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Interactive content and convergence Implications for the information society

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Interactive content and convergence

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Interactive content and convergence:

Implications for the information society

A Study for the European Commission (DG Information Society and Media)

By Screen Digest Ltd, CMS Hasche Sigle, Goldmedia Gmbh, Rightscom Ltd

Final Report

2007

European Commission
Information Society and Media

Interactive content and convergence:
Implications for the information society

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Executive summary and main findings

Our main findings in this executive summary are structured in four parts

A. Basics about the study - objectives, methodology
B. Is the road really blocked? Extent of the European delay and mid-term forecasts
C. What are the biggest obstacles to be removed for a faster, wider market uptake?
D. What kind of remedies are needed to address those obstacles and to what extent is regulatory intervention appropriate?

A. About the study.

1. **Authors**. The European Commission (EC), Directorate General Information Society and Media, Unit C1 (Lisbon Strategy and i2010), has selected a consortium made of three consultancies specialised in media (Screen Digest, Goldmedia and Rightscom) and one law firm specialised in media and copyright (CMS Hasche Sigle) to conduct this study entitled 'Interactive Content and Convergence; Implications for the Information Society'.

2. The **aim of the study** is to identify and assess the impact of the potential roadblocks of any kind (be they economic, technical or legal) that may hinder the exploitation of digital content (television programmes, radio, music, movies, games, publishing), across new distribution platforms and technologies.

3. **Methodology**. In addition to existing expertise and desk research, the consultants have consulted **179 stakeholders** between February 2006 and July 2006 in order to reflect the diversity of situations and the obstacles to digital distribution occurring throughout the content value chains. This has been done through individual interviews, four focus groups and a number of written contributions. A public workshop took place in Brussels on 3 July 2006, attended by more than 130 organisations, at which the consultants provided preliminary findings and gave stake-holders an opportunity for feedback and input. A list of consulted stake-holders is provided in the annex of this report.

B. What is the current market situation and what are the prospects?

4. **The long-awaited digital 'convergence' is now truly coming of age** in Europe. Broadband internet and mobile networks now make it possible to broadcast, stream or download digitised content from a diversity of platforms to a variety of devices, often on an on-demand, interactive basis. 'Interactivity' relates not only to content itself (as in interactive computer games) but to the many options left to consumers in the digital environment: navigation and search modes and multiple ways of accessing content in 'pull' business models, as opposed to the traditional 'push' mode of traditional

electronic media. Digital convergence is turning the now ubiquitous TV sets and mobile handsets into a terminal for interactive applications and download services. The new technological environment creates great opportunities for European content providers and platforms operators.

5. Europe has indeed witnessed **an impressive array of new media developments over the last 18 months** in terms of supply (launch of online and mobile content services, new media deals), as well as on the demand side (usage and technology adoption). This report gives many examples of new innovative European services, content deal breakthroughs, and significant cross-industry agreements in case studies that are, for most, best practices. **Hence the overall trend is very positive** even if this particular report focuses on the challenges that still need to be addressed for digital distribution to become a mass market service more quickly and more widely.

6. However, European markets are not always at the forefront of digital distribution of content and are **lagging behind more advanced markets** in some aspects. By some measures, Europe is second behind Japan and Korea (but before North America) for mobile content distribution and mobile TV, and second behind the US for broadband content distribution.

7. But **we forecast robust growth for relevant digital infrastructure penetration and digital content distribution in Europe over the period to 2010**. At the beginning of 2006, around 60 per cent of European households had a PC, and 46.2 per cent had internet access. Broadband penetration per capita[1] was 12.6 per cent by the end of 2005. By the end of 2010 we believe **broadband penetration will almost double to 25.2 per cent** of European citizens. However, the disparity between national markets across the EU will remain wide.

8. Europe is making **good broadband progress and is catching up with the US**. Back in 2003, Europe was dramatically lagging behind the US in terms of broadband access (9.1 per cent v. 5.1 per cent); two years later, at end 2005, the gap was reduced (12.6 per cent v. 15.3 per cent) and we believe it will become relatively insignificant by the end of 2010 (25.0 per cent v.25.2 per cent) with many Western European countries above that average.

9. **In the mobile area Europe lags behind Japan**, easily the leader in 3G networks and mobile data usage generally. Japan already enjoys 54 per cent of 3G penetration whereas in the seven biggest EU member States, the average penetration was **11 per cent, representing 21.3m users**. Contrasts were high since Italy alone accounted for half of all those users (10.7m, 18.5 per cent of Italian population), whilst penetration was 8.9 per cent in the UK, as low as 2 per cent in Denmark, and virtually non-existent in Belgium and many other countries (where 3G was not launched or just launched). As a result, Japan and South Korea (with several mobile television services running) tend to be 12-18 months ahead of Europe in the mobile content market.

10. **Music** has been the first content to be available for digital distribution. **European online music market generated €120m in 2005** from 'a la carte' sales and subscription 'all-you-can-eat' platforms. The online music market is expected to grow to €1.1bn by 2010. Revenues from mobile music services were already €76m in 2005 and will grow to €687m in 2010. The total digital segment (mobile+online) is thus expected to reach 20 per cent of total European music revenues by 2010. However the European digital music market is approximately one third of the US market size and will remain smaller in the mid-term.

11. In 2005, digital on-demand **movie** distribution (retail or rental) is more nascent than music as it generated only **€30m revenues in Europe** (€28m from walled-garden VOD systems, €2m online). We expect digital revenues to reach **€1.2bn by the end of 2010**, the bulk of which (€1bn) will come from online VOD (open gateway download services). At that time, digital exploitation will account for 7 per cent of all movie revenues in Europe. UK is and will remain the largest European market for VOD. However, the European figures are still short of those in the US, where the online market alone is expected to generate €1.5bn by 2010, compared to an expected €1bn for Europe.

12. Online **radio** is already reaching **15m weekly listeners** in Europe and this is expected to double by 2010 to reach 32m or 7 per cent of Europeans. **Mobile digital** radio will reach 5 per cent of European population by 2010. As for **podcasting**, we anticipate almost 11m users on a weekly basis by 2010 (2.4 per cent of Europeans). Usage of digital radio and podcasting will however remain slightly lower than that of the US. By 2010, all forms of digital radio will account for approximately **€250m**, i.e. less than 5 per cent of all radio advertising revenues.

13. Several forms of digital **games** distribution are being adopted rapidly in Europe. We estimate that the total value of the European 'digital' games market was **€698m in 2005**, of which 48 per cent (€334m) was contributed by the mobile sector. This is already 11 per cent compared to a physical retail market of just over €6.2bn in 2005. By 2010, we forecast that the digital games market will grow to **€2.3bn** – 33 per cent of the total. The European market for download of games to mobile phones is running a little ahead of the US market. Games-on-demand services over broadband networks and interactive TV games are also generally more developed in Europe. However, every other form of online gaming is so far more developed in the US market.

14. In the **publishing** industry there is no harmonised data indicating the revenues derived from online activity, which are predominantly advertising revenues as online subscription has generally failed as business model, but it is fair to say that European newspapers already draw 1 to 4 per cent of their advertising revenues from online advertising and this is growing rapidly now. From an estimated €849m revenues in 2005, we expect newspaper and magazine publishers revenues to amount to **€2bn in 2010**, almost exclusively from online and mobile advertising. E-books remain a niche market so far and will remain so in the mid-term.

C. What are the factors hindering market uptake? What obstacles need to be removed to secure a faster and encompassing European market uptake?

15. With digital convergence really happening now, it becomes clear that the **obstacles** hampering the development of digital content distribution **are themselves, 'convergent'**. Some obstacles are affecting all content sectors (music, movies, games, etc), others are more specifically affecting certain sectors; some are affecting all platforms (online, mobile), while others are specific to individual platforms. But on the whole, one of our findings is that many *similar* or even *common* problems affect all the content value chains under consideration in this report.

16. However these problems do *not* affect each content industry in the same way, to the same extent, or at the same time in the product cycle. The structure and history of value chains, the specific characteristics of the content, and simply the differences in size of digitised files, are the main reasons for this. In assessing the obstacles to convergence, this helps explain why **a content-by-content**

Figure 1 : Uptake of digital distribution/exploitation of content in Europe – Key figures[2]

	2005		2010	
	€m[1]	%[2]	€m	%
Music (online and mobile)	196.3	2.0	1,794	20.4
Movies (VOD)	30	0	1,269	7
Games (online, mobile)	699	11.2	2,302	33.4
TV programmes (VOD and digital advertising)	4.5	na	689	na
Publishing	849	2	2,001	5.4
Radio	15	0.3	250	4.8
Total	**1,793**		**8,303**	

Notes: 1. Market size in terms of revenues
2. Percentage of total sector revenues

Source: Screen Digest, Goldmedia. Rightscom

category approach (chapter two of this report) **remains useful**.

17. This report does not only look at obstacles affecting the *roll-out* of digital distribution in terms of market size and value, consumer penetration or spending. It also analyses the factors that are affecting the **position of certain content industries** or certain categories of stake-holders in the process. It reflects on how digital technologies are affecting traditional content value chains and the capacity of traditional content players to embrace digital distribution. It also reflects on some **cultural challenges**, on cultural diversity and the impact of digital distribution on the market share of European content.

18. After desk research and extensive consultation with stake-holders, the study has established a **typology of obstacles** consisting of six categories (and many sub-categories).

- **Technology issues** (mainly consumer access to enabling technologies)
- **Copyright issues** (including difficulties in accessing content, due to the definitions of new media exploitation rights, terms of trade and collective management of rights)
- **Digital piracy issues** (including the disparity of legal means to fight piracy in the different Member States)
- **Legal and regulatory issues** (including the regulation of new media services and non-linear content services)
- **Competition issues** (including gatekeeping issues in the value chains)
- **Various economic issues** (including access to funding, skills, cost of digitisation, consumer acceptance, etc.)

These families of 'generic' obstacles are detailed and analysed in chapter one, and then mentioned in the context of each content sector in chapter two. In chapter three we conduct two 'horizontal' approaches: one focused on legal/regulatory issues and remedies suggested by certain stake-holders; one focused on mobile digital distribution across content categories.

19. We have identified a number of factors hindering or potentially hampering market growth but **we do not think any of them is currently strong enough to actually 'block' the development of digital distribution** markets in Europe, as is reflected in our forecasts for digital distribution above. However, these obstacles are in some cases clearly slowing down market developments and take up of interactive content services. Thus finding ways to address these obstacles will have a positive impact on the European market for digital content.

20. The most obvious hindering factor, whose removal is actually a pre-requisite to any take-up for digital content distribution, is the **penetration of enabling consumer technologies** (PCs, broadband internet access, 3G mobile subscriptions, digital TV). In the broadband area we do not see major roadblocks hampering mass market adoption at least in Western Europe (27.1 per cent of penetration by end-2010). However the disparities remain high from one member country to another. In the *mobile* arena, 3G uptake has proved disappointing so far and the future visibility is not that good for a variety of reasons.

21. Piracy, and in particular the use of peer-to-peer (P2P) for illegal file sharing, remains a burning issue in the digital arena because it simply siphons off part of the revenue that could be made online and thus creates disincentives to legal online business on both the supply and demand sides. Most stakeholders (content owners, distributors) consider the current legal arsenal not efficient and deterrent enough. Besides, it has been extremely disparate across Europe. Now that legitimate content is fully available and awareness campaigns have been undertaken, content stake-holders believe resilient piracy should be tackled with greater energy, through increased liability of internet intermediaries and individual liability of illicit P2P users. Internet service providers now share this concern and are increasingly co-operating with content owners to fight online piracy. On the other hand some consumer associations, some consumer electronics players and some artists/authors societies argue for moderation in prosecution of individual users, especially with regard to the use of P2P to share content or even for systems authorising P2P file sharing - P2P being not illegal in itself - through 'blanket licence' systems. Actions have recently been taken by the European Commission to reinforce and harmonise legal means to fight piracy.

22. One of the most acute daily problems in the short term is to adapt existing and new **rights contracts**, and to settle the **terms of trade** between rights-holders, content owners and distributors, when it comes to new business models and technologies. The ubiquity of digital distribution is a challenge for content industries that have always been subject to territoriality and windowing: typically movie and TV businesses. But we see no fundamental reasons why contractual and business practices could not cope with these new forms of content distribution. Lawyers and businessmen are climbing a learning curve that occurs in every industry with every paradigm shift, and we can already see some progress made in tackling new business and legal concepts over the last few months.

23. Beyond the uncertainties created by new media rights definition, there is a fundamental issue with a lack of **circulation of rights**. Because of the uncertainties, some rights-holders are hesitant to license their content for new media exploitation (e.g. VOD), while some licensees – e.g. TV operators – are reluctant to exploit their rights or let them go to third party players. Behind these conservative behaviours lies a common and legitimate **concern of jeopardizing existing revenues streams and business models**. However the clear trend is that stake-holders do find new innovative collaborative solutions to prevent or remedy bundling, exclusivity or non-use of new media rights. In most cases industry players find new agreements to define - sometimes share - new media rights without the need for competition jurisdiction or regulatory remedies. However, if after some time the situation remains blocked in certain countries or certain industries, some legal remedies could be considered by policy makers as a last resort.

24. Efficient **Digital Rights Management (DRM)** systems, allowing management and protection of content in the digital environment, are viewed by most stake-holders as a pre-requisite for a secure and sustainable roll-out of digital distribution. Only consumer associations tend to question some aspects of these systems, as they impact the terms of trade and the usability of the products and services. There is less of a consensus on the question of **interoperability of proprietary DRM systems**. Some stake-holders (e.g. consumer associations, consumer electronics players, independent e-tailers) argue that mandating standardisation or at least interoperability is necessary in order to prevent consumer lock-in and competitor lock-out. Many others (e.g. content owners, TV operators, music publishers) believe that it could not be achieved without jeopardizing robustness and innovation in that sector, argue that the market is not mature yet and suggest a wait-and-see approach before moving towards any regulatory initiative in this field.

25. The **collective management of rights** in the digital environment has also been mentioned by many stake-holders (content owners as well as distributors) as being a obstacle to digital exploitation, and especially to multi-country exploitation. Several European **collecting societies have been putting in place new schemes** to address the licensing of new media exploitation (VOD, webcasting, podcasting, etc.). Following the EC recommendation on cross-border management of online music rights, many of them are engaged in streamlining their processes along the lines of the 'option 3 scenario' suggested by the EC, so as to facilitate pan-European licensing of digital rights. However, collecting societies insist that the need of 'pan-European' digital distribution remains largely theoretical anyway, as cultural content markets are likely to remain mainly national because of cultural diversity. They also warn of some risks to cultural diversity and to interests of authors if the liberalisation of the collective management 'market' was too drastic.

26. Finally, **content regulation** has to be adapted in many instances to accommodate the development of digital distribution. The ubiquitous nature of digital distribution calls for more European harmonisation in a number of areas like VAT rates, consumer protection (e.g. classification and protection of minors) and copyright, if cross-border digital commerce is to take-off. Most stake-holders do recognise the need for legal certainty but some service providers are wary to avoid new regulation and obligations (e.g. on non-linear audiovisual services such as VOD) at such an early stage, which, they believe, could hold back growth and inhibit innovation.

27. The following table summarises what we believe are the **most critical factors** (inhibitors) today (2006), in the short term

(2008), and in the mid term (2010). It shows that we expect some of today biggest problems to become less acute in the mid-term (broadband penetration, access to content, even piracy). On the other hand interoperability issues that are not such a priority in early adopter markets, can take on a greater importance in the mid term.

D. Finally, what kind of remedies are needed to address those obstacles?

28. This report systematically looks at the **remedies** that have been suggested by stake-holders for each category of obstacles and especially those inhibiting the circulation of digital content. The report analyses the pros and cons of remedies suggested, especially when remedies can cause problems themselves.

29. To **maximise the circulation and exploitation of digital content rights** in Europe, several approaches are already being explored by industry players and policy makers. Where one-to-one deals are sometimes currently difficult to make because of the classic wait-and-see and chicken-and-egg syndromes affecting nascent markets, **self-regulation** and **cross-industry agreements** are being very effective. The report analyses several examples of such 'best practice' pieces of self-regulation, e.g. British agreement on VOD windows for TV programmes (March 2006); French all-industry agreement on VOD windows for movies on broadband VOD (December 2005).

30. **Regulators** can play a role in encouraging and endorsing such initiatives through 'soft law' initiatives (e.g. recommendations, 'charters' of good practices). The EC recommendation on cross-border digital distribution is one example in the last few years, as well as the DRM high-level group and the Film Online charter. In the UK, the television regulator OFCOM played a crucial role to force producers and broadcasters to an agreement. **Classification** is also an area where policymakers and content industries can work together: the Pan European Game Information system, now recognised in 25 countries in Europe is a best practice that could inspire other types of digital content classification in the future.

31. Where new media exploitation faces **competition issues** (e.g. gatekeeping issues, bundling issues, vertical dominant positions), existing competition law and competition authorities can play their traditional role.

32. Finally 'hard law', government policy and **new regulation** are only needed in a limited number of cases in order to give market certainty and provide a regulatory framework

Figure 2 : Summary of main hindering factors

	Today (2006)	*Short term (2008)*	*Mid term (2010)*
Broadband penetration	xxx	x	
Mobile content penetration	xxx	xx	x
Circulation of content rights - terms of trade	xxx	x	x
Piracy offsetting digital revenues	xxx	xx	xx
Collective management of rights	xx	xx	x
Consumer acceptance	xx	x	x
Skill and management challenges	xxx	xx	x
VAT distortion issues	x	x	x
DRM interoperability	x	xx	x
New media regulation	x	xx	xx

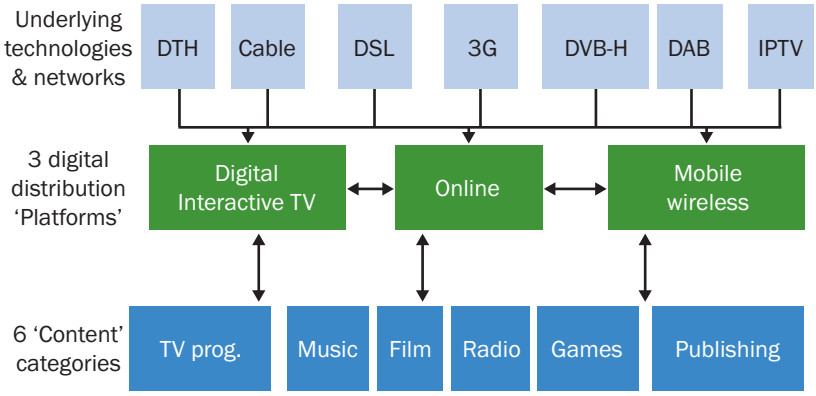
Note: Reading of the table above - 'Circulation of content rights' is one of the biggest problem today, along with piracy and low 3G penetration, rated xxx. However, we believe, as said before, that this particular issue will largely be solved by market players through new business and legal practices over time, so that the issue will not be in the top 3 most acute obstacles within two years. On the other hand, the lack of DRM interoperability is not a significant obstacle to market uptake today (e.g. because early adopters are not deterred by it) ('x' today), but it could become a roadblock in the future, when market matures and tries to reach mass market 'mainstream' consumers.

Source: Screen Digest

well adapted to new business models when market forces fail to overcome roadblocks after some time. However, any such legal remedies will have to be constructed in a flexible manner in order to adapt to the increasingly fast changing technologies and market conditions.

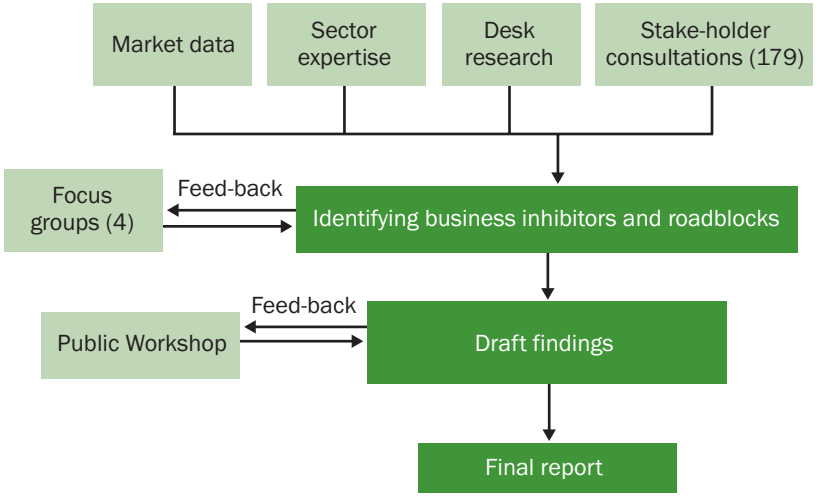
Introduction

Figure 3 : Three digital platforms, six categories of content



Source: Screen Digest

Figure 4 : Methodology of the study (inputs and outputs)



Source: Screen Digest

Objectives, methodology

The European Commission (EC), Directorate General Information Society and Media, Unit C1 (Lisbon Strategy and i2010 initiative), has selected a consortium made of three consultancies specialised in media (Screen Digest, Goldmedia and Rightscom) and one law firm specialised in media and copyright (CMS Hasche Sigle) to conduct this study called *'Interactive Content and Convergence: Implications for the Information Society'* [3].

The **aim of the study** was to identify and assess the impact of the potential economic, technical and legal roadblocks that may hinder the exploitation of digital content (television programmes, radio, music, movies, games, publishing), across new distribution platforms and technologies. The study was also required to provide data and economic forecasts of the different markets for digital content.

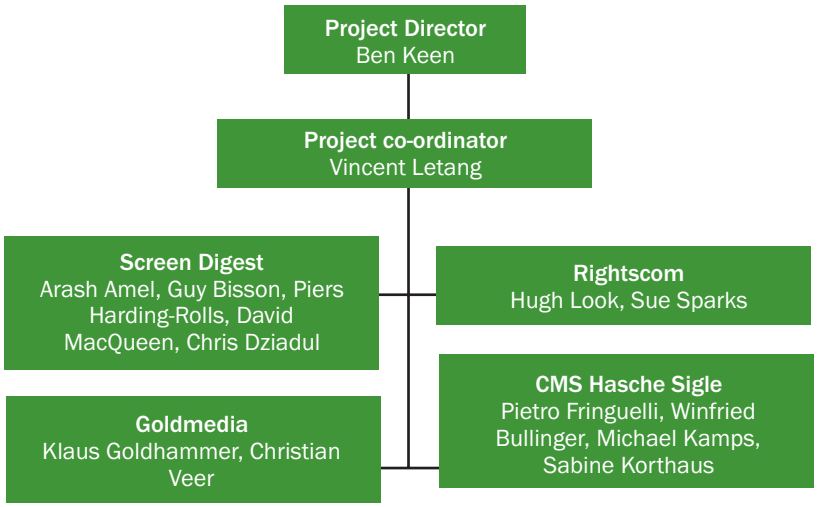
The terms of reference stipulate:

'In the context of this study, "interactive content" refers to content services delivered over fixed or wireless platforms such as mobile phone, including access to content such as : television and radio programmes, movies, music, publishing, interactive software, but with the exception of communication based services such as voice, messaging or email'.

In accordance with the EC we have thus focused the analysis on **6 categories of content**: TV programmes and movies, music, radio broadcasts, publishing content, games (excluding gambling).

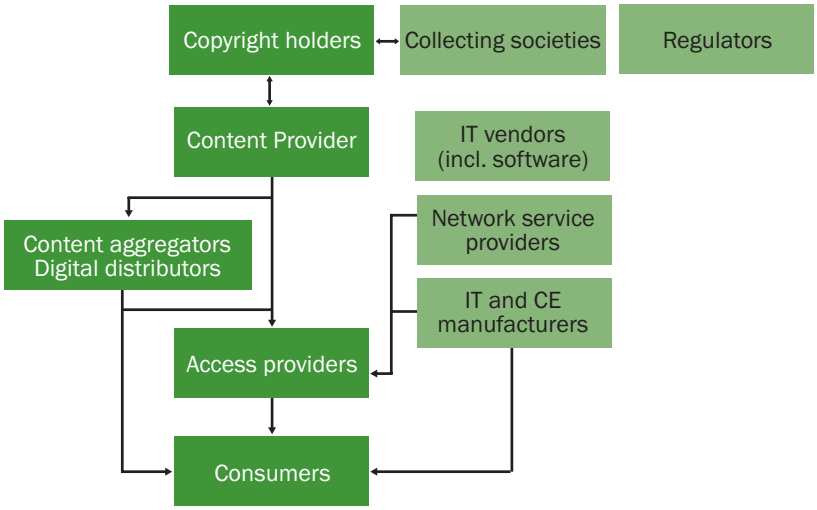
The study looks at the distribution of those content, in digitised formats through

Figure 5 : Organisation of the working team



Source: Screen Digest

Figure 6 : The value chain of digital content



Source: Screen Digest

three digital platforms: online, mobile, and digital interactive TV. Traditional linear broadcasting, even in digital mode, is not fully in the scope.

The methodology is based on four types of inputs: market data, sector expertise from the consultants, ad hoc desk research and, most importantly, an extensive consultation of stake-holders. At various stages, the consultants have met groups of stake-holders in order to present preliminary findings and gather feed-back.

The consortium of consultants was comprised of three consultancies specialised in media (Screen Digest, Goldmedia and Rightscom) and one law firm specialised in media and copyright (CMS Hasche Sigle), under the leadership and co-ordination of Screen Digest.

Screen Digest, London
- Market research and consultancy
- Expertise on television, film, music, broadband, games

Goldmedia, Berlin
- Market research and consultancy
- Expertise on radio and television

Rightscom, London
- Market research and consultancy
- Expertise on publishing

CMS Hasche Sigle
- International Law Firm
- Expertise on media law and Intellectual Property

Consultation of stake-holders

In the figure below, we show the different categories of stake-holders that have been approached and interviewed. The focus was put on the categories in dark below, i.e. the players at the core of the digital content value chain (content creators, providers distributors).

Stake-holders have been given a choice of being consulted in three ways: individual interviews (face-to-face whenever possible or by telephone), focus groups (collective meetings), answer to a legal questionnaire.

For several big, structured companies, one or two of these instances were used by stake-holders to make their points. Some also send ad hoc positions papers.

Four focus groups have been organised with representatives of relevant organisations. Each one of them has gathered 7 to 10 senior executives (industry players, regulators). Finally, on July 3, 2006, a public workshop was held in Brussels, gathering more than 150 stake-holders.

Through individual interviews, our four focus groups and a number of written contributions, **179 consultations have been made**. A detailed list of companies and people interviewed is provided in annex. We have tried to achieve a balanced sample of interviewees by content sector, and by country.

Consultations by categories of stake-holders

Of the 179 consultations, 41 were with 'television' players (broadcasters, pay TV operators, cable operators, specialised regulators), 38 with audiovisual content players (producers of movies and TV programmes, trade bodies), 16 with publishing organisations (newspapers, magazines, books), 16 with

games operators (developers, publishers, digital distributors), 17 with radio operators.

The remaining 37 consultations were made with non-content-specific stake-holders, mainly telecom operators (including triple play operators, ISPs, internet players and mobile operators), technology providers, and media corporation holdings.

Consultations by countries

Face to face interviews have been conducted by our experts through in eight different EU countries: UK, France , Italy, Spain, Germany, Poland, Sweden, Czech Republic.

On the whole, 33 consultations were made with German stake-holders, 20 with UK stake-holders, 18 with France, 12 with Italy, 11 with Spain, 10 with Poland, 4 with Sweden.

The remaining 71 consultations were made in other smaller market or with a large number of European or non-European companies having multinational activities in Europe, as well as pan-European trade bodies in all relevant industries.

Within each content value chains, the consultants were careful of achieving a balance between service providers, content providers and technology providers and network providers, as well as between 'big' players and 'independent' players.

Figure 7 : Focus groups and workshop organised (2006)

Location	*Date*	*Participants profile*	*Organised by*
London	April 28	Business executives	Screen Digest
Berlin	April 7	Business executives	Goldmedia
Cologne	April 21	Legal and public affair executives	CMS Hasche Sigle
Brussels	May 31	Legal and public affair executives	CMS Hasche Sigle
Brussels Workshop	July 3	All	All consultants

Source: Screen Digest

Figure 8 : Stake-holder consultation by country of origin and content category

Country	*Other/All*	*AV content*	*TV*	*Music*	*Publishing*	*Radio*	*Games*	*Total*
Germany	6	5	6	1	5	10	0	**33**
Spain	5	2	2	0	0	1	1	**11**
France	5	7	1	3	0	0	2	**18**
Italy	3	4	3	0	2	0	0	**12**
Poland	1	0	8	0	0	1	0	**10**
Sweden	0	1	0	0	0	2	1	**4**
UK	3	4	2	3	4	0	4	**20**
Other and pan-European	14	15	19	7	5	3	8	**71**
Grand Total	**37**	**38**	**41**	**14**	**16**	**17**	**16**	**179**

Source: Screen Digest

Taxonomy and definitions of digital content services

Crossing content, technologies and business models, we can build the following list of converging interactive content services, that are analysed in the rest of the report.

We give below some definitions of technical or business model terms used in the report. More definitions are available in the glossary.

Figure 9 : Taxonomy of digital content services

	Category of content	*Sub-categories, services*
1	**Television**	
	11	'Red button' interactive TV (iTV)
	12	Walled-Garden VOD
	13	Online TV (Internet based TV)
	14	IPTV
	15	Mobile TV
2	**Radio**	
	21	Broadcast digital radio
	22	Online radio
	23	Podcasting
	24	Mobile handheld radio
3	**Music**	
	31	Online retail (including sideloaded content)[4]
	32	Mobile retail (over the air)
	33	Podcasting
4	**Movies**	
	41	Online retail
	42	Walled-garden VOD
5	**Publishing**	
	51	Press on new platforms : online, mobile
	52	Books on new platforms : ebooks, audio-books
6	**Games**	
	61	Games digital download
	62	Games streaming (Games on Demand)
	63	Browser based casual games
	64	Massively Multiplayer Online Games
	65	Television/PC console online games
	66	PC games with free online play
	67	Interactive television games
	68	Mobile games

Source: Screen Digest

TV

1.1 'Red button' iTV

By 'red button' we refer to interactive TV services offered on traditional broadcast digital TV (e.g. satellite TV), with a return-path. Some of classic 'Red Button' functions can even be implemented without a return-path, in which case 'interactivity' is provided by the data pre-pushed to the set-top box (e.g. weather forecasts, EPG). The 'red button' on the remote control was initially invented by BskyB in the UK and became popular across the board as the entry point to interactive TV services such as Electronic Programme Guides, information services, t-commerce, casual games, etc .

The technically limited 'Red Button iTV' differs from the full interactivity offered on two-way broadband networks (online TV or IPTV).

1.2 'Walled garden networks'

Set-top box-based digital TV networks, offering services such as interactive TV and video-on-demand platforms. Differs from 'online TV' offering similar services through open internet.

1.3 'Online TV'

TV programming distributed over the open Internet - including news, sports, and genre programming (such as children's entertainment, comedy and drama), but excluding music videos and user-generated content.

1.4 'Internet Protocol Television (IPTV) '

Delivery of television content using Internet protocol within a 'walled garden' network (as opposed to 'Online TV' on open internet), over a broadband network. IPTV has been widely used by telecoms operators to offer TV over their DSL networks. IPTV can also be used by cable companies both within their own network infrastructure and as a means of expanding their service reach outside their areas of operation over unbundled third-party DSL networks.

1.5 'Mobile TV'

Unless otherwise mentioned, the term encompasses transmission of television feeds and of on demand television programmes, over broadcast network/technologies (e.g. DAB, DVB-H) or point-to-point technologies (3G).

Radio

2.1 'Broadcast Digital Radio'
Broadcast digital radio generally encompasses radio services distributed via a variety of platforms: dedicated radio broadcast standards like DAB, DRM(+) and HD-Radio/IBOC as well as radio services broadcast via digital TV platforms (terrestrial, cable or satellite) like DTT/DVB-T, DVB-C or DVB-S. In this study the term 'broadcast digital radio' does not encompass DVB-H- or DMB-services (though both are broadcast standards) as services dedicated to mobile usage are referred to as mobile radio (see below). When we refer to a certain platform we use the name of the technical standard.

2.2 'Online Radio'
Online radio, also referred to as Internet radio, webcasting or streaming, here means transmitting radio programmes, from broadcast radio stations as well as from independent online only providers, via the Internet, i.e. streaming digital radio content via the TCP/IP protocol. Referring to radio content here means that pure music services (so called music flatrates for instance) are not called online radio in this report, even though they are often branded as radio services. Radio here means that it contains editorial content (and most of the time music as well).

2.3 'Podcasting' (for music and radio)
Podcasting both means the special way of distribution and the content. The latter mostly consists of spoken word/editorial content and music to an extent – thus classical radio content. This content is distributed via the Internet, downloaded to a PC and then sometimes transferred to an MP3 player on which it is listened to. Thus podcasting is also referred to as radio on demand.

2.4 'Mobile (handheld) Radio'
Mobile digital radio or simply mobile radio in this report means radio services that are dedicated to mobile usage on handhelds or mobile telephones for instance. This definition encompasses services which use mobile broadband as well as services using mobile broadcast standards (or both). Thus this section covers radio services using 2.5G/3G networks like EDGE, UMTS, HSDPA as well as radio services using broadcast standards like DMB, which is based on DAB, or DVB-H, based on DVB-T. To be exactly: if not mentioned otherwise, DMB always refers to T-DMB.

Music and movies

3.1 Online retail
A method of selling digital content that gives the customer ownership over the files they have downloaded, allowing the customer to use the content as many times as they like – the digitally distributed equivalent of conventional retail channels. Digital retail is also known as both 'download-to-own', 'electronic sell-thru' and 'digital sell through'.

3.2 Mobile retail (music)
Mobile 'over the air' distribution refers to download/streaming of content directly to mobile devices through wireless networks, and differs from 'sideloaded' distribution.

Games

Massively multiplayer online game (MMOG)
Online games that involve gameplay within a persistent, always on and often shared game world, and that are designed to be played by hundreds, thousands and even hundreds of thousands of users.

Application streaming (also Games on Demand)
Application streaming (commonly marketed as Games on Demand or GoD) is a broadband-only service where games application data is downloaded to a user's PC on a continual basis as and when needed. Often, the game interface is installed on the user's PC, giving the semblance of a full game installation and the actual game application is run on the local PC rather than on the server. The server therefore simply acts as a remote hard drive from which, for example, level information (layout, art, animation, artificial intelligence data, etc.), is drawn at the appropriate time just as the application would have done with a local hard-drive. Games on Demand services are run under a subscription business model.

Games on Demand market
Consumer spend excluding VAT on Games on Demand subscription services.

Browser based casual games
Casual games that are served and played within, through or downloaded from a PC internet browser. Browser based casual games include content delivered under a number of business models including digital download (download-to-own), subscription and pay per play.

PC games with free online play
Multiplayer pc games that offer some form of online gameplay for free.

Interactive television (iTV) games
Games that are played through the interactive TV channels of digital TV networks.

Interactive television games market
Consumer spend excluding VAT on iTV games from both PPP and subscription business models.

Mobile games
Games that are played on mobile phones and devices. For the purposes of this report the mobile games market represents the consumer spend on downloadable mobile games.

1 Digital distribution of content

Plan of the chapter

1.1 The opportunities and challenges of digital convergence

In a few short years, the digital entertainment landscape in Europe has changed beyond recognition. The much-touted 'convergence' of digital media technologies, providing a multi-platform content distribution environment where different 'routes to content' compete for the consumer's time and attention, has now finally become a reality. The explosion in the deployment of two-way broadband Internet and mobile networks, as well as the continued advancements in digital TV distribution, coupled with rapid consumer uptake of services, now means that the European consumer is better connected than ever before, at bandwidth speeds which are increasing year-on-year. It is now possible to broadcast, stream or download digitised content from a diversity of platforms to a variety of devices, often on an on-demand, interactive basis.

'Interactivity' relates to not only the content itself, but to the many options surrounding its consumption, giving consumers the freedom to choose what, when, how, and for how long they choose to consume media programming. In the new converged digital environment, the aim of the supplier, broadcaster or service provider is simply to deliver the content in a convenient user-friendly manner, leaving many of the consumption choices to the end-user: navigation and search modes and multiple ways of accessing content in 'pull' business models, where the consumers chooses what he or she wishes to view, as opposed to the traditional 'push' mode of traditional electronic media, where the broadcaster or service provider determines the schedule. Interactive content can take four forms:

- intrinsically **interactive content services** such as mobile and online gaming and interactive TV services, but also :
- traditional content delivered in new **interactive forms**,
- traditional content delivered on (new) **digital platforms** (e.g. mobile multimedia platforms) that have interactive potential.
- traditional content delivered on an **on-demand** basis on new digital platforms where the search phase before purchasing and downloading generally includes an interactive element.

All these content-based services are bringing new business models and business opportunities for content and platform providers. Digital convergence therefore means that content services can evolve in four ways:

- **New forms**, or **enhancements,** of content. For example, in interactive TV programmes, the "interactivity" can change the viewer experience by providing opportunities for customisation or further information or can feed back into the programme itself and make it something different (eg "response TV" and reality shows).
- **New business and distribution models**; for example subscription-based radio services, sell-through music or video downloads to PCs or mobile devices, Internet distribution of movies and TV programmes, not-for-profit on-line access to public service content archives, etc.
- Consumers can access content on **new platforms** (e.g. radio on digital TV, games on mobile phones, audio-books to download from iTunes, newspapers or TV programmes to read or watch on a broad range of mobile devices, etc), which widen their options and may also widen the breadth of the content offering (e.g. through online libraries).
- Finally, all the transformation above generate **new usage patterns** from consumers.

As such, digital convergence is turning ubiquitous TV sets, PC screens, mobile handsets and consumer electronic devices into end-user terminals for interactive media applications and download services. It is enabling a diverse range of products, from games consoles to portable video players, to act as home entertainment hubs, delivering content to consumers at home or on the go.

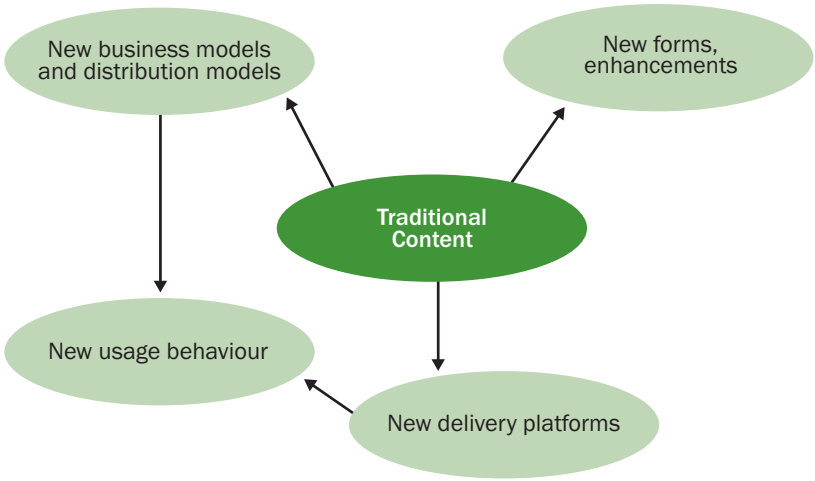
This new technological environment creates great opportunities for European content providers and platforms operators. Already traditional 'networks' such as broadcasters, telcos, Internet Service Providers (ISPs), mobile phone operators and pay-TV platforms have embraced the possibilities of using the delivery of content in a digital interactive format as a means of adding value to existing products or opening up new sources of revenue.

However, as the open Internet develops both in wireline and wireless form, new service providers have emerged, with similar goals to the established network operators and traditional media brands. Technology giants, Internet search engines, Internet portals, e-tailers, retailers, publishers and supermarket chains are just a few examples of the diverse range of sectors seeking to use increased connectivity to offer interactive on-demand content to European consumers. As companies who are giants in their own fields enter the market, not only does consumer choice increase but also competition for premium content.

The digital on-demand business model also opens up possibilities not technically feasible in the limited 'shelf space' environment of the linear world. Not restricted by time or storage capacity, on-demand services can offer a far broader range of content from the 'long tail' of all material available, rather than simply focussing on best sellers or the most popular titles. Although there is still a considerable onus on marketing and attracting users with popular hit programming, platforms can explore further into the vault of niche or library content, taking advantage of one-to-one relationships with users, and in many regards furthering cultural diversity. Taking this one step further, the line between producers, programmers and consumers are becoming blurred as the users themselves continue to become generators of the content they consume, thus opening up an ever increasing range of opportunities and business models.

However, although the basic technological components are ready, and the business models have developed, the European markets are lagging behind other developed nations, chiefly the US.

Figure 10 : The four effects of interactive convergence on traditional content



Source: Screen Digest

Specifically the distribution of value-added content through interactive platforms, arguably a pre-condition to mass-market roll-out and economies of scale, faces some difficulties in a still fragmented Europe. Today the general situation is as shown in the next chart: in each country, each type of content (C1, C2, etc) is delivered through one or sometimes two platforms (P1, P2, etc) to consumer groups (yellow boxes). Some content is simply not accessible through digital interactive platforms and only through traditional delivery channels. Some consumers cannot access some of the platforms. And on top of that, content does not circulate satisfactorily across national bounders.

Starting from this situation, the question will be how to reach a future in which the opportunities of digital technology and broadband networks are fully exploited. That is, a broad range of content being accessible through a broad range of platforms to all European citizens (following chart). And this not only in every Member State, but also across Europe's single market. This does not mean that every single piece of European content *must* be distributed on every platform in every country; it means that in so far as it makes business sense and meets end-user demand, platform operators and content producers should be *able* to make distribution deals *without* excessive technical and regulatory obstacles.

This creates opportunities for different groups of stakeholders. The main categories of players are summarised in the following chart.

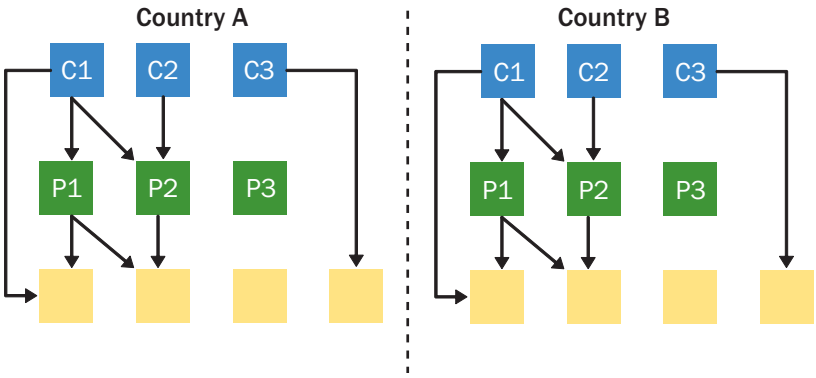
For **consumers,** for example, the new converged environment provides a situation where they can access existing and new forms of content through the new platforms and devices they are acquiring, in a seamless, simple, interoperable way.

For **content providers** there is the possibility to leverage more business and revenues from new and existing content through new platforms and delivery mechanisms, accessible in new territories, under new business models.

Hardware providers, once in economic stagnation in the 90s, are seeing renewed growth and huge opportunities thanks to digital convergence. Mobile devices (mobile game consoles phones or MP3 players) are amongst the fastest-growing categories in the industry. Broadband and broadband-based content services have clearly accelerated the adoption of PCs, which was previously limited to technologically-savvy middle-class households.

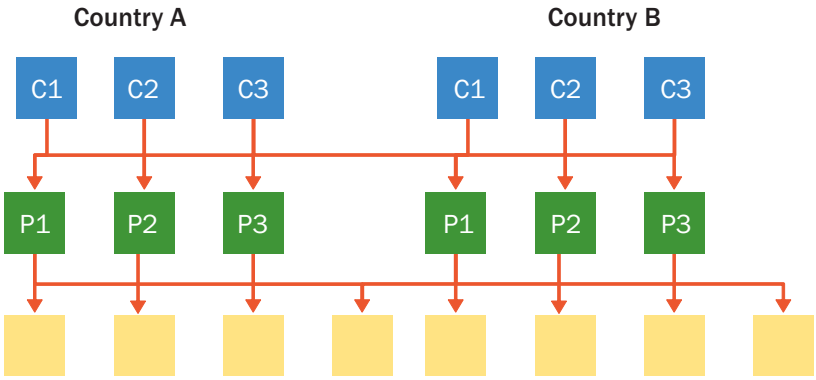
And this is only the tip of the iceberg. The scale of the activity in Europe's converging media landscape means the

Figure 11 : Content value chain, the situation today



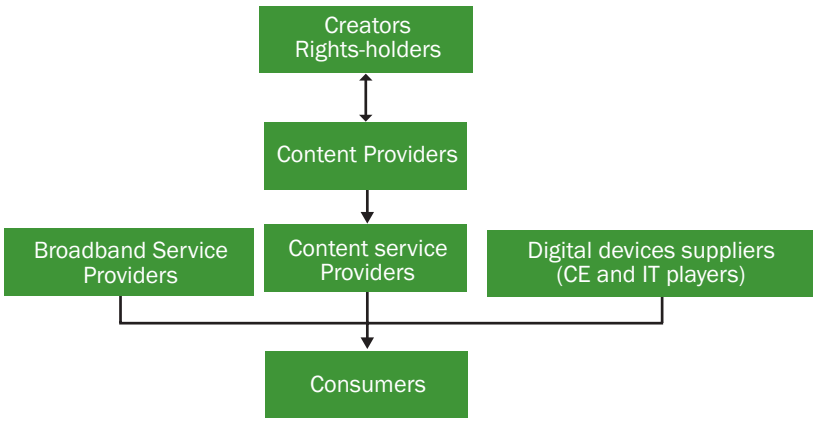
Source: Screen Digest

Figure 12 : Content value chain, the convergent single market



Source: Screen Digest

Figure 13 : The simplified value chain and main players in converging content industries



Source: Screen Digest

European media sector is now changing beyond recognition to that which existed only a decade ago. These are exciting times which require fresh thought and impetus to ensure continued growth and effective competition.

1.2 Digital distribution of content: state-of-play, market data and perspectives

1.2.1 Penetration of enabling technologies

Digital distribution of content can only develop on a large scale when there is a sufficient penetration of devices – allowing consumers to record, playback or store digital content-, as well as a mass market access to broadband technologies and networks.

1.2.1.1. PC and Broadband access[5]

Connection to broadband networks, as opposed to **narrowband** internet for instance, is an **absolute pre-requisite to digital content market take-off**. Broadband is needed for a consumer to be able to access the advanced content services examined in this report. Music download is possible on narrowband and that is why digital music was the first content to be massively affected by the internet, after text, but movie download takes hours with a narrowband connection.

Figure 14: Penetration of essential technologies in the EU

EU total (%)	*2003*	*2005*	*2010*
PC (per household)	49.0	59.9	74.7
Online (per household)	35.2	46.7	64.2
Broadband (per capita)	5.1	12.6	25.2

Source: Screen Digest, Eurostat

Figure 15: Broadband penetration EU v. USA

% per capita	*2003*	*2005*	*2010*
Western Europe (EU 14)	6.3	15.0	27.1
Eastern Europe (EU 6)	0.9	4.6	20.4
EU 20	**5.1**	**12.6**	**25.2**
USA	9.1	15.3	25.0

Source: Screen Digest, Eurostat

Figure 16: PC penetration in households in the EU (selected countries)

%	*2001*	*2003*	*2005*	*2006*	*2008*	*2010*
Austria	42.0	49.3	58.0	61.0	68.1	71.0
Belgium	41.3	55.0	68.9	73.1	79.7	83.0
Denmark	60.9	78.3	85.5	88.0	90.4	91.6
France	33.0	41.6	52.0	55.8	62.8	69.1
Finland	47.0	58.0	65.8	69.0	75.3	80.7
Germany	52.6	61.4	73.0	76.0	80.0	82.5
Greece	22.3	30.5	35.0	38.0	42.0	46.0
Ireland	33.0	45.3	54.9	58.0	64.0	69.0
Italy	34.1	45.0	52.8	57.0	62.5	65.3
Netherlands	65.0	71.0	83.0	86.0	89.1	91.6
Portugal	29.0	38.3	49.0	53.0	60.3	66.4
Spain	37.6	43.3	51.0	55.0	63.0	70.5
Sweden	72.8	78.2	82.0	83.3	85.0	85.5
UK	42.5	55.0	67.8	73.0	81.0	87.6
Total EU 14 (Western EU)	**43.0**	**52.5**	**62.7**	**66.4**	**72.2**	**76.6**
Czech Republic	0.0	23.9	35.7	39.9	46.3	53.3
Estonia	17.0	29.0	43.1	49.4	59.6	67.4
Hungary	0.0	11.5	25.0	31.0	41.0	49.7
Poland	19.6	28.2	43.6	49.8	59.2	65.3
Slovakia	11.0	35.9	63.4	70.1	79.3	83.2
Slovenia	47.0	55.0	60.6	63.0	66.9	70.0
EU 6	**13.4**	**26.4**	**41.6**	**47.4**	**56.2**	**62.7**
Total EU 20	**39.1**	**49.0**	**59.9**	**63.9**	**70.1**	**74.7**

Source: Screen Digest

Simple browser-based online games are also possible. But many new services require broadband to be rolled-out in a user-friendly, sustainable way, i.e. with download times acceptable by today's consumers. For instance, real-time online TV, movie download services and multiplayer online games are typically 'bandwidth hungry' services.

According to Screen Digest, at the beginning of 2006, around 60 per cent of European households had a PC, and 46.2 per cent had internet access. While broadband penetration per capita (taken as the number of connections with data transfer speeds of 150kbit/s or faster) was 12.6 per cent. By 2010 we believe broadband penetration will have reached 25.2 per cent. However the disparity between Western and Eastern Europe will remain wide: 25.7 per cent in the Netherlands (highest penetration), 15.0 per cent in Western Europe, 1.5 per cent in Greece (lowest penetration), 4.6 per cent in Eastern Europe.

In 2003 Europe was clearly lagging behind the US in terms of broadband access (5.1 per cent v. 9.1 per cent); two years later at end 2005, the gap was reduced (12.6 per cent v. 15.3 per cent) and we believe it will become non significant by the end of 2010 (25.2 per cent v.25.0 per cent) with many Western countries higher than that average.

1.2.1.2. Mobile penetration and 3G

Mobile phone penetration across Europe is generally very high, and in some countries exceeds 100 per cent. This is an artefact of the way the data is collected; what is counted is simply the number of subscriptions, which can exceed the population. Some users have multiple handsets (one phone provided by work and one for personal use) or a mobile phone and a laptop network card which connects to a mobile network.

There are a number of countries, Greece being a good example, where mobile phone usage penetration exceeds fixed line data access. Greece is reportedly also a very good market for mobile data usage. A similar market in Japan in the late 1990s is often cited as a reason for the success of i-mode and other mobile data services in that country.

Figure 17: Online penetration in households in the EU (selected countries)

% at end year	*2001*	*2003*	*2005*	*2006*	*2008*	*2010*
Austria	28.0	36.2	50.7	57.0	60.7	67.0
Belgium	28.4	34.8	47.9	53.0	61.5	69.0
Denmark	42.7	56.9	81.3	85.4	87.8	89.1
France	21.9	27.2	39.0	49.0	56.7	62.0
Finland	30.0	43.0	60.0	62.0	71.3	78.0
Germany	33.1	46.0	61.3	66.3	72.5	76.1
Greece	10.0	15.1	22.7	28.4	36.1	41.7
Ireland	23.6	36.0	47.5	51.0	58.0	63.8
Italy	15.0	30.9	39.7	45.4	51.8	56.1
Netherlands	48.0	63.3	79.5	82.6	85.8	88.4
Portugal	14.0	21.7	34.1	38.9	47.6	53.9
Spain	18.7	25.2	37.0	43.0	49.0	54.0
Sweden	62.7	70.0	75.7	78.0	80.6	81.9
UK	36.9	45.0	57.0	61.1	69.0	74.3
Total EU 14 (Western Europe)	29.5	39.4	52.4	57.2	63.5	68.2
Czech Republic	9.6	14.3	21.1	26.6	38.6	46.6
Estonia	10.2	17.4	36.1	41.2	50.4	58.4
Hungary	1.8	9.4	27.8	36.3	47.7	55.4
Poland	9.1	17.8	31.4	38.0	46.9	53.4
Slovakia	5.2	9.4	25.8	32.7	47.6	56.9
Slovenia	23.4	38.9	49.1	55.2	61.8	64.9
Total EU 6	9.9	17.9	31.9	38.3	48.8	55.9
Total EU 20	23.6	32.9	46.2	51.6	59.1	64.5

Source: Screen Digest

Mobile networks are often cheaper to roll out in rural areas than fixed line access. Mobile access may, in fact, be a better method of addressing the digital divide than fixed line access.

As for 3G, 24 of the 25 EU States do have at least one 3G operator. Only Malta has

Figure 18: Broadband penetration per capita – selected countries

%	2003	2004	2005	2006	2008	2010
Austria	7.4	10.4	14	17.7	24.5	28.6
Belgium	12.1	16.1	19.9	23.4	29.1	33.3
Denmark	12.8	18.3	24.8	29.9	38.4	44.7
France	6	10.9	16	19.6	23.5	26.4
Finland	9.3	14.9	22.4	24.9	31.2	35.4
Germany	5.6	8.4	12.7	17.0	22.0	26.0
Greece	0.1	0.4	1.5	2.5	5.2	7.8
Ireland	0.8	3.3	6.6	9.1	14.3	17.6
Italy	4.3	8.2	11.8	14.5	18.1	20.5
Netherlands	11.9	19.7	25.7	29.0	33.3	36.5
Portugal	4.9	8.1	11.5	14.1	17.3	19.5
Spain	5.3	8.1	11.5	14.5	18.5	21.4
Sweden	11.2	15.2	21.1	22.3	28.2	32.1
UK	5.3	10.2	16.3	20.8	21.9	31.0
Total EU 14 (West EU)	**6.3**	**10.3**	**15.0**	**18.7**	**21.4**	**23.6**
Czech Republic	0.5	2.0	4.9	8.0	13.8	18.7
Estonia	5.5	10.2	13.3	16.5	22.7	27.8
Hungary	1.8	3.6	6.1	7.9	12.6	16.0
Poland	0.5	1.4	2.7	6.6	11.4	14.4
Slovakia	0.1	0.9	2.4	4.2	8.4	11.5
Slovenia	2.9	5.6	9.8	12.6	17.7	21.2
EU 6	**0.9**	**2.5**	**4.6**	**9.2**	**12.5**	**15.6**
EU 20	**5.1**	**8.5**	**12.6**	**16.8**	**21.8**	**25.2**

Source: Screen Digest

Figure 19 : Availability of 3G services (date of first commercial launch)

Country	Date	Country	Date
Italy	Q1 2003	Portugal	Q1 2004
UK	Q1 2003	Sweden	Q4 2001
Spain	Q2 2004	Cyprus	Q4 2004
France	Q4 2004	Czech Republic	Q4 2005
Denmark	Q4 2003	Estonia	Q1 2005
Belgium	Q4 2004	Hungary	Q3 2005
Austria	Q2 2003	Latvia	Q1 2005
Finland	Q1 2002	Lithuania	Q2 2006
Germany	Q1 2004	Malta	No 3G network
Greece	Q1 2004	Poland	Q4 2004
Ireland	Q2 2003	Slovakia	Q1 2005
Luxembourg	Q2 2004	Slovenia	Q4 2003
Netherlands	Q1 2004		

Source: Screen Digest

no 3G service yet. In most countries however, services have been launched in 2004 or 2005, which explains the low penetration so far.

In terms of penetration Europe was therefore behind Japan - but in front of the US - at the end of 2005. Surveying seven of the major EU members, the average penetration was 11 per cent of 238m inhabitants, representing 21.3m users. Contrasts were high since Italy alone accounted for half of all those users (10.7m, 18.5 per cent of Italian population), whilst penetration was 8.9 per cent in the UK, as low as 2 per cent in Denmark, and virtually non-existent in Belgium and many other countries (where 3G was not launched or just launched). This compared to 54.2 per cent penetration in Japan where NTT DoCoMo Vodafone and KDDI launched their 3G services between October 2001 and October 2003.

Although Europe lags behind Japan, easily the leader in 3G networks (and mobile data usage generally), Europe is some way ahead of the United States in both mobile and 3G penetration.

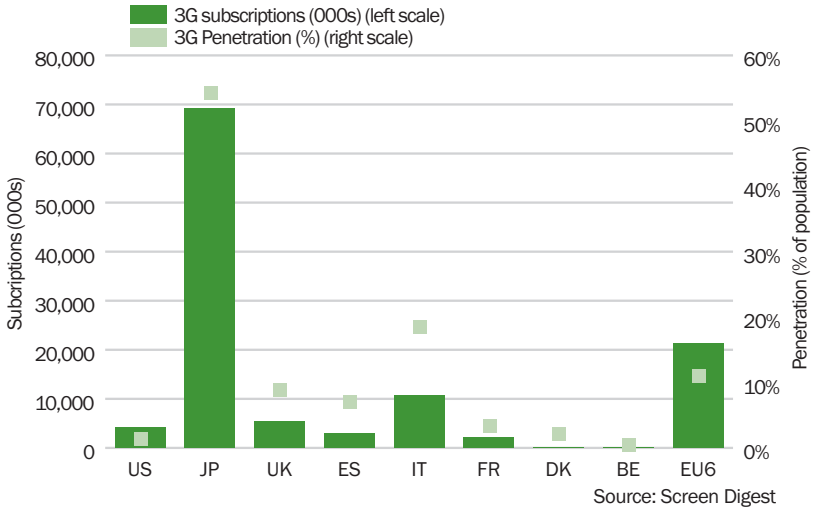
Generally it is held in the industry that Japan and South Korea tend to be 12-18 months ahead of Europe in the mobile market, with Europe 12-18 months ahead of the United States. The reason for the advanced market in Japan is described above (mobile was the first data access for many Japanese consumers), while in South Korea heavy government involvement has pushed the mobile market forwards. Europe, with the common GSM standard and a culture of operators working towards a common goal, contrasts with the US. In North America, a number of different, competing mobile standards have held back the market, along with a lack of inter-operator interoperability.

Figure 20 : 3G penetration, EU v. Japan/US

End-2005	*3G subscriptions (000s)*	*3G Penetration (% of population)*
US	4,120	1.4
Japan	69,167	54.2
UK	5,331	8.9
Spain	3,034	7.0
Italy	10,775	18.5
France	2,043	3.4
Denmark	115	2.1
Belgium	39	0.4
EU6	**21,337**	**11.0**

Source: Screen Digest

Figure 21 : 3G penetration: Europe's big 6 v. Japan



1.2.1.3. Personal digital audio players

The sale of personal digital audio players has grown rapidly. In Western Europe sales rose from 364,000 units in 2002 to 25.2m units in 2005. The largest market for these devices is Germany where 7.5m devices were sold in 2005, equivalent to one purchase per head for 9.1 percent of the population this is followed by the UK and France with 4.8m and 4.1m units respectively.

Figure 22 : Personal digital audio players ('MP3 players') - Western Europe

000s units sold	*2002*	*2003*	*2004*	*2005*	*2006f*
France	55	250	1,550	4,130	6,400
Germany	106	870	3,160	7,840	9,050
Italy	16	59	433	1,875	2,800
Spain	14	82	1,041	2,581	2,895
UK	78	288	1,663	4,796	7,300
Total Western Europe (10)[6]	**364**	**1,828**	**9,750**	**25,193**	**33,295**

Source: EITO 2006 (European Information Technology Observatory)

1.2.2. Uptake of digital content distribution

1.2.2.1. Music

The US, Japan, UK, Germany and France are the top five digital music markets worldwide. In general, countries with a greater percentage of digital sales are the strongest markets for music sales overall.

We estimate that in the EU, the **total online music sales reached €120m in 2005** and will rise to **€1.1bn by 2010** – by which time we expect that online sales will constitute more than 10 per cent of the combined physical/online music market.

Here 'online music' includes 'sideloaded' mobile music (music tracks downloaded over the internet to a PC and then to a mobile device) but not the purely mobile distribution of music (ringtones or full-length tracks downloaded directly over wireless networks).

'Digital music' comprises both acquisition models.

As a whole, digital music, which also includes exploitation of services over mobile phones, accounts for between 1 per cent and 4 per cent of total 2005 music revenues in the European territories. Digital music sales are indeed split roughly 50:50 between online and mobile at the global level, but there are big regional differences.

According to IFPI, revenues from downloads of full track songs on mobile networks[7] were €76.3m in 2005, with the UK being the biggest market (€28.2m), UK and Austria being the most successful in terms of average spending (€0.47 in the UK, €0.34 in Austria). The following table shows market size for 11 EU countries. The market is virtually non-existent in the other EU Member states.

In Japan and parts of continental Europe, mobile dominates the digital music market, while online sales are relatively stronger in markets such as the US, UK and Germany.

The European online music market is approximately **one third of the US market size**.

Figure 24 : Mobile music revenues (full track downloads)

2005	*Mobile music revenues (€m)*	*Euro per capita*
Austria	2.7	0.34
Belgium	0.6	0.06
Denmark	0.3	0.07
Finland	0.5	0.10
France	14.2	0.23
Germany	12.6	0.15
Italy	10.3	0.18
Netherlands	0.8	0.05
Spain	3.7	0.09
Sweden	1.9	0.21
UK	28.2	0.47
Total	**76.34**	**0.21**

Source: Screen Digest from IFPI data

Figure 23 : Online music revenue forecasts – Total EU

	2003	*2004*	*2005*	*2006*	*2008*	*2010*
'a la carte' download revenue (€m)	2.1	28	108	270	622	990
Combined buy rate	0.2	1.1	3.0	4.8	8.0	10.2
Online music subscriber revenues (€m)		7.9	12.0	14.8	34.1	116.7
EU online music revenues (€m)	2.1	36	120	285	656	1,107
EU total music revenues - online + physical (€m)	9,993	9,384	9,151	8,652	8,307	8,785
Online music revenues as share of total music revenues (%)	0.02	0.4	1.3	3.3	7.9	12.6

Notes:
1 A la carte revenue is the sum of single track download revenues and album download revenues
2 Combined buy rate is average number of combined single track and album downloads per broadband connection during the year

Source: Screen Digest

1.2.2.2. Movies

We estimate that the European digital movie market generated around **€30m in 2005** from 'a la carte' sales of movie files, pay-per-view (PPV) rentals, and subscription 'all-you-can-eat' platforms. The bulk of revenues were generated by set-top box based 'walled garden' services, the rest being generated by online services.

The early stage of this market is underlined by the fact that this sum represents a barely measurable percentage of total European spending on movies – over €13bn in 2005 from cinema tickets and DVD/VHS. However, looking ahead, we expect the total digital movie market (both online and in a walled garden VoD environment) to grow to nearly **€1.3bn by 2010**, dri ven by digital retail offerings provided over the open Internet. Focusing on online movie services, the UK continues to be the largest single consumer territory in Europe, expected to generate over a third of total European online movie revenues by 2010.

We anticipate that **the European market size will continue be smaller than the US**, where the online market alone is expected to generate €1.5bn by 2010.

Mobile (i.e. out of home) consumption of movies initially downloaded through broadband connections and PCs is included in 'online movie' revenue forecasts.

But, contrary to music, we do not expect a purely mobile (phone) distribution business to become significant before 2010. This is because of the limitations of wireless bandwidth, and because of the characteristics of movie content itself (length not suitable for impulse mobile purchase and consumption on mobile phones).

Figure 25 : Online movie revenues – total EU

Revenues generated in €m	*2003*	*2004*	*2005*	*2006*	*2008*	*2010*
Online VOD		1.4	2.8	18.7	205.9	1,032
Walled garden VOD		0.5	28.3	100.8	177.3	237.6
Total digital	**0**	**1.9**	**31.1**	**119.5**	**383.2**	**1269.6**
Box office (cinema admissions)	5,217	5,598	5,121	5,621	6,186	6,767
Physical format sales (DVD)	8,338	9,087	8,251	7,482	6,792	6,805
Total offline	**13,555**	**14,685**	**13,372**	**13,103**	**12,978**	**13,572**
Total movie revenues (offline and digital)	**13,555**	**14,688**	**13,404**	**13,222**	**13,362**	**14,843**
Percentage of revenues generated	*2003*	*2004*	*2005*	*2006*	*2008*	*2010*
Online VOD	0.0	0.0	0.0	0.1	1.5	7.0
Walled garden VOD	0.0	0.0	0.2	0.8	1.3	1.6
Total digital	**0.0**	**0.0**	**0.2**	**0.9**	**2.9**	**8.6**
Box office (cinema admissions)	38.5	38.1	38.2	42.5	46.3	45.6
Physical format sales (DVD)	61.5	61.9	61.6	56.6	50.8	45.8
Total offline	**100.0**	**100.0**	**99.8**	**99.1**	**97.1**	**91.4**
Grand total (offline and digital)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source : Screen Digest

Figure 26 : Online movie revenues – EU v. USA

Revenues generated in €m	*2004*	*2005*	*2006*	*2008*	*2010*
USA	7.2	9.0	17.4	346	1,503
Europe	1.4	2.8	18.7	205	1,032

Source: Screen Digest

1.2.2.3. Television

We estimate that **€4m was generated in 2005 from distributing TV content over the Internet in European countries**. The bulk of this revenue was concentrated in the leading Western European territories such as the UK and France, where broadcasters and pay-TV operators have started to take advantage of the Internet as an effective way of distributing content commercially. As similar services continue to develop in other European markets, and major technology firms and portals launch their own offerings across multiple territories, the online segment is likely to become an ever-significant aspect of the total European TV market. By 2010, Screen Digest predicts the European **online TV market (distribution of television programmes over the open Internet) will generate €689m in revenues**.

We expect that advertising-supported free content will continue to drive usage, meaning that the advertising business model will constitute over 70 per cent of all online TV revenues by 2010. This however will be a decline from the current proportion of almost 90 per cent as other business models, chiefly digital retail, become increasingly important to digital service providers.

On-demand television content within the walled garden space of digital TV set-top box-based services is now becoming available in Europe's more developed markets and we would expect this trend to spread to other EU markets as they continue with the roll-out of digital cable and IPTV services. However, we expect the revenue generated by TV content in transactional (PPV) walled garden services to remain relatively small, reaching just €8m by 2010. Overall, on-demand services within walled garden networks will remain driven by movies and sports categories.

In total, online TV and transactional walled garden TV on-demand services will represent a fraction of the total pay TV market, which will still be driven by subscription pay TV services. We expect the total pay TV market to generate €34bn a year by 2010, with all revenues from online services and TV on-demand representing just two per cent of that total.

Figure 27 : Online TV revenues and walled garden on-demand – EU

€m	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
A la carte	0.1	3.7	13.4	40.2	102	138
Subscription	0.4	1	5	18.8	48	65
Walled garden VOD	0.1	0.5	1.7	3.9	5.8	8.5
Total consumer revenues	0.6	5.2	20.1	62.9	155.9	211.5
Advertising revenues	3.9	33	105	200	325	477
Grand total	5	38	125	263	481	689
Total pay TV revenue	21,967	23,795	25,927	28,503	31,246	34,040
Revenue as % of total pay TV revenues						
A la carte	0.00	0.02	0.05	0.14	0.33	0.41
Subscription	0.00	0.00	0.02	0.07	0.15	0.19
Advertising	0.02	0.14	0.40	0.70	1.04	1.40
Walled garden on-demand	0.00	0.00	0.01	0.01	0.02	0.03
Total	0.02	0.16	0.48	0.92	1.54	2.02

Source: Screen Digest

1.2.2.4. Games

There are a number of different digital 'channels' and business models for online distribution and exploitation of video games. These include the distribution of games via mobile phone networks, interactive TV systems, and via the Internet (comprising both digital distribution of games and playing of games over the network).

The games market is the most advanced content market in terms of dematerialisation and digital distribution/exploitation.

Screen Digest estimates that the total value of the European 'digital' games market was **€699m in 2005**, of which about 48 per cent was contributed by the mobile sector. This compares to a physical retail market of €5,537m in 2005. Digital revenues accounted for just over 11 per cent of the combined total market value.

By 2010, we forecast that the digital games market will grow to **€2.3bn – 33 per cent** of the total games market.

1.2.2..5. Digital radio

We see four different business models of 'digital' radio services (see definition in previous section): broadcast digital radio, online radio, podcasting and mobile handheld radio.

We estimate that there were around 15m weekly listeners to online radio services in EU countries in 2005. Podcasts were estimated to have an average weekly audience of 220,000, while only 160,000 were reckoned to listen to radio on their mobile phones on a weekly basis. This compares to a daily audience of about 346m for traditional radio services across the EU region.

By 2010, we expect the online radio audience to have more than doubled to 32m. However, the fastest growing radio segment is likely to be the mobile sector, expected to reach 21.7m weekly listeners in 2010. By contrast the market for podcasts is anticipated to flatten by 2010, with around 11m consuming such services on a weekly basis.

The revenues brought by digital radio today are, apart from UK DAB revenues, nearly zero. Most online radio services and

Figure 28 : European games market (retail and digital)

€m	*2004*	*2005*	*2006*	*2008*	*2010*
Physical retail (boxed console/PC/handheld games)	5,906	5,537	5,350	5,724	4,600
Total digital (Online, Mobile, GoD, Download, iTV)	374	699	990	1,595	2,302
Digital share of total market (%)	6.0	11.2	15.6	21.8	33.4

Source: Screen Digest

Figure 29 : Penetration of digital radio

Total EU weekly listeners (m)	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Online radio	15	20.	25.1	28.5	30.7	32
Podcast	0.2	0.6	1.6	3.5	6.9	11.0
Mobile radio	0.1	0.6	2.0	5.2	11.8	21.7

Source: Goldmedia

Figure 30 : Radio advertising revenues

€m	*2004*	*2005*	*2010*
EU15	4,275	4,446	4,814
New Member States 10	339	366	429
Total	4,614	4,812	5,243
Of which digital radio (DAB, online, podcast, mobile)	10	15	250
% of total	0.2	0.3	4.8

Source: Goldmedia, Screen Digest

podcasts are still both free of charge and free of advertising. And radio stations have yet not begun to actively market additional reach from simulcasting their services online (it is also not adequately measured in most countries). Total DAB-related advertising revenues in the UK may ad up to €10m in 2005. Altogether **advertising revenues in the EU25 in 2005 may amount to no more than €15m**.

Viable business models for digital interactive radio services have not emerged yet and it is not clear whether models mainly based on subscription fees, on advertising revenues or on transactions will dominate, even if advertising-based business models are more likely in the mid-term (2010) though standards for audience measurement still have to be finalised and agreed upon.

Assuming that most of the revenues will be based on advertising and given the numbers of listeners forecast compared to that of traditional broadcast radio services, it seems to make sense that digital interactive radio services will most probably make up less than ten per cent of radio's total advertising revenues in 2010. In 2004, radio's total net advertising revenues amount to €4.6bn in the EU. Revenue growth has slowed considerably since 2004.

We forecast digital radio advertising revenues to represent about €250m in 2010 i.e. 5 per cent of a projected €5.2bn of total ad radio market.

Irrespective of their economic value, we expect that online radio and podcasting will probably remain niche markets. Mobile digital radio has the potential to become a mass market – but after 2010.

1.2.2.6. Publishing

Print advertising revenues are declining gradually. The big question is how the growing online advertising pie will be shared between the online activities of print publishers and all other contenders. Search engines have around 30-50 per cent of the market, depending on the particular country, and there is no immediate reason to suppose that this will fall; in some countries it may continue to rise, though there may be some revenue flow back to content providers if they succeed in gaining royalties on the use of their content.

There are also other entrants vying for share, such as video sites and Web TV channels and games, as well as pure online publishers. Although some print publishers, particularly of consumer magazines, are starting from a very low base, and therefore might be expected to experience higher rates of growth than the market as a whole, others, such as the large national newspaper sites, already have mature Internet presences.

They will see more revenue, but their rates of growth are not likely to exceed the market as a whole. Given that they face acute competition in some areas, especially classified advertising, their growth may well be lower than that of the market as a whole. Internal competition between print publishers for online revenue will be intense, regardless of overall growth patterns, and this is likely to restrict any opportunities for increasing prices.

However, this outlook does not take into account revenues which may derive from the ownership by traditional publishers of other types of Internet ventures, such as social networking sites (for example, News Corp's revenues from MySpace), or the possible

Figure 31 : Online revenues of traditional publishers (on existing brands)

	2005	*2006*	*2007*	*2008*	*2009*	*2010*
Online advertising revenue for publishers - growth rate		33	23	18	12	9
Online advertising revenue for publishers - €m	849	1,129	1,389	1,639	1,835	2,001
Online revenue share of total advertising revenues for publishers - %	2.0	2.7	3.4	4.1	4.7	5.4
Press advertising revenue - growth rate %		-2	-2	-3	-4	-5
Press advertising revenue - market size in €m	41,172	40,349	39,542	38,355	36,821	34,980
Total publishers' advertising revenues	42,445	41,478	40,930	39,994	38,656	36,981
All online advertising – growth rate %		36	25	20	14	11
All online advertising - total market size in €m	4,292	5,832	7,312	8,785	10,047	11,148
Publishers' share of online advertising (existing brands) - %	20	19	19	19	18	18

Source: Rightscom, Screen Digest

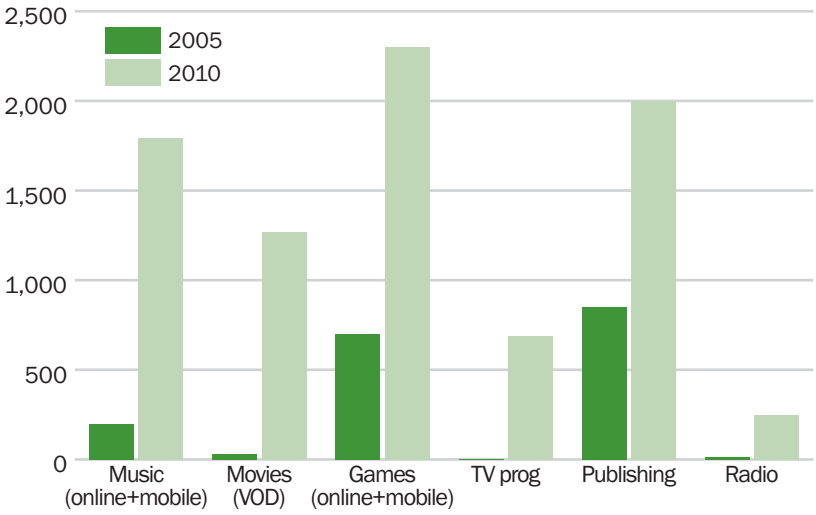
Figure 32 : Summary of market forecasts (2005-2010)

	2005		2010		CGAR
	€m[1]	%[2]	€m	%	%
Music (revenues from online - and sideloaded - downloads)	120	1.3	1,107	12.6	56
Music (mobile download revenues)	76.3	0.7	687	7.8	55
Movies (walled garden, online and mobile, consumer spending)	30	0	1,269	7	111
Games (online, MMOG, download, browser casual, GoD, iTV)	364	5.8	969	14.0	22
Games (mobile)	334	5.3	1,332	19.3	32
TV programmes (online and sideloaded-mobile consumer spending)	0.67		212		216
TV programmes (online TV advertising revenues)	3.9	0	477	1.4	162
Publishing (advertising revenues for publishers - existing brands) (WE only)	849	2	2,001	5.4	19
Radio (advertising revenues from new digital business models)	15	0.3	250	4.8	76
Total	**1,793**		**8,303**		**36**

Notes: *1. Market size in terms of revenues*
2. Percentage of total sector revenues

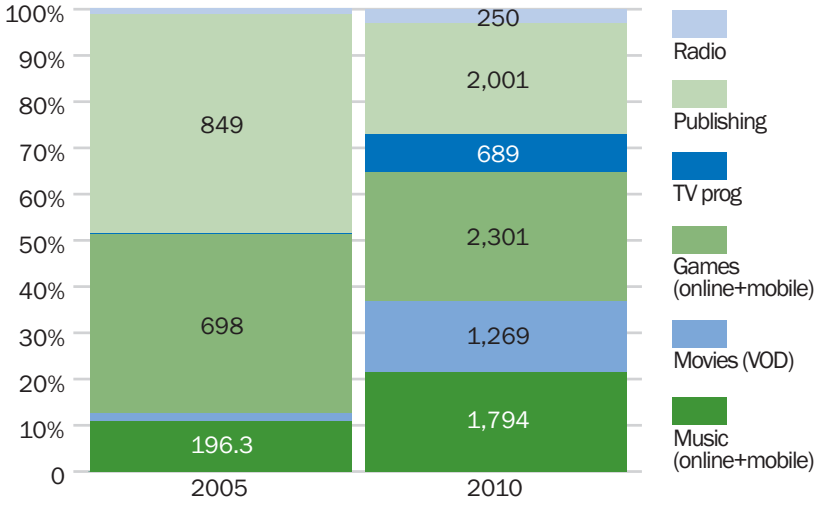
Source: Screen Digest, Goldmedia, Rightscom

Figure 33 : Digital content market in the EU, market size (2005-2010) (€m)



Source: Screen Digest

Figure 34 : Digital content market in the EU, market size (2005-2010) (€m)



Source: Screen Digest

creation of more innovative vehicles for gaining advertising share on the back of their brand strength.

1.2.2.7. Consolidation, summary of market forecasts

At end-2005 and start-2006, games and publishing content were the only content categories to already have significant market development, with market value of around one billion euros each. Games was the only sector where revenues from digital business models, as opposed to traditional and physical distribution models, were already economically significant: €698m representing 11.2 per cent of total games revenues in Europe, of which half through mobile distribution.

Digital music revenues were €196m (which was two per cent of total music revenues), of which €76m from mobile distribution. Revenues from other categories were nascent and barely measurable.
All digital content markets had an aggregated value of nearly two billion euros (1,793m).

By 2010, we expect that market value to grow to €8.3bn, following an average 36 per cent annual growth during the period.

- **Audiovisual content services**, starting from a low point, should witness three-digit growth on walled-garden and online VOD services, to end-up at €1,269m for movies, €200m for TV programmes and €477m for online TV advertising.
- **Games** will remain the biggest sector in terms of digital revenues

with €2,301m i.e. 33.4 per cent of all games revenues in Europe.
- **Online music** sales (€1,107m) will account for 12 per cent of total music revenues. **Mobile music** sales will grow to $687m and account for another 7.8 per cent of music revenues.

The two remaining categories will remain more modest in terms of digital share. This is partly because we do not expect any significant revenues from paid-for digital content services before the end of the decade. The only digital revenues will thus come from advertising, online and mobile:
- Revenues for newspapers and magazines, coming from online advertising, will grow to €2bn (5.4 per cent of global advertising revenues in 2010)
- Advertising revenues for radio operators could grow to €250m (4.8 per cent of all revenues)

Those forecasts are about mid-term take-up. They take into account all the drivers and obstacles analysed in the report, and our assumption on how well they will be overcome (e.g. broadband penetration).
Long term forecasts were not in the remit of study, but we do think the 'digital' proportion of the total media market will continue to rise during the next decade.

In the following summarising table, the percentage represents the share of digitally distributed/exploited content over total revenues in the content sector. We also indicate the Compound Growth Annual Rate (CGAR).

1.3 The challenges to digital distribution

After looking at market trends and meeting a significant number of parties involved in digital content creation, production and distribution, we have identified a number of factors that are hampering, or may hamper, the development of digital distribution of content.

In the next pages, we introduce the main obstacles identified by our research and reported by stake-holders, in a cross-content, horizontal way. Those obstacles are classified by categories in a typology that is then used in the rest of the report. The numbering used to refer to each category has no specific meaning (e.g. order of economic significance). Actually the economic significance of each obstacle varies across content categories.

After this overall introduction of the 'generic' obstacles and issues, **part two will look at those obstacles in a content-by-content approach.**

The **legal section** in part three will look at the copyright or regulatory issues with a legal analysis.

The **mobile section** in part three will look at challenges affecting mobile distribution of all content categories.

The factors listed in the following pages are of various effects.
1. Most factors are really **hindering market take-up** (hindering supply and/or demand in volume, value, consumer usage) and thus affecting all categories of stake-holders (industry players and consumers alike),
2. Some factors are not necessarily affecting global take-up but are **challenging the position of some stake-holders** in the value chain, compared to the pre-digital era. There can be cultural concerns too. The re-structuring of value chains and impacts on cultural diversity can have a backlash effect on the *economy* of digital distribution in the long term.
3. Other factors, again without necessarily hampering global take-up in terms of market penetration, adoption and consumption/revenues, can **affect European players** at production or distribution levels, jeopardizing their competitiveness in new media markets.
4. Finally, although most factors are equally affecting every national market in the EU, while some others may be **affecting some countries** more acutely.

1.3.1. Category 1: Technology issues - access to enabling technologies

Digital distribution of content can only develop on a large scale when there is a sufficient penetration of *devices* – allowing consumers to record, playback or store digital content-, as well as a mass market access to *broadband technologies and networks*.

Insuficient roll-out and lack of consumer access to those enabling technologies is therefore the most obvious and prominent hindering factor, whose removal is actually a pre-requisite to any take-up for digital content distribution. In the broadband area, we do not see major roadblocks hampering mass market adoption at least in Western Europe (27.1 per cent of penetration by end-2010). However the disparities remain high from one member country to another. In the mobile arena, 3G uptake has proved disappointing so far and the future visibility is not that good for a variety of reasons.

(1.1) Availability and access to broadband and multimedia mobile networks
(1.2) Obstacles to the adoption/penetration of end-user digital devices (e.g. affordability)
(1.3) Need for spectrum allocation (e.g. for mobile broadcast television)
(1.4) Fragmentation of industry standards and platforms (e.g. interactive TV, mobile games)
(1.5) Security of payment/Billing systems

1.3.2. Category 2: Content right issues – licensing of content for digital distribution

If the technological bricks examined in 'category one' challenges are missing, we simply have a no-go situation for content services. But when technological enablers are in, availability of content becomes the key for market uptake. The volume and attractivity of content available on new platforms not only does it determine the *pace* of uptake of new services but can decide of their mere success or failure.

In this early stage, content owner and digital distributors - or would-be digital distributors - are having difficulty coming to terms on licensing deals. There are many reports of obstacles to getting licences from content owners and also *clearance* from underlying rights-holders, for a variety of legitimate reasons analysed in this section.

There is a great variety of reasons for which content owner/rights-holders and distributors sometimes can not come to terms, or content can not be exploited:

- Content owner reluctance to license new media at all (fear of piracy, , fear of jeopardising existing revenues) (2.1)
- Uncertainty on terms of trade, leading to a wait-and-see approach (2.2)
- Uncertainty on legal definitions of new media rights (2.5), causing conflicting licenses (2.6) and obsolescence of existing licensing contracts
- Non-exploitation or under-exploitation of new media rights by licensees (2.4), sometimes exacerbated by exclusive, bundling deals (2.3)
- Complexity of clearance of underlying rights because of orphan works (2.8), locating rights-holders (2.9) and the national systems of collective management of rights (2.7)

(2.1) Some content owners are simply hesitant or reluctant to licence their content
(2.2) Content providers and distributors sometimes cannot agree on terms of trade
(2.3) Exclusive distribution deals on new media rights
(2.4) Non-exploitation of new media rights
(2.5) Definition of rights/windows – obsolescence of existing contracts
(2.6) Conflicting rights
(2.7) Clearance of underlying rights - Collective management of rights
(2.8) Clearance of underlying rights - Orphan works
(2.9) Locating rights-holders in the independent sector

1.3.3. Category 3: Piracy

Piracy remains a major challenge in the digital environment, because it simply siphons off part of the revenue that could be made online and thus creates disincentives to legal online business on both the supply and demand sides.

1.3.4. Category 4: Legal and regulatory issues

Beyond copyright regulation, other legal and regulatory issues are affecting the take-off of digital distribution. Sometimes existing regulation is not well adapted to new business models or there is lack of legal certainty. In many cases national regulation needs to be

harmonised to allow cross-border digital distribution of content. The following categories of obstacles are reported in the 'content-specific' chapters of the report (part 2), and analysed in the 'legal' chapter (part 3).

(4.1) Consumer protection, parental control and classification
(4.2) Regulation of new media services
(4.3) Legal liability

1.3.5. Category 5: Competition issues

A number of competition-related issues have been reported when it comes to the roll-out of digital distribution services. They can be obstacles to the market upake itself and/or to the situation of certain s take-holders.

(5.1) Gate-keeping issues and sharing of revenues
(5.2) Role of public service broadcasters in new media
(5.3) Direct distribution of US content
(5.4) Restrictive pricing models
(5.5) Digital Rights Management licensing
(5.6) Competition from internet pure players
(5.7) Access to information for new media news

1.3.6. Category 6: Economic and business obstacles

Finally, various economic and business factors can be hindering market roll-out.

(6.1) Disparate VAT rates
(6.2) Consumer acceptance
(6.3) Skills and management issues
(6.4) Cost of digitisation
(6.5) Backlash effect on the financing of independent production
(6.6) Entry barrier: investment capacity, access to funding
(6.7) Audience measurement of new media platforms and advertising revenues
(6.8) Pricing of content services in the mobile arena
(6.9) Mis-selling of subscription services
(6.10) Cost of payment/Billing systems

2 Part two: focus on specific content industries

Plan of the chapter

2.1 Music

2.1.1 Value chain and market trends

The addressable consumer base for digital music in Europe is still growing rapidly. The market is principally constrained by the availability of broadband Internet and the uptake of personal digital audio devices.

In 2005, there were 60m European broadband subscribers. Screen Digest predicts that the total number of broadband connections in Europe will grow to 116m by 2010. Germany remains the largest broadband market, with 11.3m broadband customers in the country at end 2005, though per capita penetration remains relatively low at 12.7 per cent. UK and France continue to compete for second place with 9.8m and 10.0m broadband connections respectively, equivalent to respective per capita penetration rates of 16.3 per cent and 16.0 per cent.

In 2005, the Netherlands had the highest rate of per capita broadband penetration of all the Members States, with approximately 25.7 per cent of homes subscribing to high-speed Internet access. In terms of penetration, the Nordic regions, in particular Denmark, have levels of over 20 per cent. Per capita penetration rates in the rest of Europe tend to remain below the 20 per cent mark, dropping as low as 1.5 per cent for Greece. The recent development of broadband in the new EU Member States continues to impress, with Estonia and Slovenia ending 2005 with penetration rates of approximately 13.3 per cent and 9.8 per cent respectively.

According to EITO, in 2005, 25.2m personal digital audio devices (MP3-player-type) were sold in 10 Western European countries (Austria, Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK). This is expected to rise to 33.3m units in 2006. The largest installed market for these devices is Germany where 7.5m devices were sold in 2005, equivalent to one purchase per head for 9.1 per cent of the population this is followed by the UK and France with 4.8m and 4.1m units respectively. This gives an equivalent buy rate of 8.0 per cent in the UK and 6.6 per cent in France.

2.1.1.1. Music Market

In terms of units sold, the European *physical* music market has been in a state of decline in recent years, having been hit severely by piracy, both in physical and digital form. According to the International Federation of the Phonographic Industry (IFPI), the sector registered 962m physical music sales in 2004, compared to 1.13bn in 2000.

This has also translated into a decline in consumer-level revenues. Although revenues held relatively stable in the 2000-2004 timeframe, they have since been

suffering an ever-increasing drop-off. In 2005, the European music market generated €9.5bn, down from €11.7bn in 2000. Overall, worldwide recorded music sales (physical and digital) fell by three per cent in 2005, to approximately €28bn, according to IFPI.

In large parts, the revenue drop in 2005 is a delayed reaction, up until now masked by growth in revenues from music DVD and the emerging online and mobile digital businesses. However, there is every sign that conventional physical sales are in a permanent period of decline, with DVD market growth also now starting to drop-off. Moreover, growth in the digital sales segment is not moving fast enough to make up for the shortfall.

2.1.1.2. Digital Music Market

The US, Japan, UK, Germany and France are the top five digital music markets worldwide. In general, countries with a greater percentage of digital sales are the strongest markets for music sales overall.

According to Screen Digest, **the European online music market generated €120m in 2005** from 'a la carte' sales (that is, the sale of music tracks over the Internet either individually or in an album bundle) and subscription 'all-you-can-eat' platforms. Online music subscriptions accounted for only 10 per cent of this total. Screen Digest expects the total online music market to grow to **€1.1bn by 2010**, driven by a la carte offerings.

The UK continues to be the largest single consumer territory for online music in Europe, expected to generate around 40 per

Figure 35 : Online music forecast

Total EU	*2003*	*2004*	*2005*	*2006*	*2008*	*2010*
'a la carte'1 download revenue (€m)	2.1	28.8	108.9	270.7	622.2	990.2
Combined buy rate2	0.2	1.1	3.0	4.8	8.0	10.2
Online music subscriber revenues (€m)		7.9	12.0	14.8	34.1	116.7
EU online music revenues (€m)	2.1	36	120	285	656	1,107
EU total music revenues - online + physical (€m)	9,993	9,384	9,151	8,652	8,307	8,785
Online music revenues as share of total music revenues (%)	0.02	0.4	1.3	3.3	7.9	12.6

Source: Screen Digest

Figure 36 : Online music revenues in Europe (2003-2005)

€m	*2003*	*2004*	*2005*	*Euros per inhabitant*
Austria	0.0	0.6	1.7	0.20
Belgium	0.0	2.2	3.8	0.37
Germany	0.3	10.4	31.7	0.38
Denmark	0.2	0.4	1.3	0.24
Spain	0.1	1.4	4.1	0.09
Finland	0.1	0.9	2.6	0.49
France	0.4	3.6	11.2	0.18
Greece	0.0	0.1	0.2	0.02
Ireland	0.0	0.3	1.0	0.25
Italy	0.0	1.1	5.6	0.10
Netherlands	0.0	0.5	5.1	0.31
Sweden	0.6	1.7	4.8	0.53
Portugal	0.0	0.2	0.9	0.08
UK	0.3	11.7	42.1	0.70
Other	0.0	1.6	4.7	0.06
Total	2.13	36.66	120.8	0.26

Source: Screen Digest

cent of total European online music revenues by 2010.

As a whole, the digital segment (which we define as the exploitation of services over mobile phones), accounts for between 1 per cent and 4 per cent of total 2005 music revenues in the European territories. Italy, which has traditionally had a very buoyant mobile phone market registered the highest percentage for the digital segment, of which almost 70 per cent was made up of mobile downloads. In contrast, the Netherlands saw 80 per cent of downloads taking place online. Digital sales are split roughly 50:50 between online and mobile at the global level, but there are big regional differences. In Japan and parts of continental Europe, mobile dominates the digital music market, while online sales are relatively stronger in markets such as the US, UK and Germany. The online segment is expected to account for 12 per cent of total European music revenues by 2010.

According to IFPI, master ringtones (that is, ringtones that are actual original recordings rather than polyphonic renditions of original recordings) are currently the largest segment of the mobile market accounting for 87 per cent of mobile music sales. However, new mobile formats such as full track downloads to mobile and music videos grew faster (180 per cent increase in trade revenues) than master ringtones (120 per cent).

According to IFPI, revenues from downloads of full track songs on mobile networks[8] were €76.3m in 2005, with the UK being the biggest market (€28.2m), UK and Austria being the most successful in terms of average spending (€0.47 in the UK, €0.34 in Austria). The following table shows market size for 11 EU countries. The market is virtually non-existent everywhere else in the EU.

Nevertheless, the European digital music market is still approximately one third of the equivalent market in the US. Arguably this is due to cultural, legal, economic and technical barriers hindering exploitation of digital music on both a national and a pan-European basis.

Figure 37 : Music revenues per country and per capita in 2005

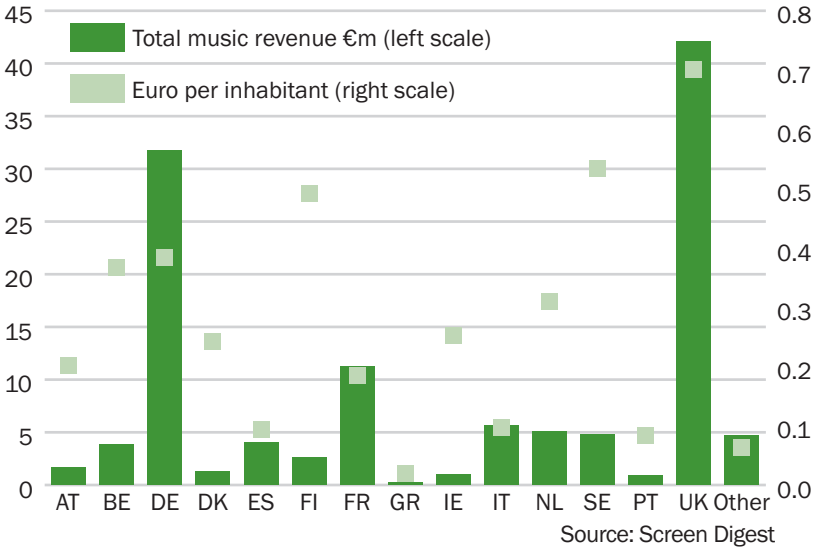


Figure 38 : Mobile music revenues (full track downloads)

2005	*Mobile music revenues (€m)*	*Euro per capita*
Austria	2.7	0.34
Belgium	0.6	0.06
Denmark	0.3	0.07
Finland	0.5	0.10
France	14.2	0.23
Germany	12.6	0.15
Italy	10.3	0.18
Netherlands	0.8	0.05
Spain	3.7	0.09
Sweden	1.9	0.21
UK	28.2	0.47
Total	76.34	0.21

Source: Screen Digest from IFPI data

2.1.1.3. Value chain and Stakeholders

Simply put, the music industry has traditionally exploited its assets using four primary models of business:

- the sale of pre-recorded music
- licensing of music for broadcast purposes
- licensing for secondary use in other forms of media and other commercial purposes
- additional exploitation of publishing rights

The fundamental value chain of the music business can be simplified into three sectors, production, distribution and exhibition/sales. That is:

- creation of content,
- distribution to outlets,
- sale/transmission to the end customer/end user.

The main stakeholder categories therefore fall within one or a combination of these responsibilities. Companies that are considered the traditional power base of the industry, the four major record labels Universal, Sony BMG, EMI and Warner Music, are primarily involved in the business of creation and

distribution. Smaller labels, traditionally known as 'independents', tend to also carry out similar functions, though on a lesser scale. It is usual in some cases for an independent label to originate content, but have a major distribution deal with one of the big four so as to capitalize on wider distribution.

The music industry has rarely carried out the sale/transmission of its own content, relying on deals with sales outlets and broadcasters, and with the arrival of the digital distribution technology, network operators (mobile and fixed line) and virtual service providers (such as ISPs and portals and e-commerce businesses). Although some small independents, such as UK label Warp, have begun to get involved in direct sales through their Bleep.com website, this remains the exception to the rule and not a strategy favoured by the major labels (perhaps in part because they attempted to do so in the early years and failed).

The music business model is not very complex if compared to other forms of media. Indeed, the sale of audio recordings can still account for up to 80 per cent of a major record label's total revenues, although the music licensing model, such as for use in visual programming, or in public environments, has also been a traditional form of generating returns (though to a lesser degree than sales). However, in the online environment, the sector has not yet transposed this model effectively, with the download-to-own model, as espoused by service providers such as Apple's iTunes and services supported by Loudeye, dominating digital revenues.

Historically, the music industry was slow to embrace digital opportunities. In the period 1998-2001, the business showed a lack of insight in the face of rapidly developing Internet technology and the changing behavioural patterns of its customer base, and as such ceded much ground to illegal file sharing platforms, such as Napster (in its previous illegal incarnation). It is well documented that by doing little to offer legitimate alternatives in the early years, the majors sought to maintain the predominance of the physical distribution channels, with the belief that they could observe what happened in the new Internet market and simply step in at the right time with deep pockets and marketing muscle.

The first step was arguably successful. It was only once the Recording Industry Association of America (RIAA) managed to shut down Napster in 2000 that, following a legal battle, the first legal services such as AOL MusicNet and Sony's Pressplay began to appear. However, the fall-out from the Napster litigation (and subsequent initiatives to take filesharers to court – some who were as young as 12 years old) - had somewhat negative consequences for the music industry, arguably alienating it from some of its core customer groups.

Indeed, it wasn't until 2001, and the launch of the iPod personal music player by computer manufacturer Apple, that the sector was offered a lifeline in the digital music space. Apple's proposition is simple. A consumer purchases an iPod at retail, which is subsequently married to the iTunes Music Store, an online music downloading service run by Apple. Using iTunes, the consumer can download protected music files onto the iPod for a fee --- paying approximately €0.99 per individual track or €9.99 per album. Apple handles all billing, and content aggregation deals, now claiming well over 1m tracks on the service. Downloaded tracks also have 'burn rights', meaning they can usually be copied onto around 5-7 CDs or devices, and are protected by Apple's own digital rights management (DRM) solution called 'FairPlay', which regulates the use of the content.

Apple launched the European version of its iTunes Music Store in June 2004, and through clever marketing and use of the 'must-have' appeal of the iPod, generated 100m individual track sales by end 2005. By the start of 2006, iTunes constituted over 80 per cent of the European online music downloads market, and its market share continues to rise. Worldwide, the service recorded its one billionth download on 23 February 2006.

The remainder of the European music download market is a fragmented field largely consisting of services either using DRM solutions from US software giant Microsoft, or providing unprotected MP3s from indie labels. Sony and Real Networks also provide their own DRM solutions for services, called SonyConnect and RealMusic respectively, but users to these platforms in Europe constitute a tiny portion of the market. Microsoft notably has been eyeing the Apple model, and will launch its own content-plus-hardware offering in Europe by 2007, called Zune.

Music bought from some alternative services can be transcoded by iTunes to also play on the iPod, but not the majority, due to

DRM restrictions. Downloads from non-iTunes services can be played on a variety of MP3 players, made by a wide range of manufacturers such as Creative and iRiver amongst others, though not necessarily universally (for example, as mentioned, Sony operates its own DRM solutions for its own devices). It should be noted that there are cross-industry attempts to promote interoperability between DRM technologies used in the consumer media market, such as the Coral Consortium --- which brings together companies from the technology and entertainment sectors with the goal of creating a common technology framework for content, device, and service providers, regardless of the DRM technologies they use. Notably, Apple and Microsoft are not members of this consortium.

It's important to note that the iPod remains by far the best selling personal music device in Europe, accounting for up to 17 per cent of total 2005 European audio device sales.

By end 2005, there were well over 200 online download services in Europe, but due to the dominance of Apple iTunes, these accounted for less than 20 per cent of European online music sales.

In the digital domain, the situation the music business now finds itself in is that its immediate future and profitability is irretrievably tied to companies whose core areas of profit lie elsewhere. On one side there is a reliance on consumer electronics and technology companies such as Apple, Microsoft, Sony and Real who supply DRM as well as channels to market, whilst on the other there are the telcos, mobile operators and ISPs, who are now using entertainment content as a means of driving customers to their communications services.

Therefore, by having moved rather late in addressing the issues raised by illegal sharing of music over online peer-to-peer (p2p) networks, the music industry has found itself in a situation where it has yet to fully bring its business models into the digital space, and in many ways is itself at the mercy of a new category of 'retailers' in the online and mobile environments. As such, the industry is now entrenched in a period of not only educating some of these new retailers, but in a process of re-examination, trial and error, with a belief that there will also have to be something tantamount to a re-education of the consumer in how music is consumed before digital channels prove a major source of revenue.

The eventual aim is to offer not only legitimate digital sales channels (based on the 'pull' model), but also to use digital delivery to encourage an evolution of how assets are monetized. This can now be seen in a willingness to license repertoire to emerging business models, via Internet, mobile, or digital broadcasting technologies, in an effort to create a diverse consumer experience. Essentially this means creating a scenario where the consumer will be able to use digital channels to:

- buy music for download on an a la carte basis, or in a bundled package including 'extras' such as music videos, much like the DVD retail business model used by the movie industry
- listen to free 'personalised radio channels' (such as Pandora.com or Last.fm) which compile a radio playlist and are paid-for on a broadcast licensing principle
- subscribe to 'all-you-can-eat' services providing access to several million songs on a non-ownership principle (such as offered by Napster)
- access streaming or downloadable services (such as podcasts) offering a radio-type experience to mobile phones and portable devices
- watch music videos on-demand, either via digital TV, mobile phone, or online
- use mobile phone personalization services, such as ringtones and ringback tones
- listen to conventional over-the-air broadcasts delivered digitally

A la carte sales and mobile ringtones aside, the majority of these business models have yet to be turned into a viable revenue stream.

- **Online unlimited subscription services**
  The online subscription model, as offered by Napster, Virgin and HMV, has fallen flat in Europe, despite at least three high profile launches, with so far little prospect of growth. This is in contrast to the US where such services have been gaining in relative popularity, with 2.8m subscribers at end 2005 (mostly because of discount deals to colleges and student facilities). This is as much to do with pricing and a lack of a device strategy for these subscription services as it is to do with a failure to convey the message to the consumer.

- **Music videos on demand**
  The possibility to offer music videos over the Internet either on an individual sales basis or on an ad-supported on-demand format has had some traction with consumers, but only as value-added product. Internet portals and service providers, such as AOL, Yahoo! and Apple, offer music videos as one part of a broader Internet video strategy, either a la carte or on an ad-funded basis. Apple has chiefly taken advantage of music videos to support the launch of its video iPod in October 2005. Mobile operators, such as 3 and Vodafone, have also used music videos as a tool to encouraging multimedia usage amongst their customer base. Increasingly, some services are evolving to provide packages offering the audio tracks, music videos and clips of artist interviews all in one a la carte bundle --- effectively bringing together the contents traditionally available on CD and a music DVD. The concept is very similar to the DVD retail experience offered by the Hollywood studios for movies, and has been rather successful in pushing up the value curve for otherwise standard-priced albums.
- **Personalised radio streaming**
  Internet and mobile platforms have also enabled an evolution of broadcast models distinct from that offered by Digital Audio Broadcasting, which is simply a digital version of traditional over-the-air broadcasts. Over the Internet and mobile phone, it is possible to not only stream broadcast stations continuously, but to also use the two-way connectivity to offer personalization services. This innovative model effectively takes the jukebox principle and marries it to radio licensing. The user's preferences and musical tastes are taken and tracked by intuitive software, which then enable a personalized and evolving radio experience. Internet firms such as the US-based Pandora and UK start-up Last.fm offer this type of service, though using different technological approaches. However, the business models have yet to fully evolve --- it is as yet unclear whether the services will be offered on a subscription, advertising or B2B licensing model, and the companies involved are still in early phase of product rollout.
- **Podcasting**
  An extension of the radio broadcast has been the 'podcast', arguably a uniquely Internet phenomena. Podcasts are programmes, such as hit lists or radio programmes, recorded as digital audio files, which are downloadable and transferable to portable digital devices such as iPods and MP3 players. Podcasts are now widely offered by many websites, ranging from public broadcasters to user-generated websites. A month following its introduction on iTunes, Apple reported 5m podcast subscriptions from a directory of more than 15,000 programmes. Podcasts usually have a 'service' element to them, such that new content in a particular series is automatically downloaded on a 'push' basis without having to specifically request it.

  So far, there has been little revenue made from podcasts ('subscriptions' have tended to be free). However, with some service providers now providing 'premium' podcasts for a nominal fee, or on a subscription basis, as well as the possibility to generate additional advertising income through placed adverts, the podcast is increasingly becoming a commercial product (and a potentially lucrative one). In the UK, Europe's largest music market, the music royalties group MCPS-PRS Alliance announced plans in early 2006 for a trial run of podcasting licences for music podcasters.

  The reality of the situation is that even in the long run, none of these strategies will individually provide the necessary return to replace revenues lost to physical sales. That is, the music business is unlikely to find a 'magic bullet' with which to solve the revenue decline. However, what may be emerging is a mixture of models - a patchwork quilt - that digital delivery platforms are enabling, which if woven together, could provide a sizeable source of income in a European climate where telcos, ISPs, Internet portals and mobile operators are fiercely competing for customers by offering converged entertainment services.

2.1.1.4. Mobile Music

As mentioned above, the market for music on mobile is still primarily ringtones. Typically these are sold via portals, paid for by premium SMS and downloaded over the air. Many portals sell ringtones via subscription services, although it is also possible to buy individual ringtones.

Full track music services began to be launched in the EU in early 2004. Most operators in Western Europe now have a full track music download service. This is an area where portals have been slow to market, though this may be due to an initial reluctance of the major record labels to work with them. Recently, however, Jamba and MonsterMob announced plans to launch full track music services in 2006.

Many operators use a specialist company to run the service. Examples of these companies include Groove Mobile, Musiwave (acquired by Openwave in 2005) and WiderThan.

Business models can include pay per track or subscription services. Since most of these services are run by operators, payment is generally handled through the operator's own billing system. Although there is variation in pricing, the 'industry standard' seems to have settled at a price of around €1.50, around 50 per cent higher than internet music services. Worth noting is that there are many mobile phones which can play MP3s and will accept music files 'side-loaded' from a PC. These internet music services do pose a commercial threat to OTA music services and so the difference in price cannot be too great. Very recently some music services have launched which are 'combined', allowing access to the purchased music through either the internet or mobile network.

2.1.2 Main obstacles

2.1.2.1. 'Anti-piracy' regulation (3)

Amongst stakeholders interviewed, the problem of dealing with piracy at a regulatory level was the most common concern, though to varying degrees depending on the category of the stakeholder.

Those least concerned about piracy issues have been the independent labels and service providers, who have, in some cases, fostered an open approach to music by selling some files in an unprotected MP3 format. This has not been so much out of a desire to disseminate copyright work freely, but to encourage compatibility with as many portable music devices as possible given the disparity in DRM (see technical obstacles below). Those most concerned have been the major labels whose catalogues tend to bear the brunt of piracy activity.

Piracy tends to fall into two intertwined categories - physical and digital.

Physical piracy is the manufacture and distribution of illegally copied music on, usually, optical disc formats (mainly DVD-R and CD-R). This can take place professionally, by large-scale criminal outfits, or casually, by the consumer copying a legally purchased disc for a friend or relative. Digital piracy is the copying and dissemination of copyright music 'virtually' over digital platforms --- currently restrained to the Internet. To date this has been carried out by consumers and casual copiers who make music collections online via p2p file-sharing services, but the digital channel can also provide a route for more professional physical piracy enterprises to transmit illegally copied files. According to IFPI in 2005, the global music sector sustained €3.8bn in losses from all forms of piracy.

The primary issue raised by stakeholders in relation to piracy has been the disparity of regulatory regimes in European Member States. It has been noted that in some territories piracy is treated as a civil offence whilst in others it falls within the jurisdiction of the criminal courts. Content owners aired concerns that there remains an inconsistency in how offenders are dealt with according to the laws of the European territory in question. It should be noted that whilst piracy poses an economic concern for content owners, the fear of content being illegally copied can also act as a psychological barrier, creating

hesitation in exploiting new digital distribution opportunities.

The biggest conflict of opinion in piracy appears to be between those expressed by consumer groups and those of the collection agencies. A major concern for consumer groups appears to be to avoid consumer P2P use becoming an act covered by criminal law. That is, it is the opinion of consumer groups interviewed that 'copyright infringement' should remain a civil offence and not a 'theft'. In contrast, artists' collection agencies argue that EU and national civil regimes are far from being strong enough to deal with piracy. One collection agency went as far as suggesting responsibility should be also shifted onto the ISP, who should face fines if content is illegally downloaded over their networks, and that there should be greater emphasis placed on the contracts between consumers and ISPs to this effect.

Suggested remedies

The range of proposed solutions from various stakeholders has been wide and varied, given the divided nature of opinion over piracy. In terms of differing legal approaches, there was a fairly united point-of-view from all parties that some degree of harmonisation of piracy law is required across Member States. It should be noted that this is a process that has already started (see section 314-4. Piracy and IPR-enforcement).

More contentious however is how to tackle the issue of P2P services used to share copyright protected music over the Internet. The view from some service providers, content owners and trade associations representing content owner interests has been to not only maintain the current trend of criminalizing unauthorised sharing of protected content, but also extend the scope of litigation to P2P service providers and ISPs. However, there is a developing body of thought from consumer groups and some trade associations in the independent sector that the best way to tackle P2P, given the amount of business that it arguably brings telcos and ISPs, is through some form of blanket licensing structure that will result in payments being made by those network businesses who inadvertently profit from the illegal use of copyright content over their networks.

2.1.2.2. VAT regulation (6.1)

From a third party digital music service provider perspective, the application of VAT regimes across Europe is considered a serious roadblock. The issue seems to fall into two primary categories.

Firstly, the European online music pricing model ('€0.99 per track' or '€9.99 per album) is based on that pioneered in the US, where sales tax is not applicable to online consumer transactions across state borders. The single price-point model as such is sustainable in an environment where the service provider does not have to allow for tax on every sale. Therefore, as a result of consumer expectation for a single-priced service, the tax is paradoxically completely borne by the service provider, rather than being added to the wholesale plus margin price and passed on to the consumer.

European service providers (some paying up to 25 per cent VAT in some EU member states) are thus stuck in a low-margin business model which puts them at a considerable disadvantage vis-à-vis their US counterparts. Primarily, US service providers are able to leverage growing success in the higher margin US digital music market into Europe. Also, given that the US digital music market is generally dominated by companies in the technology field, for whom digital sales are supporting other lucrative hardware and software business interests, the landscape for European digital service providers, especially 'pure' digital players without another business to draw revenue from, becomes very tough.

Secondly, VAT on consumer use of electronic services in the EU is charged in the country of origin if the supplier is established in the EU. This has resulted in a considerable distortion of competition given the stark non-uniformity of VAT regimes in the Member States. Effectively, local online music services are facing competition from pan-European services operating out of low VAT rate countries. Luxembourg, for example, exercises only a 3 per cent sales tax on royalties (despite a 15 per cent sales tax on most other goods), meaning online music services out of that country to other EU Member States are offered at a great advantage over domestic service providers. Although amendments were made to the E-Commerce Directive in 2003 to remedy this situation (charging VAT at point of supply rather than point of origination), the changes did not extend to consumer services. Notably, this is not an issue that arises in the

US, where there is no sales tax on digital sales between states.

Suggested remedies

In the absence of total removal of VAT on digital sales, there appears to be strong support (from digital music service providers in particular) for a single harmonized low rate of VAT applying to the sale of digital entertainment content. Although there are other sources of pressure on margins (such as high content wholesale pricing and a flat rate pricing model), the reduction of the tax burden on service providers would arguably have a beneficial impact on the digital music sector.

In the interim, it may be advisable to amend existing legislation to also bring consumer electronic services (or at least digital entertainment content) within the ambit of rules requiring VAT to be charged at the point of supply.

2.1.2.3. Withholding Tax (2.7)

This issue has been raised by service providers and artists with an interest in the independent music market, and refers specifically to double-taxation of royalties on digital sales between Member States, and the lengthy process of its reclamation. Multi-territorial major labels tend to be domiciled in each EU member state, and therefore are able to leverage their large internal structure to absorb the temporary effect of double taxation where it appears. Artists signed to major labels are compensated at the expense of the record company, which operates a 'left pocket/right pocket' structure to off-set the temporary deficit.

In the independent sector, where an artist relies on a number of disparate third parties, the problem seems to be a major concern, and can substantially raise the quantifiable cost of doing business.

Suggested remedies

The issue of double taxation clearly needs specific scrutiny, specifically in relation to the burden imposed on independent artists in attempting to recover cross-border royalties.

2.1.2.4. Collective management of rights (2.7)

The independent sector has also expressed strong concerns regarding the operation of collecting societies. The concerns appear to be interlinked: a lack of dialogue between collecting societies and their users, as well as an uncoordinated approach at supra-national level.

In the first instance, there seems to be a continued need to improve existing channels of communications between collecting societies and their users. This is as much a question of transparency, as it is of encouraging collecting societies to support new digital business models more quickly. The general gripe from rights-holders and service providers appears to be that societies in some territories are not quick enough to respond to their business needs. In response, some of the larger (and more advanced) collecting societies have accepted this criticism, and have pointed out that they are working on remedies. However, the digital music business is moving rapidly and arguably the societies are struggling to keep pace.

Similarly, some collection societies have pointed out that their work on digital business models could be carried out much more efficiently if users were encouraged to adopt a standardised data reporting structure. Notably, there is currently a cross-industry initiative, Digital Data Exchange (DDEX - formerly called MI3P Standards), which is aiming to standardise the structure. The aim of DDEX is to develop and maintain a robust framework of communication standards to support the digital distribution of digital content with the initial focus on music and music-related assets

Regarding the issue of co-ordination, some content owners consider that the EC's recommendations on the collective management of online rights in musical works does not go far enough (see section 314-3 - issues related to collective management of underlying rights). The opinion expressed by some artists' interests groups has been that the recommendations do not go far enough, and there is a pressing need to establish a pan-European collecting society which provides a choice vis-à-vis domestic agencies for artists wishing to exploit their content on a pan-European basis. However, this is the extreme, and most arguments surround the lack of a fully coordinated collection system amongst Europe's collecting societies, and the patchwork of local rules and cultural/social deductions that result in artists not being recompensed fully (or even at all in some anecdotal cases, such as Denmark) for works sold in other European territories. Some collecting societies point out that they are supporting Option 3 of the EC recommendations, which provides music

rights-holders with the choice to authorise a collecting society of their choice to manage their works across the entire EU.

An important concern is how to commercialise new services enabled by new technologies and the challenges for collecting societies in doing so. Podcasts and the developing model for podcast licensing, as mentioned earlier, is one such issue. Notably the UK collecting society MCPS/PRS has led the way on what can be called a commendable practice:

In 2Q 2006, the UK's joint MCPS and PRS scheme launched its trial license which grants the necessary writer and publisher permissions to podcasters to access the global catalogue of musical works represented by the MCPS/PRS Alliance – approximately 10m musical works. The licence is the first serious attempt by a European royalty group to generate return from music podcasting.

The trial licence, made available until the end of 2006, allows both podcasters and the Alliance to understand each others' needs, and make way for a more complete scheme planned for early 2007. The royalty rate for the Alliance Music Podcast Scheme is either 12 per cent of the licensee's gross revenue or 1.5p per track included in the podcast. Podcasts that generate low levels of revenue and usage are also catered for by a low revenue podcasting license, which will charge from £50 per quarter. Similarly, a licence to cover the sound recording rights of independent record companies was also announced in 2006 by AIM, the UK's Association of Independent Music. AIM's own trial licence covers the rights of tracks produced by labels such as Beggars Group, Breastfed, Cherry Red, Jungle and V2. Non-music podcasts will be licensed by MCPS/PRS under a new on-demand scheme for non-music services.

Music publishers have a slightly different position than collecting societies on this issue. Music publishers are keen to license as many online commercial users as possible, either directly or collectively. According to them, the issues arising in respect to online licensing, particularly with cross border licensing and the role of collecting societies, have been addressed in an appropriate fashion in the Commission's Recommendation on cross-border licensing. Music publishers consider the Recommendation correctly aims at allowing rights holders to decide how best to licence in a way to adjust to the market while promoting the value of the musical works. They welcome the soft-law approach of the EC and ask for time to adjust and streamline their licensing schemes. Two of the biggest music publishers, EMI and Warner Chappell have announced their backing of the option 3 suggested by the Commission. In addition, the International Confederation of Music publishers (ICMP) has already set up a working group with collecting societies (GESAC) to promote dialogue around option 3 and implement the common ICMP/GESAC declaration of July 2006 to facilitate the management of online rights.

Suggested remedies

Given the recent EC recommendations, a wait and see approach needs to be taken in the short term to allow those stakeholders carrying out initiatives under the ambit of the recommendations to see an outcome. However, it has been put forward by a number of stakeholders, chiefly trade bodies representing content owners and artists, that there needs to be greater scrutiny of local rules hindering compensation of artists in the digital market, as well as encouragement of greater dialogue between collecting societies and their users. One major collecting society indicated that it would welcome EU support for the cross-industry DDEX initiative to standardize data collection (an initiative that can be regarded a commendable practice).

There is also an apparent problem that collecting societies, even the larger agencies, lack resources to keep up with the rapidly changing nature of business in the digital environment, which can be seen as a question of funding (though the eventual source of that funding would need to be determined).

2.1.2.5. Competing proprietary DRM solutions and interoperability issue (5.5)

The consumer confusion and barriers to trade created by disparate Digital Rights Management (DRM) solutions has been one of the biggest issue raised by many of the parties -- with the exception of those digital service providers only interested in offering independent music content, and companies who have a vested interest in proprietary DRM technologies (primarily for the benefit of marketing integrated content-plus-hardware services).

DRM is the technology by which the use of digital content is regulated by the owner or service provider. It allows for a collection of pre-set conditions to be wrapped around a

particular piece of digital content to determine who uses that piece of content, for how long, at what price and for what purposes. In short, DRM is the crucial component in enabling not just music but entertainment services of any kind over digital platforms; mainly over Internet and mobile.

In the music sector, the most mature of the digital content markets, the 'DRM format' issue is particularly evident. Apple, which is the single largest provider of DRM-enabled digital audio devices and online music services in Europe, does not license its 'FairPlay' DRM solutions to third party service providers, meaning that no other operator can offer download services to the iPod directly (although the consumer is free to copy pre-bought CDs onto the device or download music via the iTunes Music Store for consumption on the PC or CD). For a user to be able to transfer DRM protected music bought on iTunes to other devices, or from services rivalling iTunes onto an iPod, he or she would have to burn a copy to CD (and in the process stripping the files down to an unprotected CD-audio format) before copying the unprotected files back into iTunes—a somewhat legally ambiguous process.

Apple's chief rival in this area, though coming from a different perspective, is Microsoft. Though the software giant does not directly operate a similar hardware concept to Apple yet, it has been pushing its own (free) DRM solutions in an effort to stimulate use of its software within the digital entertainment arena. With the exception of Sony and Real, who as mentioned already use their own proprietary DRM formats, Microsoft DRM solutions power much of the rest of the European digital music market. The Microsoft DRM services are compatible with a wide range of portable devices, manufactured by whole host of consumer electronics firms, such as Creative Zen, iRiver, Samsung and Philips. Nevertheless, they are proprietary in much the same way the PC sector has been proprietary—the hardware is manufactured by a broad range of manufacturers, but the operating software is in effect provided by one company. Furthermore, Microsoft has been eyeing the Apple model, and will launch its own content-plus-hardware offering in Europe by 2007, called Zune, in a closed hardware eco-system.

In essence, the European portable audio devices market, and the adjoining Internet music services sector, has begun to resemble the home computing industry—dominated by Microsoft and Apple with their own particular brand of proprietary *modus operandi*. (It should be noted again that Sony and Real also have their own proprietary DRM platforms, though their involvement in the European online music market can be considered insignificant at present).

This lack of interoperability between all content and devices, and the absence of a standardised DRM proposition, has meant that consumers are now faced with music content that was only restricted by the 'format' of the device in the physical market (that is, LP, CD, Cassette, MD), now becoming layered with an additional 'DRM format' segmenting devices in the digital arena (that is, not all portable audio players can play all digital files, like all CD players can play all CDs).

There are currently cross-industry attempts to address this issue, as in the case of the Coral Consortium, though these attempts have to-date been undermined by the notable absence of the leading two companies in the European DRM market.

For third party digital service providers, who are not in the business of developing their own DRM platforms and hardware configurations, the situation means they must license from one or more DRM format company to be able to offer services addressing all portable audio player users in the marketplace.

From the perspective of integrated content-plus-hardware providers however, it should be noted that the DRM format set-up has allowed innovation and accelerated growth in many aspects. The iPod plus iTunes model has allowed Apple to create a major market for European digital music downloads where previously one didn't exist. In many regards, the argument can be comparable to the format situation in the games sector—and a possibility that in the new digital environment, 'DRM formats' may be an inevitable part of the developing business model. It is also important to note that the restrictions some content owners now complain of are due to the DRM requirements the major labels themselves imposed on the digital exploitation of their content.

Furthermore, this issue does not rear its head with independent-only music download services such as e-music, which focuses purely on DRM-free downloads. As such, the DRM debate is instigated by major label content owners whose fear of piracy has led to DRM

being a pre-requisite for online music services wishing to access their catalogues. However, it should be noted that the major label focus may change in the future, as volume of digital sales begin to increase and the piracy threat reduces to manageable levels. Already experiments are taking place, such as Yahoo! selling Jessica Simpson's single 'A Public Affair', for $1.99 DRM-free download.

The first shots in this interoperability battle were fired in France, where in 2004 Virgin unsuccessfully sued Apple in an attempt to oblige the US company to license its FairPlay solutions. In March 2006, the French National Assembly voted 296 to 193 in favour of a draft law preventing any firm selling music digitally using a restrictive proprietary environment (see a more detailed analysis of this legislation in the regulatory section of the report - page 207). As of April 2006, it is understood that leading Danish companies, such as incumbent telco TDC, were leading a call to the government of Denmark to follow a similar route as France.

Suggested remedies

It is increasingly the case that free market development is leading to a set of highly polarised proprietary DRM solutions, which can potentially hinder the development of effective service level competition in the online music market. Fear of piracy has led to major labels requiring all online music services to guarantee DRM protection for the music catalogue made available. Some service providers have developed DRM formats at great expense (four companies, Apple, Microsoft, Sony and Real), whilst all other service providers, who are either start-ups or their core business is not technology innovation, are in a position where they have to license DRM from one or more of these companies if they wish to make major label content available.

The EU institutions previously recognized DRM as an important element of the commercialisation of digital music, with the High Level Working Group on DRM delivering its report in July 2004. Notably, this report identified interoperability of standards as an important goal for encouraging the growth of services, and advised a 'wait and see' approach.

However, since the publication of that report, the DRM situation in the European online music market is arguably more developed as major technology companies choose to launch proprietary DRM formats to support integrated hardware-plus-software propositions. In the absence of major labels changing their commitment to DRM (though this may yet happen in the long term), and closed eco-system platforms refusing to license their DRM to third party services, there can be considered a need for an alternative solution.

That solution, as proposed by some of the stakeholders, chiefly the digital platform service providers and some content owners, is that of European support for a truly interoperable DRM based on some form of open standards. A proposed development and licensing model could be similar to that adopted by MPEG for the development of digital compression technology, and which can provide an open standards alternative to using proprietary solutions. However, it should be noted that so-called 'open standards' are almost invariably themselves based upon proprietary technologies developed by companies that want to see a return in the form of technology licensing revenues. Thus, in some cases, the use of open standards can be more costly than proprietary solutions from single companies, which are often offered at a lower cost and sometimes free of charge altogether. Additional to the development of an open DRM standard could be a 'must support' commitment from all portable digital audio player device manufacturers retailing in the EU.

A noted commendable practice is that of the Coral Consortium, a cross-industry attempt to promote interoperability between DRM technologies used in the consumer media market.

There are a number of business model issues facing the development of digital music services in Europe.

2.1.2.6. Flat pricing models and low margins (5.4)

Pricing in the a la carte environment appears to be a particular concern for content owners and some service providers, who believe that the standard €0.99 per track and €9.99 per album bundle is restrictive and does not reflect a music business that has in recent times sought to explore multi-tier pricing. More importantly, there is a belief that this model was transposed over from the US, where sales tax is excluded, and does not take into account a European VAT regime that includes tax as part of the consumer price. The result is a very low margin business, where service providers are struggling to turn a profit once wholesale price, royalties and tax are deducted.

Although some independent service providers are experimenting away from this price-point, it is a difficult proposition given the dominance of Apple and its adherence to the single price-point strategy, and the subsequent influence on customer expectation. For service providers, it is also a question of returns. From every €1 generated, a service provider is left with approximately €0.83 after VAT. Of this figure, anything up to €0.70 can go to the content owner (usually the record label rather than the artist), and a further €0.05 approximately to the collection agency, leaving behind a very tight margin.

However, it must be maintained in defence of the single price-point that prior to its innovation in the European digital music marketplace, the consumer price of music download tracks were significantly higher in certain European territories. The European consumer has certainly benefited from the consumer-friendly flat-rate pricing which has played an important role in the rapid consumer acceptance of music download services worldwide.

Suggested remedies

It is generally considered that pricing model issues are best left to the market to resolve, though some service providers and content owners are genuinely concerned that they are being held from developing their businesses by pricing models set by a few dominant players. Nevertheless, the problems caused by high VAT rates, especially vis-à-vis a business model pioneered in a tax-free environment, are palpable. Reduced VAT rates on digital entertainment content, possibly harmonized, would go some way to alleviating pressure on service provider margins without interfering with the operation of the market.

2.1.2.7. Tough environment for 'pure player' aggregators

Given the low margins involved, content owners also expressed concern over the tough environment facing dedicated third party content aggregation businesses in the digital space—those who would take the role traditionally fulfilled by music stores such as HMV, Virgin and FNAC in the bricks-and-mortar high street – that is, companies that are concerned with the sale of entertainment as their primary focus of business. In contrast, the new digital retail outlets, such as the technology firms, incumbent telcos, ISPs, and mobile operators are using digital music as a value-added service to promote other primary businesses (such as broadband subscription). As such, we identified a key point of friction and a gap in the provision of services. On one side there are large-scale communications companies that consider music as a small value-added component of multi-billion euro fixed-line and mobile customer acquisition strategies and are therefore not adequately equipped to aggregate content and establish an entertainment provisioning relationship with customers, whilst on the other there are music companies that have little or no experience in delivering their products direct to the consumer, and are searching for adequate dedicated partners. Though the two sectors are helping each other through this situation with the help of technology companies such as Apple and Microsoft, the real untapped potential has been independent third party European music aggregation services such as Loudeye, 7Digital, 24/7 and TuneTribe, which have been building expertise with very little resources in the digital distribution environment.

Suggested remedies

It is generally considered that the market will resolve this issue. Moreover, it should be noted that this point was raised by major content owners, who set the wholesale price on digital tracks, and therefore have the means by which to foster a competitive higher margin market if they wished to do so (although there remains the issue of the music industry being tied to a single pricing model expectation that they have no control over). Nevertheless, funding opportunities and support for start-up businesses developing pure digital

entertainment content business models could expedite the resolution to this roadblock.

2.1.2.8. Differing terms of trade for independent labels (2.2)

A roadblock raised by independent artists has been the disparity between terms of trade offered by the major online services to independents compared to those offered to the major record companies. In short, anecdotal evidence suggests that 'most-favoured nations' clauses mean that majors, who have greater negotiating power due to the libraries and artists under their control, automatically get a better deal than independents on digital services. This can be as much as a 40 per cent difference in wholesale purchase price paid by major music platforms. In some instances, this has also translated into a long application procedure before indies can get on to major digital music platforms - sometimes as long as 14 months.

Aligned to this are general issues surrounding artist royalty rates, currently being disputed in the UK. Some artists, as well as the more liberal-minded service providers, are also of the opinion that digital download contract terms tend to favour record labels and the service providers as a whole, meaning that artists do not always receive appropriate recompense from digital exploitation.

Suggested remedies

It is expected that the industry itself will resolve these issues without the need for regulatory intervention.

2.1.2.9. Lack of pan-European licensing (2.7)

Some pan-European digital service providers have raised the lack of pan-European licensing as an important economic concern slowing the speed of development. At present, the European music market is split on a country-basis, with rights split accordingly. For a service to launch in a number of territories, rights deals will have to be struck with the rights holder on either a territory-by-territory basis or a one-time multi-territory deal. The call from service providers, and the subject of a degree of lobbying in Brussels, has been the need for a single European license to facilitate European expansion – which is addressed in the EC recommendation on collective management of online rights in musical works. The counter-argument from content owners has been that there is a requirement to maintain the territorial split, if only from a royalty collection perspective.

2.1.3 Case study 1: TuneTribe

2.1.3.1. Profile

Independent online music service provider (www.tunetribe.com) TuneTribe launched in the UK in January 2005, following an initial investment round that raised £1m, mainly from Irish digital businesses entrepreneur Patrick Rainsford (who sold his company MV Technology for £100m in 2001). TuneTribe's most high-profile investor is Tom Findlay, a successful musician as one half of Groove Armada.

TuneTribe's proposition has been to offer not only services from major labels, such as EMI and Warner Music, but to focus very heavily on independent labels in a bid to 'democratise' music. As such, the platform is offering unsigned artists and acts with existing record deals up to an 80 per cent share of royalties. Bands can also set the price for downloading their own music.

The technical back-end of the service is operated by Internet technology firm Interesource. Interesource's other clients includes the UK's fifth terrestrial channel Five, for whom the solutions provider most recently put together a service offering online streaming of Cricket matches, as well as UK newspaper The Telegraph.

As of mid 2006, the platform had over 650,000 tracks available on the site, with a new deal with Universal set to take that figure to over a million. Tracks are available either in protected Windows Media Audio (WMA) formats, or non-protected MP3. Downloads typically cost around £0.89 per track, or £8.99 per album. However, variable pricing does mean that some albums can cost significantly lower, especially from independent artists.

The key aspect to TuneTribe's service has been a desire to champion independent artists and return a certain degree of profits back into the recording industry itself. To a degree, this has gone hand in hand with a belief that the commitment to restrictive DRM solutions may promote the interests of mass-market artists signed to major labels, but only work to undermine the development of up-and-coming artists who are simply trying to gain exposure by any means possible. As such, TuneTribe management have sought to support the use of the unprotected MP3 file format in cases where the content owners give consent.

Notably, TuneTribe entered an alliance with personalised Internet Radio firm Last.FM to integrate some of the services and personalisation technology into their service.

By May 2006, the TuneTribe website was registering over 240,000 unique visitors per month, and it is Screen Digest's estimate that the service had sold around 20,000-25,000 individual tracks since launch. The company is aiming for a million unique monthly visitors, with a proportionate rise in track sales.

The initial plan for TuneTribe was to launch on several platforms, including mobile phones and digital TV. However, the anticipated pace of development has not materialised and it seems the company has switched focus to territorial online expansion rather than via new platforms. In 2006, the company was preparing to launch services in nine EU Member States, including France, Germany and the Benelux. TuneTribe's goal is to become the largest European music download platform.

2.1.3.2. Main roadblocks faced by TuneTribe

The main roadblocks pointed out by TuneTribe management facing the development of their services were:

- **Interoperability:** TuneTribe is unable to directly market its services to owners of the iPod, Europe's most popular portable audio device, due to Apple's refusal to license its **DRM** solutions. In the absence of open standards DRM, the company is forced to offer a mix of Microsoft DRM-protected WMA files (which are not interoperable with Apple devices) and unprotected MP3 files (which are not considered acceptable by major labels). From a more universal perspective, the necessity for several DRM formats has confused consumers, and is believed to be hindering potential TuneTribe customers from using the service.
- **VAT:** disparate VAT schemes and the 'country of origin' principle for EU consumer electronic services has meant TuneTribe is at a disadvantage in offering services to UK customers against music download platforms which offer service to UK consumers out of lower VAT rate territories (and who therefore operate at a higher profit margin).
- **Withholding Tax:** The cost and paperwork required in processing reclaim of tax between EU member states means that in the past TuneTribe has been unable to sign independent artists from other European territories for its UK download service.
- **Pricing:** It is TuneTribe's belief that artists are not receiving the necessary recompense from digital downloads due to contract terms favouring record labels, service providers and network operators.

2.2 Movies

2.2.1 Value chain and market trends

The underlying dynamics of the European broadband infrastructure market that underpin the digital distribution of movies to the home are covered in detail in the section on Music. Digitised movies however are very large files, the size of which varies depending on how they are to be distributed - whether over the open Internet or over closed-network set-top box environments. Whilst closed-network 'walled garden' implementations usually have little or no bandwidth problems since the aggregator service provider is usually also the platform operator controlling the supply-pipe, services being delivered over the open Internet are usually at the mercy of bandwidth issues and the end-consumer's broadband connections.

A digitally encoded movie file designed for Internet downloading tends to be upwards of 700MB in size, which means that it can take approximately two hours on a 1 Mbps connection for a two-hour digital movie to be downloaded over the open Internet by a consumer.

2.2.1.1. Movie Market Trends

Since 1997, the European movie market has enjoyed a period of sustained growth, thanks in large parts to a burgeoning DVD retail sector. In 2005, Europe's movie market generated €13bn in consumer spending (excluding revenues from the sale of lucrative pay-TV and free TV rights to pay-TV operators and broadcasters), of which almost 60 per cent was generated by DVD retail. However, the significant trend in the 2004-2005 period was one of decline, as revenues dropped from a high of €14bn in 2004. This was primarily due to plateauing DVD revenues and a poor year at the European box office.

According to Screen Digest, 2005 experienced a 4.8 per cent decline in consumer spending on retail video in 2005, giving a 5.2 per cent decline in spending on all video when a drop-off in rental revenues is factored in. Although volume sales are still growing, they are not doing so fast enough to compensate for still-falling average prices.

The box office in major European markets also performed badly in 2005, with only the UK bucking the trend. In 2005, according to Screen Digest, there was an average fall of between 10 and 20 per cent in box office admissions in the big five territories, though the UK was up marginally with 0.8 per cent. This is likely to be related more to short term fluctuations in the flow of movies rather than any long term stagnation.

The drop in revenues also reveals an important fact. With the threat of piracy looming, and the DVD business no longer the growth business it once was (at least not in terms of revenues) the movie industry, and the Hollywood studios in particular, have turned their attention to exploring new business models, such as video-on-demand (VoD) and digital retail. But these ventures are still in their infancy, and have yet to generate significant revenue, or generate it quickly enough to meet the shortfall. However, there is every possibility that they will do so in the near future.

2.2.1.2. Digital Movie Market trends

According to Screen Digest, the European digital movie market generated €30m in 2005 from 'a la carte' sales of movie files, pay-per-view (PPV) rentals, and subscription 'all-you-can-eat' platforms. The bulk of revenues were generated by **set-top box based walled garden services, which accounted for €28m of revenues**. PPV has so far driven this market, simply because rights have been easier to negotiate for than other business models,

Figure 39 : Online movie revenues - share of total movie revenues

Total EU, €m	*2003*	*2004*	*2005*	*2006*	*2008*	*2010*
Online movie revenues		1.4	2.8	18.7	205.9	1,032
Box office revenues	5,217	5,598	5,121	5,621	6,186	6,767
Movie revenues from physical format sales	8,338	9,087	8,251	7,482	6,792	6,805
Walled garden movie VoD		0.5	28.3	100.8	177.3	237.6
Total movie revenues	13,555	14,688	13,404	13,222	13,362	14,843
Online movie revenues as % of total movie revenues		0.0	0.0	0.1	1.5	7.0

Source: Screen Digest

such as subscription VoD and digital retail. For example, PPV accounted for over 90 per cent of all online movie revenues in Europe in 2005.

However, looking ahead, content owners have been implementing more lucrative commercial propositions, mimicking existing successful models in other lines of business, such as DVD. As such, **Screen Digest expects the total digital movies market to grow to €1.3bn by 2010, driven by digital retail offerings provided over the open Internet.**

The UK continues to be the largest single consumer territory for online movies in Europe, expected to generate over a third of all European online movies revenues by 2010. However, the European figures are still short of those in the US, where the online market alone is expected to generate €1.5bn by 2010.

2.2.1.3. Value chain and Stakeholders

The movie industry has tended to respond well to technological change, and as such the business model of film is a complex one, relying on a series of release windows defined by technology, time and geography. This has led to three primary models of business:

- theatrical exhibition (cinema)
- sale and rental of physical/digital copies (home entertainment)
- licensing to linear broadcast platforms (television)

From the time of first release, when and how a new film appears on platforms within this model is dictated by a set of industry rules and differs from country to country, either established by law (as in France), or defined by market forces (as in the UK). As current technology stands, this means that a film premieres first in the cinema (the theatrical window), then makes its way onto DVD and VHS video (the video window), before progressing onto television – first on pay-per-view and subscription television (the pay-TV window), then onto free-to-air television.

In each instance, exclusive access to a new film ahead of the next 'window' in the value chain has been considered by the industry to be critical to maximising turnover. As a result of this windowing policy, the film industry has created distinct value propositions for consumers so they can watch movies in cinemas, rent videos, buy videos, order a 3 A.M. pay-per-view showing, or wait for cable or network TV airings. Each channel's consumer appeal results from price, content quality, and convenience factors, rather than the sheer choice or number of films available. The backbone of this model as it stands at present is the dual core of theatrical and DVD retail --- that is, the 'shop window' of the cinema, and a film's box office performance, drives the bulk of revenues in the lucrative retail window (as well as determining the value of deals subsequently within the television and VoD/PPV windows).

The fundamental value chain of movies, much like music, falls into three sectors: production, distribution and exhibition/sales. That is:

- content production,
- distribution,
- sale/transmission to the end customer/end user (exhibition)

The main stakeholder categories fall within one or a combination of these responsibilities. Companies that are considered the traditional power base of the industry, the six major Hollywood studios, Warner Bros, Sony MGM, Disney, Fox, NBC Universal, and Paramount, are primarily involved in the business of creation and distribution.

Unlike music however, the major movie studios, as part of large entertainment conglomerates, are also involved in direct relationships with consumers through broadcast or other distribution outlets. Fox, for example, as a subsidiary of Rupert Murdoch's NewsCorp empire, not only has a US television network in its own right, but has many sister companies around the world, such as the UK pay-TV operator BSkyB and Italy's Sky Italia. Similarly, Warner Bros, as part of the giant Time Warner, is very closely allied to not only the WB and forthcoming CW US television network, but has ties with AOL that it is now starting to exploit, not only in the US, but also in the UK, France and Germany. Of the others, Universal is owned by NBC and Vivendi and Paramount by Viacom, and are tied closely to US television networks (NBC and CBS respectively). Disney, so far still an independent entity, owns the ABC television network, and is involved in video-on-demand joint ventures, such as FilmFlex in the UK. Disney's partner in FilmFlex is Sony, which brings a different perspective to content distribution, focusing on the Internet and its installed base of highly popular PlayStation consoles and handheld devices.

The local nature of film means that there are also some significant local content originators and distributors in Europe, called 'independents'. However, whilst there are some successful self-sustaining pure independents, such as Constantin Film in Germany and EuropaCorp in France, the sector tends to be dominated by significantly sized broadcasters, pay-TV operators, local distributors and public film bodies, who tend to invest heavily in film production and distribution either as part of a national mandate to foster a healthy local film industry, or in an effort to encourage some other primary business. Examples of such companies include Canal Plus in France, SogeCable in Spain and the BBC in the UK.

Although there is some sectoral overlap, it is highly unusual for a content originator to handle every aspect of distribution and exhibition itself, and there are no such instances in Europe. On the whole, the industry is heavily reliant on relationships with theatrical exhibitors, rental outlets and retailers (both virtual and bricks-and-mortar), third party content aggregators, pay-TV operators and broadcasters. The movie industry also obtains significant revenues from the license and sale of merchandising (such as soundtracks and posters), and has relationships with retailers accordingly.

2.2.1.4. The impact of 'digital'

The development of interactive digital platforms since the late 1990s has had a significant impact on how the movie industry sees its business, although this has not quite yet materialised into revenues or a wholesale change in business models.

The desire for experimentation with digital business models has been fundamentally driven by two factors:

- the continued threat of piracy (defensive)
- the desire to bolster plateauing revenues from existing markets (offensive)

Because of the large size of movie files and a corresponding lack of consumer broadband bandwidth, the movie industry hasn't yet suffered the same catastrophic fate as the music sector where Internet piracy is concerned. However, many of the piracy problems plaguing the music industry also hold true for the film business --- none more so than the advent of large scale counterfeit DVDs --- and it is only a matter of time before bandwidth increases and new compression technologies mean an average consumer will be able to download a feature film illegally in less than 10 minutes. When coupled with the reality that DVD is now very much a commodity product and that consumers are not likely to increase their spending levels on DVD retail, the mainstay of the movie business, as they once did, this created a major conundrum from the movie business as a whole. Without diversification, the sector will face a major decline in legitimate sales, but with diversification comes a degree of risk.

Although new physical technologies, such as high definition video discs (HD DVD and Blu-ray), are in the pipeline and will likely debut in Europe in 2006, there is a belief now within the film industry that if handled correctly, interactive digital platforms such as IPTV, broadband Internet and possibly even 3G mobile communications could provide a significant source of fresh revenues. In short, the response from the film industry has been pre-emptive, seeking to both stem the potential loss of business to piracy, but carve new markets in the face of slowing DVD market growth.

The buzzword so far has been video-on-demand (VoD). VoD is in essence the immediate delivery of entertainment content via a digital platform (to the TV, PC or a mobile device), as and when it is requested by the consumer. In its earliest incarnations, this functionality was crudely offered to the TV set by pay-per-view (PPV) services, which simply gave the ability to order a pre-scheduled film via a television set-top box at the touch of a button (or a telephone call). The problem with traditional forms of PPV is that the viewer still has to wait for the film start time, and once the film has started, there is no further ability to pause, rewind or fast forward. Although digital TV meant the arrival of 'Near VoD' (NVoD), where PPV films are scheduled on a number of channels at fifteen minute intervals allowing a choice of start times, this still fell short of true VoD.

A key component of VoD is immediacy, which has a requirement for an always-on two-way connection between the viewer and the service provider, allowing all the functionality normally experienced with a DVD or VHS. For this to happen, the viewer must be able to enter a direct dialogue with the service provider via the touch of a button, whether that button is on a remote control, a PC mouse, or a mobile phone. This 'always-on'

requirement for VoD has meant then that it is restricted to broadband (both mobile and fixed line) and digital cable platforms that can provide an instant connection (as well as offer high-bandwidth to deliver the actual content itself). However, the delivery of services in such an environment is not uniform and tends to fall into two supply models:

- **'walled garden':** the platform operator puts together and manages services to a set-top box in the living room via a dedicated closed network,
- **'open gateway':** the service provider offers its services over the open Internet, available to all with a PC or PC-enabled device

The development of PC technology has meant that both propositions can offer services to the living room TV set in a 'sit-back' environment. Home media centre device propositions which are, in effect, PCs built to resemble set-top boxes (as developed and supported by Intel, Microsoft, Apple and other home computing companies) continue to blur the boundaries between the PC-screen and TV set, and as such, the open gateway model, using a standard consumer broadband connection, promises to be an effective route to market for services delivering movie content to consumer homes. According to Microsoft, there were more than 14m PCs sold worldwide with Windows Media Center Edition software by mid 2006, of which Screen Digest estimates 40 per cent were sold in the EU. Though these devices are not necessarily 'sit-back' devices, they do incorporate a media interface functionality.

In both walled garden and open gateway scenarios there is the possibility to exercise a number of business models, which bring together not only traditional broadcast scenarios, but also retail models usually associated with the physical rental/retail market. As such, VoD can be offered:

- à la carte on a rental or retail basis (the latter known as 'digital retail'),
- on a subscription basis (where subsequent individual downloads are 'free')
- free (usually on a sponsorship or advertising funded model)

The key issue to date is how to marry digital strategies with very lucrative physical business models. Studios are generally very protective of their DVD business. The key point about DVD is that it has allowed the studios to maximise margins through an attractive retail business model. Every DVD sale of a new release generates over six times the gross revenues of VoD or any other form of movie consumption. Even after manufacturing and distribution costs are taken into account, DVD retail is generally at three times more profitable than other form of exploitation. As a result, VoD services in Europe have been slow to take off, and in general held back by the studios through various rights restrictions and demands for high minimum guarantees.

In the walled garden environment, the first European VoD services appeared in the late 1990s, with two of the earliest pioneers being VideoNetworks' Homechoice platform in the UK and Italian alternative network operator Fastweb. Since then, especially in the 2005-2006 timeframe as studio interests in exploiting digital platforms have somewhat aligned with the desire from pay-TV operators, network operators and ISPs to offer converged services, the number of platforms has grown exponentially.

The biggest walled garden VoD services in Europe have been launched by incumbent telcos and competing platforms in an effort to expand into entertainment services as a way of increasing broadband revenues and reducing customer churn. Examples of major incumbent VoD services include France Telecom's Maligne TV service in France, Telefonica's Imagenio platform in Spain, and Deutsche Telekom's T-Online Vision in Germany.

The technical nature of walled garden services, and the structuring of film exploitation rights, has meant that walled garden VoD services have been limited in their scope. Services operate purely on an a la carte rental model (generally one of the least profitable sources of revenue for the film industry), and are within a hybrid window somewhere between home video and television (anything up to nine months after a film's theatrical release). Although some platforms, such as Homechoice, offer a subscription VoD service (SVoD), this tends to be for 'second-run' and library titles which have exhausted their first cycle of exploitation (usually after about seven years, sometimes five).

The open Internet and the advent of broadband have created a far different proposition for the film industry. The possibility to address all of Europe's ever-

increasing number of broadband homes (see Music section for broadband infrastructure analysis) with not only rental services, but the far more lucrative retail and subscription models, has piqued the interest of studios.

By mid 2006 they were heavily involved in trials of open Internet propositions, as well as already seeing some commercial launches. In April 2006, Universal launched its first digital retail proposition in the UK with online DVD rental firm LoveFilm, whilst Warner Bros launched similar services with Bertelsmann-backed German platform In2Movies in Germany, Austria and Switzerland. The digital retail principle is a straight-forward concept – for a one-off fee, broadband users can download a digital copy of the film to keep, much like the ownership model used by Apple's iTunes in the music sector. Notably, some films are offered in the premium DVD retail window, marking a significant step in transferring physical retail strategies to the online environment. However, for the moment, DRM conditions are set very restrictively (the downloaded copy can only be ported to a limited number of other devices, and cannot be moved to a DVD), whilst pricing is significantly higher than that of DVD retail.

The Internet sector is evolving rapidly, with pay-TV operators, telcos, cable operators, ISPs, online DVD rental firms, and even major technology and Internet companies such as Apple, Google, Yahoo!, Amazon and Microsoft, becoming increasingly involved. The 2006-2008 period is expected to bring more service launches on a number of business models, including those offered by pay-TV operators within the subscription pay-TV window, such as BSkyB's Sky by broadband platform, which provides movie downloads to existing TV-based movie channel subscribers free of charge.

It is important to note, however, that it is not just the major Hollywood studios leading the evolution of VoD services in Europe, although due to their overall share of the market, they are dictating the pace of its development. Independent European distributors and producers have been involved in some of the most innovative services to date --- for example, in France, Pathe and Luc Besson's EuropaCorp were key in supporting VoD start-up MovieSystem (now acquired by Canal Plus and rebranded Canal Plus Active); content from Constantin Film was an important factor in the early development of VoD services in Germany, including the support of the first portable device strategies with ISP T-Online; whilst the UK's FilmFour worked closely with Tiscali UK to offer Europe's first major digital retail title on a commercial basis in March 2006.

However, independent content has not traditionally been the mainstay of the movie market, and there has been even less demand from VoD service operators, although the need to differentiate service offerings means this is slowly changing. Coupled with serious issues in the drafting of production and distribution contracts prior to 2005, where new media rights were badly defined, this has meant that a general sense of confusion (and lack of co-ordination) prevails within Europe's independent movie sector. This situation has only recently started to be addressed by national and pan-European film agencies.

2.2.2 Legal/regulatory obstacles

2.2.2.1. Disparate anti-piracy regulation (3)

Similar to the issues addressed in the legal roadblocks facing the music industry, stakeholders within the movie sector have raised the need for uniform anti-piracy regulation as a major concern—this holds true for both European independents and the major Hollywood studios (though the studios arguably have most to lose as it is their content that is pirated most, and are accordingly more vocal in this area).

Given the nature of movie windowing, piracy at any stage of the film exploitation process can cause the sector financial loss across the entire value chain. Logically, the earlier the pirated copy appears in a movie's primary business cycle, the heavier the potential revenue loss is likely to be. Essentially, the earlier the act of piracy is, the greater is the number of 'windows' of exploitation that become vulnerable to diminished revenues. One stakeholder, from a content provider perspective, went as far as to state, "*the minimum requirements to national law in European directives are too low, not enforced enough, and extremely easy to bypass in the digital age by setting a VoD business in a low-protection country*."

The developing legal position in France has been raised by content owners as a particular cause for concern. In December 2005, the District Court of Paris' Judges concluded that the uploading and downloading on P2P networks qualifies as private copying. This verdict is being appealed by Société Civile des Producteurs Phonographiques (SCPP), a French record producer association, but for now, the ruling has been made public and the law will stand in France until it is reversed.

French movie producers and right-holders have been recently upset by the attempt to fully legalise P2P in the transposition of the copyright Directive into French Law. Although the controversial amendment creating a flat-fee 'blanket' license to download, introduced by some MPs, was ultimately removed in parliamentary process, the content industry throughout Europe is still worried about the incident. They are also concerned by the low-level penalties aimed at illegal P2P users introduced by the new law.

These sentiments echo that of both the music and games industries that piracy is still not being taken seriously enough by policymakers within some EU countries and that if left unchecked will have a serious impact on legitimate digital distribution businesses.

Suggested remedies

The piracy remedies as set out for the Music sector can also be taken to encompass movies.

2.2.2.2. Problems relating to VAT (6.1)

Although stakeholders within the movie business did not specifically raise the disparity of VAT regimes within the EU as a hindrance to the pan-European development of services, it is Screen Digest's opinion that this is because digital exploitation of movies over the Internet is at an earlier stage of development than music, and stakeholders have yet to encounter these problems. The issue of whether or not VAT is charged in the country of origination, as discussed in relation to the music sector (see Music section), will also have a bearing for the online movie industry. As services develop, and distributors seek to offer content on a pan-European basis (especially independents who may not be traditionally bound by the same commitment to territoriality), differing VAT rates will almost certainly pose a roadblock (for further discussion of VAT, see Music section).

Suggested remedies

In line with the EC proposal, it may be advisable to amend existing EU legislation to also bring consumer electronic services (or at least digital entertainment content) within the ambit of rules requiring VAT to be charged at the point of supply (country-of-destination).

2.2.2.3. Film classification (4.1)

Though not raised by stakeholders, we believe that the disparity in age classification systems will also need to be addressed to enable cross border marketing of services. At present, all services, with the exception of SF Anytime and Film2Home in the Nordics, are handled on a single region basis and yet to face this obstacle.

Suggested remedies

The PEGI in games initiative can be considered a best practice of pan-European self regulation in classification. The movie industry and the classification bodies should draw lessons from it (see details in the Games section).

2.2.3 Technical obstacles

Similarly, stakeholders within the movie industry have not shown much concern for technical roadblocks and as such have not generally raised many significant technical points. The sector is still in its infancy where VoD is concerned and therefore entrenched in a 'rights debate', focusing a great deal of attention on how to aggregate and commercialise content (see next section). Technical roadblocks are unlikely to really become apparent until business model issues have been resolved and services actually begin to provide content owners and service providers with a sustainable source of revenue.

2.2.3.1. Low broadband penetration and bandwidth limitations (1.1)

The broadband penetration in Europe at end 2005 was 12.6 per cent, which raises a major issue in terms of equality of access. Indeed, with broadband having a greater urban focus, government initiatives to encourage universal access in rural areas (and supra-national support for such schemes) will become imperative. In the words of one stakeholder, a government film agency, "*how can you justify supporting and sustaining a viable film business online when you can only offer your services to less than half of the country?*"

Moreover, at end 2005, average downstream bandwidth speeds ranged from 9.2 Mbits/s in Sweden to 0.6 Mbits/s in Greece. In even the most advanced Internet movie platforms, it can take anything up to ten hours to download a feature film over a 1 Mbit/s broadband connection. This question over the quality of the consumer experience is one of the key arguments traditionally raised by the Hollywood studios in delaying the mass launch of full commercial services over the Internet. Although this is becoming less of an issue as bandwidth increases year-on-year, there is still a disparity between not only rural and urban areas, but also those homes that are closer to the local telephone exchange and those that are further away (at least in the DSL environment). Therefore, somebody who lives just 1km from the exchange will have a far better broadband DSL experience than a customer that lives 5km from the exchange, and as a result a far better movie downloading experience.

There is of course also the issue of universal access. Due to geographical issues, not all of Europe's homes are capable of receiving conventional broadband services (i.e. DSL, cable or FTTH), meaning that a small percentage of European consumers will not be able to access any kind of broadband without special provisions being made.

Suggested remedies

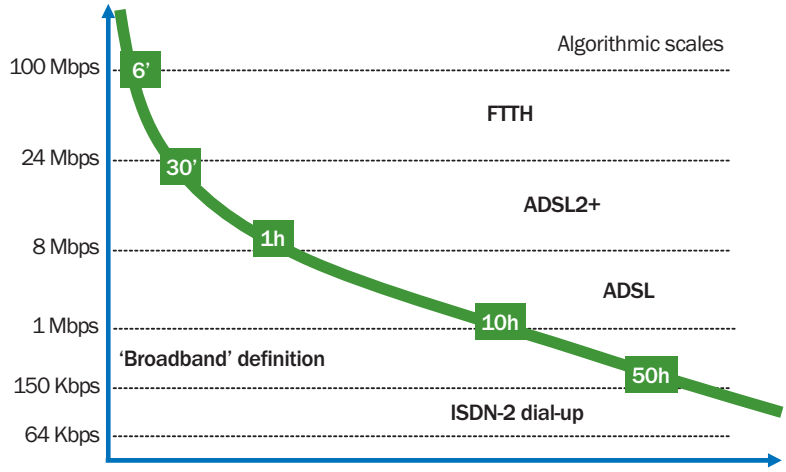
The EC has already shown its support for furthering European broadband connectivity through co-operation with Member States. For example, it most recently provided an exemption under EU state aid rules enabling significant investment in the deployment of broadband networks in Greece.

2.2.3.1 Interoperability of DRM systems (5.5)

In the fixed line sphere, there are effectively two forms of rights management and conditional access scenarios for VoD platforms. Services in a set-top box based walled garden environment are regulated in large parts by conditional access systems, of which there are approximately 20 solution providers currently supporting on-demand platforms in Europe. The closed nature of these environments rarely requires interoperability, and there is little expectation from consumers for the platforms to do so, though whether or not this stays the same in the new breed of PC-type home media centres remains to be seen.

In terms of the Internet however, most Hollywood studios approve service providers' use of Windows encoding and DRM systems from Microsoft. A 2006 survey of Internet VoD services in Europe by Screen Digest reveals that almost every single major platform to be using Windows DRM, and requiring

Bandwidth scales



Note: time needed to download a 90 minute video file in DVD-quality with various broadband technologies

Source: Screen Digest

Windows Media Player (WMP). The key factor behind this is arguably the lack of alternative open standard DRM solutions that are also approved by the Hollywood studios, as well as the general ubiquity of Microsoft's WMP software in consumer PCs. There is a strong possibility that this will result in an environment comparable to Apple's position in the digital music market. Microsoft's initiatives in also licensing software to the portable video devices and mobile phone markets should also be remembered. However, Microsoft's chief rival Apple, whose CEO Steve Jobs is also on the board of Hollywood studio Disney, has recently launched its video iPod and is expected to start movie download services (alongside its TV propositions) using proprietary DRM within the 2006-2007 time period.

Views from some of the more forward-thinking independent content owners echo those raised by the music sector. The lack of interoperability of proprietary DRM standards, and therefore hardware, is considered to be an important potential roadblock as the sector develops, especially in financial terms. According to one significant content provider, "*it is certainly more costly (for the content owner) to deliver multiple solutions that are incompatible"* and that *"the profusion of standards … has the potential to artificially distort the market"*.

Suggested remedies

The EU institutions previously recognised DRM as an important element of the commercialisation of digital music, with the High Level Working Group on DRM delivering its report in July 2004. Notably, this report identified interoperability of standards as an important goal for encouraging the growth of services.

Nevertheless, as with the music business, the developing DRM scenario for movies is one of potential market dominance by one or more proprietary technologies. Unlike music however, there is a *de facto* system being used, in the shape of Microsoft Windows Media, by all service providers and approved by almost all major content owners, which has, by default, near universal operability with consumer PCs. However, this does not address the market for Apple and Linux-based home computers, nor does it address the market for portable video devices, which may be dominated by non-Windows-based devices.

The solution, as proposed by some of the stakeholders (chiefly by some content owners), is that of European support for a truly interoperable DRM based on some form of open standards. A proposed development and licensing model could be similar to that adopted by MPEG for the development of digital compression technology, and which can provide an open standards alternative to using proprietary solutions. However, it should be noted that so-called 'open standards' are almost invariably themselves based upon proprietary technologies developed by companies that want to see a return in the form of technology licensing revenues. Thus, in some cases, the use of open standards can be more costly than proprietary solutions from single companies, which are often offered at a lower cost and sometimes free of charge altogether.

A commendable practice is that of the Coral Consortium, a cross-industry attempt to promote interoperability between DRM technologies used in the consumer media market.

2.2.3.3. Lack of awareness of independent content owners (2.1)

Among some smaller independent content owners (mainly independent European producers and distributors) there is still a certain lack of awareness as to the development and potential of Internet technologies. The largely irrational belief that the moment a work gets to the Internet it will be subject to piracy and unlawful access by users outside of a particular rights territory seems to be a major psychological barrier for content owners in exploiting VoD as a means of revenue.

Without a coherent education plan, nor the necessary research budget of the major independent and Hollywood studios, smaller content owners don't seem to necessarily understand the full capabilities of DRM and other technological restrictions such as geo-blocking, and what digital distribution may be able to offer them.

Suggested remedies

The EC has already set out education and increased dialogue between content owners and service providers as an important aspect of the Film Online initiative. Education plans must include raising awareness amongst European rights holders as to the possibilities surrounding the exploitation of on-demand and digital rights.

2.2.4 Economic obstacles

2.2.4.1. Cost of digitisation (6.4)

Those independent producers now seeking to enter the European VoD space, as well as European film agencies seeking to support an indigenous European film sector, have stated that the overall cost of digitising product into the appropriate file formats will be a factor preventing wholesale exploitation of content over the Internet.

In the walled-garden environment, operators tend to carry out ingestion and digitisation as part of the deal, which is subsequently billed to the rights holder. A similar practice takes place on the Internet, although here some services include ingestion as part of their revenue share. Nevertheless, it is clear that independents may need public support to finance digitisation of their catalogues; a fact that is even truer in the case of heritage catalogue (e.g. classic films).

Suggested remedies

Some national film libraries are digitising their films, some are not. The EC is involved through the IST programme and pilot subsidies, in defining formats and best practices. It is important for the EC to continue to encourage and support film agencies in individual Members States, so that they can support digitisation programmes for the independent film sector.

2.2.4.2. Protection of existing markets by major content owners (2.1)

Economic and business model issues dominated the concerns of stakeholders in the movie industry. Of particular significance is a concern from service providers that Hollywood studios dictate the development of the VoD market whilst protect existing physical retail revenues. All platform operators and service providers were clear that significant development of new digital platforms and business models was being held back by a desire or need from major content owners to protect established sources of income. It was widely understood that exploitation of a piece of content in a prior time window or on an alternative platform (either before or simultaneous with the established main mode of distribution) devalued the content—which from a Studio perspective is a major concern given the high production cost of premium movies.

The conundrum is that new digital platforms do not yet have the scale to produce enough income to make up for the devaluation of content to established modes of distribution. It is perceived that on-demand exploitation may reduce revenue from the pay TV window and broadband download or streaming may damage revenue from DVD. It was thus considered that new digital platforms were restricted largely to the choice of niche and second tier content with which to build their services.

2.2.4.3. Negotiation of VoD deals - Minimum Guarantees on premium movie titles (2.2)

A number of service providers and network operators, primarily those offering Internet VoD, have raised the issue of minimum guarantees requested by studios before premium content is licensed to platforms. This practice requires an up-front commitment by the service provider to pay the content owner a particular amount, sometimes as much as seven-figures, as a guarantee against under-performance.

The issue is one raised typically by new entrants to the VoD business, such as ISPs and telcos. The response from Hollywood studios has generally been that minimum guarantees are a legacy model of business pre-dating 2005 and not one they stick to in the evolving Internet business. But some studios do still adhere to it strongly, stating that minimum guarantees are a way of ensuring "*fair compensation for high value products in a market where new services have yet to be proven*" and are valued in a manner so as not to be "*crippling*" to the service provider in question. The ISPs and telcos have responded to this by insisting that the values have been high enough in some case to prevent them from being able to enter a deal, and in some cases consider the use of minimum guarantees as a blocking mechanism.

2.2.4. 4. Poor definition of windows and 'exclusivity' clauses encouraging market restriction (2.3/2.5)

Some service providers and network operators, chiefly new entrants, also pointed to restrictions caused by what they consider to be opaque definitions of VoD windows. At present, a la carte digital retail is considered by Hollywood studios to fall within the video retail/rental window (approximately five months after theatrical in the UK), and a la carte digital rental within the traditional pay-per-view (PPV) window (approximately nine months after theatrical). Neither window is

exclusive and encourages competition amongst service providers.

The issue of subscription VoD (SVoD) however has yet to be resolved. Traditionally, linear subscription broadcast services fall into what is known as the 'pay-TV window' (approximately 12 months after theatrical) – a lucrative source of revenue for studios who sign output and package deals on an exclusive basis usually with one (exceptionally two) pay-TV platforms in any particular European region. This practice of exclusivity is also one used in deals with independent distributors, though not necessary always of the distributors' choosing. In many TV contracts in the UK for example, pay-TV and broadcast deals signed by independent distributors have an unwritten exclusivity that effectively constrains or completely rules out prior PPV and/or VoD exploitation. According to German content owners, German public broadcasters also take a similar restrictive approach.

The net effect is that, if some content owners—those without the necessary clout of the Hollywood studios or the major independents—choose to exploit their content elsewhere in the prior on-demand window, then the value of their broadcast deal will be directly compromised.

The trend with studios now appears to be to use exclusive SVoD rights on new titles and over the Internet as a means of bolstering the value of existing exclusive pay-TV deals with the major pay-TV operators. In the UK, BSkyB has now renegotiated a number of its studio deals to include exclusive SVoD rights, and similar trends are visible in other European territories.

In short, the de facto exclusivity of SVoD rights puts the pay-TV operators into a strong position over new entrants (such as telcos and IPTV businesses) who may not be given the opportunity to bid for or acquire movie rights in support of rival subscription services. Since some pay TV operators are also major investors in production, they can secure on-demand rights even earlier in the process.

It is clear, however, that the windowing system is coming under increasing strain from the demands of new technologies and commercial opportunities. The period between theatrical and DVD release is growing ever shorter. This has happened faster in Europe than the US. The average US theatrical-to-DVD window has come down from 5.5 months in 2002 to 4.5 months in 2005, while that in the UK has been reduced from 7 months to 4.5 months over the same period. The same window in Spain has been cut from 7.5 months in 2002 to 5.2 months in 2005.

In general terms, the rationale behind these reductions to the window is to boost DVD sales by closer proximity to the initial marketing push around the theatrical release. Some senior studio executives have even recently been publicly discussing the possibility of releasing DVD simultaneously with cinema exposure in order to maximise the marketing impact. In some cases, this has even gone further. In Norway, for example, TV2 premiered a film online a day before its theatrical premiere, whilst Tiscali and Channel 4 in the UK premiered an independent production simultaneously with its TV premiere and retail DVD release.

A la carte rental VoD, with its positioning in the PPV window, also has its problems when compared to its physical equivalent of rental DVD, which has a similar window to that of DVD retail. A long-term concern from service providers has been that by offering access to the content later than DVD rental, demand for rental Internet VoD will remain muted. There have been attempts by some Member States to bring VoD windows, if not in line with DVD, at least ahead of PPV.

In France, cross-industry parties agreed in 2005 to set a 33 week VoD window on movies exploited in French cinemas, with the possibility that the window can be closed by a rights-holder if at some point it conflicts with the broadcast (pay-TV) windows. SVoD was also addressed, but limited to catalogue titles only (over 36 months old) and would not exceed 15 new movies per month. It was the opinion of one set of stakeholders, namely the independent producers, that this was only the first step and that "*windows must evolve, and start more shortly after exhibition*." The French national film agency is now monitoring the follow-up, and has established a VoD 'observatory' to track sector development and consumer response.

It should be noted that some telcos are currently lobbying to include a 'must offer' obligation on content owners in favour of digital newcomers. In the Italian context, the Italian incumbent claims it cannot access rights, though this is not primarily from the producers' unwillingness, but arguably a consequence of Italian national broadcaster RAI's catalogue power. Indeed, there is a

concentration at present of a few national catalogue rights holders (such as Canal+ and Gaumont in France) whose control of library titles and ability to renegotiate for new media rights, is in the opinions of some (though not all) network operators a major hindrance to the emergence of a more competitive market.

Suggested remedies

These issues will in all likelihood be resolved by the market as services develop. However, there would have to be continuous monitoring the situation from a competition perspective to ensure major content owners and platform operators that may have a dominant positions do not abuse this position to the detriment of smaller entrants.

2.2.4.5. Difficulty of locating rights-holders in the independent sector (2.9)

Service providers like VoD operators, especially new entrants to the market, have identified the difficulty in locating rights in the European independent film sector as a significant roadblock in the development of their services, especially if they want to specialise in independent cinema on a cross-border basis.

Although some national film agencies, such as the UK Film Council, are now looking into the issue of rights identification and clearance, there is no single database today in Europe that allows distributors and service providers to easily identify the new media rights-holders of a specific film. The closest noted so far has been the "Registre Public du Cinéma et de l'Audiovisuel" (RCPA) enabling financial institutions to register their assignments of film rights and to check validity. This French system, supported by French national film agency CNC, aims to ensure an effective balance between the sectors and a close link between industrial objectives and cultural aims.

2.2.4.6. Confusion over Internet rights (2.5, 2.6)

Also related to the difficulty in locating rights for VoD is that of ambiguity as to new media rights in independent film licensing contracts struck between producers and distributors pre-dating 2005. The distributors are typically the 'middlemen' in the deals between content owners and digital platform service providers, acquiring all rights for a particular period of time from content owners. However, most film licensing deals struck by domestic independent distributors prior to 2005 have been silent or vague on who specifically holds Internet and other new media rights during this timeframe (although the loosely termed and inadequate 'on-demand rights' do sometimes get covered). This is largely because deals were struck before the Internet was seen as a viable medium for exploiting entertainment content.

How this is approached really depends on the laws and practices of the particular Member State. For example, in the UK, the approach of distributors ranges from those willing to take the risk and presume silence means they are in possession of the rights, to those who believe that where contracts are silent, the rights remain with the original filmmakers and will have to be renegotiated. In France, on the other hand, the overall position is that silence means the rights have not been assigned to the distributor (whilst in Italy, again, the reverse is true).

This, of course, is usually not an issue for the Hollywood studios who are almost always the rights holders themselves and in most cases handle all relationships with digital platforms and content aggregators directly.

Suggested remedies

Facilitating the location and sourcing of rights has already been identified by the Film Online initiative as an important aspect of encouraging the development of digital movie services. Within this ambit, there is opportunity to co-ordinate greater clarification of rights, a first step towards which could be ensuring the development of a 'rights portal' by local European film agencies – an online business-to-business (B2B) database of rights information.

That is, rights holders would have the opportunity to populate the database with their own information in order to make distributors and platforms aware of the availability of their content, or ensure co-ordination for domestic film agencies to facilitate the undertaking of an industry rights audit (possibly as the first step in setting up this initiative and then on a regular basis).

2.2.4.7. Access to capital and loss of production finance (6.6)

Some European film agencies and trade bodies protecting the interests of filmmakers highlight the potential effect of new digital entrants taking market share (and therefore capital) away from broadcasters and dominant catalogue rights holders without having the same commitment to invest in indigenous European film production.

The view from trade bodies and content owners in both the UK and France has been that some kind of obligation has to be in place to ensure new entrants, such as telcos, ISPs and third party Internet aggregators, do not adversely affect the European film sector through the undervaluation of rights, or a refusal to re-invest in domestic film production.

In France, in particular, there is a move to make VoD operators commit to acquiring rights or co-producing French and European films for an amount that will be proportionate to their sales/revenues: from 5 per cent where revenues are below €3m, to 10 per cent where revenues are in excess of €5m.

Suggested remedies

Given that the digital movie sector in Europe is still in its earliest stage of development it may be advisable to leave this obstacle to be resolved by individual negotiations in the market, and collective negotiation by trade bodies. However, the situation should be monitored and reassessed periodically for signs of adverse trends.

2.2.5 Case study 2: Tiscali UK

Profile

The UK arm of European Internet service provider Tiscali (www.tiscali.co.uk), which in 2006 had over 1m broadband customers, launched its first major online digital movies offerings in 2004. Having identified the provision of movies as an important element of its value-added services and customer retention strategy, the ISP has been busy building strategic relationships with third party service providers. It currently has a deal to promote LoveFilm's DVDs-by-post and download-to-PC services, as well as a separate alliance in place with US Internet movie download platform CinemaNow.

Additionally, Tiscali has been seeking to buy content and fund original programming for its own download-to-PC service, and since 2005 has been developing its own online publicly accessibly Tiscali Cinema Club.

Tiscali's proposition is based fundamentally on the provision of independent and specialised movies, rather than major studio titles, which have allowed it to pioneer new business models. In July 2005, Tiscali offered a film from UK independent Dogwoof Digital called EMR for £2.99. Although the film was anything but a hit, the digital delivery was part of a simultaneous release campaign and was therefore available whilst the film was being exhibited theatrically and launched on DVD. Notably, Tiscali became the first UK service provider to launch PC-downloads on a digital retail model in 2006, in conjunction with the UK's FilmFour, offering Michael Winterbottom's 'The Road to Guantanamo' on a download-to-own basis simultaneous to its DVD release and TV premier.

Tiscali does not have the financial clout of larger ISPs, such as BT or AOL. Therefore the strategy to focus on independent content has been one of necessity rather than choice. Outside of digital downloads, Tiscali has been active in other ways in the specialised field—most notably acting as a sponsor for the Raindance Film Festival 2005 and putting money up for the 'Best British Short Film Newcomer' award. The ISP has also partnered with Turner Classic Movies to offer short movie VoD content through its portal, as well as from independent filmmakers.

The platform operates in a complete Windows Media environment, with technical elements, such as encoding, being handled in-house.

Though Tiscali sees movies as a spearhead for its entertainment content, and hosts a number of promotional micro-sites for studio titles, most revenue is currently generated from less glamorous content such as business, gambling and travel content. To this end, Tiscali does not believe film VoD is a viable business model on its own, but only as a supplementary offering. Despite this, the ISP is staying in Internet VoD in the hope that it becomes more profitable.

It considers the PC service as potentially the first steps towards a multi-platform strategy, especially as it ramps up LLU (local loop unbundling) plans ahead of an IPTV trial in 2006.

Main roadblocks faced

The main roadblocks facing the development of movie services as pointed out by Tiscali UK were rights issues and are as follows:

- **Access to content:** Tiscali UK has so far been unable to acquire premium movie content from the Hollywood studios because of "*high studio expectations*". According to the ISP, studio content has been over-valued to the point of rendering online business models untenable, whilst its position as an ISP has been viewed with suspicion by the major content owners who see such companies as "*parasites not partners*".
- **Rights confusion in independent sector:** Very few of the smaller content owners are up-to-speed on the location and ownership of all rights, making it very costly and time-consuming for a service provider to acquire certain content. According to Tiscali, the general trend amongst independent producers seems to be ignorance as to the possibilities of video-on-demand and the Internet.
- **'Exclusivity' clauses:** Major pay-TV operators, broadcasters and telcos are tying up digital rights exclusively in the independent sector, or "*warning off*" producers from exercising the rights elsewhere, in an attempt to defend their current business models, making it difficult for new digital service providers to access content.

2.3 Television

2.3.1 TV Value chain and market trends

2.3.1.1. The basic value chain

Many of the issues surrounding the exploitation of television content in the digital value chain come back to the traditional business models that still operate in the TV business.

Like other forms of audio-visual entertainment, the fundamental television value chain can be simplified into three top-level categories: production, distribution and exhibition. Production is the creation of television content; distribution is the sale of that content and exhibition is the transmission of the content to the end user.

In the traditional TV value chain, the exhibition of content involves two sub-categories: the channel and the platform. The channel can be seen as the aggregator of content while the platform (a cable, satellite or IPTV operator, for example) is the means by which the channel is made available to the public. Where content is made available on an on-demand basis, the platform can effectively also become the aggregator and a blurring occurs between the concepts of channel, distributor and platform.

Because traditional channels and platforms currently generate the majority of revenue for TV content producers, it is their standard business models and practices that dominate today. New media players (be they ISPs, mobile operators or IPTV service providers) must work within these business models or search for ways in which they can bend and gradually change the way in which content is sold and distributed. Nonetheless, it would be fair to say that most of the problems encountered during the course of this research fall back on the dominance of business models designed for the 'old word' TV space. The following overview explains the way in which the television value chain operates.

2.3.1.2. The television content value chain

The TV value chain begins with a production company and the production of a piece of content or programme. Production companies generally seek to pre-finance the production of programmes before they begin making them, either through **pre-sale** or **commission**. Depending on the size of the production company and the scale and cost of the production, a production company may seek 100 per cent of the financing or a lesser proportion. Generally, though, the majority of financing (60-plus per cent) will be sought before full production begins.

In the case of a **pre-sale**, a broadcaster or distributor will agree before the programme is made to buy the finished programme and put up a portion of the production budget. A producer will seek several pre-sales as the money paid up-front in this form of agreement is far less than a commission and will generally be a minority of the budget. In a pre-sale, the broadcaster generally takes only rights to broadcast the programme in a particular territory and will not take wider distribution rights.

Where a broadcaster **commissions** a programme, it will put up a larger portion of the budget than in a pre-sale and often cover the majority or the entire programme budget. As part of the commission agreement, the broadcaster will usually take extensive rights, including wider geographical distribution rights and a stake in the future sales of the programme. Copyright, however, is retained by the producer.

Broadcasters may also buy finished programmes (in which they have had no pre-financing involvement) outright. In this case, the broadcaster pays a **licence fee,** often to a distributor that has acquired the distribution rights to the programme. A licence agreement includes limited rights to broadcast the finished programme with limitations relating to the duration for which rights are held and the number of transmissions allowed, as well as the geographic distribution of the content. The value of a finished programme is related directly to its prior success in the market in which it was commissioned. The price a distributor or platform is willing to pay for content also relates to this prior success, the degree of exclusivity offered and the size of the audience reached by the platform.

The license fee is commonly paid in money but may be exchanged or part-exchanged for advertising space or production services. Such a form of payment is called a **barter agreement**. In the new media space, a new form of deal might not involve a licence fee at all but a **share of the revenue** generated by the programming. This is an example of an Internet model coming back to (early) TV business models.

Central to understanding the way in which programmes are bought and sold and the issues and arguments surrounding rights

and usage of the programme is knowledge of the way in which **programme budgets** are set. The budget for a programme, and thus the sum of money on which pre-sales and commissions are based, is calculated on a **cost-plus** basis. This means that the budget is set as the total cost of production plus an industry standard margin for the production company.

When a series is particularly successful, a production company may be able to negotiate a higher margin for subsequent seasons of the series.

In addition, a production company or the programme distributor may take a portion of the **back-end** which includes revenue from **ancillary rights** that may include revenue from premium phone lines on game shows, future sale of the programme on DVD, or merchandising revenue. New media revenues currently fall within the ancillary rights grouping but increasingly will shift up the value chain to become the primary windows of exploitation.

2.3.1.3. The channel value chain

A commercial linear television channel derives its income from one or more of three main sources: carriage fees, subscription fees and advertising revenue. A channel will broadcast for a certain number of hours each day which it will fill with programming. A 24-hour channel broadcasts 8,760 hours of programming a year. If the channel is advertising supported, roughly 10 per cent of this time will be filled with advertisements. Of the remaining time, at least 30 per cent will be repeated material. News, daily magazine shows and current affairs programming is generally produced in-house by the broadcaster, the remaining hours (60 per cent) will thus be filled with new programming and this is the amount of content that the channel must acquire or commission each year.

In addition to commissions and pre-financing agreements, channels will acquire this new content from a distributor—a middleman that has contracted to distribute or sell that content in the national and/or international marketplace. The distributor will either have acquired the rights to the content outright and thus take all revenue derived from the sales, or will take a cut of the sale value out of the primary fee to the original rights holder. The business model under which a channel operates is directly related to its mode of broadcast.

- A free-to-air commercial channel derives most of its revenue from advertising.
- A basic tier pay television channel will derive its income from both advertising and carriage fees.
- An advertising-free premium channel (movie or sports, for example) will derive its income from **carriage fees** and **subscriber revenue**.

Digital compression means that far more channels can be carried in the space previously required for a single channel (the usual multiple is six digital channels per analogue service). This has impacted all forms of distribution. A single analogue channel requires a whole transponder on a broadcast satellite; that transponder can now carry six channels in digital. Cable companies can fit six times more channels down the same bandwidth needed for a single analogue channel. Digital compression has also allowed the development of IPTV over DSL and of multi-channel digital terrestrial television.

However, the rapid growth in the number of television channels since the take-off of digital TV in the mid-1990s has led to intense competitive pressure in the channel provision space to the point that (with the exception of the most popular channels) there is a downward pressure on channel carriage fees and the balance of power has largely shifted to the platform operator which, despite digital compression, can justifiably argue capacity issues. The launch of HDTV could again shift this balance, however, as a single digital HD channel will require a capacity similar to a single analogue channel.

New media players are further blurring the definition of what constitutes a channel in that a branded on-demand service on a platform can also be considered a 'channel'. Such an on-demand service is likely to be supported by a pay-per-view (PPV), subscription video-on-demand (SVoD) or advertising supported free-VoD business model.

Advertising income

Advertising-supported television channels operate air-time sales departments or contract with third parties that market the available on-air advertising slots. These are sub-divided into 30 second slots and sold on a cost-per-thousand (CPM) basis. Advertising breaks occurring during popular shows, delivering higher audiences, can also claim a

greater CPM. The CPM is also affected by volume discounts given to larger advertisers. A programme that delivers a particular demographic (young, male, upper-class for example) may also warrant a higher CPM than a generalist audience.

Income from carriage fees and subscription is discussed under the platform value chain.

The development of Personal Video Recorders (PVRs) as standalone devices or bundled with pay TV set-top boxes is the single biggest threat to the free-to-air TV economy. In the US, where the adoption trend is several years ahead, time-shifted TV viewing with ad-skipping has become a massive phenomenon, affecting negatively the audience of the network. Connected PVRs can theoretically allow an on-demand, permission-based advertising into programmes even watched time-shifted, in which PVR operators or network operators would become audience aggregators.

2.3.1.4. The platform value chain

While a channel aggregates programming, a platform is in the position of aggregating channels and transmitting them to the end user. A platform may thus be a cable operator, a satellite operator, a digital or analogue terrestrial television network or an IPTV service operator. The range of companies that can be considered platforms is increasing all the time alongside developments in technology so that mobile network operators, broadband ISPs and even major Internet portals may today be considered platforms.

As with channels themselves, a platform may operate on a free-to-view or pay television business model (or both) with free-to-view platforms relying on advertising income (or in some cases technical access fees).

Where the platform operates on a pay television model, its business is the packaging, marketing and selling of monthly or annual subscriptions to its channel packages. In many cases, the platform also offers PPV services in addition to the subscription packages.

A platform will pay the channels it distributes a carriage fee based on the popularity of the channel and the package in which they are carried within the platform (and thus their overall reach). It is in the interests of advertising supported channels to get carriage on as many platforms as possible in the most widely distributed packages in order to support their advertising business models. Advertising-supported channels that are carried on free-to-view platforms or on mass-market pay TV services may also actually a carriage fee in favour of widening reach. In fact, in some European markets, the business model is reversed so that advertising supported channels pay the platform a carriage fee or technical distribution fee in order to increase their reach.

In the pay television environment, premium channels (which generally do not carry advertising) will get a considerably larger carriage fee than basic television channels or will be sold on a revenue share or wholesale basis. Independent premium channels, which have no financial or equity relationship with the platform distributing them, may also be sold direct to the consumer with marketing and subscriber fulfilment carried out by the channel itself. In this case, the channel takes all of the subscriber revenue but will have technical distribution costs payable to the platform and relating to such things as EPG listing and encryption.

Figure 41 : Television content value chain

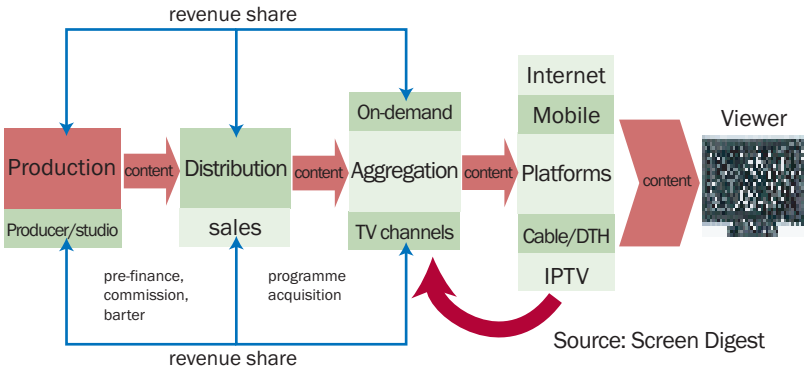


Figure 40 : Total European pay TV PVR homes forecast

Million homes	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Total	1,471	2,186	3,131	4,548	6,367	7,928

Source Screen Digest

2.3.1.5. New media platform business models

With open Internet TV and mobile television, there is a cross-over between the traditional TV advertising models and those commonly found on the Internet. With TV content on the Internet (or on a mobile), an advertisement can still be included within the programme stream (as it is on a traditional TV channel) and sold in the same way (based on a CPM). But Internet TV also allows for the addition of banner advertising within or around the video player window which can be sold either on a CPM or a performance-related cost-per-click basis.

Internet streaming and download of content also allows for greater targeting of advertising and for the direct sale of goods and services from within an advertisement or programme stream.

New media platforms currently operate on similar business models to their 'old world' peers. The primary difference is the variety of ways in which content can be distributed in the new media digital space and the way in which greater targeting of advertising and monitoring of content usage can be used to develop new revenue streams. The ease of measuring the performance of particular content has also allowed different terms of trade to be conducted between the content provider and platform. In particular, it has become common for various forms of revenue sharing deals to be agreed. These may involve the content provider getting no upfront payments, but instead an agreed split of the incomes from advertising and other revenue streams.

Additionally there is a blurring of the differentiation between channel and platform that is so clear cut in the 'old world' TV space. In particular, through the combination of streaming content and on-demand content (as well as downloaded material), a platform like an ISP or Internet portal can fulfil the content aggregation role of channels in the old world TV space.

2.3.1.6. Windows

Windows of exploitation are inextricably linked with the TV value chain. Within the television space alone there are multiple windows that can broadly be described (in order of exploitation) as on-demand; first pay, second pay, and free-to-air. These windows are followed by a period of syndication or sale of the programme to secondary platforms and in the international market before the content moves out of the TV space to other forms of exploitation. The value of content to a distributor or platform depends on the window into which it is sold and the exclusivity of that window. It is this value equation that, combined with the cost-plus

Figure 43 : European on-demand revenue (selected countries, €m, 2005)

Country	*On-demand rev.*
Austria	2.1
Belgium	0.6
Cyprus	Na
Czech Republic	0.0
Denmark	23.4
Estonia	0.0
Finland	1.4
France	114.1
Germany	26.7
Greece	2.6
Hungary	Na
Ireland	0.5
Italy	152.1
Latvia	na
Lithuania	na
Luxembourg	0.0
Malta	na
Poland	0.0
Portugal	2.5
Slovakia	na
Slovenia	na
Spain	43.4
Sweden	22.9
The Netherlands	2.2
United Kingdom	141.2
Total	536.0

Source: Screen Digest

Figure 42 : Forecast European on-demand revenue

€m	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Total	536	758	1,017	1,197	1,328	1,386

Source: Screen Digest

financing model of content creation, is creating the primary problems regarding rights for new digital platforms.

Fundamentally, the issue can be summed up with the traditional saying 'he who pays the piper calls the tune.' New digital distribution platforms (by virtue of being new and delivered via hardware that has yet to reach saturation) provide limited revenue opportunities and a distributor or producer is unlikely to be willing to license content deemed valuable to a new digital platform if it believes it will impact the value of a deal with a larger, more established player. Thus, a distributor or content owner may be unwilling to license content to an on-demand window that comes before the main pay TV window for fear of damaging the revenue stream from that pay TV window.

The whole concept of windows emerges as central to the issues faced by new media players in exploiting digital content across multiple platforms. Content is sold on both a time (duration of window and position in the value chain) and a technology (type of platform or mode of distribution) basis. With the rapid development of new forms of TV distribution, today's contracts specify both (as well as frequently stating 'hold backs' from yet-to-be-invented modes of distribution).

However, in the new media cross-platform space, another concept, that of 'usage rights' during a particular window becomes centrally important. Thus, a content owner may want to prevent any form of digital copying or storage during the earliest windows of exploitation in order to protect a future revenue stream from DVD or a paid-for download model at a later point.

These factors operate across the entire value chain over all different technical platforms and will be discussed in more detail as individual issues below.

2.3.1.7. Mobile TV

Although the terms are often used interchangeably by marketers, mobile TV refers to live services while mobile video refers to on-demand clips. Some mobile video services are sold as mobile TV; an example of this would be a news service which consists of a handful of news clips, updated regularly, which the user can access at any time.

Video can be transmitted over conventional (2G, 2.5G or 3G) networks, though the amount of time spent to download a clip over a slow 2G connection would severely test the patience of users. Other than video player software or hardware in the phone, no special equipment is required. Most modern phones with colour screens have a video player built in, and in 2006, 70 per cent of handsets worldwide are expected to ship with video players.

Sports and comedy content are generally the most popular genres. Both portals and operators have been active in growing this market segment.

Mobile TV technologies can be broadly divided into two camps; those which use a network operator's existing infrastructure, and those which do not. The main technologies which use an operator's existing infrastructure are IP broadcast technologies and 'streaming' TV, which is usually delivered over a 3G or 3.5G network.

Streaming mobile TV is a one-to-one technology ('unicast'), similar to watching video clips on web sites. Network bandwidth is a major issue; each user opens a two way connection and so uses up some of the available bandwidth. On a typical 3G network, a single network cell can support around 15 streaming users simultaneously. This can significantly limit the market, as a single cell can cover an area with a radius of around 3km (2 miles). This is not a major issue at present for Europe as 3G penetration is so low and mobile TV services have not reached a mass market. Network enhancements – dubbed 3.5G - allow much greater capacity

Figure 44 : TV programme walled garden on-demand revenue forecast

€m	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Top Five	0.12	0.35	1.05	2.14	2.93	4.26
Rest of Europe	0.05	0.19	0.70	1.75	2.93	4.26
Total TV	**0.17**	**0.54**	**1.74**	**3.90**	**5.87**	**8.51**

Source: Screen Digest

and deployments across Europe have already begun, so these technologies could provide a solution.

Mobile networks offer some advantages over other technologies. As a data network, the services have a 'return path'. The user can not only receive data, but can also transmit requests back to the network. This allows interactive TV services to launch over mobile networks. In addition, there is no upper limit to the number of channels which can be delivered.

There are numerous mobile TV broadcast technologies which do not require a network operator's mobile network to function and can bypass it completely, transmitting directly to users' handsets. The major technologies are DMB, DVB-H, DAB-IP and MediaFLO, a proprietary system of Qualcomm. These are sometimes referred to as 'disruptive' technologies as they can disrupt the conventional value chain.

This is a rather simplified diagram, but it does demonstrate that there are multiple routes to market for broadcasters. What all of the broadcast systems have in common is the potential to reach mobile phone owners without the network operator being involved. The broadcaster does not have to have a relationship with a network operator. However, in practice, almost all mobile TV trials and certainly all live services have involved network operators. Operators are best placed to market services to consumers and also have a large stake in the distribution of handsets.

Services in Europe have just begun to be launched. In Germany, a DMB service run by MDF in partnership with operator Debitel launched in May 2006. In Italy, two DVB-H services were available in June 2006, both run by operators (3 Italia and TIM).

Roadblocks covered in the mobile section of this report affecting mobile TV include:

- spectrum allocation
- conditional access (DRM)
- the cost of building infrastructure
- rights issues (especially confusion over internet versus mobile rights)
- television regulation crossover

It must be remembered that mobile TV, although receiving much media interest and investment, is a nascent market. In the case of broadcast technologies, it is a market literally months old in Europe. One of the biggest concerns is that early regulation may be inappropriate, and the market could resolve many of these issues over time.

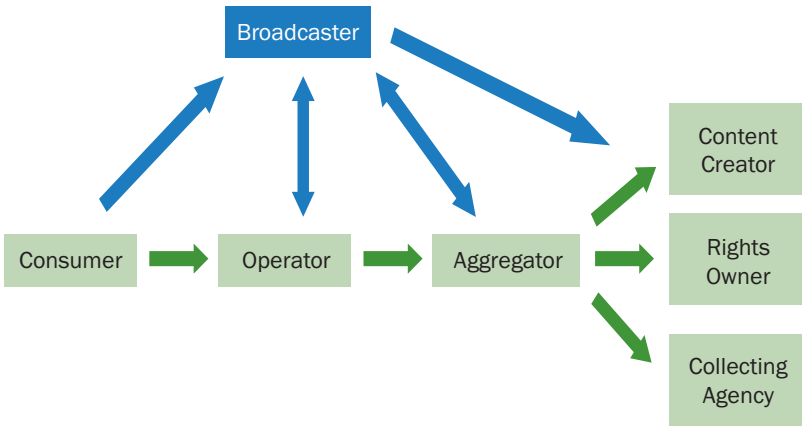
2.3.1.8. Online TV

According to Screen Digest, the European online TV market (open Internet TV as opposed to walled garden IPTV) generated €4m in 2005. The bulk of this revenue was concentrated in the leading Western European territories such as the UK and France, where broadcasters and pay-TV operators have started to take advantage of the Internet as an effective way of distributing content commercially. As similar services continue to develop in other European markets, and major technology firms and portals launch their own offerings across multiple territories, the online segment is likely to become an ever-significant aspect of the total European TV market. By 2010, Screen Digest predicts the European online TV market will generate approximately €700m in consumer level revenues.

Advertising-supported free content will continue to drive usage, meaning that the advertising business model will constitute over 70 per cent of all online TV revenues by 2010. This however will be a decline from the current rate of almost 90 per cent as other business models, chiefly digital retail, become increasingly important to digital service providers. Pure Internet subscription TV models are unlikely to gain much traction in the study timeframe due in large parts to existing rights deals in place on premium content in the traditional pay-TV environment preventing online exploitation (other than as part of a 'value-added' service offered by existing rights holders).

On-demand television content within the walled garden space is now becoming available

Figure 45 : Broadcast mobile TV value chain



Source: Screen Digest

in Europe's more developed markets and we would expect this trend to spread to other EU markets as they continue with the roll-out of digital cable and IPTV services. Many of the TV on-demand services will be offered on a subscription basis and we expect the revenue generated by TV content in transactional (PPV) walled garden services to remain relatively small, reaching just €8m by 2010. Overall, on-demand services within walled garden networks will remain driven by movies and sports.

In total, online TV and transactional walled garden TV on-demand services will represent a fraction of the total pay TV market, which will still be driven by subscription pay TV services. **We expect the total pay TV market to generate €34bn a year by 2010, with online services and TV on-demand representing just two per cent of that total**.

Figure 46 : EU25 - online TV revenues and walled garden on-demand - €m

	2005	*2006*	*2007*	*2008*	*2009*	*2010*
A la carte	0.1	3.7	13.4	40.2	102	138
Subscription	0.4	1	5	18.8	48	65
Advertising	3.9	33	105	200	325	477
Walled garden on-demand	0.17	0.54	1.74	3.90	5.87	8.51
Total	5	38	125	263	481	689
Total pay TV revenue	**21,967**	**23,795**	**25,927**	**28,503**	**31,246**	**34,040**
Revenue as % total pay TV						
A la carte	0.00	0.02	0.05	0.14	0.33	0.41
Subscription	0.00	0.00	0.02	0.07	0.15	0.19
Advertising	0.02	0.14	0.40	0.70	1.04	1.40
Walled garden on-demand	0.00	0.00	0.01	0.01	0.02	0.03
Total	**0.02**	**0.16**	**0.48**	**0.92**	**1.54**	**2.02**

Source : Screen Digest

Figure 47 : Examples of walled-garden VOD services launched in the EU

service	*content*	*distribution*	*launch*
Fastweb	movies, sport, adult, events.	FTTH	2001
Ojo		Cable	2005
Yes Television (VoD)	movies, series	ADSL	1999
BT Freeview Plus	movies	ADSL	2005
Homechoice	movies, series	ADSL	2000
KIT	series	ADSL	1999
FilmFlex	movies, series	Cable	2005

Source : Screen Digest

Figure 48 : Examples of IPTV services launched in the EU

Market	*service name*	*Operator*	*commercial launch*
Austria	aonDigital TV	Telekom Austria	March 2006
	fibre triple play pilot, Telekom Austria	Telekom Austria	2005
	iNode IPTV, iNode	iNode	planned 2006
Belgium	Belgacom TV, Belgacom	Belgacom	Jul-05
Czech Republic	tba	Czech Telecom	planned June 2006
Denmark	FTH Bredband TV, FTH Bredband	FTH Bredband	Dec-02
	TV2 Sputnik, TV2/Nordisk Film	various networks	Mar-05
	TDC TV, TDC	TDC	May-05
	tba, Dansk Bredband	Dansk Bredband	planned May 2006
	service name tba, EnergiMidt	EnergiMidt	planned Q2 2006
Estonia	Elion DigiTV, Elion	Elion	planned 2006
Finland	Maxinetti TV, Maxisat	Maxisat	May-04
	aland.TV, Alands Datakommunikation (Alcom)	Alands Datakommunikation (Alcom)	Jun-05
	Canal Digital IP-TV	Canal Digital	planned 2006
	dna TV, Finnet	Finnet	Feb-2006
France	TPS	France Telecom (MaLigne TV), Neuf Telecom, Alice	Dec-03
	Canal Plus Le Bouquet, CanalSat	France Telecom (MaLigne TV)/Free Telecom/Neuf Telecom	Mar-04
	Free Box, Free Telecom	Free Telecom	Dec-03
	Neuf TV, Neuf Telecom	Neuf Telecom	Nov-04
	Alice Box	Alice	Nov-05
	MaLigne tv, France Telecom	France Telecom	Dec-03
	Club Internet/T-Online France	Club Internet/T-Online France	planned autumn 2006
	Cegetel	Cegetel	planned 2006
Germany	T-Online Vision (VoD only), Deutsche Telekom	Deutsche Telekom	Dec-03
	Alice Movie, Hansenet	HanseNet	Jun-02
	T-Home, Deutsche Telekom	Deutsche Telekom	planned Aug-2006
	Alice homeTV, Alice	HanseNet	May-06
Greece	ElTel	El Telecom	
Hungary	T-Magyar Telecom	T-Magyar Telecom	planned Q3 2006
Ireland	MagnetNetworks TV, MagnetNetworks	MagnetNetworks	Dec-04
	Smart Vision TV, Smart Telecom	Smart Telecom	Jan-05
Italy	Fastweb TV, Fastweb	Fastweb	2001
	Alice Home TV, Telecom Italia	Telecom Italia	Dec-2005
	Tiscali	Tiscali	trial planned Mar-2006
Poland	Videostrada	TPSA	Jun-2006
Portugal	Portugal Telecom	Portugal Telecom	trial 2004
	Climax SmarTV, Novis	Novis	commercial trial December 2005
	Redvo TV, Redvo Telecom	Redvo Telecom	planned Q3 2006
Slovakia	tba, Slovak Telekom	Slovak Telekom	trial planned Q3 2006. Commercial roll-out expected 2007
Market	*service name*	*Operator*	*commercial launch*
Slovenia	SiOL TV, Slovenia Telecom	Slovenia Telecom	Sep-03
	T-2 Television, T-2	T-2	Oct-05

Figure 48 : Examples of IPTV services launched in the EU (continued)

Spain	Imagenio, Telefonica	Telefonica	Q1 2004
	WanadooTV, Wanadoo	Wanadoo	May-2006
	Auna	Auna	planned
	Superbanda TV	Superbanda.net	Nov-2005
	Jazztelia	Jazztel	Jan-2006
Sweden	Sollentuna TV	Sollentuna Energi	Aug-02
	Viasat	B2, other city networks	Sep-04
	Telia Digital TV, TeliaSonera	TeliaSonera	Jan-05
	FastTV.net	FastTV.net	
	Canal Digital	various city networks	Q4 04
	Varberg Digital-TV	Varberg Energi	Apr-06
Netherlands	First Mile TV, NOB Cross Media	NOB Cross Media	May-03
	Mine TV, KPN	KPN	May-06
	Tele 2 Eredivisie, Tele 2 (formerly Versatel)	Tele 2 (formerly Versatel)	Apr-05
	Wanadoo	Wanadoo	planned 2007
United Kingdom	Homechoice, VideoNetworks	VideoNetworks	2000
	KIT, Kingston Communications	Kingston Communications	1999
	BT Vision	BT	planned autumn 2006
	service name tba, Orange	Orange (formerly Wanadoo)	trial planned end 2006
	Tiscali	Tiscali	trial 2005

Source : Screen Digest

2.3.1.9. High definition TV

High definition (HD) is not exactly in the scope of this study because it is per se not a new service or distribution model. HD is only a new standard of picture quality applied in production, transmission and reception, for television, VOD or optical disks (DVD).

However, HD-quality services are viewed as potentially driving European markets in terms of pay TV adoption, average revenue per subscriber, and consumer electronics markets.

There are some obstacles in the migration towards HDTV in Europe, like the cost of bandwidth and the necessity to roll-out new generations of digital set-top boxes supporting MPEG-4 compression systems. But we believe the conditions are ripe and market forces will manage to develop the market successfully, leverage the consumers' expectation for better quality TV. Many HD-quality tiers have been launched in Europe over the first half of 2006 (Sky, Canal+, TPS, Premiere, ProSiebenSat.1 etc) and Europe is under way to catch up with US and Japan.

In terms of production, European companies will have to fight to remain competitive on the international market, as HD production is required and North American competitor have started to switch some years ago.

Remedies suggested

Again, thanks to the HD move of European broadcasters, we believe European producers will find a way to share the costs of switching to HD production.

However the fixed cost of making a new HD master out of catalogue of 35mm works in niche segments or audiovisual archives might be simply not economical. If independent production catalogues and audiovisual archives in some countries cannot be re-mastered in HD quality their circulation could be hampered in the mid-term, as broadcasters and consumers will simply not accept standard definition images.

Here there may be case for state support for cultural diversity reasons.

2.3.2 Generic obstacles to digital TV distribution

2.3.2.1. Collective management of rights in the new media area (2.7)

Platform stake-holders and companies involved in content aggregation (e.g. pat TV and VOD operators) have reservations relating to collective management of rights in new media and the current organisation of some collecting societies. It is reported the system is creating barriers to the exploitation of content both across platforms/technologies and across European markets. Chief among the objections were:

1. **Lack of transparency in the charging structures** of collecting societies and the existence of multiple societies for different rights meaning that users of content were never sure when demands for payment would be made, how much they would be for, what they were based on and when all payments due were made. Uncertainty was also expressed as to whether the charges were based on a rate card that was also applied to competing operators and platforms.
2. Failure to disclose to the distributors/operators the way in which money paid for rights clearances is **distributed** to the copyright owners.
3. An unnecessarily **complex operational structure** among collecting societies and lack of consolidation among the individual societies within a given market, so that numerous individual payments were required to clear rights to a single piece of content. Even within single markets, the number of collecting societies with which separate negotiations had to be concluded was noted as a hindrance to rights clearance. In Poland, for example, it was noted that there are 15 separate societies.
4. The **lack of a streamlined pan-European clearing system allowing the** clearance of rights across multiple territories or platforms. It was noted by a number of stake-holders that, despite reciprocal agreements between societies, any attempt to license content on a pan-European basis required multiple negotiations at a local level when it was increasingly important to streamline this sort of negotiation. In an ideal world, operators would like a one-stop shop for copyright clearance that not only collected all payments due to authors' and copyright holders, but also did so on a pan-European basis. Such a development would fit well with the **EC's recommendation** on collective cross-border management of copyright and related rights for legitimate online music services, although there seems to be scope to extend the scope of this recommendation to *other* platforms and content.

Suggested remedies

A number of suggestions were put forward on how to improve the situation regarding the clearance of rights and compensation paid to artists and performance. While a one-stop shop for European copyrights was put forward as one route, some stake-holders feared that this would create a monopoly situation that would not be beneficial to the development of the industry as a whole.

Another suggestion involved removing the territorial lock that collecting societies have on clearing rights within their home market. This would introduce competition among collecting societies and market forces would then lead to the adoption of best practice. It was also felt that this would force consolidation among societies.

Other than the way in which collecting societies were run and managed, there was a general consensus that the point at which content was fully cleared should be moved back in the value chain from the platform or aggregator to the distributor that is licensing or selling the content. Platform operators stated that their ideal would be to pay a simple, single license fee for the content in the knowledge that all copyrights and royalties had been cleared. In some cases, broadcasters have attempted to take on this role but no uniform practice is currently in place.

2.3.2.2. Demands from rights-holders for new media exploitation (2.2)

A knock on effect of the perceived general market over-valuation of new media rights is that authors' and other rights-holders' societies are perceived as demanding unreasonably high fees for new media exploitation, by some distributors.

For instance, one content owner noted that major broadcasters in the UK had reached agreements with the societies representing scripted drama rights-holders that included unsustainably high payments. In particular,

agreements reached between the BBC and Channel Four with actors union Equity were singled out as being based on an especially high percentage. Equity agreements had previously been very specific on mode of distribution and did not include rights for any form of new media distribution. One French VOD operator said it has been discussing for two years with no less than five collecting societies. So far, their demands are regarded as unacceptable.

In addition, in several countries it was mentioned that negotiations with copyright societies are proving extremely time-consuming to the point of delaying development of new digital services. In each country, there is no global collective negotiation ongoing on new media rights for TV programmes; every VOD operator (independents and telcos alike) is discussing individually with every collecting society. One French service provider, unable to reach an agreement at this point, has decided to go on and set aside ('provisionner') five per cent of revenues in a blocked account in the meantime.

2.3.2.3. License fee issues around MHP (1.4)

Broadcasters and platform operators are concerned about the proposed fee structure for use of the DVB-MHP standard which has now been widely adopted in Europe (particularly in the Digital Terrestrial Television space). DVB-MHP is an open middleware system standard designed by the European DVB project for interactive digital television. DTT platforms in Italy, Finland, Germany and Spain are based on the MHP standard, for example.

MHP was adopted on the understanding that it was an open standard and would thus carry no or minimal license fee payments – which was questioned by industry associations such as DIF. Many broadcasters have then invested heavily in MHP technology and now find that broadcasts using the system will be subject to on-going license payments relating to the pool of patents surrounding MHP.

The licensing programme is being handled by Via Licensing, an independent division of Dolby Laboratories on behalf of patent holders Comcast, Open TV, Panasonic (Matsushita Electric Industrial Co., Ltd.), Royal

Figure 49 : Via Licensing proposed MHP license fee structure

Fee Type	*License Fee*	
Consumer devices	$2.00 per device	
MHP services provided by subscription-based service provider	$0.25 per subscriber (household) per year (Option: One-time five-year license for $1.25)	
MHP services provided by free-to-air broadcasters that do not offer any for-fee services	Total number of households within reach of MHP services (million)	Licensing fee per broadcaster (originator of MHP service) per year
	0 to 0.1	FREE
	0.1 to 2.5	$25,000
	2.5 to 5	$50,000
	5 to 7.5	$75,000
	Above 7.5	$100,000
MHP services provided by free-to-air broadcasters that also offer for-fee services (including but not limited to pay-per-view services)	Total number of households within reach of MHP services (million)	Licensing fee per broadcaster (originator of MHP service) per year
	0 to 0.1	FREE
	0.1 to 2.5	$50,000
	2.5 to 5	$100,000
	5 to 7.5	$150,000
	Above 7.5	$200,000

Source: Via Licensing

Philips Electronics, Samsung Electronics, Thomson, and Time Warner Cable. License fees for MHP services broadcasted free-to-air will not be charged by the MHP patent pool before January 1, 2009.

It is reported that under the current terms set out by Via Licensing, a free-to-view broadcaster with a family of five channels would be subject to annual license fee payments of half a million dollars just to broadcast in MHP. The addition of any form of paid-for on-demand option would add a further $200,000 per service. However, Via Licensing has said that as the 'purpose of the pool is to promote wide adoption of MHP by the market', license fees for MHP services broadcasted free-to-air will not be charged by the MHP patent pool before January 1, 2009.

Nonetheless, several broadcasting stake-holders argue that unless there is a significant reduction in the fees being proposed for MHP, it will no longer be cost-effective to use the technology in Europe. Without a resolution to this problem, the interactive television business (meaning 'red-button' interactive television) will be damaged, they suggest, because multiple standards will be adopted, increasing the development costs of any service or application that runs on the set-top box.

Suggested remedies

It was generally feared that the suggested license fees for MHP would lead to the collapse of the system in Europe and damage any future attempts at European standardisation in the TV space. Negotiations to resolve this issue were considered urgent and EC involvement was mooted as one possible path to resolution.

2.3.2.4. Market confusion over new media rights contracts (2.5, 2.6)

There is a general market confusion over new media rights that is holding back exploitation of content on new digital TV platforms. Older contracts are frequently silent on new media exploitation of rights ('older' in the context of new media can mean as little as a year). Distributors with large archives are particularly impacted as they do not have the rights to make use of their archives on new distribution platforms. For instance one broadcast stake-holder noted that 40 per cent of its schedule was currently held back from broadband simulcast because of rights issues. (See also PACT UK Terms of Trade case study.)

In addition, there is confusion as to whether a time-window right includes exploitation across any platform as long as it is within this time window. A classic interpretation is that contracts that are silent on technical means of distribution do not include rights to that mode of distribution. Thus, the confusion extends both to the time window and the technology and both need to be clearly stated in a contract (along with any specific technology or time hold-backs).

This situation particularly impacts stake-holders with large content archives or libraries who felt that massive amounts of older content could not currently be exploited because the new technologies and platforms had not been anticipated at the time the rights agreements were negotiated and thus the majority of contracts were silent on these rights.

Suggested remedies

A sharp division emerged in opinion over how these issues can be resolved. Television 'exhibitors' like channels, believe that in the future **contracts should be standardised on a time window**, with all means of exploitation permitted within that time window.

Not surprisingly, content owners want to negotiate rights for individual technologies separately and receive payments for each new mode of distribution. On the other hand, broadcasters tend to consider that a right for 'broadcasting' a programme is – by default – valid for mobile or IPTV transmission too, as long as it remains uncut and in real-time.

Several broadcasters agreed that broadcasting rights should be defined by 4 criteria only, irrespective of networks, devices, and technologies:

- Linear vs. non-linear
- Pay vs. free
- Territories of exploitation
- Languages

The issue with selling rights for individual technologies is that it does not remove the economic hurdle of devaluation of future windows by prior exploitation on an alternative technology.

By contrast, while a time window right would leave it up to the rights holder to decide how it best exploits the rights given the available technologies, it would not remove the issue of, for example, availability of a

download during a catch-up TV window damaging future DVD sales.

A time window was only seen as working if the exploitation excludes extended storage and physical media. In addition, it is likely that time windows will have to be both shortened and highly variable because the change in value of a piece of content over time is heavily dependent on the content type. A daily soap, for example, loses its value far more quickly than a documentary.

These concepts also have implications for the duration of catch-up windows currently being negotiated by broadcasters as the value of content will be impacted differently by a catch-up window of a given length.

The general consensus among players involved in every step of the value chain (with the possible exception of collecting societies) was that rights in the future must be sold on a technology neutral basis and some form of time window (possibly combined with mode of exploitation) was the only way to proceed. The suggestions ranged from minor modifications to business practice in which the traditional windows (on-demand TV, Pay TV, Free TV) were maintained, but within those exploitation on all technical platforms was permissible, to a complete re-think of the concept of time windows that related to the content type and its specific lifecycle (see Fremantle case study). It was noted by several broadcasters, however, that content owners were on the whole so far reluctant to agree contracts that were technology neutral.

On the issues of library content it was suggested that new media rights should be automatically granted for content which contracts had not specifically mentioned or excluded new media, because renegotiation can prove impossible in some cases simply because the works is 'orphan' (one or more rights-holder cannot be located).

This would clear the back log and block on older content, but doubtless prove less popular with the content producers and copyright holders. Collecting societies argue against any form of automatic devolution on behalf or moral right. They also argue that in most countries there are well-established procedures allowing clearance for archive material 'orphanated', which was confirmed by several broadcasters in the case of France for instance. (the issue of devolution and orphan works are analysed in detail in the legal section of this report)

2.3.2.5. Dominant players' issues (2.3)

Dominant players are encountered at every stage of the television value chain and may be either sellers or buyers of content or services. Most of the issues surrounding dominant players that were raised by stake-holders related to the usage rights surrounding content and the demands made in contracts relating to such.

Smaller content owners believe that there remains an imbalance in the free television market due to the limited number of national broadcasters of scale. Despite the introduction of regulations intended to allow content owners to keep ownership of new media and ancillary rights in some markets (e.g. UK and Germany), major broadcasters still hold dominant negotiating positions by virtue of being limited in number and of a scale that makes agreement of a distribution deal crucial to content owners and distributors.

Major broadcasters are trying to obtain all-platform digital rights to content that they acquire and are also trying to incorporate 'catch-up' on-demand rights as a standard contract clause. Content owners and major broadcasters frequently operate on the understanding that lack of agreement over new media and catch-up rights is a deal breaker. Such unwritten understandings are therefore very difficult to regulate against.

A number of smaller players and new market entrants (like telcos) feel they are priced out of the market when it comes to key premium rights like soccer and Hollywood movies.

Despite efforts by regulators to encourage the sharing of premium sports and movie rights, smaller or new operators are not able to compete in negotiations with established players. Moreover, rights-holders are not willing to license content to smaller players if it will damage the value of a contract with the major player in the market or potentially damage a business relationship with such a player.

Suggested remedies

With digital technologies allowing numerous new ways to distribute and 'slice' content, it is clear that there is more that could be done to encourage or force a wider sharing of key rights, through commercial negotiations or competition decisions.

2.3.2.6. Protection of existing revenue streams (2.4)

All operators, platforms and content owners were clear that significant development of new digital exploitation platforms and business models was being held back by a desire or need to protect established sources of income. It was widely understood that exploitation of a piece of content in a prior time window or on an alternative platform (either before or simultaneous with the established main platform) devalued the content.

The conundrum is that new digital platforms do not yet have the scale to produce enough income to make up for the devaluation of content to the established platform. Thus, on-demand exploitation is seen as reducing revenue from the pay TV window, while broadband download or streaming is seen as damaging revenue from DVD. It was thus considered that new digital platforms were restricted largely to niche and second tier content for the time being.

Only in cases where a piece of content was so valuable that it would still maintain its value across all exploitation windows were experiments with new media platforms widespread. The example of Desperate Housewives licensed to iTunes in the US was noted.

In some instances, it is sometimes felt that, when well managed, near-simultaneous multi-platform distribution (broadcast, VOD, DVD) can increase the awareness of a given TV programme and maximise primary audience, rerun asset value, and revenue for content owners. For instance, in France, high-profile TV drama (Les Rois Maudits) and natural history documentaries (L'Odyssée de la vie) were made available for streaming and download-to-own from France Televisions' and third party vodeo.fr VoD platforms.

Suggested remedies

Some content owners considered that the only way to break this cycle was for a platform to offer a minimum guarantee for the content that would match the revenue from established windows and sources. A platform would thus have to have the nerve and financial muscle to buck the market by taking on the risk of lost revenues from the traditional value chain. While it was considered inevitable that such a move would occur, it was noted that few new digital platforms currently have the scale to take on such a risk. The already-mentioned vodeo.fr platform, specialising in TV documentaries, does not offer minimum guarantees but takes on upfront digitisation costs and offers revenue sharing.

With newly commissioned content, however, there is another way in which these economic roadblocks could be removed or mitigated. Internet aggregator companies like AOL and MSN have shown that by acting as the commissioning party for TV content, they leap over all of the rights issues and end up as the primary broadcast outlet (taking the role of both channel and platform). The content could then be sold on in the usual way to traditional channels or platforms which then fulfil the role of secondary broadcaster or syndicator.

Another strategy that is emerging in the new media space that can be seen as a way of working around the barriers imposed by traditional business practices is the development of unique added-value content around a popular TV show that is broadcast exclusively in the Internet or mobile area.

When done in partnership with the main traditional broadcaster of the content, this can add value in acting as an additional promotional tool of the producer and broadcaster as well as allowing them to capitalise on the power of the Internet to target advertising and incorporate e-commerce and merchandising opportunities. In addition this business model provides additional pre-financing for the content producer through the ancillary deal with the new media platform owner.

2.3.2.7. Disparate valuations of new media rights – terms of trade (2.1, 2.2)

Most stake-holders expressed a concern that there are widely diverging assumptions in the market about the value of new media rights/windows and that content owners generally considered that they were worth far more than could be justified on current economic models, according to service providers.

This economic road-block is inextricably linked to the desire among content owners to protect existing and established revenue streams and business models.

While a platform or operator may argue that they cannot make money from new media exploitation on the terms and values being demanded by content owners, the content owners can justifiably argue that the value placed on the content also relates to loss of revenue from other windows as a result of prior or concurrent exposure of the content

on new media platforms. Nonetheless, the high value of new media rights is seen as generally holding back the market.

Suggested remedies

When pay TV was launched in Europe in the late 1980s, and again when PPV was launched in the 1990s, some US majors negotiated what they would later consider as very bad output deals and were then lastingly traumatised and reluctant to give away any other rights. This illustrates the fact that early deals can easily be bad deals for one or the other party when markets and business models are nascent for a new exploitation window. That is why so many content owners are favouring a wait-and-see approach from the time being. That is also why we are confident market forces will be able to progressively find a way to converge towards typical, if not standard, valuations and deals, just as they were ultimately able to do with pay TV and PPV rights/windows 15 years ago.

2.3.2.8. DRM issues (5.5)

Issues surrounding DRM were mentioned by several stake-holders, although it should be mentioned that Nonetheless, some issues were felt to currently act as road blocks, including the lack of interoperability between television and broadband DRMs. It was also noted that some content owners (Hollywood majors were singled out by several stake holders) were making unreasonable demands for DRM and piracy protection that were acting as a block on the roll out of some services dependant on this type of content.

Suggested remedies

The interoperability issue is mostly raised by music stake-holders but with mobile i-pod-like devices managing audiovisual content now, audiovisual content owner and service providers are starting to mention interoperability as a potential obstacle in the future.

However a large number of television stake-holders feel that DRM should *not* be subject to interoperability regulation at this stage. It is partly because many television operators, at least commercial pay TV operators, have developed proprietary technologies themselves in the not-too-distant area of Conditional Access Systems, and they dislike any idea of mandated inter-operability in such matters.

2.3.3 'Red button' interactive TV

By 'red button' we refer to interactive TV services offered on traditional broadcast digital TV (e.g. satellite TV), with a return-path. Some of classic 'Red Button' functions can even be implemented without a return-path, in which case 'interactivity' is provided by the data pre-pushed to the set-top box (e.g. weather forecasts, EPG). The 'red button' on the remote control was initially invented by BskyB in the UK and became popular across the board as the entry point to interactive TV services such as Electronic Programme Guides, information services, t-commerce, casual games, etc .

The technically limited 'Red Button iTV' differs from the full interactivity offered on two-way broadband networks (online TV or IPTV).

2.3.3.1. Middleware standards for interactive television (1.4)

The use of multiple middleware systems across the European pay TV space is impacting the 'red-button' interactive television industry and can be seen as an economic roadblock. Each additional middleware system means additional development costs.

Interactive content developers are aware that it is not possible (or, indeed, reasonable) to impose middleware standards on commercial pay TV operators, but are wholly supportive of European standards initiatives surrounding DVB and MHP. However, there are fears among stake holders that licensing issues relating to MHP will destroy the standard in Europe and some developers bemoan the failure of European regulators to intervene in the issue.

By contrast, in the US, industry players have managed to reach a satisfactory agreement over licensing of the US equivalent of MHP, the OCAP middleware used by the cable industry.

2.3.3.2. Regulation of 'interactive TV' (4.2)

Currently there is no standard definition of 'red-button'-type interactive television at a European level. Such definitions are also lacking at a local regulatory level. Interactive television is defined by trade body AFDESI as: a service that allows the viewer to interact with the television content or programme. To define interaction AFDESI says that the user action must have a result on screen.

Lack of a regulatory understanding of interactive television means there is no clear way of regulating the sector. In turn, lack of regulatory clarity is leading to failure to invest in the sector. There is also no standard definition at an EU level.

AFDESI uses the example of French regulation to highlight the issue of definition failings at a regional level. Since the implementation of the Telecoms Directive in France there has been new regulation relating to iTV. The regulation recognises two forms of service: Audiovisual Communications (which falls under the governance of the Conseil Supérieur de l'Audiovisuel, CSA) and Public Communication Line which falls under ARCEP (the new French telecoms regulator, formerly ART). But there is no clarity over where interactive TV services fall. AFDESI's view is that iTV services that are part of a television programme fall under the Audio Visual definition and are therefore regulated by the CSA. But stand-alone services fall under Public Communication and therefore under the ARCEP regulation.

This lack of clarity also impacts the way in which advertising can be sold around interactive services because of the different regulations relating to broadcast and telecoms. Interactive services that fall under public communication definitions are subject to telecoms type Internet rules. Services falling under the CSA, however, are subject to TV restrictions on advertising. AFDESI believes most channels are avoiding use of iTV because of the lack of regulatory clarity.

2.3.3.3. Dominant player and gatekeeping issue: Interactive service providers (5.1)

The European trend towards a single dominant force in the pay TV space in each country is seen as detrimental to the survival of small interactive television content developers.

In most major European markets there is now a single dominant DTH satellite pay TV operator and a single dominant cable player. Interactive TV developers believe that three to four strong platforms are necessary in each country for a competitive market. They argue that in the UK, where Sky dominates the pay TV market, it is almost impossible for interactive service developers to make money because of the commercial terms offered by Sky. They claim that all non-Sky interactive services in the UK are losing money and that the decision by national commercial broadcaster Channel Four to stop 'red-button' services was an illustration of the economically unviable terms offered by Sky to third-party players.

2.3.4 Walled garden networks

2.3.4.1. 'Must-carry' rules on digital services (4.2)

It was also felt that the issue of 'must-carry' regulations (stipulations that certain channels must be re-broadcast), which apply to cable operators, was confused in the IPTV sector. In particular, television channels that have must-carry status on cable (and therefore do not receive carriage fees from cable operators) feel that must-carry should not also be applied to IPTV. For instance this issue was raised in Spain where Telefonica was able to switch its cable license to a license for IPTV and is trying to get must-carry status for its platform in order to access the national commercial channels for free. In Poland where the must-carry issue on cable is still highly controversial, it is bound to raise even more confusion on IPTV.

Channels also objected to the application of must-carry rules to digital terrestrial television platforms because they felt they were not being reimbursed for the investment they had made in digital television. Indeed, the whole issue of the extension of must-carry rules to digital channels was a contentious one, with channel operators strongly against the application of must carry to any digital service.

2.3.4.2. Exclusivity issues (2.3)

Rights-holders encounter issues with dominant players when negotiating with platforms. This directly impacts channel operators as there tends to be a downward pressure on carriage fees paid to include the channels in a pay television package. It also impacts content owners licensing movies and programming for on-demand services operated by such players. In common with most 'exhibitors' in the TV space, platform operators are seeking all-platform rights to allow them to exploit content across broadband and mobile. Content owners increasingly have to sign away such rights as part of standard agreements.

In addition, dominant platform players tend to impose hold-backs on exploitation of the content on alternative platforms for the duration of the contracts negotiated with them. That means that they are effectively demanding cross-platform exclusivity across

the entire digital exploitation chain (regardless of whether they have services across all areas of the digital value chain).

2.3.4.3. Unbundling of incumbents' networks disincentivising investment in new infrastructures (1.1)

Some network operators claim that unbundling of incumbent broadband networks created a disincentive to investment in new transmission and telecoms infrastructure because it was cheaper and easier to make use of regulated access to the existing national telecoms network. It is felt that, over the longer term, this could have a negative impact on the market as a whole.

In particular, cable operators and fibre-to-the-home network operators that a few years ago were investing in new infrastructure roll-out, now see the use of DSL (combined with exchange unbundling) as a cheaper way to reach new customers and thus have little incentive to invest in systems to provide a competitive choice of broadband infrastructure.

2.3.5 Online TV (Internet based TV)

2.3.5.1. Piracy and the protection of TV content (3)

The television industry is now facing the same issues with piracy that have already been faced by the music and movie businesses. Popular TV programmes are commonly available within hours of first broadcast on file sharing networks like BitTorrent and Kazaa. BitTorrent alone is thought to account for 30 per cent of all Internet data traffic and 60 per cent of that traffic is video content. In one single month during 2005, there were 350,000 downloads of the four most popular US TV shows via BitTorrent. While this is clearly an economic issue, regulation can play a role in the prevention of such piracy but will have to go hand in hand with the development of new business models that allow content owners, channels and platforms to provide a legal alternative to the illegal peer-to-peer file sharing networks.

Remedies

Specifically regulatory intervention should continue and intensify with regard to:

1. Minimum standards for content protection which could form part of a wider European requirement for DRM and content protection in the new media space.
2. European wide agreement on the policing and prosecution of copyright abusers in the digital space. This may simply involve standardisation of the way in which cases of copyright abuse are tried. Unification of the way in which individual and commercial copyright abusers are dealt with across European territories.
3. Common understanding and legal treatment of peer-to-peer networks and the concept of fair usage.

2.3.5.2. Emerging dominance of Windows Media Player (5.1)

There is a general consensus among stake-holders that **Windows Media Player is emerging as the dominant video player in the broadband television space**.

Few players raised this as a particularly negative issue, noting that commercial forces and scale (particularly of player installed base on client machines) was driving the adoption of the software. However, some stake-holders noted that a non-proprietary open-standards system may be preferable. Nonetheless, given the licensing issues surrounding MHP, it is important to note that Microsoft is making Windows Media available for free.

2.3.5.3. Standardisation of meta-data (1.4)

Operators, technology providers and content owners believe that there would be benefits to a **standardised system for the tagging of digital content with so-called 'meta-tags'**. These are text-based informational tags which contain information about, among other things, the content type, copyright and ownership. Standardised meta-tags would help with the gathering and sharing of information on content usage across multiple platforms.

Currently many operators working with digital content have developed their *own* systems for meta-tags, information gathering and reporting, and do not particularly see that there is a problem that is preventing the development of the digital television business. However, as cross platform distribution of content develops and advertising models

evolve, it will become increasingly important to be able to share information stored in meta-tags.

2.3.5.4. Access to content for on-demand and broadband exploitation (2.5)

Platforms are encountering difficulties in obtaining access to content for subscription on-demand services (SVOD) because of unclear definitions over window rights. Effectively, the dominant pay television operator in each market usually has a lock on SVOD rights by virtue of buying exclusive pay TV window rights. On-demand rights that are offered on a monthly subscription basis are generally considered to represent pay television exploitation or at least fall within the pay TV window.

In addition, economic factors are also impacting access to on-demand rights. Again, rights holders are reluctant to license content if they think it may damage the value of a deal with a dominant player (generally the main pay TV platform in each country). As the on-demand window comes before the pay TV window and because an exclusive pay TV deal is worth far more than the limited revenue that would be derived from on-demand exploitation, content owners still hold back content from on-demand services.

2.3.6 IPTV

2.3.6.1. Regulatory definitions of TV in the telecoms, Internet and mobile space (4.2)

The issue of what constitutes television and thus how a platform providing television services is regulated was raised by a number of stake-holders in several countries. Despite a general European move towards deregulation, there is a disparity between the regulation of old-world TV platforms (terrestrial, cable, satellite) and new delivery technologies like IPTV (sometimes also referred to as DSL TV).

IPTV is widely regulated under telecoms law, despite providing a full-channel pay television service in every way equivalent to those on cable. While there was a general consensus that this had had **limited negative impact on the market to date**, there was a feeling that this could impact the way in which adult content and advertising content was regulated.

Generally it was felt that the European drive towards technology-neutral regulation was a positive step. However, there were suggestions that this still seemed to be differentially applied to telecoms platforms and cable and satellite. It was also felt that open Internet platforms operated in a particularly free regulatory environment and that consumer protection had so far been reliant on self regulation in this space.

2.3.6.2. Tying of broadband access with IPTV (4.2)

Concerns were expressed by some stake-holders about the compliance with competition rules of tying Internet access through a particular ISP with access to the ISP's related IPTV service. Stake-holders believe that this may constitute anti-competitive behaviour as incumbents, in particular, are able to make subscription to a monthly broadband Internet service a pre-requisite for getting access to a related television over DSL service. It is contended that large players that are able to fund the launch of a DSL TV service therefore have an unfair advantage in the sale and marketing of broadband Internet access.

The tie of broadband access services to IPTV was also felt to be an abuse that was not being picked up by current measures to identify anti-competitive services. In particular, the widely used 'price-squeeze' test, designed to identify insufficient margins for alternative operators in incumbent wholesale pricing was no longer effective when incumbents were offering tied and bundled packages. It was argued that new regulatory tools were required to identify price squeeze in bundled products.

2.3.7 Mobile television

2.3.7.1. Legal definition of mobile TV (4.2)

The issue of defining television in relation to mobile was raised by many stake-holders.

Like IPTV and open Internet broadband TV, mobile TV is currently regulated under telecommunications regulation rather than broadcast regulation. Concerns were raised that, as future free delivery models supported by advertising evolve, this could lead to uncertainty over what is and is not permissible in this space. It was also noted that uncertainty regarding regulatory responsibility existed in regard to developing mobile TV platforms that make use of DAB and DVB broadcast technology rather than 3G or GPRS mobile networks.

Questions arise as to whether mobile television based on broadcast technologies (rather than one-to-one telecommunications

technologies) will be regulated under television or telecoms law or both. For instance, the television law is to be updated in 2006 in France to address, amongst other things, mobile TV.

2.3.7.2. The need for A EU-Wide spectrum allocation (1.3)

Several stake holders noted that there was an emerging need for EU-intervention in spectrum allocation, particularly with regard to spectrum use for mobile television. This issue is likely to become increasingly important over the next two to three years as analogue switch-off dates are reached. (see also discussion in 'Mobile' section) in chapter three.

2.3.8 Case study 3: Fremantle Media

2.3.8.1. Profile

Fremantle Media is the content division of pan-European broadcast group RTL and a major television production and distribution company. The company is headquartered in London.

Today's FremantleMedia is the product of a series of mergers and acquisitions. The company was formed in 1995 when Pearson Media acquired Australian production group Grundy, merged it with its Thames Television production group and renamed the whole division Pearson Television. In 1997, the assets of All American Television were added to the pot. Then in 2000, Pearson Television was acquired by CLT-Ufa, forming the RTL Group. The merger also brought CLT-Ufa's Pan-European channel operations and its Ufa Film and Television production company as well as Trebitsch Produktion into the fold.

Fremantle has over 8,500 hours of programming in its library and production assets in 25 countries managed by Fremantle Worldwide Production. A second division, FremantleMedia Enterprises, develops ancillary rights and manages Fremantle International Distribution, which distributes 19,000 hours of programmes to broadcasters in 150 countries worldwide.

2.3.8.2. Story

As a producer and distributor of content and a sister company to a major international broadcast group, Fremantle is involved in every step of the TV value chain. As a distributor it is responsible for negotiating rights deals with every type of traditional and new media distribution platform, while as a holder of a large programming library, it is involved in negotiating and re-negotiating rights deals from the other side of the spectrum, attempting to acquire itself new media rights for content.

The breadth of Fremantle's involvement in the TV value chain was reflected in the diversity of roadblocks that the company encounters. As a producer and distributor, Fremantle is faced with dominant player issues in rights negotiations at both an aggregator and platform level and for both linear and non-linear television. As a buyer of rights for distribution, it is affected by collective rights agreements and royalty and copyright collecting issues. Further, it has experience and views on the economics of the content exploitation chain and the balances that need to be achieved in order to reduce the economic roadblocks created by the desire to protect existing revenue streams.

2.3.8.3. Right clearance issues

Fremantle raised a number of issues regarding collective management of rights and the organisation and operation of collecting societies and artists' associations. The high value placed on new media rights by artists' associations was seen as a particular roadblock.

The precedent set by broadcasters in negotiations, which in some cases Fremantle believed had been rushed through, has contributed to this inflated value. Uneconomic terms agreed by broadcasters meant negotiators now expected to get similar terms from others.

Further, the length of time required to complete negotiations with artists' societies was proving a roadblock to exploitations. This was especially true for archive content leading to a situation were large amounts of archive material simply could not be exploited on new media platforms.

2.3.8.4. Dominant player rights issues

Fremantle believes that a handful of free-to-air broadcasters (generally those few with national terrestrial distribution) hold dominant positions in the broadcast market. As such, these broadcasters are able to negotiate deals that include all new media rights. Independent producers in particular are impacted by this. The degree to which this is a problem varies by market. Germany in particular was singled out as a market in which producers face 'a deal or no deal' ultimatum: 'agree to the broadcaster's terms regarding new media rights and exploitation or there will be no agreement'.

Fremantle also noted that some broadcasters simply used the new media rights without any prior permission or agreement. There was a feeling that producers were completely powerless. Suing your customers, especially when there are so few of them, is simply not an option.

A related issue regarding major broadcasters was the trend towards inclusion of catch-up rights in contracts between broadcasters and producers. These were also seen as problematic for producers and a road-block to the later exploitation by the producers (on occasion when they were able to retain new media rights) of ancillary revenue. In particular, a 'one-size-fits-all' catch up window was seen as damaging as it takes no account of the way in which the value of different content is affected. Certain types of content lose value almost immediately following first broadcast; other types have a long shelf life. Thus, a seven day or longer catch-up window for free-to-air broadcasters was seen as too long.

2.3.8.5. Economic issues

As a distributor and user of ancillary rights, Fremantle was also acutely aware of the economic issues acting as a roadblock to new media exploitation. Desires among distributors to protect secondary broadcast windows and DVD windows meant that distributors often impose complete hold-backs on new media exploitation that may last for the entire duration of the distribution agreement (several years, for example).

This was seen as a market issue for which there would have to be a market solution. Once a new media player can match or underwrite the potential lost value from traditional means of exploitation, this economic roadblock would disappear.

2.3.8.6. Suggested remedies

Fremantle believes that there may be a role for regulation in the issue of windows of exploitation and exclusivity. Fremantle believes that rights contracts, windows and exclusivity can only be negotiated on a time basis rather than a technology or platform basis. Thus with the expansion of new media platforms it is no longer relevant to license cable rights, satellite rights, IPTV rights (that is by technology) and likewise the concept of windowing by business model or mode of exploitation (e.g. pay TV rights, free TV rights, on-demand rights) no longer works.

Instead, Fremantle suggests, the concept of licensing should be based on exclusive time periods during which all rights, all technologies and all modes of exploitation are included. Thus, there may be a 'first 48 hours exclusive window' during which the broadcaster could distribute the content on TV, on the Internet to mobiles and to any other broadcast medium available. After this period of exclusivity, the content may be made available to other broadcasters and platforms on a non-exclusive basis.

According to Fremantle, such license agreements would be capable of differentiating between the different value lifecycle of various types of content as well as making the revenue share and other participation business models far more transparent between the content owner and the broadcaster/rights exploiter.

2.3.8.7. Lessons from case study

Fremantle's case is interesting because in many respects it sits on both sides of the fence regarding new media exploitation of content. As a company, it faces the problems experienced by creators of content; by buyers of content and by sellers of content. Further, its entire business model is impacted by the economic roadblocks that affect the TV value chain. As such it is well placed to comment on the issues faced by the industry as it searches for solutions.

The redundancy of licensing rights on a technology basis was noted by a number of other stake holders. The suggestion that rights should be licensed on a time window basis was also put forward by a number of players. Broadcasters and platform operators almost unanimously stated that best practice would be to be able to license all media/technology rights for their typical window (i.e. free TV or pay TV).

2.3.9 Case study 4: PACT terms of trade agreement (Best practice)

2.3.9.1. New media rights in the UK

Under revisions made to the UK Communications Act (2003), intellectual property rights of independently produced programmes were deemed to reside with the producer. This modification led to the introduction of new Terms of Trade between the major UK broadcasters and independent producers, represented by trade association PACT (Producers Alliance for Cinema and Television). This development was the first solid recognition of the potential value of new media rights and of the right of the producer to maintain some control over those rights.

Major broadcasters agreed Terms of Trade following the introduction of the new Act that recognised the rights of independents. With the planned introduction of so-called 'catch-up' services delivered over broadband (whereby the viewer can view over broadband or mobile a programme broadcast on television after its first transmission), the broadcasters approached PACT to modify the Terms of Trade. Negotiations have now been concluded with the BBC, ITV and Channel Four - and Channel Five is expected to agree terms shortly.

The agreements (and the original 2003 Terms of Trade – see also legal section of this report) are important in that they shift the negotiating power with regard to new media rights away from the dominant national broadcasters and back into the hands of the independent producers. They set a precedent that recognises that the funding agreed for a commissioned programme is only for exploitation by traditional broadcast and all new media rights (broadband, mobile) are subject to separate negotiation.

The new Terms of Trade also address issues surrounding hold-backs on content and the revenue sharing models that are allowed by new technology like broadband and mobile.

Prior to these new negotiations, broadcasters had kept a five-year hold back on exploitation of new media rights meaning that, despite the fact that it was recognised since 2003 that new media rights resided with the producer, they could not be exploited during the period of the five-year broadcast contract. This was designed to protect the value of the broadcast window.

With the new Terms of Trade agreed in June this year (2006), the way in which hold-backs work has been modified. The broadcasters' hold-back period has been drastically shortened and clauses introduced that allow the producers to participate in revenue generated from new media exploitation during the period when the broadcaster controls those rights.

The Terms of Trade vary slightly with each broadcaster but are fundamentally similar in the following respects:

1. In recognising the rights of independent producers to maintain control of new media rights.
2. In agreeing terms under which producers can participate in new media revenues
3. In recognising that new media rights revert back to the producer after a relatively short hold-back during which the commissioning broadcaster can exploit the new media rights.

Specific clauses within the individual broadcaster agreements are worthy of mention because they address some of the other issues that arise during new media rights negotiations. Issues that were addressed include the different business models surrounding downloaded and streamed content. They also show that, through negotiation, different broadcasters have been able to agree with PACT a variety of 'catch-up' durations depending on their specific new media plans.

2.3.9.2. The BBC

With regard to catch-up rights on broadband, a seven day floating window was agreed. The catch-up window does not begin until the viewer begins to watch the content.

Thus, the viewer can download and store any piece of content and keep it for a maximum of 30 days during which time he can watch the content at anytime. Once viewing has begun, it must be completed within seven days, after which the content expires. With regard to series, viewers can download any episode at any time during the broadcast period of the entire series on this basis.

The content will be provided for free to the viewer. However, there is a facility to allow the BBC to make content available after this period or in international markets on a pay-per-view basis. Under these terms, producers will receive 75 per cent of the revenue generated by each PPV transaction within the five-year licence period.

2.3.9.3. ITV

ITV agreed a 30-day catch up window following first transmission. The duration of contracts was kept at five years, but the hold-back (during which time producers cannot sell new media rights to third parties) was again shortened to six months.

Revenue generated from ITV's planned broadband VOD service will be split 50/50 with the producer. ITV introduced a different hold-back for returning series (second, third, etc, series of a popular programming franchise). There is a 30 month hold-back on the exploitation of new media rights by third parties for returning series.

2.3.9.4. Channel Four

Channel Four agreed to reduce its standard licence period from five years to three years. Channel Four also agreed a 30 day catch up and a six month hold-back on new media rights sales to third parties. During these six months it retains VOD rights on a revenue share basis with the producer. It does not get any right to download to own, however. Where content is made available for free on broadband, the producer will receive a royalty payment.

2.3.9.5. Lessons from case study

The UK Terms of Trade agreements address several issues that have been raised by stake-holders during this study. They detail the exact nature of the relationship between broadcasters and independent producers and make clear what rights are actually being purchased during the programme commissioning process. They also recognise the broadcaster's right to exploit the content on new media platforms giving them a window of opportunity to fully exploit hit shows across all platforms and monetise those platform opportunities (on reasonable terms with the producer). This therefore recognises the risk taken by the commissioning broadcaster in funding new shows. Further, after the relatively short hold-backs, they leave independent producers free to make new media rights available to third parties, thus providing a means by which new platform entrants not associated with a major broadcast group can get hold of high-quality original TV content.

2.4 Games

2.4.1 Summary of main roadblocks

See table below for a snapshot of main roadblocks.

2.4.2 Digital value chain

2.4.2.1. Value chain for digital distribution in games

Digital distribution is involved in a number of separate games markets. Loosely these markets can be split into two different types:

- Games content (complete games, expansion packs and games clients for online games) that is distributed using digital transport technology such as the internet or mobile networks.
  —Under these circumstances the channel is utilised as a straightforward sales and product distribution channel.
  —Examples include the download to own mobile, casual and core games markets.

- Games that are played through the digital distribution channel. Under these circumstances the channel is a transport mechanism for data utilised to deliver a form of gameplay experience.
  —Some of these games are free to play, while others use the channel as a way to monetise their product or service.
  —Examples include massively multiplayer online games, other online PC and console games, interactive TV games and games on demand markets.

There are an increasing number of game types that fall into both these categories including MMOGs and other online PC and console games where distribution and gameplay takes place via the digital distribution channel.

2.4.2.2. Digital distribution channels for games

At present the following channels are used for the digital distribution of games.

- Internet: The internet is the primary transport channel for the digital distribution of games. Although games have used narrowband internet services for many years, the market has become increasingly broadband internet service reliant. The emergence of broadband internet access has also helped drive the evolution of new online games markets. Markets that leverage this transport mechanism include digital download of games (both core and casual), streaming

Snapshot of main roadblocks for games digital distribution

	Digital download	*Games on Demand*	*Browser casual games*	*MMOGs*	*Television online console*	*Handheld online console*	*Interactive TV games*
Broadband penetration	EU wide	Southern and Eastern Europe		EU wide	EU wide	EU wide	
Localisation –Porting	EU wide	EU wide	EU wide	EU wide	EU wide	EU wide	EU wide
DRM (standardisation and consumer perception)	EU wide	EU wide	EU wide				
Billing	EU wide - especially Germany	EU wide - especially Germany	EU wide - especially Germany	EU wide - especially Germany	EU wide - especially Germany		
Standardisation							EU wide
Incumbent resistance	UK, France, Germany, Italy, Spain	UK, France, Germany, Italy, Spain					
Competition	EU wide						UK
Age classification	Germany	Germany		EU wide - especially Germany			
Piracy	EU wide	EU wide	EU wide	EU wide	EU wide	EU wide	
Sales tax	EU wide	EU wide	EU wide	EU wide			

Source: Screen Digest

of games, browser based casual games, MMOGs, online television and handheld console games, core PC online games and some forms of internet protocol television (IPTV) interactive television games. As suggested above games markets are often defined by the platform that is used to access the internet.

- Digital television: Digital television (DTV) through satellite, cable and terrestrial networks is used to deliver interactive television (iTV) games to users. The emergence of IPTV services means that there will increasingly be a convergence between traditional DTV channels and the internet as distribution channels for iTV games.

- Mobile internet: Please see the mobile content section of this report for further details on mobile internet definitions.

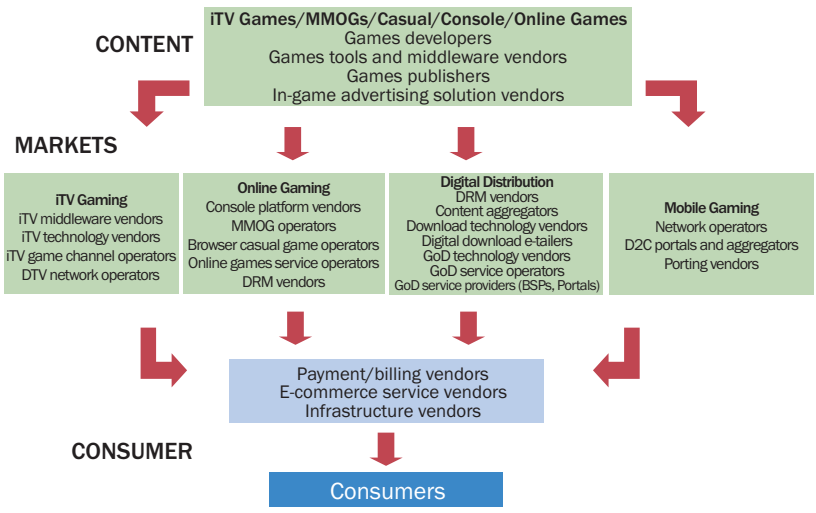
Figure 50 shows the different games digital distribution markets considered in this report, and the major stakeholders that are active in each market.

Below we define the separate games markets and examine the major stakeholders of the different markets within the digital distribution of games spectrum.

Digital download of games

Games digital download is the direct, retailer-to-consumer distribution of games via the Internet under an outright (or, very occasionally, subscription) purchase model.

Figure 50 : Games Digital Distribution Markets & Major Stakeholders



Source: Screen Digest

Consumers pay for games or premium games content (such as add-ons to existing games) through an ecommerce site or other online service, which allows them to download the games onto their PCs, consoles or mobile devices in their entirety.

The digital download value chain is made up of the following stakeholders:

- E-tailers
- Download platform and network operators
- Content aggregators
- DRM vendors
- E-commerce vendors
- Infrastructure vendors
- Games developers
- Games publishers
- Billing solution vendors

Streaming of games

Application streaming (commonly marketed as Games on Demand or GoD) is a broadband-only service where games application data is downloaded to a user's PC on a continual basis as and when needed. Games are never downloaded in their entirety although – depending on the technology used – significant portions of the game tend to be cached (pre-loaded) on the user's PC to improve the efficiency of the application streaming process. Often, the game interface is installed on the user's PC, giving the semblance of a full game installation and the actual game application is run on the local PC rather than on the server. The server therefore simply acts as a remote hard drive from which, for example, level information (layout, art, animation, artificial intelligence data, etc.), is drawn at the appropriate time just as the application would have done with a local hard-drive.

The GoD value chain is made up of the following stakeholders:

- GoD service providers (mainly portals, broadband service providers and large media companies)
- GoD content aggregators and service operators
- GoD platform technology vendors
- DRM vendors
- Infrastructure vendors
- Games developers
- Games publishers
- Billing solution vendors

2.4.2.3. Online gaming

The online gaming market is made up of a number of different sub-markets. These are:

Browser based casual games

These usually take the form of instant or quick download games with simple, intuitive gameplay, aimed at casual and/or inexperienced gamers. However, usage statistics suggest they are capable of providing no less compelling a gaming experience than deeper, more complex massively multi-player and boxed product games. Examples of popular genres include skill, card, puzzle and word games. Browser and browser plug-in-based games typically use open internet technology standards, such as Flash, Shockwave and Java, or proprietary platforms such as Wild Tangent.

The browser based games market value chain is made up of the following stakeholders:

- E-tailers
- Games service operators
- DRM vendors
- E-commerce vendors
- Games developers
- Games publishers
- Billing solution vendors

MMOGs

Massively Multi-player Online Games (MMOGs) are games designed to be played online by hundreds, thousands and even hundreds of thousands of users. The majority of MMOGs are set in shared game worlds that remain constantly on and where gameplay, as a result, is persistent rather than defined (and limited) by session, duration or score. This open-ended gameplay persistence allows players to enter and exit as they wish, developing their game characters at the pace of their choosing, whether over weeks, months or years.

The MMOGs market value chain is made up of the following stakeholders:

- Game service operators
- Game developers
- Game publishers
- Infrastructure vendors
- Billing solution vendors
- Online service middleware vendors
- IT service vendors

Television console online gaming

The television console online gaming market is currently based on three platforms: Sony's PlayStation 2, Microsoft's Xbox and Xbox 360. These console platforms leverage broadband internet access in the home to deliver online gaming experiences to the consumer. Users also utilise this internet connectivity to download gaming and non-gaming content (such as film trailers) to the devices. The next-generation console releases now confirmed for the end of 2006 and March 2007 in Europe – Nintendo's Wii and Sony's PlayStation 3 – will both support online gaming and digital distribution of content.

The television console online gaming market value chain is made up of the following stakeholders:

- Platform vendors
- Game developers
- Game publishers
- Infrastructure vendors
- Online service middleware vendors

Handheld console online gaming

The handheld online gaming market is based on two platforms: The Nintendo Dual Screen (DS) and the Sony PlayStation Portable (PSP). Both of these portable consoles utilise Wi-Fi technology to allow users to play online games through wireless internet access points. Users also utilise this Wi-Fi connection to the internet to download gaming and non-gaming content (such as new 'wallpapers') to the devices.

The handheld console online gaming market value chain is made up of the following stakeholders:

- Handheld platform vendors
- Game developers
- Game publishers
- Wi-Fi infrastructure vendors
- Online service middleware vendors

PC games with free online play

The majority of current boxed-product PC games feature some form of internet-based multi-player functionality as part of the basic retail package. As these components are almost always supported online free-of-charge, they have proven highly popular and are used to increase sales of games software.

Unlike MMOGs their multi-player features are limited by duration or session and therefore do not support any degree of gameplay persistence. Most are incapable of supporting more than 64 players in a single game world too.

The PC games with free online play market value chain is made up of the following stakeholders:

- Game service operators
- Game developers
- Game publishers
- Infrastructure vendors
- IT service vendors
- Online service middleware vendors

Interactive TV Games

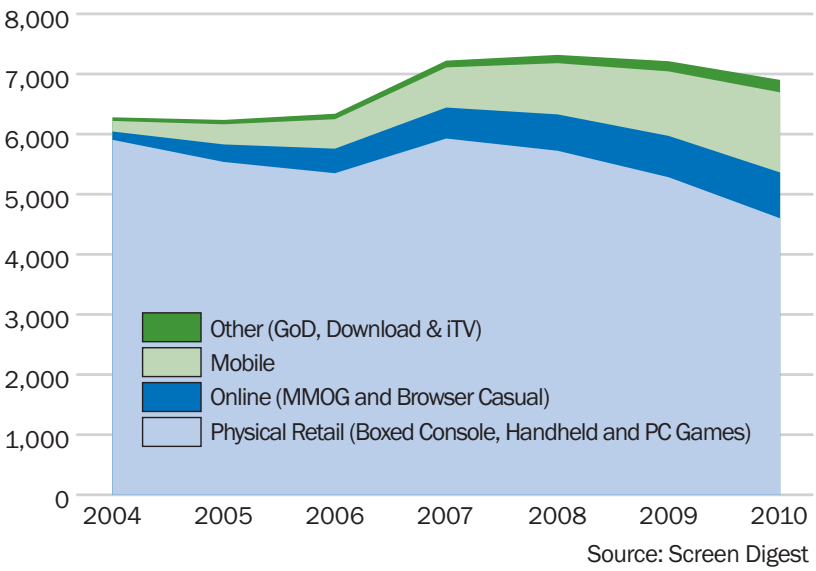
Interactive television (iTV) describes any number of applications or services that allow digital television (DTV) viewers to interact with television content using a remote control (or in the case of some iTV games a game pad). To be considered fully interactive, the viewer must be able to alter the viewing experience or return information to the broadcaster through the use of a return path.

Since the iTV market emerged, one of the most popular applications delivered through iTV services has been the video game. ITV games are broadcast to the set-top box (STB) like any other iTV application, and then downloaded into the STB's flash memory. The game is then run from the flash memory on the STB (the STB contains an on-board processor and graphics chip) and primarily controlled using the STB remote control as an input device.

The iTV games market value chain is made up of the following stakeholders:

- DTV operators
- Game channel operators
- Game developers
- Game publishers/content aggregators
- iTV game technology vendors (middleware vendors, games technology platforms)

Figure 51 Total Europe games market - retail plus online and mobile (€m)



Source: Screen Digest

2.4.2-4. Mobile Games

Please see the mobile content section of this report for details of mobile games value chain.

2.4.3 Market trends

Figure 51 shows the growing impact of digitally distributed games content on the total European games market over the next few years. The European market in this context includes all country markets within the region. Online games revenue covers subscription MMOGs as well as PC-based casual games downloads, subscription services, and pay per play revenue. Mobile games revenue is operator revenue accrued from game downloads, under a download to own model. Both online and mobile games markets will grow the European market to €7.3 billion by 2008. In 2005 mobile games revenue was worth 6 per cent of the total games market. This will increase to almost 15 per cent in 2008. In 2005 online games revenue was worth 5 per cent of the market. This will increase to almost 11 per cent by 2008.

Increasingly new business models and content strategies in the games sector will add to this overall market size. These emerging business models include in-game micro-transactional purchases and also in-game advertising. At present these new models are extremely nascent within Europe and have yet to be included in this total games market forecast. Overall, however, the retail market is expected to show minimal growth over the next few years, while strong growth is expected to come from networked content utilising digital distribution methods whether that be online or mobile in nature.

Figure 52 shows the 2005 split between retail and non-retail (i.e. digital) games markets in Europe. €699 million or 11 per cent of the European market value is non-retail, while €5.5 billion or 89 per cent of the market is retail.

2.4.3.1. Digital download of games

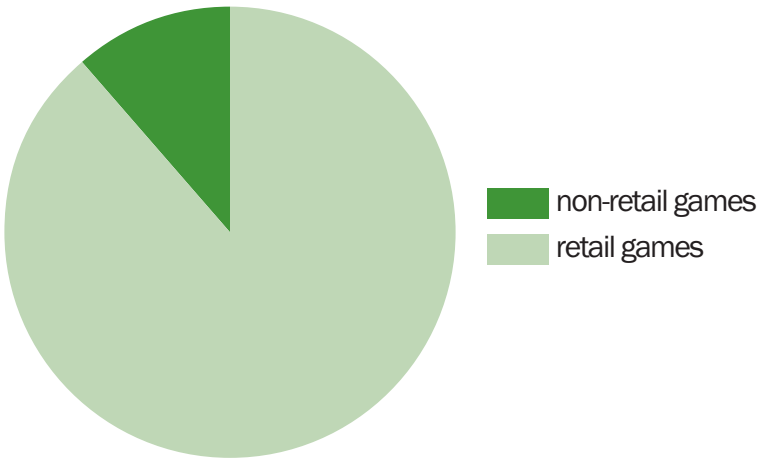
Digital download via the Internet as a medium for the distribution of software content has been around almost since the inception of the Web. Only within the last two to three years, however, has it been effectively applied to the premium retail PC game market with any commercial conviction. Before this, the

download of premium associated content was centred on non-interactive game movie trailers (catering for all games platforms, not just PC) and playable demonstration versions (demos) of retail PC games. In contrast, the market for casual games downloads has been around since the late 1990s. Its relative maturity can be attributed to technological factors and the prevalence of dial-up Internet access in Europe and North America, which only allowed for the distribution of small games files. Other factors included retailer power and publisher worries over potential piracy of digitally distributed content.

Over the past couple of years, however, most of these barriers to developing a commercial framework for the digital download of core PC games have been slowly dismantled and are in fact being steadily removed. Certainly the download of PC games has now evolved beyond its casual games origins and is being considered as a serious channel of distribution for a number of leading premium PC game publishers. The transition from the small file size, casual game downloads – which still dominate the market in terms of volume of downloads and addressable market – to the sale of downloaded premium retail game content has come about for a variety of reasons. These include:

- The huge popularity of games-specific portals and Web sites that first offered downloadable games content in the form of demos, videos of gameplay and trial games: These applications were the testing grounds for large file downloads and helped to prove that it was an acceptable distribution method for premium content. Some of these game web sites are starting to offer premium PC downloads to their users.
- The mainstream emergence of the Massively Multiplayer Online Game (MMOG) market: The majority of MMOG developers and publishers use digital distribution as a key (and often sole) sales channel for their client software. This is more established within the Asia Pacific region, particularly South Korea and China, but there are still examples of MMOGs distributed by digital download within Europe by companies such as CCP Games (*Eve Online*) and NCsoft (*Guild Wars*, *City of Heroes*). Again, this has acted as a proving ground for large file digital download and has also shown that, in some cases, customers are willing to pay for client software as part of that process.
- The emergence of the retail digital download business model: The launch of Direct2Drive by IGN has provided a shot in the arm to the digital download sector and has made publishers sit up and take notice. Although headquartered in North America this site serves customers across Europe. The fact that Direct2Drive's business model is basically a re-enactment of the traditional retail model under a download distribution model validates the premium games digital download model in the eyes of the leading publishers and incumbent retailers. The company has shown that gamers are willing to pay more than €16 – considered the price over which many consumers become disinterested in downloaded games – to get hold of new releases. This is important for the commercial development of this channel and, in particular, for publisher support.
- The use of the Steam digital distribution platform by Valve Software to distribute popular game *Half-Life 2*: Although there has been no official confirmation of the success of the Steam platform for the distribution of the best selling title, indications are that it has been a resounding success both in terms of consumer numbers and technology. Valve's platform has re-ignited the debate on digital download of game content

Figure 52 : Total Europe games market - retail versus non-retail market share, 2005



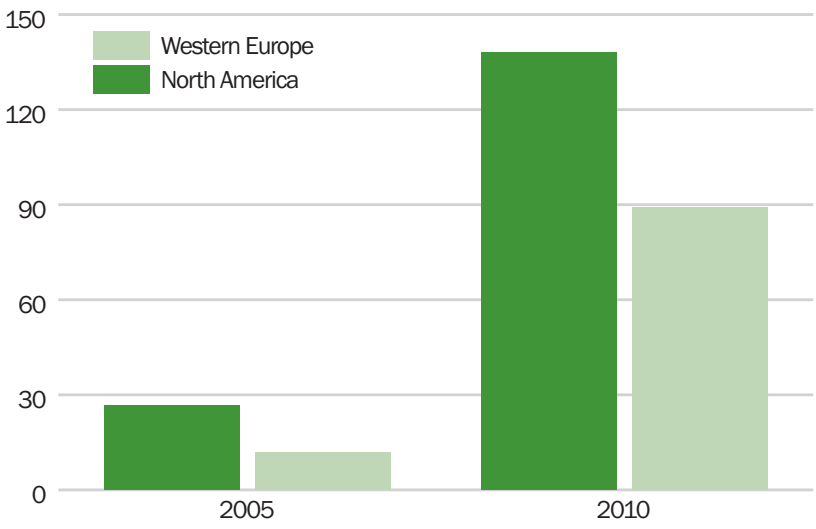
Source: Screen Digest

and driven publishers, distributors, developers, and retailers to examine the digital download distribution model. *Please see the case study at the end of this section for more on Steam.*

These market developments have been underpinned by the increase in penetration and use of broadband (BB) Internet access by consumers interested in gaming. This addressable market will continue to expand and help drive the demand for downloaded game content, while helping convince publishers that they should be considering download as a legitimate sales channel. Aside from premium PC game downloads, there is now a burgeoning download-to-own market for console game content through Microsoft's Xbox and Xbox 360 console platforms, and through handheld devices from Sony and Nintendo. The console download market will continue to increase rapidly with the introduction of the remaining next-generation television consoles from Sony and Nintendo at the end of 2006.

Figure 53 shows the North American and Western European revenues for retail equivalent PC games and console content digital downloads in 2005. This market sizing does not include PC casual game downloads. As illustrated the North American market is significantly more developed than the Western European market, partly due to the diversified nature of the European market and the localisation, currency and billing challenges it offers. By 2010 the size difference between the two regional markets is less marked.

Figure 53 North America versus Western Europe – PC and console digital download market revenue, 2005 & forecast for 2010 (€m)



Source: Screen Digest

2.4.3.2. Streaming of games

When streaming technology was first applied to the games industry, it was to aid in the distribution of game demos to drive more retail sales for PC games.

Since those early days, the streaming market, in the form of Games on Demand, has matured considerably. GoD services now offer a multitude of premium PC game titles in their entirety and have evolved more robust and profitable business models. During this market transition there have been a number of developments fundamental to the shaping of the market:

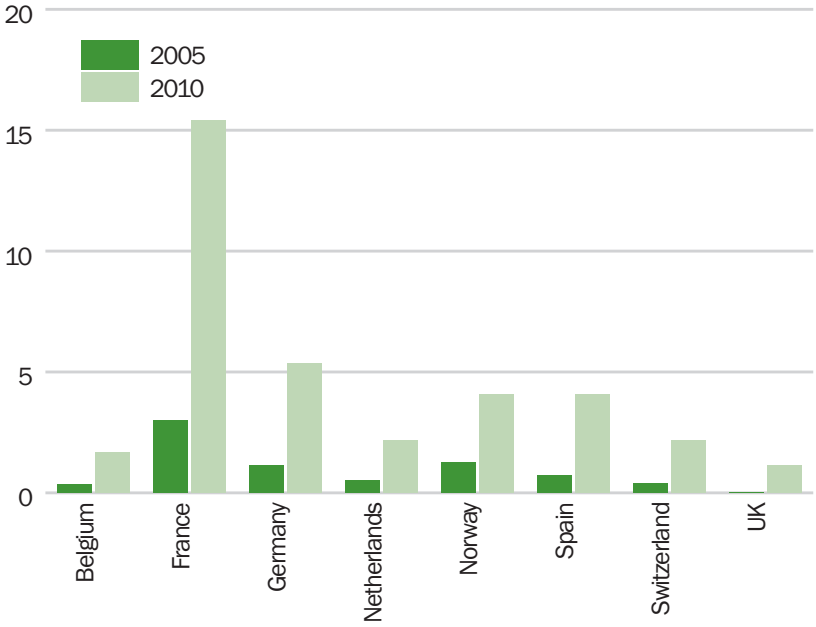
- The number of streaming technology companies operating within the games market has declined. This has resulted in less competitive market conditions for the remaining players. It also means that these remaining players have been able to build up sufficient momentum within the market with enough content and client relationships to make them a solid business proposition.
- GoD services have found a natural home alongside broadband service providers (BSPs). BSPs have invested in GoD infrastructure to differentiate their value-added service offerings, to retain existing customers, to drive up revenue per user and to attract new customers.
- GoD services have evolved from a limited rental business model to a subscription business model which has generally been more successful in the market for all the different business parties in the distribution chain.
- A handful of publishers have made material profits from GoD services. Moreover, the relative success of subscription GoD services has resulted in a greater acceptance of GoD services by publishers and a willingness to be more open to negotiating the distribution of new release PC game titles through the medium. As such there has been an increase in the number of streaming titles launched on the same day and date of retail releases

Figure 54 shows the different European territory totals for GoD revenues in 2005 and forecast for 2010. In this embryonic market, France leads the way primarily because of the success of French company Metaboli, a leading European GoD service provider and

operator. Significantly Norway is the second biggest market in Europe, highlighting the country's strong broadband penetration. The UK market is currently minimal, which is surprising considering its leading role in the total European games market. We believe that retail power has had a role to play in slowing development in this particular market.

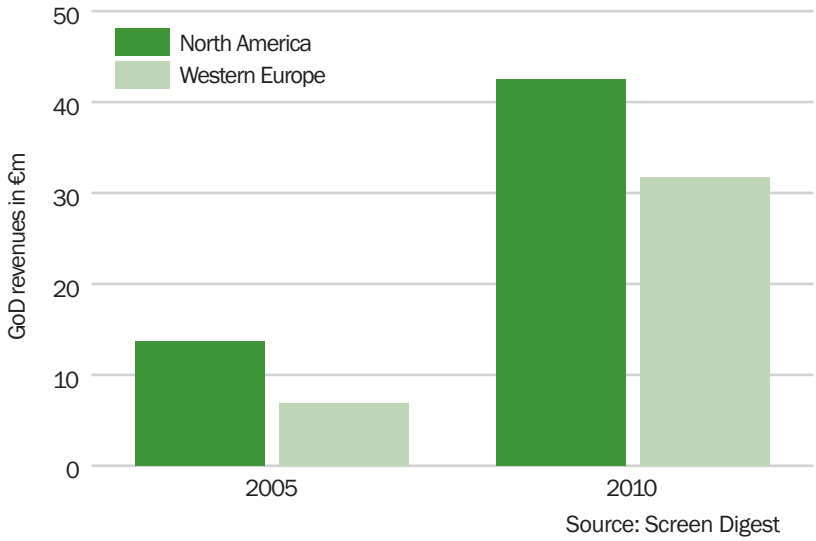
Figure 55 shows Western European versus North American GoD revenues from subscriptions in 2005, and forecast for 2010. The Western European total for 2005 included all services that were operational from the following countries: Belgium, France, Germany, Netherlands, Norway, Spain, Switzerland and the UK. In 2005, the Western European market was significant behind the North American market and was about half its size. By 2010 we expect this differential to be alleviated somewhat and for there to be a more even distribution of GoD subscriber numbers and revenues between regions. The number of GoD services in Europe is negatively impacted by the many small markets within the region and the need for significant scale of service to reach profitability.

Figure 54 : Games on Demand revenue, selected countries, 2005-2010 (€m)



Source: Screen Digest

Figure 55 : North America versus Western Europe - Games on Demand Revenue Comparison, 2005 and forecast to 2010 (€m)



Source: Screen Digest

2.4.3.3. Online Gaming

Online console gaming

The online console games market is based around Microsoft's Xbox Live service and Sony's PlayStation Network Entertainment service. Nintendo did not follow Microsoft and Sony's online gaming initiative with the Gamecube, arguing that it would only commit to a full online games service when it can see proof of a profitable model being applied to it, although the company has implemented an online games service for the DS handheld console and has announced that the Wii will have networking capabilities. Both Microsoft and Sony's services were launched in late 2003/early 2004 and in Europe are broadband only (the North American PS2 network adapter also supports a dial-up connection).

Both companies have partnership programmes with an extensive array of broadband ISPs and telecoms companies and are working to broaden the geographic reach of their service offerings.

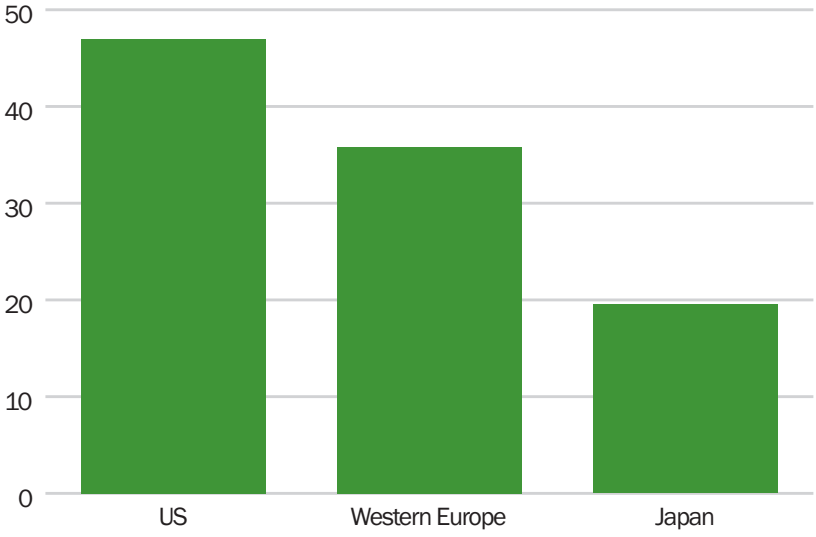
The success of Microsoft's strategy is shown by the fact that by March 2006 over 50 per cent of Xbox 360 users had been online with the console. This level of consumer penetration is unprecedented, although the early adopters of the 360 are more likely to fit the profile of an online console gamer.

We estimate that Europe has around 1m online console subscribers out of a global tally of about 7m. These numbers illustrate that European adoption of online console services is relatively low. Localisation challenges and billing/payment are two major factors that have impacted the uptake of services within the EU.

Aside from playing online games, console online services will play an integral part in digital download of content to the next generation of platforms. This content already includes casual games, expansion packs for retail games and film trailers, with the potential of video and music content in the future.

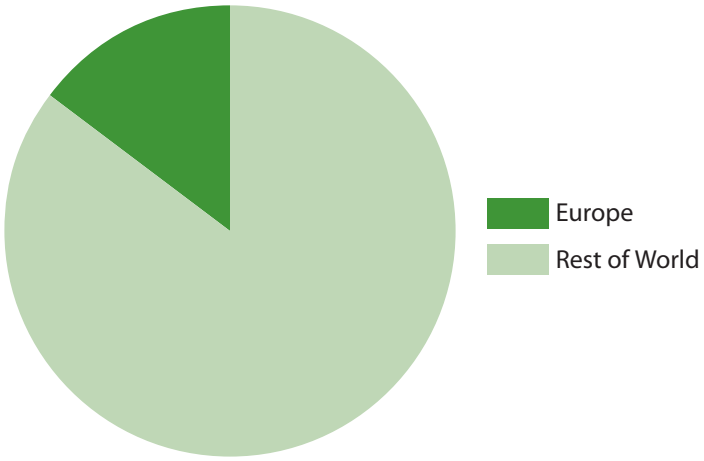
Like the PSP, Sony's PS3 is positioned as a converged device capable of using different forms of consumer content. As a television console with hard drive the PS3 would be a suitable target for video download services, thus potentially increasing the penetration of video download capable devices within Western Europe. We expect there to be an installed base of over 19 million PS3s in Western Europe by the end of 2010. Likewise, Microsoft's Xbox 360 has the capability to play downloaded video. We forecast an Xbox 360 installed base of almost 17 million by the end of 2010. Western Europe includes the following territories: UK, Germany, France, Spain & Portugal, Italy, Benelux, Nordic Countries, Ireland, Switzerland and Austria.

Figure 56 : Online capable television consoles installed base, 2005 (m)



Source: Screen Digest

Figure 57 Europe versus Rest of World: Share of online console service subscribers, Feb 2006



Source: Screen Digest

Figure 56 shows the installed base of online capable consoles in the three key sales territories at the end of 2005. Europe lags behind the US significantly.

Figure 57 shows the European share of online console services subscribers at the end of February 2006. Europe accounted for only 15% of the nearly 7 million online console subscribers at that time.

Figure 58 shows the installed base forecast for next-gen television consoles for US, Japan and Europe to 2010. Next-generation consoles are Microsoft's Xbox 360, Sony's PS3 and Nintendo's Wii. Europe in this context includes UK, France, Germany, Italy, Spain, Portugal, Nordic Countries, Benelux, Ireland, Switzerland and Austria. All next-gen consoles will have online and digital distribution capabilities. The US will be the biggest market for next-generation console hardware during the forecast period with an installed base of over 58 million by 2010. Europe lags behind significantly with a projected 42 million by 2010.

Handheld Online Gaming

Handheld consoles represent the latest games devices to utilise internet connectivity for gaming and content downloads. The portable nature of handheld consoles means that to deliver this online capability both Sony's PSP and the Nintendo DS have built-in Wi-Fi technology. This networking capability takes advantage of local 'ad hoc' connectivity for local multi-play gaming with other handheld users and also 'infrastructure' connectivity to allow play against remote players across the network. Nintendo's DS Wi-Fi Connection launched in Europe on 25th November 2005, and now has over 20,000 free hotspots all over the region. As of the beginning of March 2006 the DS based service had over 1 million unique users worldwide.

The PSP is also capable of downloads of new game elements over the network to a Memory Stick. Like the upcoming PS3, Sony's PSP handheld is positioned as a converged device capable of using different forms of consumer content. As a handheld platform the PSP would be a suitable target for music download services, thus potentially increasing the penetration of music download capable devices within Western Europe. We expect there to be an installed base of over 16 million PSPs in Western Europe by the end of 2010. At the end of 2005 there was an installed base of 2.5 million PSPs in Western Europe.

Western Europe includes the following territories: UK, Germany, France, Spain & Portugal, Italy, Benelux, Nordic Countries, Ireland, Switzerland and Austria.

Figure 59 shows the installed base in the three major sales territories for online capable handheld consoles at the end of 2005.

Massively Multiplayer Online Games (MMOGs)

Before the launch of Vivendi Universal Games/Blizzard's World of Warcraft at the end of 2004, the Massively Multiplayer Online Game (MMOG) market in the West was continuing to expand, but was characterised by a number of key factors:

- The market as a whole was getting relatively saturated, particularly in North America but to a lesser extent in Europe as well.
- Competition for subscribers between existing MMOGs was becoming more intensive.
- As a result publishers and developers started to become more risk averse and released fewer MMOGs.

However, the European market has been recently invigorated by the success of *World of Warcraft* within the region. The market has expanded significantly during the last 12 months as a result of the game.

- *World of Warcraft* currently has over 1m subscribers playing in Europe demonstrating the significant commercial potential of a MMOG title that has IP attractive to European gamers.
- Its game servers are available in English, French and German (and soon Spanish) although the game is played by a much wider variety of gamers from different countries.
- This expansion of the European market by *World of Warcraft* has helped develop a mainstream consumer of MMOG games in Europe.

European-based MMOG business development over the last 12 months has been occurring in a number of ways:

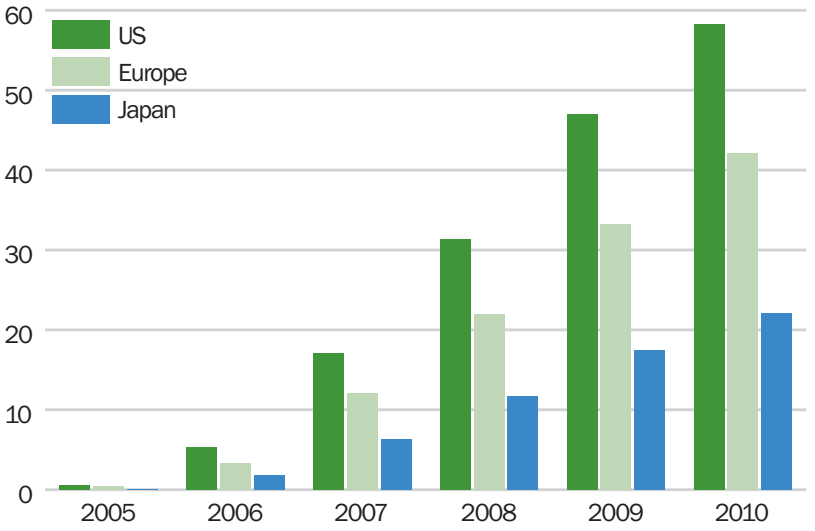
- Through the development of original IP-based MMOGs.
- Through Western publisher licensing of IP from established brands that consumers within the European market are familiar with.
- Through European publishers signing and distributing existing MMOGs from the Asia Pacific region.

At present the European market is dominated by a few major global MMOG players – NCsoft, SOE, Blizzard (Vivendi) for example - and a handful of small independent developers that are based in the region.

The European market is almost entirely PC game based, although a very small segment of console gamers play Square Enix's *Final Fantasy XI*.

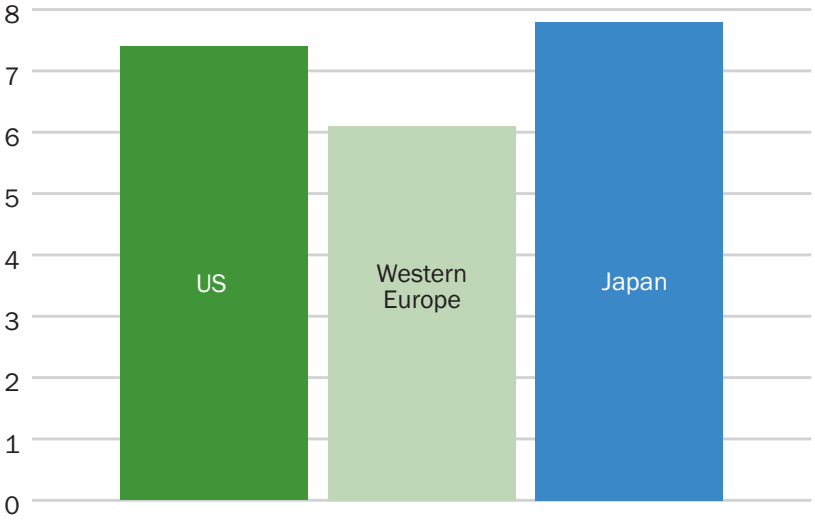
The European MMOG consumer is now considered relatively mature. As such MMOG game operators have been driven to invest heavily in quality of service through high product availability and quick user problem resolution in an attempt to reduce subscriber churn.

Figure 58 Next-generation television console installed base forecast to 2010 (m)



Source: Screen Digest

Figure 59 Online capable handheld consoles installed base, 2005 (m)



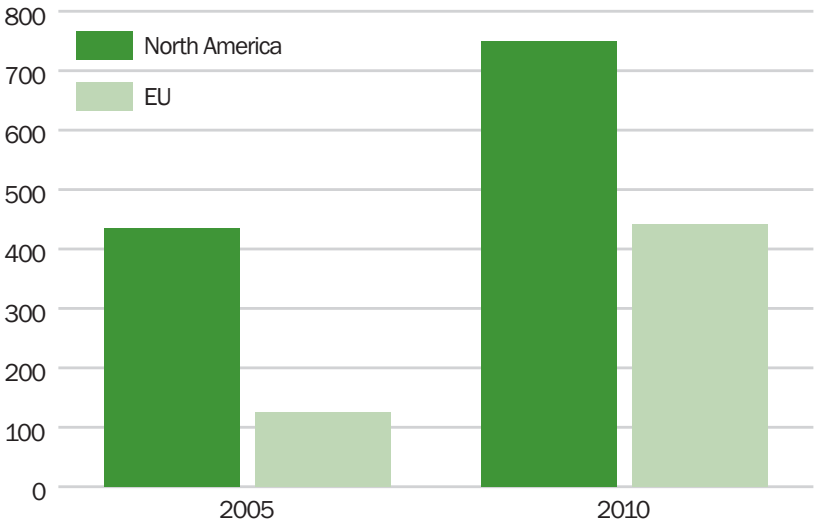
Source: Screen Digest

Figure 60 shows subscription revenue generated from MMOGs for North America and Europe. Europe in this context includes all countries within the region. In 2005 the North American market was far more developed and was worth €394 million, compared to Europe's €166 million. By 2010 the wide revenue share differential between the regions will be reduced, with North America expected to be worth around €488 million and Europe €321 million. The European MMOG market is negatively impacted by broadband penetration, localisation, and billing issues discussed later in this section of the report.

Figure 60 North America versus Europe – MMOG market subscription revenue, 2005 and forecast for 2010 (€m)

Source: Screen Digest

Figure 61 North America versus EU – Casual gaming market size, 2005 & forecast for 2010 (€m)



Source: Screen Digest

Casual Online Games

Casual games sites have been buoyed by the Internet advertising market recovery, but most have also diversified their business models to protect against weakening advertising sales. Some of these new models are proving remarkably successful.

Pay-per-play casual gaming is where gamers pay to enter skill-based games tournaments in which cash and merchandise prizes can be won. The emergence of this model in the early 2000s led to the formation of dozens of specialist pay-per-play games service providers, many of whom are now matching and in some cases exceeding the revenues of the largest advertising-based services and with a fraction of the user base.

Other successful models are subscription-based access to premium casual games channels and casual game downloads where gamers pay to download offline-playable versions of their favourite online games.

The casual online games market is centred on North America. Most companies servicing these markets are based there and most are still targeting North Americans only. European launches are fraught with difficulties - from adherence to local laws and customs, to catering for language and currency diversity. As a result up until 2004 not many North American companies had tried to tap the European market to any great degree and, in some markets, this has precipitated the formation of indigenous service providers who are relishing their unfettered ability to exploit this market gap. However, the major US online games service providers are increasingly concluding that Europe, with its higher population level, PC homes and Internet users is the key to the maintenance of their long-term growth.

However, the implementation of a multicurrency and multi-lingual strategy is both costly and complicated and is the principal reason why the pay-per-play market leaders were slow to make international moves.

The UK, French and German markets have all spawned their own indigenous service providers. They have been joined more recently by the major US pay-per-play service providers.

Figure 61 shows the difference in casual gaming market size between North America and the EU country markets in 2005. Whereas US operators have managed to achieve scale more effectively due to the nature of

the market, European operators have been undermined by the diversified nature of the region. North American operators are now steadily entering the European market by acquiring local players, and they are able to leverage their existing scale to absorb the costs of localising their services. In 2010 the difference in market size between regions will remain marked, although the impact of large scale operators on the EU region will considerably improve the relative size of the market.

2.4.3.4. ITV Games

When the iTV industry started to emerge towards the end of the 1990s, games were not viewed by operators, iTV technology vendors or traditional game developers as technologically or commercially viable for deployment through iTV services. This view was challenged and ultimately changed however when the first basic games started to appear on iTV platforms in the UK and these games turned out to be popular and played by a significant number of viewers.

Digital TV operators began to realise that iTV games could play a role in driving analogue customers to adopt digital technology, and they could be used as an effective tool against subscriber churn by differentiating services within the market.

As the market expanded it became clear that iTV games were one of the most popular iTV applications, and that if they were considered good enough, games could be used to generate revenues directly from consumers willing to pay to play them.

Since 2002 there has been steady market growth driven primarily by the launch of new services but also through the continued development of existing ones. We are confident that the iTV games market will have a wide number of commercial opportunities presented to it during the next few years, in well established markets as well as important emerging markets that are waking up to the potential for iTV services in general.

Return path capability

Two way interactivity, essential for the collection of revenue from viewers using iTV applications as well as home to home multiplayer games, is limited by the return path capability of the different DTV platforms. Upgraded cable networks with infrastructure deployed to take advantage of the triple play market (voice, TV and data) now have a substantial two-way capability and are therefore well positioned to take advantage of multiplayer games.

Digital terrestrial television (DTT) is generally broadcast only, although there are signs that two-way functionality may be introduced into DTT STBs in the future and that middleware will be upgraded to take advantage of true interactive applications (such as games, shopping and entertainment show voting for example). Many industry commentators considered the lack of modems in DTT STBs as a missed opportunity not only with regards to the capability of deploying genuine interactive applications between the viewer and the broadcaster, but also with regards to the potential revenue these applications could generate on the DTT platform.

Satellite operators currently use dial-up modems connected to a viewer's telephone line as a form of return path. The slow (many STB modems are rated at only 33 K), narrowband characteristic of this return path means that two way applications, such as multiplayer games are limited to the sending of small packets of data from STB to servers at the head-end.

The importance of the return path in generating direct income from iTV applications has driven operators to examine other forms of return path technology to aid two-way interaction. These alternatives are particularly important to broadcasters that want to take advantage of revenue generating interactivity on DTT networks. The most widely used alternatives to incorporated return path capability include SMS text messages from mobile phones, internet based response channels and premium rate phone numbers.

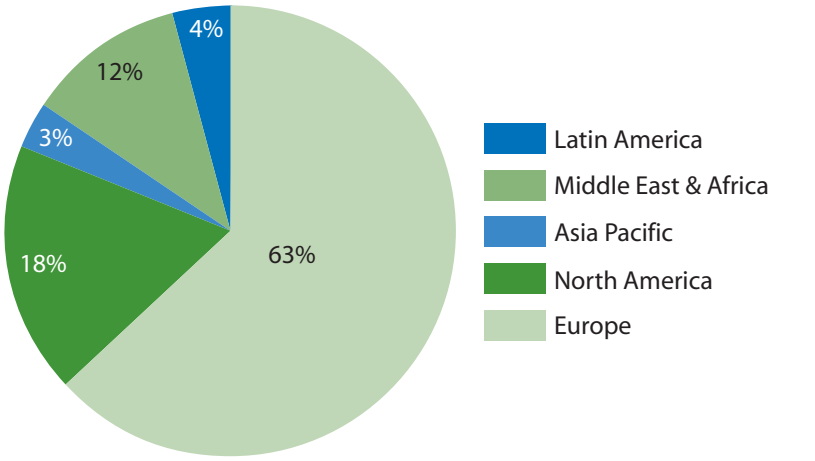
The UK remains the largest market for iTV services, but is considered highly competitive by iTV games channel vendors. Those that have yet to be successful in the UK are concentrating building their businesses in other markets. Over the years the UK has represented a test bed for iTV services, and has been at the forefront of development in the market. As a result operators in other markets have been able to leverage the widely shared experience of UK networks, and have learnt many highly valuable commercial lessons from iTV deployments in the UK.

Another major market in the region is France. With an estimated 5 million plus digital pay TV subscribers by the end of 2005, the French market is only second to the UK

in terms of its addressable size. French DTV operators have been open to iTV games channels, and have used the content as a way to compete with each other. Adoption has also been driven by the overall success of the French based iTV games developer and channel vendor, Visiware, which operates several channels in the market. In contrast to the UK, quite a few French services are subscription based. Significantly, a large majority of Visiware's game deployments are subscription based, and its influence on the French market should not be underestimated. Visiware has found that there are some markets that seem to be inherently open to subscription games services, and France is one of them.

Figure 62 shows the dominant role that the European region has in the worldwide iTV games market with 63% share. The European market includes the following country markets that had services operating in 2005: UK, Ireland, France, Austria, Italy, Netherlands, Spain, Switzerland, Denmark, Sweden, Finland, Norway, Russia, Poland, Germany and Greece. The UK is the largest European market by far, and represented 42% of the total global market in 2005. Worldwide consumer spend on iTV games was €81.7 million in 2005. Continued success in this sector within Europe will depend largely on standardisation of technology to reduce market entry costs.

Figure 62 : iTV games regional share of consumer spend, 2005



Source: Screen Digest

2.4.4 General obstacles to digital distribution of games

2.4.4.1. Availability and access to broadband (1.1)

The importance of broadband internet access penetration rates within the EU to the digital distribution of games should not be underestimated. This technological factor defines the size of the potential market for many sectors due to a heavy reliance on this data transport mechanism. The important and underlying role that broadband penetration holds within many digital distribution games markets indicates that, inevitably, market development relies heavily on how penetration rates develop over the coming years. Clearly penetration rates will and do impact the size of markets and also the number of competitors those markets can support.

There have been varying responses from stakeholders with regards to broadband internet access penetration as it stands today within the EU. Some companies including online game companies and game publishers believe that broadband penetration is the most important factor in business development, and that compared to other non-EU country markets, specifically Japan and South Korea, the European market is significantly under developed and therefore disadvantaged.

The problem not only extends to overall broadband penetration, but also to the availability of higher-speed services, both for download and upload, comparable to those available in South Korea and Japan. High speed services are preferable for the download of premium PC games, which can sometimes reach over 4Gb in size. High download and better upload speeds are also preferable for playing online games such as MMOGs, where many gamers, sometimes quite a few hundreds, are connected to a graphical complex game world at the same time. Again, the EU in general lags behind the leading global broadband markets by some margin, although download speeds have been increased significantly in major urban centres, upload speeds have stayed low due to the technological characteristics of the most popular broadband technology, ADSL.

For a few of these companies that rely specifically on access to broadband, this technological issue is the most fundamental roadblock to business development within the EU. All broadband reliant games companies analyse broadband penetration rates and

subscriber numbers before entering a country market, and for some these rates will alone decide whether entry is warranted.

In contrast, one Games on Demand solution vendor suggested that in fact it was currently 'satisfied' with the progress of broadband internet access services within the EU. Furthermore one MMOG operator was less specifically troubled by broadband penetration rates but was more concerned by internet access penetration rates as a whole, because its game supported narrowband dial-up users as well.

Some markets were highlighted as being stronger than others. Strong markets include the Scandinavian countries, France and Germany. The UK market has had higher speed services introduced over the last twelve months. Significantly these companies wholly or partially rely on broadband penetration to sustain their businesses in the same way as those above. This research evidence seems to suggest that often, at current levels, broadband penetration alone is not enough to completely undermine the success of a games related business.

In emerging games markets, the generally smaller number of competitors means that broadband penetration is less of an issue. This is particularly relevant in the emerging market of Games on Demand, where some markets in the EU only have one operator. In more established and competitive markets, penetration levels inevitably have more of an impact as there are fewer consumers to share between the market players. Generally then, the impact of broadband penetration rates will be increasingly felt in all games markets that utilise the internet as a transport mechanism as they become more established.

There are four markets where the current use of non-broadband dependent digital distribution channels means that broadband penetration is a less pressing issue at this time. These are:

- iTV games that are primarily distributed over traditional digital television infrastructure. There is however an emerging market for distribution of games content to the television through IPTV networks. As these become more established the impact of high speed broadband penetration will be more relevant.
- MMOGs that support narrowband dial up access as well as broadband
- PC games with online play that support narrowband dial up access as well as broadband, and
- Browser based casual games, which can also be played using narrowband dial up internet access.

Increasingly however we expect the need for broadband to become further established in these markets as content complexity and the functionality of games reaches a point that can no longer be served by narrowband access.

One other variant of broadband internet access is Wi-Fi, which is used by handheld games consoles to allow online play and to distribute content. Access to Wi-Fi hotspots (public Wi-Fi access points) within the EU and member state markets therefore has an impact on hardware sales, software sales and the digital download of content and its associated revenue streams for these platforms.

One factor that should be considered is that although handheld consoles are 'travelling companions' often used on the move by consumers, many gamers use these consoles to play games at home. Playing at home also involves accessing the internet through home based wireless internet networks. The increasing use of wireless networks at home lessens the negative impact that limited access to Wi-Fi hotspots in many countries within the EU has.

A new form of technology underpinning the evolution of wireless wide area networks (WANs) is WiMAX. It is suggested that this technology could either compete with Wi-Fi technology (which is local in nature) or work in conjunction with the technology as a more effective way to link up Wi-Fi coverage across wider geographical areas. WiMAX is still at the testing phase, but the adoption of this technology is likely to have an impact on the ability of handheld console users to access online games and distribution services.

Lastly, aside from the broadband penetration issue, many broadband services (particularly digital subscriber line services) have 'caps' on the data transfer that is allowed. Uncapped services tend to be more expensive. The capping of data transfer limits on broadband accounts acts as a disincentive to online gaming and distribution of large file PC and console games. The capping of data transport seems to be particularly prominent in the UK.

Suggested remedies

Interviewees suggested that national and local governments should take a more active role in promoting the adoption and introduction of broadband services. This may mean speeding up the unbundling of the 'last mile' in countries like the UK, dismantling any incumbent monopolies, or implementing specific regional initiatives to drive adoption. For example, in France the mayor of Paris has set a policy in motion that all residents should have access to 100 Mb/s broadband over the next few years.

2.4.4.2. Payment/Billing Systems and Strategies (6.10)

Pan-European and some specific country market billing and payment systems were mentioned as significant roadblocks to business development by a large majority of interviewees. In fact the only sector not to mention billing specifically was iTV games. This is understandable as billing costs can have a major impact on profitability depending on the type of solution employed. Some specific country markets were highlighted for having poor credit card penetration, for example Germany, and for having a lack of online use of credit cards, both Germany and France.

Although credit cards are the most obvious payment method for many of the games markets mentioned above, access to credit cards by under-18s is low and, as already mentioned, some major markets have low credit card penetration. Therefore there is a general requirement for games companies to support others forms of payment in certain markets.

The support of these local payment systems is considerably more expensive than credit cards and therefore can have a considerable impact on profitability if done so through a service provider such as Bibit. Even so, negotiating directly with the payment organisation on a local basis is not practical for many companies. Other forms of payment include direct debit, which is paper based in many markets and therefore expensive, third-party commercial payments systems (such as those operated by a specific ISP or mobile network operator for example) and pre-paid cards. The costs for these local payment/billing solutions is high compared to credit cards – for example between 12-15 per cent for T-Pay, a system run by telecom operator Deutsche Telecom and a massive 30 per cent for pre-paid cards distributed through shops.

From the interviews, Germany stands out as the most problematic market for billing. Not only is credit card penetration low, but so-called 'chargebacks' on both credit card and direct debit transactions are high (see below). Indications are that the industry accepted percentage for chargebacks of around one per cent of transactions is often superseded in Germany.

Chargebacks are set in motion by consumers (acting legitimately or fraudulently) or credit card companies for a number of reasons including suspected fraud, wrongful payment and general consumer dissatisfaction with the product or service. This can happen in any country in the EU, but it is high in Germany because chargeback rules are more lenient for consumers. Significantly, digitally distributed content is particularly susceptible to chargebacks because it is very hard for the vendor to prove that the service or product has been adequately supplied to the consumer. This is a problem encountered by all digitally distributed goods.

Chargebacks are also being increasingly fraudulently applied, and are more common in Germany because they are easier to process. Often the fraudster is in another country, but has purchased German goods, and once they are received applies a chargeback. This type of fraud seems hard to stop at present.

Suggested remedies

It is expected that the market will find solutions to billing and payment difficulties. One bright spot for German payment systems has been the introduction of an electronic direct debit system, ELV (Elektronisches Lastschriftverfahren). The electronic basis of this system means that it is far quicker and more cost effective than the paper based systems used in many other country markets. Games on Demand operators and MMOG operators that operate subscription services would like to see this sort of system applied across Europe, and certainly in all the major games markets.

Moving forward we expect the market to develop alternative business models, especially in areas such as digital distribution to games consoles and MMOGs, where in-game advertising and micro transactions are becoming more popular. Although payment and billing solution vendors have a legitimate

role to play in the value chain, if prices remain high, games companies may look to establish new business models which lessen the impact that billing costs have on the distribution chain.

2.4.4.3. Digital rights management (5.5)

Digital Rights Management (DRM) is an integral part of digital distribution, especially with regards to games download, where users receive a complete game file. This differs from Games on Demand (GoD) services and streaming technology where users never have access to the complete game file. Initially the main roadblock to DRM adoption and therefore digital distribution from games companies was whether they would work or not. Now that publishers are generally happy with the top tier of games DRM solutions available on the market (although many publishers are still testing some platforms) this has had a positive impact on the digital download market in particular.

Most DRM technology comes in the form of 'wrapper' software. A wrapper is data that is added to the game file as a security measure and works to ensure that only authorised users are allowed access to the content. Most of today's DRM technology is capable of supporting a variety of business fee models including subscription, try-before-you-buy and outright purchase. Some DRM technology allows the unlimited copying of content but will only allow permanent user access once payment has been made for the product. This works best in a try-before-you-buy model, thus allowing the viral marketing of a title and giving its recipients an opportunity to play the game before being pointed to a Website where the user can make a purchase and unlock the full game.

Although most publishers are happy that the key DRM solutions in the market work and are secure, there is some apprehension over the fact that some of the major distribution technology enablers, such as Trymedia (now part of Macrovision), only support their own DRM technology. This means that it is quite possible for the same title to have more than one type of DRM technology wrapping it, depending on which markets it is available in for download. Using more than one type of DRM solution can actually work against anti-piracy measures by giving hackers a multiple view of how the content is secured. Thus there is an incentive for publishers to standardise on one form of DRM, although with the relatively high number of DRM vendors supporting different distribution partners it is not always possible. It is worth noting that the major vendors of DRM solutions in the games market are different companies from those that dominate the DRM space for music, movies and TV content.

DRM impacts the way consumers interact with the software and limits, to varying degrees, their ability to make copies of the content. DRM wrappers add additional complexity to the process of installing and running a game. Using the most consumer-friendly solutions, this additional complexity is shielded from the consumer and the process is seamless with the installation of the software. Some lower quality solutions, on the other hand, may result in the software not working at all on a particular end-user PC, or not allowing the content to be copied onto another machine by the same user. Unfortunately, there will always be technological compatibility issues with such a highly configurable platform as the PC.

There remains some general reticence by informed consumers to buy products that employ DRM solutions. Game publishers and games service operators suggested that DRM vendors should implement quality and technology standards to increase consumer confidence, and that education of the consumer is paramount.

Suggested remedies

At this time interoperability between DRM solutions is not a major issue for games companies. More importantly publishers would like to see their chosen solution supported by all distribution networks, so they are not forced to use more than one proprietary solution for different sales regions. Due to the embryonic nature of the games download market and the emergence of DRM vendors that are also content aggregators and distribution network owners (especially for premium retail content) there are a few dominant DRM solutions operating in different regions and countries around the world. Most publishers felt that open standards for games DRM would be largely unworkable, but would like to see better support by the biggest distribution networks for a cross section of solutions.

This issue makes those distribution network vendors that have a DRM-neutral business model (Boonty for example)

more attractive to publishers as their digital distribution strategies evolve and mature. Boonty, a turn-key PC games digital download service provider, leverages its support of several third-party DRM packages as a unique selling point to games publishers, so the launch of a pan-European DRM solution would not be welcome to this particular stakeholder. Boonty agreed however that some form of industry 'stamp of approval' standards for DRM solutions may help increase consumer confidence in DRM solutions.

Another current issue facing content owners using DRM is consumer acceptance. There has recently been a significant amount of negative press about certain DRM solutions on the market and a consumer backlash of some degree. Content owners are aware that they need to find a balance between a product that protects their content but that is user friendly and non-intrusive for the user. Finding this balance will help consumer acceptance of these solutions.

2.4.4.4. Product localisation/porting (1.4)

The diverse linguistic and cultural nature of the European market means that product and services localisation is a considerable budgetary cost for games developers and publishers seeking to distribute their content across the EU region. This high cost often results in games only supporting the key European languages of English, French and German. Perhaps the most affected online games market is that for MMOGs, although games of all types are impacted. In the case of MMOGs, numerous content updates have to be localised and product support needs to be in local language, which can represent a significant drain on resources.

Few MMOGs have been localised to date and given the importance of communication within MMOGs, it is thus no surprise that MMOG uptake amongst non-English speakers and in non- English speaking territories has been relatively limited.

For many publishers and developers, the question of localisation is a purely economic one as localisation even into one other language can seem prohibitively expensive and, as such, highly risky. Localisation entails not just the initial and ongoing translation of game narrative, instructions and other text, but also cultural localisation—such as taking out the depiction of blood from German versions (a legal requirement) or adjusting content to cater for other regional, racial or religious sensitivities.

Content localisation has to be done hand in hand with local publishing and distribution (both physical and network) and the same support cover (customer relationship management, local currency billing, security, usage monitoring, adjudication and other community management, etc.) has to be provided for each language covered and can prove very costly.

However, these are critical steps to be taken if the MMOG market is to continue expanding and the huge international success of *World of Warcraft* is to be replicated by others. The latter was launched with fully localised German and French versions and serves as evidence that a geographic diversification strategy can work if executed properly.

Aside from MMOGs, the porting issue is a significant problem for the iTV games and mobile games markets. The cost of porting games to a large number of different set top boxes (STBs) - sometimes even to launch the service on one network - is prohibitive for many smaller operators thus undermining the potential of the iTV games market. Even the largest iTV game developers find the porting of content to many different STB onerous and financially draining. Developers have responded by innovating with regards to games development, but would like to see both STB middleware and hardware capabilities further standardised to open up the market within Europe.

Suggested remedies

An interesting partial technological solution to the problem of language barriers comes in the form of language translation software embedded into a MMOG. Although not perfect by any stretch of the imagination, translation software can broaden the appeal of games by allowing users to chat or issue orders that are translated in real-time into other languages. *Everquest*, for example, supports French, German, Japanese and Korean via automated (as well as human) translation. The future quality and capability of these automated solutions will obviously determine how big an impact this remedy could have on the market.

Aside from this limited technological solution, no stakeholders identified any form of other remedy apart from trying to lower

costs through outsourcing to localisation specialists, many of which reside outside the EU member states. Indeed one interviewee stated it used a company in Japan for its localisation of content. As localisation is a significant issue for all games markets and companies, this is perhaps one area where the EU could make some sort of intervention to try and reduce the implications of distributing content across the region. Without intervention it is inevitable that country markets outside the big five games markets in Europe will continue to be left out with regards to content localisation.

2.4.4.5. Lack of support of new distribution methods by incumbents (2.1)

Game publishers' adoption of download sales and Games on Demand services in the EU market is at an all time high, although there is still wariness with regards to cannibalisation of traditional retail channels. This will continue to impact the development of the download market, but is not specific to the European market.

Overall, more premium content is becoming available – much of this is in response to the adoption of digital distribution by console platform vendors, the success of downloadable music and the emergence of video on demand services.

Retail power is particularly felt in established markets however, where retail distribution is entrenched. These include the big five games markets in the EU - the UK, France, Germany, Spain and Italy. Commercial pressure from retailers fearful of the impact of digital distribution on their businesses has meant less up-to-date content being released to download and GoD channels, and generally higher prices for download software when compared to the high street.

Suggested remedies

It is expected that the industry itself will resolve these issue without the need for intervention especially as more incumbent retailers start to access new distribution methods for content. A potential remedy to retail commercial pressure on publishers is the continued use of digital distribution channels to provide alternative content and business models which do not cannibalise retail channels and that in fact help grow the overall European games market. Another strategy that could impact this roadblock and that is advocated by retailers in the UK is better collaboration between publishers and their retail partners to understand how these relationships can be translated successfully to the digital distribution of games.

2.4.4.6. Access to funding (6.6)

The access to funding for games being developed outside of the incumbent publisher-funded retail games business model is an ongoing problem within the EU, as it is in all regions. This factor has a negative impact on the innovation and creativity associated with games development that could help drive the growth of some of the less established games markets that leverage digital distribution. For example digital distribution is able to support business models such as microtransactions and episodic gaming that can not be replicated in the retail sales channel, yet this potential to innovate is undermined by a reticence by publishers to invest freely in these new emerging business models.

Digital distribution itself in the form of digital download is part of the solution, yet independent developers seeking to exploit this distribution method to lower costs and improve their revenue share from sales, often still need funding to develop content. For many small independent developers it is a stark choice, either go out of business or develop games that are safe in content and that will appeal to mainstream publishers. There are very few examples where independent developers have managed to develop games outside of the publisher funded incumbent business model with success. The case study of Introversion Software at the end of this section is one such example.

Suggested remedies

Independent developers would like to see more support from local and central government to support their choices to develop innovative content that can be distributed via digital distribution channels and that could help grow these markets in the EU. Support could take the form of wider reaching grants, better national strategies for inward investment to nurture original games content IP, or more extensive research and development tax breaks for games companies starting out.

2.4.4.7. Classification of games content, censorship of games and age verification (4.1)

Pan European Game Information (PEGI) is a European system for the classification of games content. There are two parts to the classification for any piece of software - a suggested minimum age and also up to six descriptions of content highlighting violence, sexual explicit content or strong language. It was established by the Interactive Software Federation of Europe (ISFE) in April 2003 and there are currently 28 - including 24 EU Member States - that recognise the PEGI system[9].

Most game publishers have signed up to this self-regulatory system and in this respect it is considered a success. Indeed the PEGI system is an attractive blueprint to other content markets, where classification is still carried out on a country by country basis, although in many European markets the classification of games was yet to be established before PEGI was implemented.

Of the main games markets within Europe only one operates wholly outside the PEGI system, which is Germany. The classification of content for the German market is considered a challenge for game companies. Specific raised issues included:

- Games publishers feel that launching an adult-rated games title into the German market represents a greater risk compared to many other EU markets, even when that game is rated by the German rating system and given permission to be sold into the market. The risk is higher with the German market because there have been examples where games given a rating have later been banned, and in these situations there is little right to reply for games publishers.
- The system for online purchasing of games content in Germany is convoluted and inefficient. Gamers seeking to download games or play Games on Demand have to prove their age first, and this involves going to a post office, proving your age and collecting a code, which can then be used to purchase a game. In the eyes of game publishers and download e-tailers, this system hinders the potential of the market significantly. Overall, game publishers would like to see the German system of age verification made more efficient or even abolished altogether and brought into line with other major European countries.

An example of game content classification where a propriety system for specifically defined content is run alongside the PEGI system successfully is the system run in the UK. The UK classification system is defined by the Video Standards Act, which defines what content needs to be separately classified under the UK system (operated by the British Board of Film Classification (BBFC)) and what content is exempt and can be classified by the self-regulatory PEGI system. In practice games publishers feel this system also runs relatively smoothly although it faces challenges in the future, in the same way as all classification systems, with regard to digitally distributed content.

Areas where the classification is being tested with regards to games content include mobile games, massively multiplayer online games (MMOGs), freely available PC game demos and independently developed self-published games content available on the internet. Today, the PEGI system has been expanded to incorporate mobile games, although there is little evidence of self-regulation in this sector of the games market at present.

The MMOG market brings its own challenges. Due to the nature of MMOGs and the need to maintain, expand and add to the persistent game worlds found in these games, the online infrastructure that they are played upon is also used as a channel for delivery of content updates and patches. Smaller updates can occur up to three or four times a month, with major content updates occurring every couple of months for most MMOGs. This is one area we believe that games classification is being circumvented. PEGI is currently working on a system to extend its self regulatory approach to online gaming, although this will not solve the problems faced by online games companies with regards to classification of content in Germany.

As part of the European Union's Safer Internet Programme, in late 2005 a working group was set up to create a new PEGI Online Seal of Approval. Where displayed, the PEGI Online Seal of Approval will indicate to users that the website follows an agreed code of conduct and that all games offered are rated using the PEGI system.

Suggested remedies

Overall, game publishers would like to see the German system of age verification made more efficient or even abolished altogether and

brought into line with other major European countries.

Publishers would also like to see the PEGI system extended to the German market or perhaps run in the same way as the UK market. The UK system is a positive example of game content classification where a propriety system for specifically defined content is run alongside the PEGI system successfully. The UK classification system is defined by the Video Standards Act, which defines what content needs to be separately classified under the UK system (operated by the British Board of Film Classification (BBFC)) and what content is exempt and can be classified by the self-regulatory PEGI system. In practice games publishers feel this system also runs relatively smoothly although it faces challenges in the future, in the same way as all classification systems, with regard to digitally distributed content.

2.4.4.8. Piracy (3)

The issue of games piracy and the effectiveness of anti-piracy legislation in EU country markets continue to be important issues for games companies. At least one company suggested that the anti-piracy measures did not go far enough and that piracy was heavily impacting the potential of its business. This company dealt entirely with PC game content. The nature of the PC platform means that PC games are inevitably more likely to be pirated and distributed via the internet than console games, although console games too are pirated frequently.

There were a few developments in recent months with regards to country laws concerning piracy which perhaps indicated that certain markets were taking a more lenient approach to piracy. Game technology companies are concerned that if a more lenient approach is taken to piracy that game publishers will loose confidence in those markets that leverage digital distribution of content such as digital download and Games on Demand. Without publisher support and premium content these games markets will flounder in the EU.

The most recent legal developments have taken place in France concerning the personal use of Peer to Peer (P2P) networks for copying and distributing content, although industry feedback suggests that there may be challenges to the illegality of P2P networks in a number of European countries in the coming months.

At the end of 2005, the French parliament passed an amendment calling for a 'blanket' license for consumers using P2P networks to distribute copyrighted content for personal use. The license would be set at a small sum every month and used to pay content copyright holders. At a similar time, a French man standing trial for the illegal use of file sharing networks was freed and told his activities were in fact legal by the District Court of Paris' Judges.

Both these events caused a significant stir in the consumer content industries. In fact not long after in March 2006, the French parliament voted the amendment for a blanket license down but the impact of these events were felt far and wide. However the new law did set low levels for fines for consumers found to be using P2P networks for personal content copying and introduced the idea of imposing interoperable DRM (later dropped), which was felt by a number of interviewees to be too lenient.

It is worth noting that the decision of the French Council of State (Conseil d'Etat - 25 November 2002) concerning compensation for private copies does not exist for software, thus compensation for a private copy cannot apply to the reproduction of entertainment software. This important decision implies that private copying does not apply to entertainment software and therefore games.

Suggested remedies

Stakeholders of all types would like to see broader regional initiatives developed that tackle the issue of piracy within the EU and generally tougher sanctions against pirates to deter illegal copying of content.

2.4.4.9. Sales tax on computer services (6.1)

On May 7, 2002, the EC adopted a proposal which modifies the rules for applying VAT to certain services supplied by electronic means including download to own games and subscription-based games services. The objective was to create a level playing field for the taxation of digital e-commerce according to OECD principles. Now enacted (on July 1, 2003), the Council Directive 2002/38/EC ensures that the digital delivery within the EU of software and computer services generally-plus information and cultural, artistic, sporting, scientific, educational, or entertainment services, specifically-would be subject to VAT at the prevailing rate of the consumer's country of residence. When such

services are supplied for consumption outside the EU, they are exempt from VAT.

Online game companies, download e-tailers and Games on Demand operators mentioned this specific VAT issue when interviewed, considering it a roadblock to market development. This especially impacted those stakeholders that were involved in online games services and that operated outside of the EU but that sold products and services to EU consumers.

This sales tax issue is considered a roadblock to market development for European stakeholders because they make services more expensive for EU consumers and they provide an opportunity for competitors from outside the EU to grow more quickly. These competitors could eventually enter the EU market on a potentially stronger financial footing. Some UK based game publishers interviewed were more accepting of these changes and felt they levelled the playing field for those operators outside the EU.

Other EU-based companies were impacted by the additional billing/payment solution investment and administration the new VAT law had resulted in. This additional investment has financially hit the smallest operators the hardest. These smaller companies are prevalent within the emerging markets for games digital distribution. Some vendors complained that billing solution vendors operating within the EU did not comply with the latest VAT laws making it impossible for them to return correct and accurate tax returns.

Online game companies believe that this taxation has impacted the potential of the market significantly, while also undermining consumer confidence due to price transparency between EU and non-EU markets. MMOG operators find it hard to explain to EU consumers why they are being charged more for a subscription service than users from other countries outside the EU.

Suggested remedies

A remedy to this hardship could involve an exemption to comply with this VAT rule for small companies that are looking to find a footing in the market or a grant to help those small companies that need to invest more in billing systems to comply with the rule. Some online game companies would like to see their service redefined under the rule and made exempt from VAT charges within the EU altogether.

2.4.5 Digital download of games

2.4.5.1. Consumer acceptance (6.2)

Consumer confidence in digital download is by no means certain. Until the issues of refunds, warranties and being able to make limitless personal copies of the content are fully resolved, a lack of consumer confidence in digital download will undermine the market moving forward.

In addition, some consumers are reluctant to give up the tangible assets of a retail-based purchase, including the original game CD/DVD, manual and box. The lack of these physical items, especially at the current price point for many download titles, is an inhibitor to market growth. Consumers need to be convinced to spend more than €16 (the industry quoted figure for the average maximum spend a consumer will make for a games download) on each game via digital download. This price bracket suits back catalogue titles best, but with premium titles costing considerably more, consumer confidence in this distribution method needs to be improved.

Suggested remedies

Stakeholders suggested that consumer acceptance of digital download could be improved in three ways:

- Education of the consumer as to the benefits and drawbacks of digital download of content
- Professionalisation of the sales and distribution process by e-tailers
- Clarification of the rights of consumers with regards to the sales of digital downloads, and consideration of standardising these rights across the EU in collaboration with consumer groups and industry stakeholders

2.4.5.2. Customer relationship management (6.3)

Many of the e-tailers offering game downloads today have little experience in customer relationship management with regards to download sales. These companies are still fine-tuning and refining their CRM strategies to make it relevant to this sales channel.

An essential element of e-tailer CRM strategies should be education of the consumer as to how digital download differs from retail sales of PC games. There continues to be a lot of consumer preconceptions within the market that the download experience should be exactly the same as the retail experience. Unfortunately this is not always the case, due to the unpredictable nature of the internet and due to the nature of some DRM platforms. This customer education also needs to be backed by a first class customer support infrastructure that can tackle inevitable download problems in an effective manner, thus avoiding consumer dissatisfaction with the medium. Strong customer support will lead to more repeat business.

Suggested remedies

It is expected that the industry itself will resolve these issue without the need for intervention.

2.4.5.3. Competition (5.4)

Independent developers would like to see more digital download platforms and networks that support the self-publishing business model and that are not just a replication of the high street retail model. In fact many of the download platforms operating today have a revenue share model that is largely similar to the retail model, giving just 5-10 per cent to developers. Although there are a couple of platforms that operate with attractive revenue share models in place, single vendor control of these powerful distribution platforms could mean potentially damaging changes in the future with little or no recourse. More competition brings it own issues. If there are more download platforms and more content, developers are aware that this could undermine the potential of the market by allowing consumers too much choice and not allowing developer content to stand out to give it a chance to bring in revenue.

Suggested remedies

It is expected that the industry itself will resolve this issue without the need for intervention.

2.4.6 Games on Demand

2.4.6.1. Skills and resources (6.3, 6.6)

As GoD platforms emerged, as with other forms of streaming content including films and music, broadband services providers (BSPs) latched onto the promise of a differentiated offering that would boost revenue per user to generate potentially strong profits. Indeed BSPs were the main drivers behind the initial adoption of GoD services because of the ease of alignment of these services with other subscription businesses. BSPs are responsible for a significant percentage of GoD services within Europe.

Unfortunately smaller BSPs within Europe simply do not have enough web traffic flowing to their sites to generate subscribers to make a successful GoD business. To compound this scale issue the competitive nature of the BSP market means that these companies have been unable or unwilling to free up resources to market their services correctly and in conjunction with content owners to build up subscriber numbers. Publishers feel that BSPs often lack the marketing expertise required (or expected) to leverage their content successfully. Dealing with BSPs can be a frustrating and drawn out experience for content owners. Poor marketing and an inability to find sufficient scale has resulted in a number of GoD services within Europe commercially failing.

Suggested remedies

It is generally expected that the industry itself will resolve these issue without the need for intervention. European BSPs launching GoD services should be aware that unlike their counterparts in the US, they need to spend proportionately more on marketing and advertising their service to attract enough consumers to their GoD portals to deliver the required scale for profitability. Significantly GoD platform vendors are providing more marketing expertise for inexperienced GoD service providers than ever before which should also help bridge the marketing knowledge gap.

2.4.7 Online gaming

2.4.7.1. Digital Asset Management Systems

Asset management system solutions are increasingly important for games publishers looking to expand into new digital distribution markets and new geographies within the EU. The largest games companies utilise a mixture of traditional forms of asset management software, niche games industry specific solutions and in-house tools to promote internal efficiencies in areas such as multi-platform games development.

More often than not, the games industry specific offerings are developed by small, relatively new companies. Like other small technology companies they face the challenges linked to establishing themselves in an emerging market with the threat of not securing funding or running out of capital. Using these solutions is therefore a significant risk for games publishers. This risk factor has a negative impact on uptake and, we suggest, overall business development within the region.

Suggested remedies

Although it is generally expected that the industry itself will resolve these issue without the need for intervention, the increased strategic importance of asset management systems built specifically for the games industry means that game publishers would like to maintain a market climate within the EU where small companies offering these solutions thrive to help reduce risk to the publishers and to increase choice for the customer.

2.4.7.2. Technological skills/services associated with new distribution platforms (6.3)

There remains a lack of publisher expertise in managing and running large scale MMOGs in Europe. Areas where publishers lack expertise include:

- customer relationship management
- service management
- game community development and management

The more successful a title is in the market, the more rigorously these elements will be tested.

Customer support and community management are often cited as the most onerous cost bases necessary for the provision of a successful MMOG service. Keeping users satisfied (and thus continuing to pay) is a function of gameplay, technical service quality and, increasingly, customer service quality. Indeed, as the market continues to expand and attracts more casual MMOGamers whose loyalty will be more difficult to attain, customer service will increasingly make or break an MMOG.

Customer service is expensive as the technical nature of many of the questions posed by users necessitates a high level of training. Indeed, it is this expense - possibly more than any other - that has prevented many MMOG publishers from launching their titles outside of English, German and French-speaking territories. The more successful MMOGs retain substantial customer support operations, although a high proportion are only used during peak periods. The perceived wisdom is that one support person is needed for every 3,000- 4,000 subscribers.

However, CRM is not just about support personnel. Support systems are needed that can guide not just the support personnel, but also the users themselves. In addition, MMOG publishers need to provide tools and infrastructure to manage their online communities, both within the game (policing, player dispute arbitration, feedback reporting, event organisation, etc.) and outside of the game (web sites, forums, etc.).

Again, there are third party providers of CRM and community management servicing the MMOG market, but most of the larger MMOG developers and publishers retain this function in-house. In such scenarios, ongoing CRM costs can therefore reach around €590,000 to €780,000 per annum for every 100,000 subscribers.

The success of MMOGs in the EU region will rely heavily on the development of specific skills to deliver CRM and community services to consumers.

Some larger publishers have already identified the need for new services. Codemasters' creation of an Online Group to service MMOG titles is an example of this awareness. Codemasters (a UK publisher) is building its expertise in game hosting, community management, technical support and billing. The company will be responsible for both RF Online and Dungeon and Dragons Online when they are launched in the European market.

Suggested remedies

It is expected that the industry itself will resolve these issue without the need for intervention.

2.4.7.3. Regulation of user created content

User-created content defined as original content made by the gamer in-game is a potential roadblock for the online game industry and especially MMOGs if not managed correctly. The problems associated with user created content include infringement of copyright and infringement of trademark against the game itself and perhaps more worryingly, real life third-party brands. Another associated problem is the challenge of effectively regulating user created content especially with regards to content classification under laws operating in both Germany and the UK.

At present there are very few MMOGs where gamers can create their own content with no in-game rules or regulation, although the success of the highly experimental game, *Second Life* developed and operated by Linden Labs based in the US (but played in many countries across Europe) makes this an area to watch more closely. In *Second Life*, gamers create their own content which they then sell in-game for currency, which can then be exchanged for real life currency at a later date. Infringement issues are starting to arise though with gamers generating in-game content – clothes for characters for example – that infringe on trademarks of real life brands.

None of the MMOG operators interviewed for this study considered user-created content a roadblock to European market development at this time, although they acknowledged that if users were left to create content without rules – as in *Second Life* – there could be potential problems in the future.

No intervention is required at present as this is not a major issue and a very small number of networked games allow 'free for all' user content creation. However like MMOG games that have constant updates, which need to be regulated and age classified, if this content model becomes popular it is inevitable that this approach will be difficult to align to current regulation and classification practices. Both content creators and classification organisations should be aware of user generated content and its potential impact on business processes.

2.4.8 Interactive TV games

2.4.8.1. Platform standardisation (1.4)

One of the key markets negatively impacted by a lack of software and hardware standardisation is iTV games. The lack of standardisation is evident in both set top box (STB) middleware and in the processor and graphical capabilities of STBs in general. STB middleware, the software layer that runs iTV games when they are downloaded to the STB through DTV broadcast channels, has been adopted at different rates by DTV operators and there are now quite a few different standards of middleware implemented across the EU on satellite, cable and terrestrial DTV networks.

The emergence of IPTV services has meant the introduction of still more types of middleware. The need to prepare content for a range of different middleware results in more development and porting costs for the games developer. This has had a negative impact on the development of the iTV games market within the EU.

Suggested remedies

The industry has tried to remedy the situation by developing open standard STB middleware such as MHP, which is favoured in Europe and OCAP, a form of MHP, which is favoured in North America. It was envisaged by many iTV companies and operators that MHP would become the standard for STB middleware across many country markets in Europe especially with regards to terrestrial DTV networks. Indeed MHP has been adopted for some TV platforms in a number of European markets including France, Italy, Spain and Finland.

Recently, however, Via Licensing, the company that controls the license for MHP, has stated that MHP will remain free to use until 2009 after which there will be a charge for each STB and head-end deployment of the technology. The charges that Via Licensing is proposing are significant and perceived to be far too high for small DTV channels that may want to run iTV applications – especially those that are not generating significant revenue.

The publishing of these proposed charges for use has understandably rocked the market. Not only has there been considerable investment in MHP applications, services and technology by terrestrial operators and iTV application vendors alike, but it is likely that future terrestrial deployments may

rethink adoption of the standard. If Via Licensing keeps the tariff for MHP use high, it will inevitably undermine the adoption of MHP, and will result in less STB middleware standardisation across Europe. ITV games companies and trade bodies expect this to act as a significant roadblock to the development of the iTV games market in the EU moving forward if this issue is not resolved in the same way as OCAP has been adopted and resolved in North America (also controlled by Via Licensing).

2.4.8.2. Competition issues (5.4)

One games market that is being impacted by a reduction in competition is iTV games. The on-going consolidation of DTV operators in key country markets, for example the UK where there is now only one major cable operator following the merger of NTL and Telewest, is reducing the number of market players in each country to one or two.

This less competitive environment means that dominant operators can implement high charges for electronic programme guide listing for independent interactive games channels with less threat of losing market share. This hinders the entry of new vendors into and onto those networks charging high prices, and therefore reduces competition and removes choice for the consumer. Overall this hinders the development of the market.

Suggested remedies

It is expected that the industry itself will resolve this issue without the need for intervention. However, iTV game companies would like better safeguards against this sort of practise. From their perspective third-party content vendors should be able to compete with in-house games channels without being at a significant commercial disadvantage. At present it is unclear how these safeguards would operate and how they could be put into practise.

2.4.8.3. Regulation issues (4.2)

The regulation of iTV services and advertising for these services has become unclear within France. Since the implementation of the Telecoms Directive in France, there has been new regulation relating to iTV services and applications. The directive recognises two forms of service:

- Audiovisual Communications which falls under the governance of the CSA, and
- Public Communication Line which falls under ARCEP (the new French telecoms regulator).

Today it is unclear for French companies to know under which regulator an iTV service will be assessed and although trade association AFDESI has asked the CSA to explain the position it has not been clarified. The way the services are regulated has a major impact on how they can be advertised. According to AFDESI, this is having a negative impact on the emergence of new iTV services within the French market. As one of the strongest markets for iTV games, this is obviously a roadblock to the development of the iTV games business within the EU.

Suggested remedies

AFDESI, the French iTV games trade body, believes that there should be more EU-wide regulation on iTV services, to help avoid the problems currently faced by the French market. A pan-European system will help drive the expansion of the market, it believes.

2.4.9 Case Study 5: Introversion Software

Profile

Introversion Software is a small UK based games developer which was founded at the end of 2001. During the last five years the company has released three PC game titles without significant funding from publishers – *Uplink, Darwinia* and most recently *Defcon*. Since December 2005 Introversion has become increasingly well known for deploying a successful download to own digital distribution strategy for its content in conjunction with a third-party distribution platform vendor. The use of digital distribution has turned the commercial fortunes of the company around, and has, in the words of one of its founders, 'saved the company'.

Background

Introversion was founded with the intent to create innovative games independent of the incumbent publisher funded business model used for the development of mainstream games content. The company strongly believes that the publisher funded model inhibits creativity and stifles innovation in games development. Introversion wanted complete control over the development process without the influence of a publisher and therefore made the decision to self-fund the development of its games titles.

Introversion launched its first game *Uplink* towards the end of 2001 through independent games retail outlets in the UK and also through its own in-house ecommerce operation. The game sold in very small numbers mainly due to a lack of mainstream retail exposure and access to the most profitable sales channels.

The company was better prepared for its second release, *Darwinia*, in March 2005, with a more advanced PR and sales strategy, but retail sales again fell short of its expectations. Although the major high street retailers took the game, because of the general fall in PC game shelf space, and because *Darwinia* was not an instant best seller, the game had a very short shelf life. As a result the company came under increasing commercial pressure to implement a change strategy to increase its sales.

The switch to digital distribution and its impact

Introversion sought to radically overhaul its distribution strategy and opted first to develop and build its own digital download platform, which it launched in September 2005 following six months of development work.

The company secured an 'export aid' grant from the UK government to build the platform. The use of this distribution platform effectively removed several parties and costs from the value chain including materials and time to make the materials, inventory, distribution and retailers and because the games were sold direct the company took a 100 per cent share of the sales revenue.

Although the strategy did not increase volume of sales (at this time, six months after the games launch, web traffic to the Introversion download site was fairly minimal), it demonstrated to the company that - with enough exposure - digital distribution would allow for a much better business model for the future of the company. One of the major challenges facing developers self-publishing and digitally distributing their games without the help of a third-party network is securing enough traffic for their unpublicised and small web sites to generate sales.

In order to increase its exposure, Introversion negotiated a distribution partnership with a third-party DRM and download-to-own platform and service vendor, Valve Software. Significantly Valve Software's Steam distribution platform was already installed on over 6m PCs globally mainly because of the phenomenal success of its best selling digital distributed title *Half-Life 2*. Therefore the platform had a well established captive audience far in excess of Introversion's normal distribution channels.

Introversion released *Darwinia* over the Steam platform in December 2005 and within three weeks it had sold more units via digital distribution than it had through all the company's other sales channels for the past nine months. Aside from the high sales figures, Introversion also negotiated a much better share of sales revenue through the Steam platform than it did through its retail partners. Share of revenue increased at least five-fold using the Steam platform in comparison to the retail channel. Removing both incumbent parties – the publisher and high street retailer – from the distribution chain resulted in a far better margin business for the company which allowed it to grow its business while maintaining its independent status and its level of content and technological innovation.

The shift to digital distribution has secured the financial future of the company for the short term and has allowed it to fund the development of its most recent game *Defcon*. Additionally, by remaining independent, Introversion will be better positioned to innovate in terms of content, middleware and developer tools, an important factor for all developers seeking to differentiate their product offering, and more generally for the future success of the games industry within the EU.

Another positive result of the shift to digital distribution was the significant reduction in piracy due to DRM. Introversion estimates that the piracy level for its first game *Uplink* was 100-1. For every CD-based game sold there were 100 games distributed illegally. Much of this was due to the lack of effective anti-copy protection the company used for its CD based games, but it also highlighted to the company the ease with which physical media could be copied. Steam's DRM has helped reduce that ratio dramatically.

Aside from the Steam platform, Introversion is commercially assessing the idea of digitally distributing its games through the online and distribution networks of next generation consoles from Microsoft and Sony. The company states that, like Valve's Steam revenue share model, Microsoft's Xbox Live Arcade revenue share model is far better to the developer than the traditional high street retail model, and as such is a realistic alternative to retail distribution.

The challenges that come with digital distribution

Although the switch to digital distribution has had a massively positive effect on the commercial potential of the company, it has brought with it some hurdles of its own.

Perhaps the biggest challenge for Introversion has been managing the ramifications of offering product to a global audience. Localisation of content for the EU market is a considerable expense to a small developer. *Darwinia* is currently only available in English, which undoubtedly will have impacted the sales potential of the title in major European markets such as France, Germany, Italy and Spain. At present 80-90 per cent of the company's software is sold in the UK and North America to English speaking consumers.

The administrative impact of VAT charges on products digitally distributed via the Internet has also been a problem for Introversion. The company found that its billing provider was not supplying it with the necessary sales records to identify which consumers should or should not be paying VAT and at what rate. Eventually Introversion got round this issue by building its own billing solution in-house at significant expense.

Conclusion - Lessons

For many years small independent developers have struggled to survive commercially under the established value chain within the European games industry. Many development houses have gone out of business or have been acquired by publishers to create in-house teams to generate content. Digital distribution, or more specifically digital download of games content, represents an opportunity for EU companies - such as Introversion - to self-publish and to have a better share of sales revenue.

Its worth noting that the shift to digital distribution for Introversion has brought with it some challenges of its own, including localisation and increased complexity in billing and payment solutions that it was not prepared for. Developers should be aware of these challenges before embarking on this form of distribution.

At present there are very few viable distribution platforms with the necessary consumer exposure to represent a suitable alternative to retail distribution. However, this is slowly changing as Valve's Steam solution becomes more prevalent for third-party content and the console manufacturers make a serious attempt to attract independent content to their platforms. There are other digital distribution solutions and networks operating in the EU market, yet the revenue share model that these are built upon are very similar to traditional retail model for developers and therefore are less commercially favourable.

Independent developers seeking to leverage digital distribution of their content would like to see more distribution platforms operating extensively within the EU under a revenue share model more favourable than the standard retail revenue share model. Some developers have identified some challenges ahead for these distribution platforms including the need to maintain a balance between quality and quantity of content made available. In addition developers would like to see safeguards maintained to ensure that the owners of these platforms do not implement sweeping changes detrimental to the content providers. Detrimental changes could include a change in revenue share policy or a decision to deal only with game publishers and not small developers. Higher competition in this segment of the market will help keep distribution platform owners in check.

2.5 Radio

2.5.1 Introduction

Compared to other media, digitisation of radio lags behind in all European countries. Until now real success stories for digital interactive radio services have been rare, especially after the failure of DAB (Digital Audio Broadcasting) in some countries and only modest success in a few – Radio is sometimes forgotten when thinking about convergence or digital and interactive media.

When speaking of "Mobile Entertainment", for example, radio, the oldest mobile electronic medium, is seldom mentioned. Mostly television broadcasters are seen as content providers for mobile entertainment services. Nevertheless the attractions of digitisation are also growing for radio stations, which however at the same time also fear competition from new players.

Until now interactivity has in most cases been enabled via telephone, i.e. value added calls or SMS. But with new standards offering integrated feedback channels on the rise, radio broadcasters will have to develop new business models in order to compete with other media which are already or are soon going to be fully digital. The ability to offer the same type, depth and quality of (interactive) services requires radio's digitisation.

Today radio in Europe is available across a huge variety of different digital platforms: from digital television, to mobile phones and the Internet – and of course still via traditional analogue FM and AM radio sets. Multimedia and interactivity are increasingly becoming part of the radio. New services like visual radio services for instance offer additional benefits to mobile phone users.

At the same time reduced transmission costs and a potentially larger listener base could offer opportunities for special interest programming and subscription-based radio services. The key question however is whether radio stations will be able to exploit these chances and to what extent traditional radio is threatened by new potential competitors or offerings like podcasts and other user generated content as well as substitutes like services offering music via fixed or mobile broadband or music on MP3-players listened to instead of radio programmes.

European-wide accessibility and the exchange of content are of marginal importance for radio being constricted to the respective local language. Until now there has been only low user demand and little business interest for universal accessibility of radio content outside domestic markets. Radio's unique selling point (USP) is – apart from its speed and immediacy – above all the local connections. Especially in highly fragmented markets listeners are used to local radio content and appreciate that. Hence traditional radio is, especially when it comes to local/regional content, contributing a lot to media diversity and pluralism.

Listeners have learned that radio is a free service. In countries with strong public broadcasters, as for example in Scandinavia and the German speaking countries, radio is available to listeners without advertising or with reduced advertising.

At the same time the demand for new radio programmes certainly depends on the number of radio stations currently competing in a given region, the business development manager of a pan-European radio group stressed. The establishment of business models beyond the classical advertising financing is therefore quite a challenge. The share which these new business models will have in the future can be estimated only with difficulty..

The interest of current broadcasters in enabling more competition by forcing digitisation is often not very strong. Even in most pan-European radio groups there is no unique strategy concerning digitisation.

2.5.2 Summary of main findings

To identify convergence obstacles, Goldmedia conducted nearly thirty interviews with stakeholders, including managing directors, technical directors and senior management in charge of business development from several radio stations and groups, furthermore stakeholders from media agencies, network operators and platform providers as well as the automotive industry (about in-car digital radio).

Moreover a focus group of ten stakeholders discussed economic, technical and regulatory issues at Goldmedia's Berlin office on April 7th 2006. Furthermore in-depth desk research conducted by Goldmedia provided the basis for these insights into issues concerning the future development of digital and interactive radio and its specific technology, business and regulatory issues

In contrast to TV digitisation which is gaining pace across Europe, digitisation of broadcast digital radio is – apart from very

few countries – still stagnating at a very low level or even at a trial stage. Especially in continental Europe, radio is mainly still an analogue medium using the analogue FM band as the principal means of distribution. While Digital Audio Broadcasting (DAB) had been designed to replace the existing analogue radio systems, newer digital broadcast standards are much more efficient. More and more people in the industry as well as regulators and governments are rethinking their switch-over plans for radio.

The result is, above all, uncertainty at radio stations as well as among listeners, consumers and amongst the consumer electronics industry is. Thus plans for the introduction of services and the allocation of spectrum for digital services are being postponed and a switch-over within the next five to ten years seems very unlikely in most member states.

However traditional radio broadcasters are threatened by other players in the digital value chain and fear competition especially from broadband music services and MP3-players. Thus radio stations are beginning to use the Internet as a new way to simultaneously stream their content even though adequate business models have not emerged yet.

3G networks and mobile broadcast standards like DMB and DVB-H are another big issue for the radio industry, hoping that radio services for mobile usage will be able to compete with (and to a certain extent embrace) MP3-players as well as TV and multimedia services on these platforms.

Radio stations are mostly SMEs and have to compete with much bigger companies. Whilst radio's total net advertising revenues in EU25 added up to € 4.6bn in 2004 (being shared by about 7,700 radio stations), mobile network operators for instance, like Vodafone or T-Mobile generated revenues of nearly € 43bn respectively about € 29.5bn in 2005. At the same time mobile network operators may offer such services for branding reasons or to reduce churn. Companies like Apple subsidise their music services in order to push hardware sales. Given these facts, the competitive situation for radio stations is becoming increasingly complicated. The effects of competition from these new substitutes for radio programmes are already become apparent amongst young target groups in which radio's reach has been decreasing extraordinarily fast during the last two years.

Given that mobile phones are subsidised by network operators on a large scale and that handsets are replaced at an average rate on every two years, radio managers are hoping for rapid penetration by new technologies in contrast to the market for dedicated radio receivers. Since the latter devices are generally low cost products, it is difficult to persuade customers to invest in digital receivers, which are still relatively expensive (on average about € 100), especially when there is so much uncertainty and while the added value of digital radio is unclear.

While it is not clear yet which digital radio broadcast standards (i.e. DRM/DRM+, IBOC, DAB/DAB+, DMB, DVB-T) will succeed to what extent, it is certain that radio stations will have to distribute their content via a variety of new ways while FM will remain the dominant way of distribution within the next ten or even fifteen years.

The business will become much more complex for several reasons:

- new digital channels encompass linear as well as non-linear ways of distribution
- new business models such as pay radio or radio on demand and e-commerce (especially music) will have to be established to finance these different types of channels

Using a variety of different distribution channels in parallel makes distribution far less efficient than it used to be. This is also true in terms of spectrum efficiency as most probably more than one digital terrestrial broadcast standard will be in use – while FM will also be used for another couple of years.

Challenges for the development of digital and interactive radio are discussed in detail below, the most important ones are summarised here.

2.5.2.1. General issues

- Digital radio will only succeed if both commercial and public service radio stations are sure that they are going to profit from digitisation
- Compared to the US market the huge variety of languages in the EU makes it hard to find niche target groups big enough to establish special interest radio programmes. This is intensified by the fact that in some member states it is hardly possible to establish even national brands
- Fragmented radio markets and thus small radio stations hinders large investments

in new digital and interactive services from the traditional radio industry
- Skills to handle new online and mobile platforms and IT issues in general as well as skills in developing new business models are lacking in some traditional radio companies
- The traditional commercial radio business model, being almost entirely based on local and regional advertising revenues does not fit with new platforms that are not dedicated to a certain region
- In order to further develop the business model of advertising revenues and fit it to radio that is transmitted via a variety of channels and used in a variety of ways, new standards for usage measurement have to be invented and agreed upon
- Therefore a strong position of publicly funded radio that offers a huge variety of programmes (mostly free of advertising) might sometimes also act as an inhibitor to the emergence of innovative digital radio platforms, especially for pay radio

2.5.2.2. Broadcast digital radio issues

- DAB, the standard originally designed to replace FM, is outdated and other, newer standards such as DAB+, DRM(+), DMB, DVB-H are superior in terms of quality and efficiency
- Uncertainty about the development of DAB and other broadcast digital radio standards are hindering efforts from existent radio stations
- Additionally traditional FM radio broadcasters are not interested in giving up their comfortable oligopolistic situation
- The consumer electronics industry so far only offers digital radio receivers which are far more expensive than analogue ones, as they cannot realise economies of scale
- There is a lack of political will and pressure to switch-over (though the recent postponements of switch-over efforts are also due to uncertainty about standard issues)
- Consumers are confused and alienated. There is a lack of knowledge about and interest in DAB amongst consumers in most European countries
- From the consumers point of view there is only little added value in digital programmes. (As Ofcom studies in the UK show, particularly a larger choice of radio programmes creates added value for the listeners, even if radio reception is not improved fundamentally. The German market for example shows in contrast that simply providing digital radio reception while not offering new services provides no incentive to consumers to invest in new radio devices)
- Consumers have learned that radio receivers are traditionally low cost products and are not willing to heavily invest in new devices which are still ten times as expensive as average FM receivers
- To solve the chicken-and-egg roadblock to the roll-out of broadcast digital radio, public regulation and impetus at European level would be needed to create confidence in the market
- Low cost receivers can only be provided for mass markets that permit economies of scale. Hence standards as well as timing of digitisation should be agreed upon at a European level
- Uncertainty amongst all stakeholders must be reduced and confidence should be created by a regulatory framework as well as clear messages and communication efforts
- Receivers could theoretically be subsidised to create a critical mass. Traditional radio companies are not willing to do this at present and the business model is not suitable for subsidies in contrast to subscription based models. Some consumer electronics manufacturers are of course also fond of governmental subsidies)

2.5.2.3. Online radio and podcasting issues

- Broadband penetration is the main driver for online radio as well as podcasting. Low penetration rates in some member states slow growth of online radio and podcasting
- Also (real) flat rates are a basic requirement for online radio and podcast usage
- Online radio can still almost only be listened to on the PC yet radio is, especially in the morning (radio's prime time), traditionally often listened to in the kitchen, the bathroom and also the car, which are not equipped with PC yet. This slows down demand for online radio.
- Devices such as Wi-Fi radios that could be used in rooms like the kitchen etc.

are being developed and would be more convenient to use than the PC in typical low involvement radio usage situations. Some manufacturers announced the introduction of such devices in 2006. In the mid and long term such devices will, if they are marketed at reasonable prices, drive usage of online radio
- Radio is also listened to a lot at work. While many offices are equipped with PCs and broadband connections, more and more companies do not allow their employees to listen to online radio in order to save bandwidth
- Provider's costs for streaming rise with every user. Thus traditional streaming technologies are not a suitable model for mass media (solutions: Multicasting, P2P)
- Traditional radio business models based on revenues from local, regional or even national advertising are not suitable for the online world. Thus contacts that are generated and cause costs (streaming, royalties) can hardly be sold to advertisers within the radio station's traditional sales structures
- Standards for audience measurement have to be developed and agreed upon in order to create new advertising markets
- Some stakeholders mentioned a vague fear of advertising-regulation for online radios
- Differences in the amount of royalties levied for music in online radio services amongst the member states lead to competitive disadvantages for online radio services based in countries with comparatively low royalties
- Commercial radio stations complained that public service broadcasters would enter online radio and podcasting markets aggressively and establish free services that would not allow commercial stations to establish pay radio or paid radio on demand/paid podcast services
- Most podcasts do not contain music. This is due to the fact that most collecting societies treat podcasts that contain music like music downloads. Thus a 30-minute podcast "radio show" containing ten songs would have to be priced like an album to pay the royalties. Consumers would definitely not be willing to pay that much. Hence "real" radio on demand is hampered at the moment
- When trying to establish paid podcasts or radio on demand services, the lack of convenient and trustworthy micro payment systems (at least from the consumer's point of view) hampers billing in many member states
- Podcasting is often discussed about as a great opportunity for user-generated content and citizen journalism. Nevertheless creating a good podcast is quite complex. Compared to blogs, podcasts require much more journalistic, entertainment and IT skills. Furthermore podcasters have to invest much more time creating content that can not be assessed as convenient as blogs.
- Radio companies trying to establish new business models that include e-commerce with music downloads complain about low margins
- In contrast to broadcast digital radio regulatory action and public impetus are not requested that much
- However online radio and podcasting will remain niche markets compared to analogue FM broadcasting for the next five years despite high growth rates

2.5.2.4. Mobile radio issues

Many of the issues raised for online radio were also mentioned and are also true for mobile radio especially for 3G services:
- Role of public broadcasters
- Usage measurement
- Streaming not suitable for mass markets
- Royalty issues
- Regulation of advertising

Nevertheless there are also many differences:
- As the name suggests there are no problems in using mobile radio on the move
- In contrast to the Internet there are well established and very convenient billing systems
- 3G penetration is still much lower than fixed broadband penetration
- 3G flat rates at attractive prices are a crucial success factor for such services
- Prices for 3G usage are still quite high, price structures are often too complex
- Download volumes are often limited (even for so-called flat rates)

Furthermore there are a lot of issues specific to the mobile market
- There is a huge variety of operating systems and platforms. Thus it is very complex to establish services. Some interviewees mentioned that they

hoped that Symbian would succeed others preferred Windows Mobile
- As the number of UMTS users per cell is restricted, broadcasting technologies (DVB-H, DMB) are the better choice for bigger audiences, especially when it comes to live radio shows.
- However on mobile phones convergence of broadband and broadcast services (3G + DVB-H/ DMB) allows for attractive services
- Nevertheless there are still less than 20m 3G handsets in the market (EU) and even far less DMB or DVB-H handsets
- Fast replacement rates for mobile phones, thanks to subsidies, guarantee fast take-up of the installed base
- On mobile broadband platforms radio content has to compete with music services, which are more attractive for mobile network operators in terms of revenues
- On mobile broadcast platforms radio has to compete for spectrum with TV services
- Generally radio stations have to compete with services from mobile network operators, whose objectives may not only be to generate revenues directly from those services but also branding or low churn rates
- Radio stations feel that they are in a weak position compared to mobile operators
- Radio managers think that non-discriminatory access to digital platforms as 3G mobile networks and DAB/DVB-H multiplexes is needed. Many radio broadcasters are in favour of must-carry rules

Figure 63 : Forecast Online Radio, Podcasting and Mobile Radio in the EU (weekly users in Mio.)

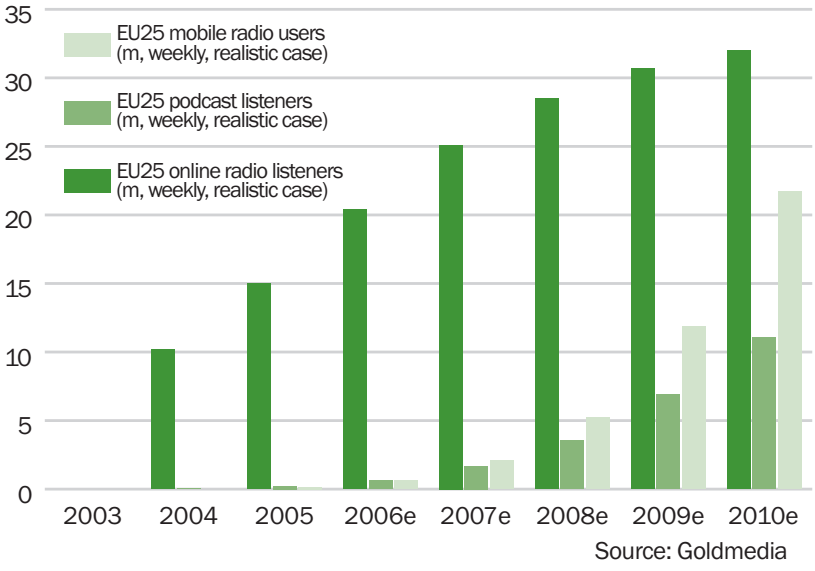


Figure 64 : The ten biggest Commercial Radio Companies in Europe (2004 operating revenues)

	Company	*Country*
1	Sociedad Espanola de Radiodifusion (SER)	ES
2	GWR Radio Services Ltd	UK
3	Radio Popular	ES
4	NRJ	FR
5	Radio e Reti	IT
6	Soc. pour l'édition radiophonique (RTL)	FR
7	EMAP Performance Ltd	UK
8	Europe 1 Télécompagnie	FR
9	Antenne Bayern GmbH (est.)	DE
10	Sky Radio Ltd	UK

Source: European Audiovisual Observatory

Mobile satellite radio
- European national markets seem to be too small to run mobile satellite radio services comparable to XM or Sirius profitably even though some possible providers are still trying to figure out whether they could succeed. But as it would take several years to make such a system run, mobile satellite radio will most probably not emerge in Europe by 2010

2.5.2.5. Forecasts

The future development of broadcast digital radio depends on which standard will be used and when each country will start the switch-over. But regardless of the standards that might succeed, a switch-over by 2010 does not appear to be realistic.

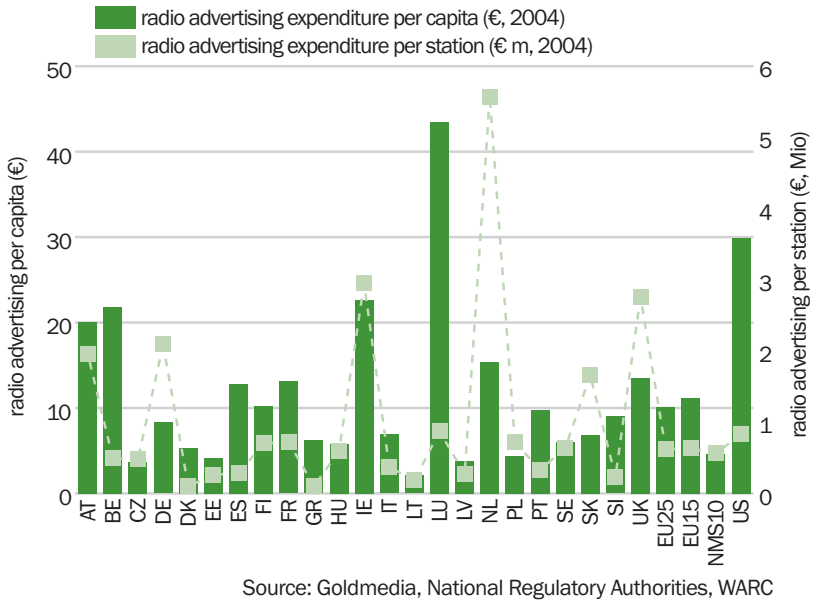
As online radio and podcasting are not very dependent on regulatory or governmental decisions, the take up of these nascent markets can be forecasted quite well.

According to Goldmedia's moderate scenario for 2010, there will be
- about 32m weekly online radio listeners
- about 11m weekly podcast listeners and
- nearly 22m mobile radio listeners

in the European member states.
This compares to a daily audience of about 346m for traditional radio services across EU25 in 2005. Thus about 75 per cent of the Europeans listen to radio every day. In the few countries were both radio's daily and weekly reach is measured, weekly reach is about ten per cent higher.

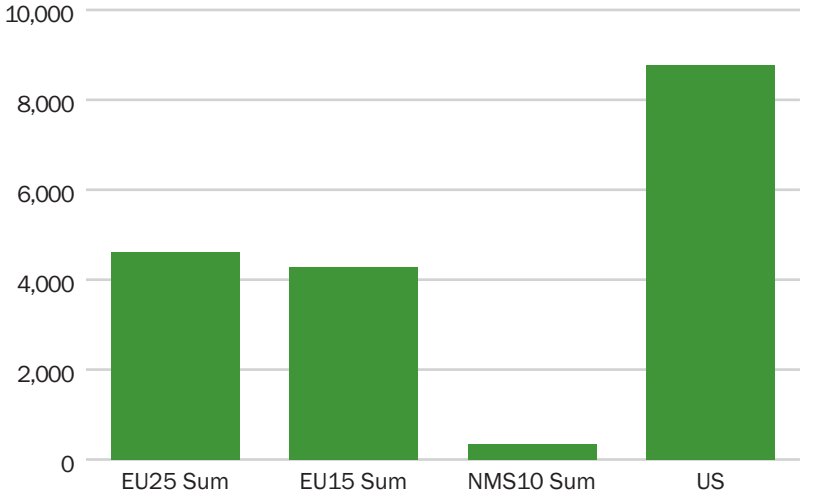
Viable business models for digital interactive radio services have not emerged

Figure 65 : European and US Net Radio Advertising Expenditure



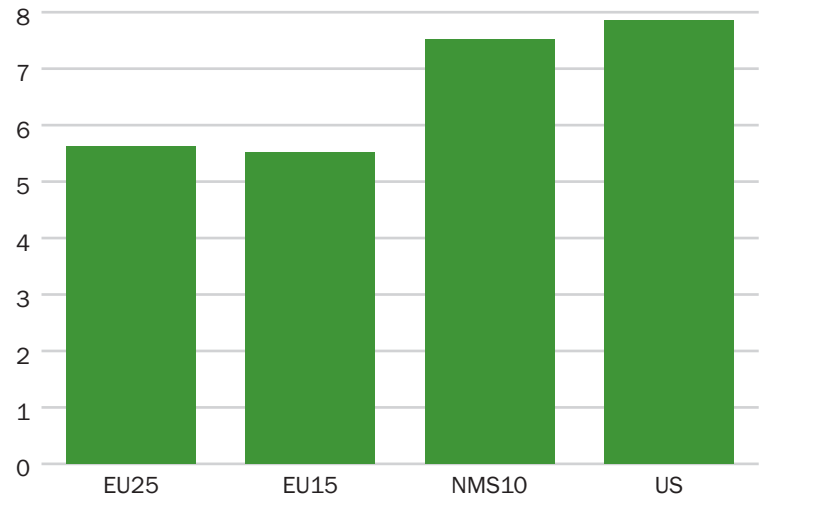
Source: Goldmedia, National Regulatory Authorities, WARC

Figure 66 : Total Radio Advertising Revenues in the EU and in the US (net, € m, 2004)



Source: Goldmedia, National Regulatory Authorities, WARC (NMS10 excl. Malta and Cyprus)

Figure 67 : Radio's Share of Advertising Market in Europe (in %, net, 2004)



Source: Goldmedia, National Regulatory Authorities, WARC (NMS10 excl. Malta and Cyprus)

yet and it is not clear whether models mainly based on subscription fees, on advertising revenues or on transactions will dominate, even if advertising-based business models are more likely in the mid-term (2010) though standards for audience measurement still have to be finalised and agreed upon.

Assuming that most of the revenues will be based on advertising and given the numbers of listeners forecast compared to that of traditional broadcast radio services, it seems to make sense that digital interactive radio services will most probably make up less than ten per cent of radio's total advertising revenues in 2010. In 2004 radio's total net advertising revenues amount to €4.6bn in the EU. Revenues increase growth has since considerably slowed down.

We forecast digital radio advertising revenues to represent about 5 per cent of a projected €5.2bn market.

However, apart from the economic value online radio and especially podcasting will probably stay niche markets. Mobile digital radio has the potential to become a mass market – but after 2010.

2.5.3 Value chain and market trends

While the French and British Radio markets for example are characterised by few major radio groups dominating the market and disposing of considerable financial power, the German radio market in contrast is fragmented, highly local and characterised by very low competition in most local/regional markets (see country profiles for details).

Radio advertising expenditures per capita and per station vary a lot in the EU – thus, the competitive situation varies considerably.

Radio's total net advertising revenues in the EU amount to € 4.6bn Euro in 2004 which correspondents to € 10.1 per capita. In the new member states radio's net advertising revenues amount to about 8 per cent of that in the EU15 states, per capita expenditures being less than half that much in NMS10 compared to EU15.

In the United States radio's total net advertising revenues were nearly twice as high as in Europe. Given the fact that population is smaller, per capita expenditures are nearly three times higher.

Radio's share of total advertising revenues also differs. Both in The US and NMS10 it is about 50 per cent higher than in EU15.

In the new member states radio advertising revenues and advertising markets in general are growing quite rapidly, at a

compound annual growth rate of about 12 per cent from 2001 till 2004 – much faster that GDP growth.

By radio advertising revenues in the EU15 grew slower than the GDP between 2001 and 2004. Hence commercial radio markets are stagnating in EU15 while there is quite a boom in the new member states.

2.5.3.1. Taxonomy of Digital Radio

The following section focuses on sound content and programmes delivered via new digital platforms (such as digital broadcasting, broadband Internet, digital TV), with new technologies and/or new business models, while excluding traditional broadcast radio on AM and FM bands.

The most important new digital platform technologies for the distribution of radio are:

- broadcast digital radio for dedicated receivers for digital radio
  - Digital Audio Broadcasting (DAB) (used in some European and very few other countries)
  - Digital Radio Mondiale (DRM) (usage is slowly building from a very low level)
  - IBOC/HD-Radio (by now not used in the EU, but in the US)
  - Mobile satellite radio (so far only XM and Sirius in the US)
- broadband Internet
  - fixed (DSL, Cable, FTTx)
  - wireless (WLAN, WiMAX) and
  - mobile – 2.5/3G (EDGE, UMTS, HSDPA)
- digital TV platforms
  - DVB-C
  - DVB-S
  - DVB-T/DTT
- mobile digital TV platforms (sometimes combined with 3G)
  - DVB-H
  - DMB (developed on the basis of DAB)

The rest of this section focuses on three forms of digital radio:

1. broadcast digital radio, especially DAB
2. online radio/webcasting and podcasting
3. mobile radio

The chapter on broadcast digital radio focuses on DAB, which was originally designed to replace FM and AM, since it is still the most important, though still not a very successful standard for broadcast digital radio in Europe. DRM, IBOC/HD-Radio are nevertheless more and more considered to be alternatives to DAB. (Mobile satellite radio is dealt with in the chapter on mobile digital radio).

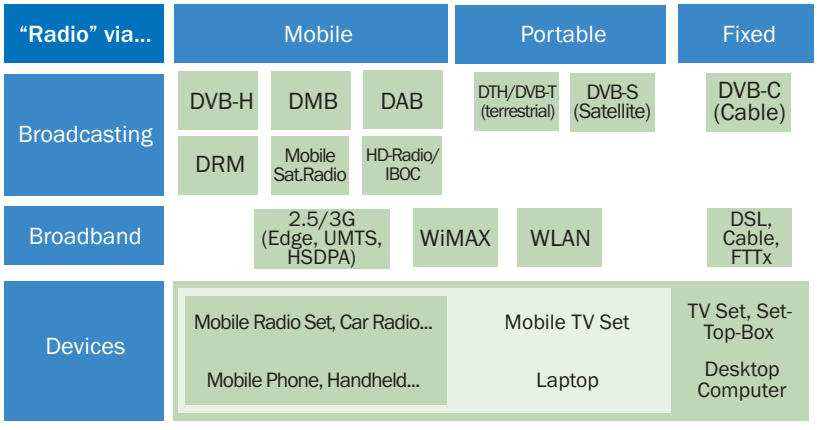
The chapter on online radio as well as on podcasting focuses on radio programmes that are streamed or downloaded via the (predominantly fixed) Internet. Online radio in this sense does not include music flatrate or download services, like "new" napster (see music chapter), although they are sometimes promoted as "radio" but is defined by the fact that programmes also contain editorial content.

The chapter on mobile radio focuses on radio programmes that use terrestrial mobile broadcasting standards (DVB-H, DMB (not DAB, see above)) dedicated to usage especially on mobile phones and/or 2.5/3G services. Furthermore mobile satellite radio is included though it has not emerged yet in Europe (and perhaps never will) but only in the United States.

The most important new business models potentially enabled by these platforms include subscription-based advertising-free radio and on-demand radio on mobile interactive platforms as well as customised, ultra-segmented web radios (including podcasting).

From traditional radio programming to an all customised, automatically-learning personal radio, different steps increase interactivity and individuality when consuming radio.

Figure 68 : Overview: Platforms and technologies for digital interactive radio services



Source: Goldmedia

2.5.4 Broadcast Digital Radio

2.5.4.1. Introduction

There are many different ways to digitally broadcast radio programmes. Firstly radio programmes can also be broadcast via digital TV platforms, via satellite, via cable networks and by using terrestrial digital TV. This is already done by several stations especially in countries with a high digital TV penetration. However until now no radio services have been dedicated to this form of usage, but stations are being simulcast. Most of these stations are traditional analogue radio stations, while in the UK the BBC also simulcast its originally dedicated DAB services via Freeview, the UK's free to air DTT/DVB-T platform. In some eastern European countries regulators are thinking about using DVB-T/DTT instead of DAB to digitise radio.

One of the interviewed radio managers mentioned that one of the stations of his group was starting a trial for broadcasting additional information like texts and pictures via DVB-S that can be seen on a TV sets screen.

The United States are not using DAB, but have instead opted for a proprietary IBOC (in-band on-channel technology), system branded HD-Radio. IBOC trials in Switzerland have drawn a lot of attention from other European countries. One of the interviewed radio managers stated that IBOC would be the better solution to digitise Europe's radio market.

Digital Radio Mondiale (DRM) as another example uses in-band on-channel technology to broadcast digital and analogue radio signals on the same frequency. Therefore switch-over would be easier. At the moment it is only used on shortwave frequencies and therefore not suitable to mirror Europe's local and regional radio landscape but with DRM+ it will also be possible to broadcast on VHF frequencies (not before 2009).

One of the interviewed radio managers stated that generally IBOC would be the better solution to digitise Europe's radio market.

However, whether one of these standards will be used to digitise radio instead of DAB can hardly be foreseen at the moment. Currently Digital Audio Broadcasting (DAB) is the dominant standard for digital radio broadcasting.

DAB has been designed to replace the existing analogue radio systems FM and AM within the Eureka 147 project. In the late 1980s it was promoted as the future of radio broadcasting. DAB theoretically provides high-quality audio and allows for superior reception in cars or on portable radios in comparison to that which can be achieved with FM radios – though in the most advanced DAB market, the UK, sound quality is sometimes not even as good as FM due to low bit rates.

Moreover, DAB could offer listeners a greater choice of programmes. Nevertheless, the digitisation of radio compared with other media lags behind in every European country. As a consequence the vast majority of listeners in Europe still receive radio via the analogue FM band.

In order to raise the profile and encourage the roll-out of DAB Digital Radio several organisations have been set up in some European countries, e.g. "Vivement la Radio Numerique!" in France, "Digital Radio Development Bureau" in the UK, Germany's "Initiative Marketing Digital Radio" (IMDR) or the "Nordic Radio Digital Initiative" (Nordini) in the Nordic region. Mostly they are joint initiatives by radio broadcasters, network providers and other stakeholders. On a global level, the non-governmental organisation "World DAB Forum" is in charge of co-ordinating the implementation of DAB digital radio services.

Beside these lobby groups other players are involved in the development of digital radio. Their different interests and economical aims complicate the implementation of the DAB-standard in Europe.

Apart from some European countries, DAB services are in operation only in Canada and Taiwan.

Some countries, like South Korea in 2005 for instance, have started to use Digital Multimedia Broadcasting (DMB), a mobile TV standard based on DAB which can also broadcast radio services (see chapter on mobile radio for details). Today seven TV channels and 20 radio channels can be received by the 500.000 devices which have been sold in South Korea.

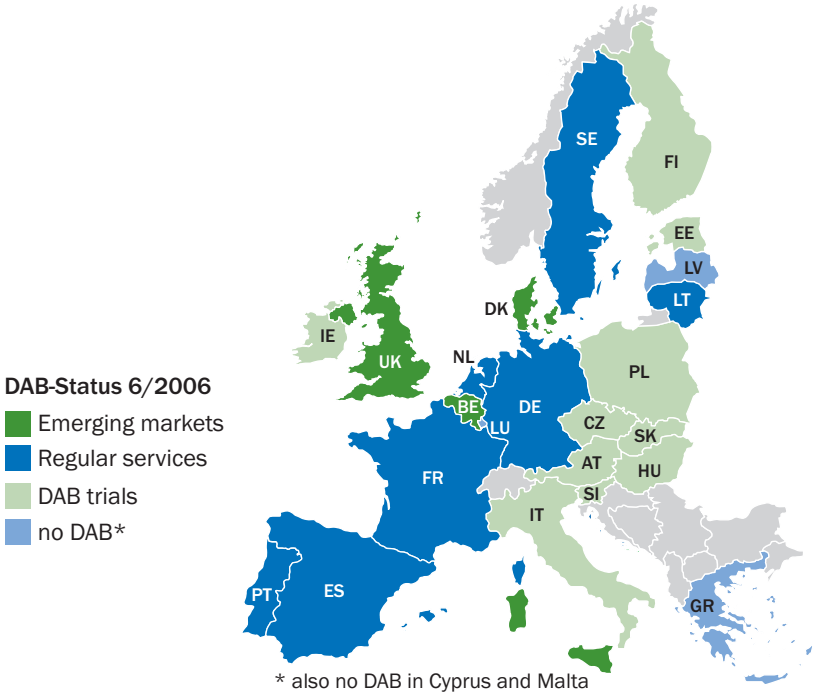
The development of digital radio in Europe is closely linked with the distribution of DAB. But the digitisation of radio in Europe did not progress as forecasted some years ago although DAB has been available since 1995. In many member states field tests using the DAB-standard took place – but without substantial success. In consequence broadcast digital radio has failed so far in most of the European countries. The spreading of

Figure 69 : DAB Stakeholders

Type of Stakeholder	*Role/interest*
Commercial radio stations	● increasing number of listeners ● and thus increasing advertising revenues ● at the moment transmission cost (though often still subsidised) per listener are much higher than potential additional revenues ● commercial radio stations owning an FM licence are often in a comfortable oligopolistic situation and fear competition form new players emerging in the cause of digitisation ● therefore commercial radio stations are often reluctant to push DAB (though most do not say this publicly)
Public radio stations	● public interest ● to a certain degree increasing the number of listeners to stay relevant ● most support DAB
Consumers/listeners	● low costs for (new) receivers ● added value of digitisation ● huge choice of programmes ● better sound quality
Consumer electronics industry	● generally interested in creating a new market by replacing analogue devices with DAB sets ● but radio receivers are or used to be low cost products that do generate neither high revenues nor high margins ● need big/international markets to realise economies of scale
Automotive industry	● potentially very influential in supporting digital radio due to high usage of in-car-listening ● equipping of new cars with digital receivers could advertise DAB and decrease the cost of components thanks to economies of scale. ● US satellite radio companies XM and Sirius have exclusive arrangements with automotive companies (General Motors and Honda are even investment partners at XM. XM's OEM partners represent approximately 60 per cent of US vehicle sales.)
Transmission operators	● costs of broadcasting not negligible for radio ● guarantee of access security for (all) radio providers?
Governments & regulatory authorities	● encouraging the economy ● mainly still in favour of digital radio ● some countries have stopped to supporting DAB (e.g. SE, NL)

Source: Goldmedia

Figure 70 : Overview: Status of DAB in EU25 (June 2006)



* also no DAB in Cyprus and Malta

Source: Goldmedia

DAB in the EU25 states is very heterogeneous. There are a lot of underdeveloped digital radio markets and few more or less successful ones like the UK and Denmark. Field tests took or are still taking place in many European states, but this does not necessarily lead to an implementation of DAB. Mainly in Eastern Europe an extremely low deployment of DAB can be observed.

The range of DAB technical coverage ranges from 20 per cent (Austria) to 98 per cent (Belgium) – apart from countries where there are no DAB services at all. But a high coverage does not automatically imply a huge audience. For instance in Germany only 200.000 DAB-compatible devices had been sold until the end of 2005, although DAB can theoretically be received by 82 per cent of the German population.

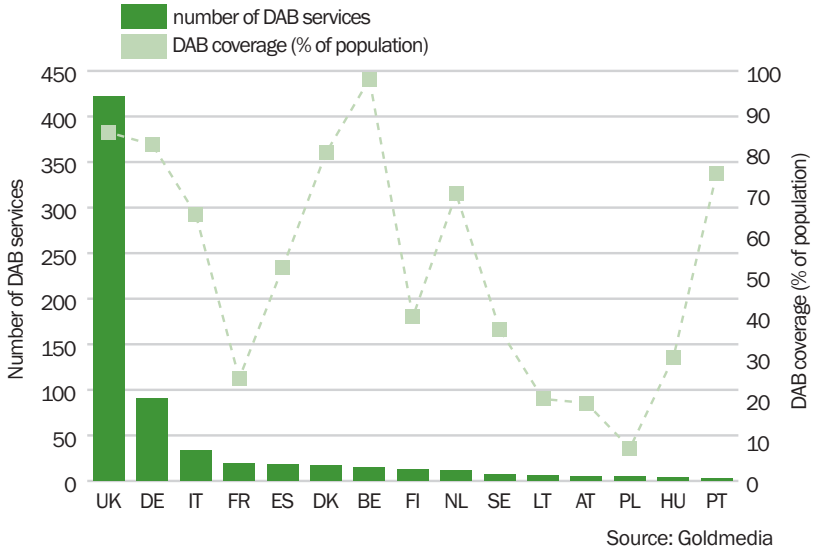
Comparing EU15 and NMS10 shows that the average number of stations as well as coverage of population is much lower in the ten new member states than in the

Figure 71 : Classification of DAB-markets in EU25

No DAB	*DAB-trials*	*Regular services*	*Emerging markets*
No services available, no trials	Regular services on air, DAB is being tested	Regular services on air – number of services and users stagnating at a (very) low level	Growing number of services and users
• Greece • Latvia • Luxembourg • Malta • Cyprus	• Austria • Czech Republic • Estonia • Finland • Hungary • Ireland • Italia • Poland • Slovakia • Slovenia	• France • Germany • Lithuania • Spain • The Netherlands • Portugal • Sweden	• Belgium • Denmark • UK

Source: Goldmedia

Figure 72 : DAB – number of services and coverage of population in the EU25 countries



EU15 countries – where especially the UK in particular are boosting the average. But even excluding the UK's 400 stations the "EU14" average is still 17 stations compared to two in the new member states.

With more than three million DAB sets sold the UK is the most advanced DAB-market in Europe (see case study on DAB in the UK for details). More than 11 per cent of the population now live in a household with at least one DAB receiver. Nevertheless, since most households use more that one radio set, this figure does not imply that these people are only listening to digital radio. In the UK about 420 radio services are transmitted via DAB. In case of public broadcaster BBC, services that are broadcast via DAB and sometimes referred to as "DAB only" are also provided as Internet streams and are also broadcast via "Freeview", the UK's free-to-air DTT/DVB-T service (there were 10.9m DTT households in the UK according to Ofcom).

Despite being the most successful DAB market in relative terms it is controversial whether DAB in the UK is a success or not. Many consumers complain about audio quality problems (see chapter on technology issues for further details). Furthermore it seems as if advertising revenues from DAB services were not sufficient to cover costs.

Since broadcasting is a business characterised by a very high level of fixed costs, it is obvious that DAB is – at least from a commercial point of view – even less successful in other member states where usage is even much lower.

While governments and regulatory authorities used to support DAB in the beginning, the situation seems be changing:

- Finland switched off its DAB network in 2005.
- The Swedish government stopped the further expansion of DAB.
- The Netherlands are presently waiting for better alternatives than DAB for digital radio.
- The five biggest French commercial radio broadcasters are vehemently opposed to using DAB.
- Even the German media regulatory authority MABB for the federal states of Berlin and Brandenburg, once strongly in favour of DAB, is pleading for an ending of the current DAB system.
- Some Eastern European countries are in favour of using DTT/DVB-T rather than DAB for terrestrial digital radio broadcasting

- Swiss IBOC trials are carefully watched by many other European countries

The low development of DAB in Europe is caused by various technological, economical and legal obstacles. Below the relevant roadblocks will be specified for each category.

2.5.4.2. Technical standards

In Europe there is no uniform strategy for the implementation of one technical standard for digital radio. Although DAB has achieved a certain user acceptance in some European countries, it is not seen as the only suitable solution by most of the interviewed stakeholders. Due to the lack of a strong standard, radio operators face a high level of uncertainty. Most of them therefore hesitate to invest in new digital services as at the same time simulcasting seems too expensive. The high level of uncertainty is reflected by the following selection of some of the interviewees' statements offering completely different points of view:

- *"The best standard currently available is DAB."*
- *"Surely not DAB, because of the high costs."*
- *"Currently it cannot be foreseen which transmission standard will be adopted by most players in the market."*
- *"There are too many standards to predict which one will prevail."*

Having been developed in the late 1980s the current DAB system is presently not the best available technical solution for radio broadcasts. At that time further developments, that have dramatically changed the communication behaviour patterns within the last ten years, could not have been foreseen. Broadband Internet and the mobile phone have become distribution channels adopted by a mass market and both can be used to offer radio services (see chapters on online radio and mobile radio for details).

Where wireless radio broadcast standards are concerned, DAB, which is dominant at the moment, is one of the oldest and one of the least efficient standards.

Standards which were developed later on, DAB+, an upgrade of DAB or Digital Radio Mondiale/DRM+, as well as mobile TV platforms such as DMB, which is based on DAB, and DVB-H are better alternatives from a technical point of view. Using a better error correction and AAC/AAC+ codecs these digital broadcast standards are far more efficient: Hence

- a lot of more stations can be broadcast within a given amount of available spectrum
- also more multimedia services could be transmitted
- due to cheaper bandwidth, higher bit rates and thus high quality audio could be provided by the radio stations

As mentioned above there are tendencies not to support DAB anymore in a couple of member states for those reasons. Others are not sure which standard should be supported.

The Netherlands, for instance, have halted the development of digital radio broadcasting and are waiting for better alternatives. Originally it was planned to start the procedure for the licensing of frequencies for commercial radio immediately after the Regional Radio Conference 2006 in May/June.

2.5.4.3. Frequencies

The effective allocation of (digital) frequencies is controlled by individual members of the European Union. Many stakeholders mention this allocation of resources as a field in which political support for the radio industry is absolutely essential. Mainly from the EC, as frequencies are supposed to be a European issue as expressed by most interviewed stakeholders. In case of DAB one reason for the low take-up can be seen in the high uncertainty whether DAB will get enough radio spectrum to succeed. In this case telecommunication companies are strong competitors because they will also claim frequencies.

Figure 73 : Overview of standards for wireless radio broadcasting

	DAB	T-DMB	DVB-H	IBOC/HD	S-DARS	DRM	DVB-T
Spectrum	Band III: 174-230MHz, L-band: 1452-1492 MHz	At the moment L-Band 1452-1491MHz	Like DVB-T, max. 738 MHz (<K54)	FM/AM: 87-108 MHz (21 MHz) AM	S-Band (2320 MHz-2345 MHz), L-Band (USA: 25 MHz)	DRM: LMK up to 30 MHz; DRM+: up to 120 MHz	Band III, IV, V 470-862 MHz, 174-230 MHz (448 MHz)
Audio-codec	Musicam 192kbps=FM	AAC+ 64kbps=FM	AAC+ 64kbps=FM	HDC 64kbps=FM	AAC+/PAC 64kbps=FM	AAC+ 64kbps=FM	Musicam 192kbps=FM
Prog. per Multiplex (quality comparable to VHF)	6-7 at 1,5 MHz Mux-Bandwidth	19 at 1,75 MHz Mux-Bandwidth	Ca. 160 at 8 MHz Mux-Bandwidth	Ca. 4 at 0,4 MHz Mux-Bandwidth	CA. 70 at 12,5 MHz Mux-Bandwidth	1 at 9,5 to 18 kHz Mux-Bandwidth	78 at 8 MHz Mux-Bandwidth
Specifics	Implemen-tation of more efficient DAB+ is discussed	Based on DAB Applicable for multimedia content especially video	Based on DVB-T Layer Applicable for multimedia content especially video	Uses in-band on-channel technology to broadcast digital and analogue radio signals or the same frequency	Additional terrestrial repeater needed	DRM+ can be used within the VHF spectrum (not before 2009)	TV standard
Success stories	UK (see case study for details)	Mild success in South Korea (S-DMB and T-DMB)	Mostly trials, first commercial services in Italy (June 2006)	US (reach is only marginal)	US (XM, Sinius)	No commercial success so far	UK (Freeview)

Source: ScreenDigest

For DAB a positive outcome of the Regional Radiocommunication Conference (RRC06, Geneva, May 15th – June 16th 2006) was that the countries are allowed to increase transmission power. Increased transmission power would increase quality of indoor reception. Though new DAB-multiplexes were assigned to some European countries, this does not automatically have an impact on the deployment of DAB, as these can also be used for other technologies within the frequency mask (e.g. DMB). Usage of multiplexes is a national matter.

As the spectrum of the FM band was not discussed at the conference, no conclusion about the analogue switch-off can be drawn. New developments in this sector can be expected from the World Radiocommunication Conference in autumn 2007.

A new coordination of the analogue FM frequencies on national level is being discussed in some member states (Belgium, Denmark, France, Germany). In the Netherlands analogue radio frequencies were successfully re-coordinated in 2003. FM frequencies need to be re-coordinated because there is a large amount of spectrum on the FM-band currently not in active use. Some radio experts stated that a re-coordination of FM-frequencies would act as an obstacle for the development of digital radio. It is seen as a signal to all radio stakeholders not to support DAB. Others argue that due to an efficient use of the analogue radio frequencies which is linked with lower costs for broadcasters radio players could invest in new digital services, such as DAB. At present the influence of a new coordination of analogue radio frequencies for the further development of DAB can hardly be estimated.

But there is no pressure to release the FM band. DAB is relatively expensive in terms of bandwidth used and quite difficult to insert in existing radio bands. Hence, DAB requires allocating new bands or the release of existing radio bands (thus the termination of some analogue radio services).

Another spectrum issue that seriously worries radio stations is an allocation of frequencies led by economic factors, e.g. possible spectrum auctions. As radio stations are mostly SMEs, they fear the financial power especially of telecommunications companies with whom they think they cannot compete when it comes to spectrum auctions. The radio managers interviewed also think the traditional business model of radio services would not allow them to generate as much revenues from the spectrum which might be awarded. A economic approach to spectrum allocation Therefore threatens the radio industry.

2.5.4.4. Problems with audio quality

Many DAB listeners, for example in Germany and especially in the UK, report a disappointing sound quality of DAB, being worse than FM. In-house reception is a particular problem. This is due to the planning process having had primarily outdoor mobile reception in mind. In principle audio quality comparable with Compact Discs (CD) is possible with a high bit rate of 256 kbps. The minimum rate for DAB transmissions in the UK set by Ofcom for instance is 128 kbps. In consequence the average bit rate for stereo music stations is 129 kbps in UK due to economic reasons, as more stations can be transmitted within one multiplex. Other European states use higher bit rates.

However the question is, whether improved sound quality is a killer application for listeners to switch over to DAB. The UK being the most advanced DAB market by now seems to prove that it is not. It certainly is a benefit, but radio is for example heavily listened to while travelling in a car – a situation not very sensitive to hi-fi sound.

2.5.4.5. User perspective

Currently, there is no demand for DAB in most European countries, as listeners – on a European perspective – do not know anything about this service, even though several organisations try to push the DAB profile. Until now many radio stations using DAB to simulcast their analogue programmes have not advertised their digital offers adequately.

Apart from the lack of knowledge low user acceptance is particularly caused by a lack of added value compared to FM. Through digitisation, more radio stations can be transmitted and a wider choice of (attractive) programmes could be offered. "This is added value which listeners truly appreciate", an interviewee stated.

The modest success of DAB in Great Britain is mainly based on the multitude of programmes offered. Consumers will only invest in new digital devices if there is a real increase in attractive radio content. In many European countries analogue radio programmes were simply transferred one to one to digital. Thus there was no incentive

for listeners to switch over. "This was a big mistake", a German radio manager said.

The lack of attractive new content is an important roadblock for the development of DAB in Europe. Listeners' focus is content, not broadcasting technology. Listeners in general do not know or care about the technology used to transmit the radio signal. In order to speed up the diffusion of digital radio new and digital content has to be developed. Radio stations thus need to use their creative potential to devise concepts for new digital contents and programming. It is also necessary to invest in marketing campaigns to advertise and increase the public understanding of DAB.

2.5.4.6. Devices (1.2)

Uncertainty about the further usage of DAB also affects the market for end devices since manufacturers hesitate to market new devices. Although prices for DAB receivers are sinking (average price about 150 €, in the UK since spring 2006 there are DAB receivers for about 80 € available), costs are still too high for consumers. As a consequence radio broadcasters are not investing into DAB as there is no listener market – a classical chicken-and-egg-situation.

At present there are between three and five radio receivers per household, a lot of them being low cost products. Replacing that many radio sets is only possible if there are low cost DAB sets for the mass market and/or if there are strong incentives for customers to invest in new devices.

Digitisation of TV was driven by subsidised receivers from pay TV operators and the success story of mobile telephony and new mobile services is highly dependant on subsidised devices. Thus subsidising radio sets could also be a possible way forward. US paid satellite radio providers XM and Sirius seem to prove this concept. However a business model based on advertising revenues in contrast to paid content services seems unsuitable for a business model which includes subsidised devices.

Due to the fact that the production of devices is only cost-efficient on a large scale, a European-wide harmonisation could help to overcome this problem.

As radio is heavily listened to while driving a car, car manufacturers are important players to trigger the consumer interest and mass-market uptake. But as long as European countries do not use the same standards, it is also difficult for the automotive industry to invest in digital radio. Nevertheless several car manufacturers offer digital car radio systems mostly based on the DAB standard. One reason for this is that some car manufacturers are developing information services on traffic or navigation systems that *also* use broadcast technologies similar to DAB. However, many car manufacturers do not have an interest in equipping their vehicles with DAB as long as there are few attractive digital services.

In contrast the US automotive industry is heavily engaged in promoting digital radio – digital satellite radio to be exact. US satellite radio companies XM and Sirius have exclusive arrangements with automotive companies. XM's OEM partners represent approximately 60 per cent of US vehicle sales. General Motors and Honda are investment partners at XM.

2.5.4.7. Business Models

Radio has been almost exclusively a free-to-air model until now. Most analogue radio stations try to generate additional revenues directly from their users. Besides call-ins, pay radio with both pay per download or regular subscription fees is considered a possibility.

DAB, as implemented up to now, does not offer the chance for new business models which include interactive services. Only if new and/or more channels are offered, pay models will become feasible. Special interest radio channels for small audiences could be refinanced by subscription fees or advertising. Most interviewed experts could imagine the establishment of nationwide niche channels though they gave different answers to the question how they could be financed.

2.5.4.8. Barriers to entry

Existing radio stations and groups which own analogue FM frequencies are often not supporters of digitisation in general but lobby against it, as they – being the dominant players in an FM landscape with low competition due to a lack of frequencies – fear the additional competition in a digitised market. *"The existing players in the market will do everything to keep the status quo"*, a radio manager added. However most of the established players which fear competition from the new market entries in the cause of digitisation would not declare this publically. However most of them are not strong supporters of digitisation either.

Thus the strong position of existing analogue radio stations is a major barrier

to market entry for new players. Their main advantage is – besides the control of frequencies –, that listeners are used to their brand.

Most probably other traditional media companies will also try to enter the markets. Besides their strong brands, they could also benefit from cross-media-synergies on a large scale.

In UK over 70 per cent of DAB radio brands are already known from the analogue environment. Although a quarter of DAB channels are purely digital the economical success of these stations is uncertain. According to one interviewee, even in the UK being the most advanced market, the DAB platform currently offers no economic incentives for radio operators, because of the small audience reach and the high level of competition. In London for example, where transmission capacities were returned by some stations, these licences were only partly used again.

The UK's leading commercial radio group GCap Media (57 analogue and 100 digital stations) for instance incurred a loss of GBP 9.9m in 2005/06 in their digital business while generating a total group turnover of GBP 220.2m. GCap Media plans to break-even in their digital business in 2010.

In Germany commercial radio broadcasters stopped simulcasting via DAB for financial reasons. Due to high transmission costs many commercial stations returned their DAB licences after the one-year subsidies had ended.

2.5.4.9. General issues, regulation

Because they need technological and legal certainty at European level in order to be able to invest in digital technologies, radio broadcasters feel the EC should put radio on the agenda. The interviewed radio managers think that radio isn't really on the EC's agenda at the moment – though at the same time some stakeholders also think that radio should not be regulated on a European level at all.

Many stakeholders nevertheless state they need support in promoting the digitisation of radio in order to create confidence amongst for instance the consumer electronics manufacturers. The Commission could at least declare, they think, that radio must be digitised like TV in order to boost the digital radio market.

Concerning the spectrum issues, the interviewed radio managers think they need support from the European Commission (see above). Stakeholders stated, that they are rather weak market players compared to the enormous power of the telecom industry. Without political support, radio may end up with a too narrow spectrum, which will not allow the introduction of interactive services.

Generally most interviewees fear too much regulation and consider competition the best way to develop the market for digital and interactive radio services. All of the interviewees believe, that there will be a complete switch-over to digital transmission of radio – whether they support it or not. But interviewees do not agree upon a certain point of time. From today's point of view a switch-over date in within the next five years does not appear to be realistic (e.g. Germany planned a switch-over in 2010). Stakeholders expect switchovers now to occur between 2015 and 2020. This is comparable to most of the other continental-European countries. In Spain a complete switch-over is not forecast until 2020. However, insufficient analogue FM frequencies make this switch-over seem necessary.

Furthermore many stakeholders stated that radio should be regulated on regional or local level rather than on a European level, which is also the opinion of the Association of European Radios.

2.5.4.10. Digitisation

One of the crucial issues for the development of digital radio in Europe, based on whichever technical standard, is its legal framework. One possible way to develop digital radio services might be a clear, obligatory pan-European switch-over regulation. Apart from fixing a clear switch-off date for analogue radio broadcasting, a definition of a technical standard would be needed.

The majority of the interviewed stakeholders would appreciate a fixed switch-off date for analogue radio broadcasting. "I would absolutely support a European switch-off-regulation" a German radio manager stated. However, most stakeholders think that a switch-over at a pan-European level at the same time is not realistic. While sufficient support by the European Union is seen as a basic requirement, most of the interviewees prefer that user acceptance – in other words the market – should provide the answer to the question of technical standards in each country. Others are in favour of a clear

regulation concerning one technical standard by the EC.

2.5.4.11. Access to digital platforms

The need for non-discriminatory access to multiplexes for digital broadcasting was brought up in discussion by many participants of the focus group. There was agreement that non-discriminatory access for all content providers is a necessity. An appropriate framework jurisdiction by the European Union could be of helpful here.

Ideas how security of access could be guaranteed differed. Some said that it should be ensured by competition between infrastructure providers. Others pleaded for national or European regulation. A combination of regulation and competition was also mentioned. Most content providers were in favour of must-carry rules. The main goal is fair market access for all potential providers of digital radio services.

2.5.4.12. Regulation in selected EU-countries

Governmental support at a national level is an important factor for the success of DAB. In Denmark for example the minister of Culture announced, that DAB will be the future platform for radio in Denmark. Negotiations about the expansion of the Danish DAB net, to make more commercial radio stations use DAB, are taking place.

On the other hand the Swedish government decided to freeze subsidies for the expansion of DAB digital radio in Sweden at the end of 2005. The government thereby rejected the original plan for the long term goal of analogue FM network switch-off. The Swedish government announced that it thinks that other ways of digital distribution could be more efficient and advised the radio industry to use other digital distribution channels such as DTT/DVB-T, podcasting or streaming services (also to mobile phones).

In the Netherlands, the Dutch Ministry of Economic Affairs announced the postponement of plans for further DAB roll out in March 2005. The Netherlands are instead going to investigate if other new technologies like DAB+, DRM+ or DVB-H will be the better option. Given the technical superiority of these technologies it does not seem very likely that the Netherlands will push DAB in the future.

Regulation is one key for the success of DAB. In markets where DAB is not so strong, there is most of the time a lack of enabling regulation. Successful regulation, for instance in the UK, included licensing incentives and other incentives for traditional commercial radio broadcasters who started to use DAB. On the other hand many commercial broadcasters in Germany stopped broadcasting via DAB after regulatory authorities stopped subsidising DAB transmission costs.

Suggested remedies

Above all the yet unanswered question which digital broadcast standard will prevail hampers broadcast radio's digitisation. Though DAB is the most "successful" in Europe at the moment It as also one of the least efficient standards. As other opportunities are being increasingly taken into consideration, the already high level of uncertainty rises further, both amongst regulators and radio stations. Thus in more and more countries digitisation efforts are being stopped or postponed.

Therefore the primary objective of all efforts the accelerate radio's digitisation is to help to overcome confusion and to create confidence. At this stage it might help to spread knowledge about different aspects of digitisation especially on a European level, e.g. about strengths and weaknesses of broadcast digital radio standards – from a technical as well as a business point of view. Sharing and constantly tracking best practices for enabling regulation amongst the national and regional regulatory authorities might also be very useful. At the same best practices of new digital interactive radio services for instance could also be tracked and spread within the industry as radio companies are mostly SMEs and lack the resources for R&D. Furthermore The EC could try to accelerate the process by initiating round tables involving all stakeholders in order to help to come to agreements faster. Especially agreements on switch-off dates might be useful as the majority of the interviewed stakeholders would appreciate a fixed switch-off date for analogue radio broadcasting. Particularly as low cost receivers can only be provided for mass markets that permit economies of scale, standards as well as timing of digitisation should be agreed upon at a European level.

Apart from standards, the stakeholders perceived spectrum as an issue that should be addressed by the European Commission. Most interviewees stated, that compared to the enormous power of the telecom industry they are rather weak market players. Thus radio

may end up with a too narrow spectrum not allowing for interactive services.

Market Outlook

At the moment it is difficult to predict how broadcast digital radio will develop on a European level over the next five years. Though DAB is still the dominant standard and gaining strength in some of the member states, other standards are being considered. On a European level, broadcast radio, apart from distribution via the Internet (see chapter on online radio and podcasting) and standards dedicated to mobile usage (see chapter on mobile digital radio), is still an analogue medium.

DAB is, arguably apart from the UK (see also case study on DAB in the UK) and Denmark, not a success story and DAB implementation has been stagnating for several years. Whether, when and to what extent there will be finally a take-up cannot be forecast at the moment as it is highly dependent on political and regulatory decisions which cannot yet be forecast. But as many member states have taken backward steps and others are postponing switchover to see whether there are better ways to digitise radio, it is becoming less and less likely that DAB will be the one and only standard for broadcast digital radio in Europe.

The point of time for a switch-over in the member states is highly dependent on the technical standard for digital radio broadcasting they are going to choose. However, regardless of the standards which are going to succeed, a switch-over by 2010 does not appear to be realistic.

2.5.5 Online-Radio and Podcasting

2.5.5.1. Introduction and status

Online radio, also referred to as Internet radio, webcasting or streaming, here means transmitting radio programmes, from broadcast radio stations as well as from independent online only providers, via the Internet, i.e. streaming digital radio content via the TCP/IP protocol. Online radio is mostly listened to using the PC and installed RealAudio or Windows Media Players or "virtual tuners" and on-site applications.

In this report pure music services are not included in online radio content even though they are often branded as radio services. Radio here means that it contains editorial content (and most of the time also music).

The fact that also music services call themselves radio however illustrates that radio stations generally face competition from these substitutes, which is also emphasised by the fact that most radio stations, especially commercial ones, define their unique selling proposition (USP) using the kind of music they play. Not only online music services but also MP3-players therefore threaten most interviewed radio managers especially when it comes to young target groups. Those who used to listen to the music on the radio for mood management reasons, thus music, nowadays often use an MP3-player containing their own collection of music which better reflects their preferences.

During the last five years more and more traditional radio stations throughout Europe have begun to stream their programmes via the Internet (see country profiles for details). Most interviewed stakeholders reported that more and more people are starting to use these services regularly as broadband penetration increases and affordable broadband flat rates are available in most member states.

At the same time traditional radio stations face competition from online only radio stations in this field though commercial only online stations find it hard to succeed as traditional ones dispose of established brands and marketing power. Being one of thousands of free online radio stations on portals like SHOUTcast makes it hard to reach an audience big enough to finance costs via advertising revenues.

The first online radio services were launched in the mid 1990s and during the so called "New Economy" boom a first big wave of online radio services emerged. Many of these disappeared after the collapse of the dot-com bubble was followed by a downturn at the beginning of this century.

Also traditional radio stations too mostly do not generate enough revenues from streaming services to cover costs which in contrast to traditional broadcast technologies increase with every additional user. Many radio stations therefore limit the number of users that are allowed to listen to their programmes via the Internet at any one time. Some stations do not allow users that are not situated in the country of origin to use their streams (see below for details). An interviewee admitted that his company was only steaming for branding reasons in order to appear modern, but that he had no financial justification for running the service.

Usage figures are not surveyed in every member state and existing surveys often use definitions that vary considerably. In this report references to listener include anyone who listens to online radio services at least once a week.

Using that definition Goldmedia estimates that 15m people in the EU listened to online radio at least weekly in 2005 corresponding to 3.3 per cent of the population.

While penetration in EU15 is much higher than in the new member states, US penetration is 50 per cent higher than in EU15. The reason for the difference between EU15 and NMS10 is mainly due to differences in broadband take-up and the availability of broadband flat rates. The reason for the US' lead includes the fact that online radio services have been marketed for a longer time and more aggressively. This again can be explained by the fact that a much bigger potential audience speaking the same language is much more likely to permit special interest channels to find a niche big enough to generate substantial revenues.

Podcasting is a relatively new phenomenon. The word itself appeared only in 2004 meaning both the content and the way of distribution and was formed by combining the words "broadcasting" and Apple's MP3 player named "iPod". The concept itself is a few years older, but the take up of podcasting actually started in 2004.

As mentioned above, podcasting refers to both the method of distribution and the content. The latter mostly consists of spoken word and other editorial content and music (though music is a complex issue, see below) – thus classical radio content. Usually there are only short episodes of typically a few minutes, but there are also shows that last about an hour.

This content is distributed via the Internet, downloaded to a PC and then – most of the time – transferred to an MP3 player on which it is listened to. Since usage is typically supposed to be mobile, one could also call podcasting a mobile radio service.

With 3G networks arising and convergent mobile handsets combining UMTS or HSDPA with big hard drives and MP3-players, podcasting will certainly become more and more mobile, though some do not call podcasts dedicated to usage on mobile phones podcasts but mobcasts.

In contrast to "normal" audio downloads podcasts are distinguished by the push function, i.e. podcasts can be downloaded automatically using RSS feeds or Atom feeds.

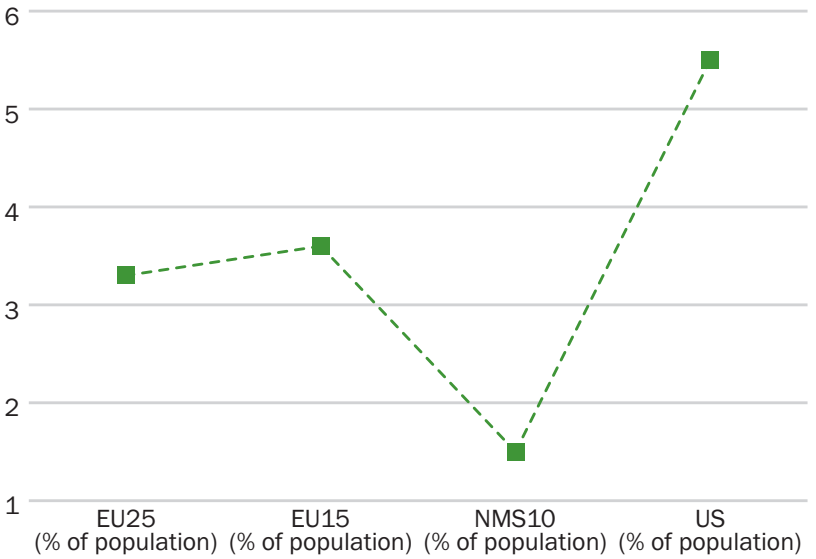
Podcasts or MP3s were first perceived as a threat to radio stations, because they offer users the possibility to listen to their own "personal" radio. During the expert seminar, some of the stakeholders observed, that users might become bored with their MP3-database after a while, as it contains no surprises. And surprise is what makes radio attractive. Also it was stated, that listening to the radio is easier than going through the hassle of uploading, downloading and choosing the right songs. One of the interviewees pointed out: *"Podcasts are no threat for radio. I see them as an extension instrument."*

Instead of being a threat, podcasts could also be an opportunity for radio stations:

- For public service stations especially, podcasts are a great possibility to offer public service content for niche audiences.
- For commercial radio, podcasts are a good new way to generate additional advertising revenues (presentations or product placement)
- Paid podcasts could also become a market within the next years

Many commercial and public radio broadcasters in Europe have already started podcasts. Newspaper and magazine publishing houses offer podcast which are in this case often audio version of published texts or recordings of interviews.

Figure 74 : Weekly online radio listeners in Europe and the US (2005, penetration as percentage of population)



Source: Goldmedia

Nearly all the interviewees consider podcasts a great marketing tool, especially for listeners with niche interests and for people who like to use time shift functions. At present, podcasts are used as a marketing tool to increase user loyalty, but for the future pay models seem to be realistic as time shift functions are a mainstream trend in media usage (for adherent rights issues see below).

Usage figures are surveyed even less than online radio usage. Also surveys often use different definitions or simply count the number of downloads (though not every podcast that is – usually automatically (using feeds) – downloaded is actually also listened to. In this report references to listener include anyone who listens to podcasts at least once a week.

Using that definition Goldmedia estimates that 0.22m people in the EU listened to podcasts at least weekly in 2005. This correspondents to about 0.05 per cent of the population.

While penetration in EU15 is much higher than in the new member states (0.02 per cent), US penetration is higher (0.08 per cent).

There are differences between these regions in broadband take-up, the installed MP3-player base, the time when podcasting started to catch the attention of the public and the market entry of Apple's iTunes for instance.

Again the US market with a large number of people speaking the same language is commercially much more viable for niche content such as podcasts.

2.5.5.2. Devices (1.2)

In contrast to the many situations in which traditional radio is typically used, online radio can still almost only be listened to on the PC. While the PC requires (at least to start a service) relatively high listener involvement, traditional radio is a low-involvement medium. During radio's prime time, the morning hours, at breakfast or even in the bathroom, there is usually no PC. In-car usage, another typical situation where radio is traditionally heavily listened to, also still does not allow for online radio usage.

Furthermore it is much more convenient to use radio receivers than to use a PC a factor that should not be underestimated when it comes to low-involvement media.

Hence demand for online radio will be slowed down as long it is "locked" to the PC.

However, devices such as Wi-Fi or WLAN radios that could be used in rooms like the kitchen are being developed. Such devices would allow for listening to online radio in traditional usage situations. As consumer electronic manufacturers have already announced the introduction of such devices, there will be more promotion of online radio in the mid or long term, depending on the pricing and the actual convenience of such devices.

2.5.5.3. Economics of streaming (1.1)

Whilst broadcasting is a distribution channel characterised by fixed costs, costs for streaming increase with every user. In contrast to broadcast technologies which perfectly fit for mass media, streaming is thus inappropriate for mass usage.

As a consequence many radio stations limit the number of users that are allowed to listen to their programmes via the Internet at the same time. Furthermore some stations do not allow users that are not situated in the country of origin to use their streams. (The fact that also current royalties for music are levied based on usage figures adds to that problem (see below)).

An interviewee admitted that his company was only streaming online services for branding reasons in order to appear modern, but has no business case for running the service cost covering.

2.5.5.4. Vital broadband markets as a basic requirement (1.1)

The state of broadband distribution is crucial to the success of online radio and podcasting. On the one hand streaming services can only be used comfortably if enough bandwidth is available. On the other hand flat rates ("real" flat rates without limits for data volume) are a basic requirement as otherwise if users have to pay per minute of usage, which makes online radio in fact a paid service (though content providers do not benefit).

Therefore the development of broadband penetration and the availability of reasonably priced flat rates are the key factors for growth of online radio usage and for market take-up.

2.5.5-5. Company policies at work (6.2)

At work radio is traditionally also listened to extensively. A high penetration of PCs and the availability of a broadband connection in most

offices, make offices theoretically an ideal place for online radio usage. However in the US, the modest success of online radio has at the same time brought up another roadblock: more and more companies in the US do not allow their employees to listen to online radio services in order to save bandwidth. This policy is also being adopted by many companies in Europe.

2.5.5.6. Need for new business models

Traditionally the commercial radio's business model has been almost entirely based on advertising revenue. As radio is mainly a local and regional medium also most of the advertising revenue comes from local and regional advertisers.

National and international usage therefore does not fit into radio's traditional business model: Local and regional advertisers are not interested in advertising their products and services to listeners in other regions or countries, and are thus not willing to pay for these contacts.

As these listeners however create costs for streaming and for royalties (see chapters below), streaming services for listeners from other regions or countries are a loss making business.

As a consequence, many online radio services run by traditional broadcasters, do not allow users who are not situated in the country of origin of the service to listen to their streams.

2.5.5.7. Audience measurement (6.7)

To create a new market for online radio advertising, radio stations and advertisers will have to agree upon standards for usage measurement, as a trustworthy "currency" for online radio usage is needed.

Consumer usage of time-shift services like podcasts and radio on demand cannot be surveyed within the old systems. Though counting downloads would be easy, it would not necessarily measure actual usage adequately, as podcasts for instance are often downloaded automatically via RSS feeds or Atom feeds, and not every download is actually listened to.

2.5.5.8. Billing (1.5)

Since, from the consumers' point of view in many countries there is still a lack of micro payment systems for online payments (in contrast to mobile payments) that are trustworthy and yet convenient, stakeholders report difficulties when it comes to trying to charge listeners for services like podcasts or radio on demand.

2.5.5.9. Music rights (2.7)

As music is one of the key components of radio programmes, radio stations which try to establish new business models, often think of paid music downloads. Nevertheless those interviewees who introduced such services or thoroughly discussed it within their companies, reported that due to the music industry's and the collecting societies' terms and conditions, this business model was not very attractive as it would leave only very low margins.

2.5.5.10. Skills (6.3)

Radio managers themselves, at least some of those who were interviewed for this study, confess that the skills to make the leap to interactive radio are lacking. Many companies, especially but not exclusively smaller ones, lack the management skills needed to introduce new services and new business models. Furthermore they often lack the skills to handle platforms, both from the point of view of marketing and customer relationship management and in terms of IT.

2.5.5.11. User generated content/citizen journalism (2.5)

User-generated content respectively citizen journalism is often mentioned when talking about podcasting. Especially when this phenomenon came up, quite a few people where reminded of Bertolt Brecht's radio theory. In 1927 the German writer had postulated: "to make radio a really democratic thing" and "to turn broadcasting from a distribution apparatus into a communication apparatus".

Nevertheless it is not that easy to create and run a podcast that attracts a critical mass. Compared to blogging, podcasting is actually quite complex. The skills required, in terms of journalism and entertainment as well as IT skills and technical infrastructure, are a barrier. Compared to blogging, podcasters have to invest much more time to create content. At the same time it is not as easy to access this content as it is to read a blog. As a consequence usage figures for podcasts are even lower than those for blogs. Thus podcasting can be quite frustrating and some people who started enthusiastically have already given up.

2.5.5.12. Music rights and royalties

Most podcasts do not contain music but mostly only the spoken word. This is due to the fact that collecting societies in most member states treat a podcast that contains music like a music download. As a consequence a 30-minute radio show containing ten songs that is downloadable on the Internet would have to be priced like an album in order to be able to pay the royalties.

Obviously consumers are not willing to pay such prices for on demand radio shows or podcasts. "Real" radio on demand and podcasts containing music are therefore hampered at the moment.

Another issue for online radios, especially online only radios trying to enter international markets, are differences in the amount of royalties levied for music in online radio services amongst the member states. High royalties mean competitive disadvantages for online radio services based in countries with comparatively low royalties.

Apart from commercial online only radio stations, this is also an issue for public services broadcasters. The BBC for instance does not allow users from outside the UK to access its online radio services anymore, due to this problem.

2.5.5.13. Competition from public service broadcasters (5.2)

On the other hand commercial radio companies complained that public service broadcasters would hamper market development. Said to be entering online radio and podcasting markets aggressively and establishing a *"huge amount"* of services free of charge, would *"destroy the market"* for new business models, according to an interviewee from a commercial radio station. Therefore it would be almost impossible to establish pay radio, paid radio on demand or paid podcasting services on the Internet.

2.5.5.14. Advertising regulation

Some stakeholders mentioned an uncertain fear of advertising regulation of online radios and podcasts. Still figuring out how podcasts could be refinanced through sponsorships or product placement for example, some were afraid that these business models might not be possible from a legal point of view in the future.

Suggested remedies

Enabling technologies, particularly vital broadband markets, are crucial to the take-up of both online radio and podcasting. Thus everything that helps to increase broadband penetration and the diffusion of reasonably priced flat rates (otherwise online radio is in fact a paid service, from which content providers nevertheless do not benefit) also helps to boost these markets (see chapter on challenges to digital distribution for possible remedies).

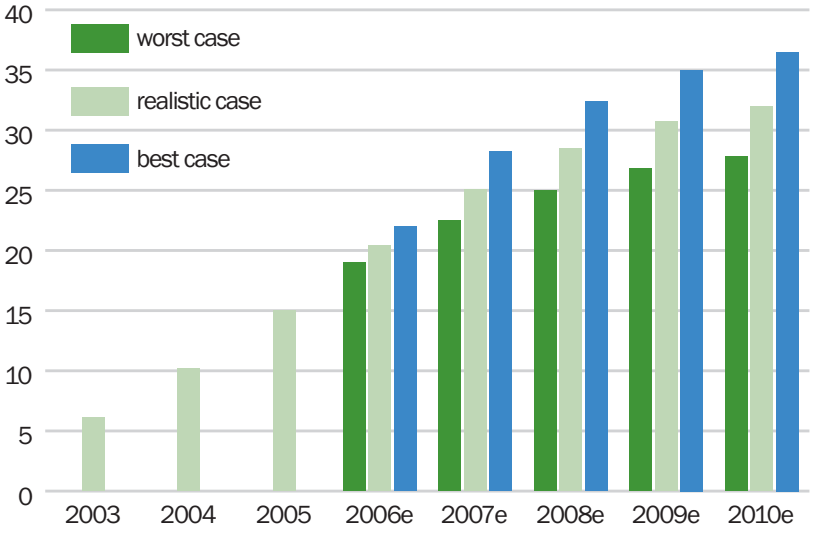
Furthermore trustworthy standards for audience measurement ("currencies") are crucial to finance online radio and podcasting by advertising. Additionally new business models are an important issue and have not emerged yet. Both these problems will most probably be overcome by the market and are typical for new services. However, constant pan-European tracking and sharing of benchmarks and best practices would help to overcome these two issues more rapidly and thus to accelerate market take-up.

Particularly in case of podcasting the issue of music rights/royalties is also very important (see chapter on music for suggested remedies).

Market Outlook

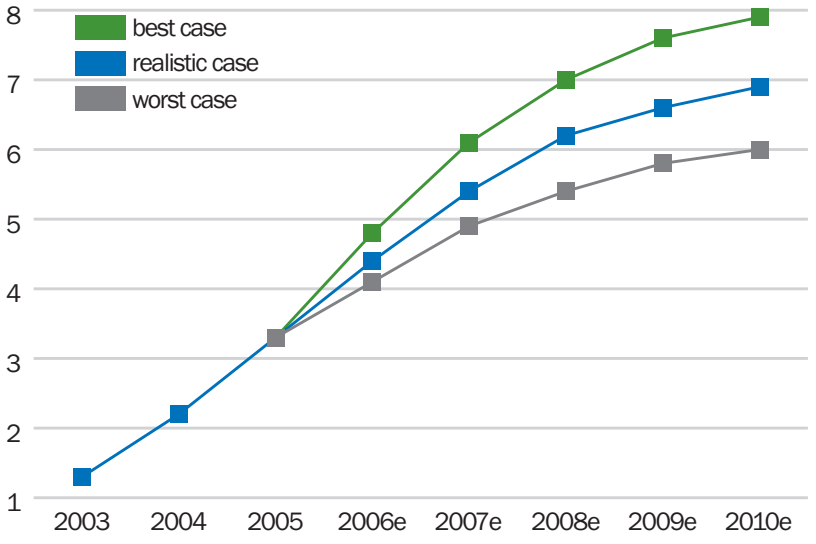
Despite the roadblocks mentioned, there is still a lot of growth potential for online radio and podcasting, both being nascent markets. However both will nevertheless not reach mass audiences by 2010 but stay niche markets (despite high growth rates), especially compared to analogue FM broadcasting.

Figure 75 : Online Radio Forecast EU25 Scenarios (weekly listeners in Mio.)



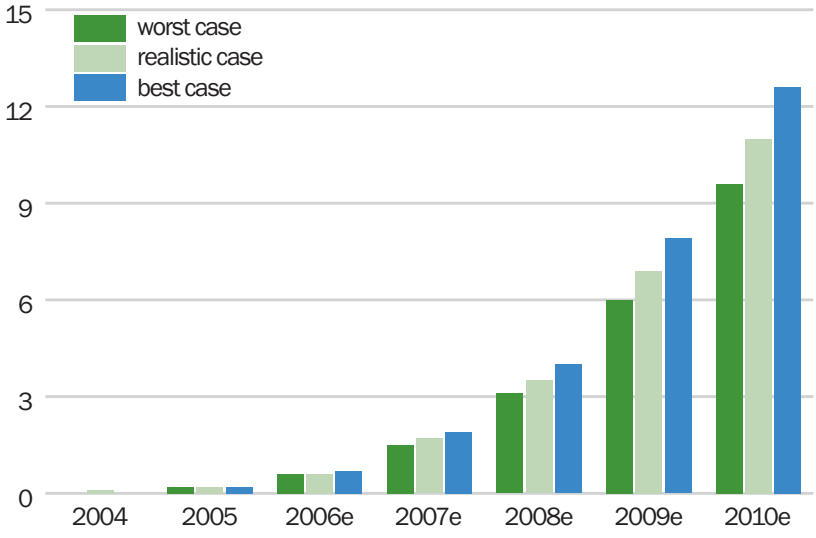
Source: Goldmedia

Figure 76 : Online Radio Forecast EU25 Scenarios (weekly listeners as percentage of population)



Source: Goldmedia

Figure 77 : Podcasting Forecast EU25 Scenarios (weekly listeners in Mio.)



Source: Goldmedia

Especially for online radio broadband (flatrate) penetration is the main driver.

Depending on several factors influencing growth also a so called worst case or, on the other side, a best case are possible scenarios, meaning lower penetration and slower growth respectively higher penetration and faster growth: Growth is mainly dependent on how fast and to what extent the roadblocks mentioned above will be solved.

We believe that 32m people in EU25 will listen to online radio weekly in 2010 (realistic case).

These figures correspondent to an online radio penetration of 6.9 per cent of the inhabitants of EU25 in 2010.

Compared to the US, the European online radio market will grow faster and overtake the US market in terms of total users by 2007, but penetration will still be higher in the US in 2010.

Total online radio listeners in the new member states will be less, due to the number of total inhabitants,, but penetration will also still be lower in the new member states compared to EU15 in 2010.

Market outlook - Podcasting

Goldmedia forecasts that about 11m people in EU25 will listen to podcasts weekly in 2010 (realistic case).

These totals correspondent to a podcasting penetration of about 2.4 per cent of the inhabitants of EU25 in 2010.

Comparing Europe with the US, the podcasting picture is similar to that of online radio, though podcasting is at an earlier stage: The EU25 podcasting market will grow faster and will also overtake the US market in terms of total users in 2007, but penetration will still be higher in the US in 2010.

In both the EU15 and the NMS10 podcasting will be a niche market despite high growth rates. Total user figures and penetration will be higher in the EU15 than in the new member states in 2010.

2.5.6 Mobile Digital Radio

Introduction and status

Mobile digital radio or simply mobile radio in this report means radio services that are dedicated to mobile usage on, for example, handhelds or mobile telephones. This definition encompasses services which use mobile broadband and services using mobile broadcast standards.

Thus this section covers radio services using 2.5G/3G networks like EDGE, UMTS, HSDPA as well as radio services broadcast using standards like DMB, which is based on DAB, or DVB-H, based on DVB-T. To be precise: if not mentioned otherwise, DMB means T-DMB. DAB is not covered here, though also originally designed for mobile usage, as a whole chapter is dedicated largely to DAB (see above) and most DAB receivers which are sold are stationary ones.

While it is of course possible to transmit all sorts of content via 3G networks and DMB as well as DVB-H were originally dedicated to mobile TV, both mobile broadband and

mobile broadcasting services contain or will most probably contain radio services.

Services that use convergent combinations of mobile broadband and mobile broadcasting standards will also emerge, though they are still at a trial stage. Also services combining analogue FM for radio broadcasting combined with UMTS to transmit additional multimedia content or as a feedback channel, e.g. for interactive services, are thinkable and a consortium of Nokia and HP for example has already tried to establish such a service (see case study on visual radio).

Mobile satellite radio is also discussed in this section though it has not emerged yet in Europe and it is not clear whether it ever will emerge in Europe. While in the US XM and Sirius show impressive growth rates and in Korea S-DMB (besides T-DMB) also seems to be succeeding (thanks to governmental subsidies), European national markets seem to be too small to run mobile satellite radio services profitably. Nevertheless possible providers are at the moment trying to figure out whether they could succeed with mobile satellite radio. But as it would take several years to have such a system up and running, mobile satellite radio will most probably not emerge in Europe within the next five years.

Bearing in mind that mobile network operators subsidise mobile phones and therefore handsets are replaced at an average rate of every two years, most interviewees believe that the installed base for mobile broadband and mobile broadcasting services will increase rapidly within the next few years.

Nevertheless at the moment mobile radio is still a nascent market. Mobile network operators and start-ups entering the market began to market their 3G radio services about two years ago. Mobile broadcast platforms were only started to be rolled out commercially this summer after a phase of trials in many countries.

Italy started the world's first commercial DVB-H roll-out in June 2006 and in Germany a DMB service was only launched shortly before the Football World Cup.

Therefore the installed base is still quite low which is thus also true for European usage figures. By contrast, mobile satellite radio providers XM and Sirius are driving mobile radio usage in the US.

Thus there were more than ten times more weekly mobile radio users in the US than in Europe in 2005. Goldmedia estimates that only 0.16m people in the EU listened to mobile radio at least weekly, which correspondents to a penetration of a tiny 0.04 per cent of population.

Figure 78 : Podcasting Forecast EU25 Scenarios (weekly listeners as percentage of population)

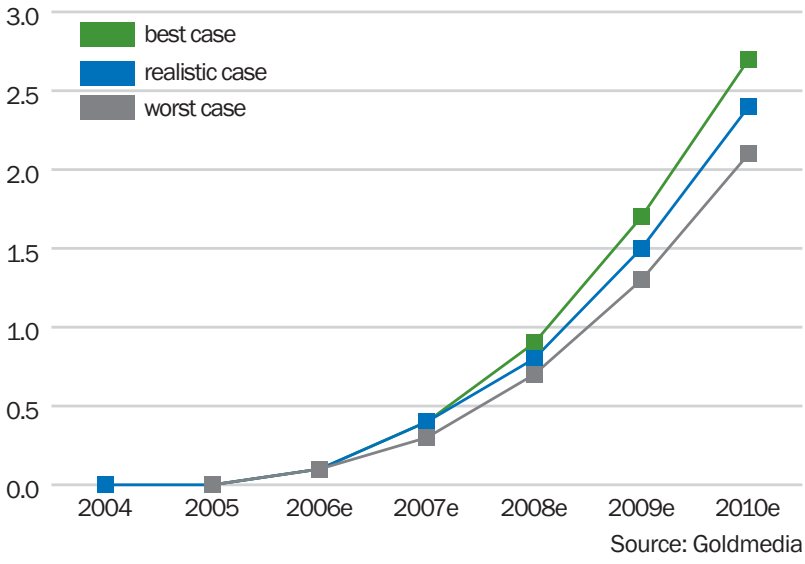


Figure 79 : Mobile radio usage in EU25 vs. US (weekly users in Mio, 2005)

	Million users	*% of population*
EU25	0.16	0.04
USA	1.23	0.41

Source: Goldmedia

2.5.6.1. Devices (1.2)

In contrast to the online radio market and thus the PC market the installed base of mobile phones equipped with mobile broadband technologies like EDGE, UMTS or even HSDPA and/or mobile broadcasting technologies like DMB or DVB-H is still very low in Europe, in contrast to Asian markets like Japan or South-Korea.

On the positive site mobile radio is, as the name suggests, in contrast to online radio not locked to a stationary device. And listening to the radio on the go has always been quite attractive to consumers.

However frequent replacement rates for mobile phones, thanks to network operators' subsidies, guarantee a rapid increase in the installed base.

2.5.6.2. 3G vs. DMB/DVB-H as a channel for mass media distribution (1.1, 1.3)

Using UMTS, the number of users per cell is restricted as they have to share the bandwidth.

As a consequence UMTS is not suitable for mass usage. Especially when it comes to live services, in contrast to on demand services, UMTS is definitely not a good choice to transmit content. Nevertheless Spodradio for example tries to establish radio via UMTS at the moment and mobile operators generally like the idea as they hope to drive 3G ARPUs.

At the same time convergent handsets also enabled with mobile broadcast technologies like DMB and DVB-H perfectly fit mass usage, as broadcasting is perfectly designed for mass media.

However, UMTS can be used for convenient interactive services and convergent mobile phones using both mobile broadband and broadcast services (3G + DVB-H/DMB) definitely allow for attractive services.

2.5.6.3. Operating systems (1.4)

The mobile market is characterised by is a huge variety of operating systems and platforms depending on both phone manufacturers and mobile network operators.

Thus it is extremely complex to establish services that reach a critical mass regardless of the operator and the device of the actual user.

Most of the interviewees that hoped that either Symbian or Windows Mobile will bring an end to this, even though they did not agree upon which system was preferable.

2.5.6.4. Vital mobile broadband markets (1.1)

The role of mobile broadband for mobile radio is similar to that of fixed broadband for online radio (see above). Though mobile radio can also be broadcast via DMB and DVB-H, 3G penetration is a crucial success factor for all sorts of on demand as well as interactive and multimedia services enhancing the traditional audio content.

At the moment 3G penetration is obviously still much lower than fixed broadband penetration. Thus those types of services are hampered.

Also corresponding to fixed broadband in case of online radio, 3G flat rates at attractive prices are a crucial success factor for such services. Nevertheless prices for 3G usage are still quite high, price structures are often too complex for many users and Download volumes are often still limited (even for so-called flat rates). Thus active 3G users are still rare in Europe.

2.5.6.5. Billing (6.10)

By contrast to the online market billing is not an issue within the mobile market as there are well established and convenient billing systems that allow for charging even quite small amounts comfortably.

2.5.6.6. Competition and gatekeeper issues (5.1)

When it comes to mobile the traditional business web is changing from a "radio content provider-led approach" to a "platform provider-led approach". Compared to mobile network operators radio stations generally feel that they are in a very weak position.

Radio stations are mostly SMEs. Nevertheless, increasingly they have to compete with much bigger companies. Whilst radio's total net advertising revenues in EU25 added up to € 4.6bn in 2004 (being shared by about 7,700 radio stations), mobile network operators for instance, like Vodafone or T-Mobile generated revenues of nearly € 43bn respectively about € 29.5bn in 2005.

At the same time mobile network operators may offer services radio stations have to compete with for other reasons than in order to generate direct revenues from the content business, but instead for branding reasons or in order to reduce churn. Another example is Apple offering subsidised music services in order to push hardware sales. Given these facts, radio's competitive situation is becoming more complex. The effects of competition from these new substitutes for radio programmes are already become apparent amongst young target groups in which radio's reach has been decreasing extraordinarily fast during the last two years.

At the same time radio content has also to compete with music services on mobile broadband platforms for instance (e.g. Vodafone's Radio DJ), which are more attractive for mobile network operators in terms of revenues.

2.5.6.7. Role of public service broadcasters (5.2)

Looking at developments on the online radio and podcasting market, stakeholders from commercial radio stations fear, that public service broadcaster are also going to enter the mobile market with services free of charge and therefore make it difficult for commercial operators to establish paid content services.

In case of mobile broadcasting public service broadcasters have already announced

they would offer their programmes free of charge.

2.5.6.8. Need for new business models

Similar to online radio (see above) new business models for mobile radio also have to be established. However, radio managers think that compared to the online world it is easier to establish paid services. Also revenues from ringtones and music are thought to be generated easier as mobile users are used to pay for services and billing is not a problem.

2.5.6.9. Music rights

Another point similar to online radio (see above) though consumer prices and margins are higher in the mobile market.

2.5.6.10. Audience measurement (6.7)

If mobile radio stations want to generate revenues from advertising, stakeholders also have to agree upon standards for usage measurement (see similar point in the online radio section).

2.5.6.11. Skills (6.3)

The skills issue is even more apparent in the mobile market than in the online market (see above) as especially IT is even much more complex given that a huge variety of operating systems has to be addresses.

2.5.6.12. Size of national markets/mobile satellite radio

For businesses like satellite systems that cause very high fixed costs, it is crucial to address a mass market. By contrast to the US, there is a vast diversity of languages spoken in the EU. Thus radio services, especially special interest programmes that are typical for paid content platforms, find it more difficult to reach a critical mass.

Nevertheless XM's and Sirius' pay radio success in the US makes many players think about starting similar services in Europe. However possible providers are still figuring out whether they could succeed in Europe. Some interviewees thought that it was not possible, others hope that it is given a try. One interviewee also mentioned the South-Korean case as a role model where S-DMB (in parallel to T-DMB) was launched thanks to governmental subsidies.

However as it would take several years to have such a mobile satellite radio system up and running, mobile satellite radio will most probably not emerge in Europe by 2010.

2.5.6.13. Access to digital platforms

As radio stations feel that they are in a weak position compared to mobile operators (see above) the necessity of non-discriminatory access to digital platforms such as 3G mobile networks and DAB/DVB-H multiplexes was brought up for discussion by many participants of the focus group. Agreement prevailed that non-discriminatory access for all content providers is a necessity.

An appropriate framework jurisdiction by the European Union could be a large assistance here. The answers, how security of access could be guaranteed, were diverse: Some said that it should be ensured by competition between infrastructure providers. Others for their part pleaded for national or European regulation. Also a combination of regulation and competition was mentioned. Most content providers were in favour of must-carry rules. The main goal is fair market access for all potential providers of digital radio services.

2.5.6.14. Music rights/royalties (2.7)

In case of mobile radio on demand or mobile podcasts ("mobcasts") similar to online radio (see above).

2.5.6.15. Advertising regulation (4.2)

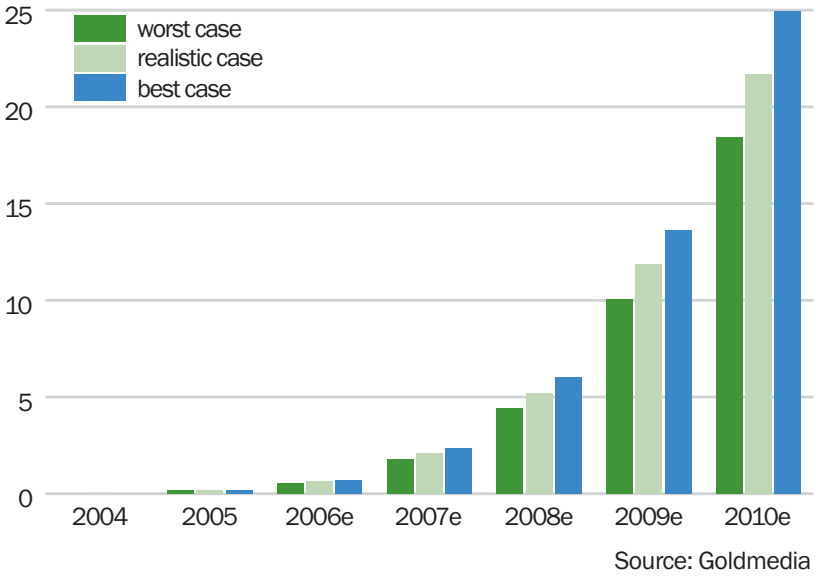
Also corresponding to online radio (see above), some stakeholders mentioned a vague fear of advertising regulation of mobile radio services.

Suggested remedies

Corresponding to online radio, enabling technologies are crucial to the take-up of mobile radio. Both penetration of mobile broadband (3G) and digital mobile broadcasting (DVB-H and DMB) is still at a very low level in Europe. Thus everything that helps to increase penetration of enabling technologies also helps to boost these markets (see chapter on challenges to digital distribution for possible remedies). However frequent replacement rates for mobile phones, thanks to network operators' subsidies, guarantee an increase in the installed base.

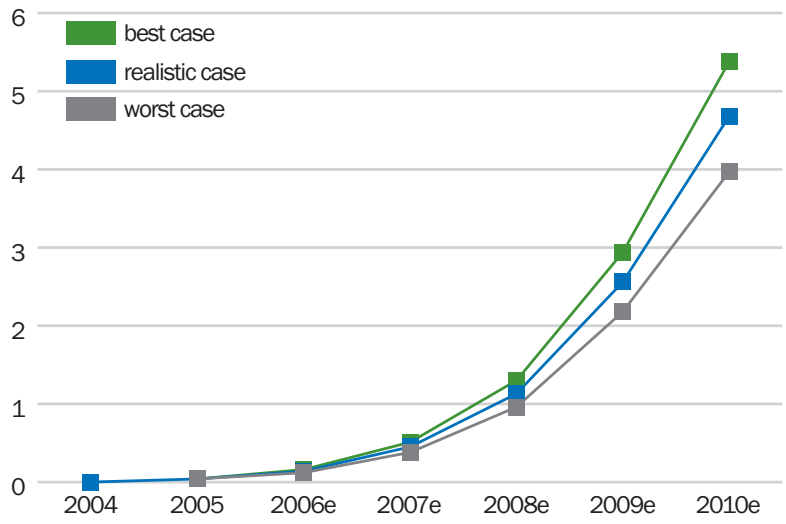
New forms of audience measurement ("currencies") and the need for new business models are also an issue (see chapter on online radio and podcasting), but the interviewees think that compared to the online world it is easier to establish paid services.

Figure 80 : Mobile Radio Forecast EU25 Scenarios (weekly listeners in Mio.)



Source: Goldmedia

Figure 81 : Mobile Radio Forecast EU25 Scenarios (weekly listeners as percentage of population)



Source: Goldmedia

From the point of view of interviewees from "traditional" radio companies gatekeeper issues could also hamper mobile radio services from existing radio stations. As the traditional business web is changing from a "radio content provider-led approach" to a "platform provider-led approach", these interviewees generally feel that they are in a very weak position compared to mobile network operators and thus ask for non-discriminatory access to mobile platforms in order to ensure media diversity.

Market Outlook

Regardless of some of the roadblocks mobile radio will most probably grow quite fast, even faster than podcasting. In contrast to online radio and podcasting, mobile radio will not be a niche market but most probably a mass market, even though it will not be a mass market by 2010.

Goldmedia forecasts that nearly 22m people in EU25 will listen to mobile digital radio weekly in 2010 (realistic case).

This correspondents to a mobile radio penetration of about 4.7 per cent of the inhabitants of EU25 in 2010.

In the US, thanks to mobile satellite radio providers XM and Sirius, the mobile radio market is already much bigger than in the EU. Europe will not overtake, in terms of total users, the United States before 2010. But even in 2010 mobile radio penetration in the US will still be higher.

Mobile radio will take up both in the EU15 and in the NMS10. However growth will be faster and start earlier in the EU15 and penetration will nevertheless be higher.

2.5.7 Case Study 6: Visual radio

Introduction

Visual radio services are a perfect example for convergent content services. While radio traditionally is an audio medium, visual radio services are trying to enhance audio content with texts, pictures and interactive services.

Visual radio is a digital interactive service for mobile phones offering radio enriched with graphics and background information on the display related to the audio broadcast. Visual radio profits of the fact, that FM radio is already quite a popular feature on mobile handsets..

In March 2005 the first visual radio broadcasts took place. For the reception of VR listeners need a GPRS/UMTS-compatible mobile phone.

In addition to the current radio programme information on songs and artists currently playing, future tour dates and graphics accompanying news broadcasts can be displayed on the mobile handset. Besides detailed maps during weather forecasts, audience votings and competitions are imaginable.

Direct sales of products such as concert tickets, games, video clips, wallpapers and ringtones of the song currently playing are possible over VR. Beyond radio advertisement can be visualised in parallel to the programme.

As many of the experts who have been interviewed see mobile handsets as an important future device for the radio industry, VR is a chance to test the acceptance of radio and associated interactive services on mobile phones. As most young people in Europe own mobile handsets, VR can especially higher the attractiveness of radio for this audience.

At present two coexisting visual radio systems are on the market. One, "Visual Radio" was developed by a consortium under the guidance of Nokia and Hewlett-Packard, the other, "spodradio", by a start-up called "Liquid Air Lab" which is based in Germany.

Nokia's/HP's Visual Radio

Using the trademark "Visual Radio" Nokia and HP started their service in March 2005 in cooperation with the Finnish radio station Kiss FM (named Uusi Kiss today). As sound is received analogically via traditional FM radio, "Visual Radio" is not a digital radio solution.

Additional visual content synchronized with radio programme is streamed to the phone via data connection (GPRS or UMTS), for which the user is charged. As a consequence the FM transmission chain is not affected by "Visual Radio's" additional services.

Until now the "Visual Radio" client is only integrated in half of all Nokia devices. By the end of 2006 16 different Nokia devices enhanced with Visual Radio shall be available. But Nokia intends to make it also available to handsets of other manufacturers. By the end of 2006 Nokia expects 100m sold devices worldwide equipped with "Visual Radio".

By now only four radio stations and four mobile operators in three different EU-countries support Nokia's/HP's "Visual Radio":

Although already announced more than one year ago, Nokia's/HP's Visual Radio services are still not available in most European countries. According to an interviewed radio manager from a pan-European radio group Nokia admits the failure of "Visual Radio".

Nokia also conducted a visual radio pilot project using the DVB-H standard in autumn 2005 in cooperation with the radio station Uusi Kiss (already first partner of first version of "Visual Radio") and other partners. Compared to the origin "Visual Radio" the DVB-H-version only needs one technology to transmit both sound and images (even music videos) to the mobile phone. Additionally this system ensures an improved sound quality. After successful realisation of the trial the commercial broadcaster SBS Finland (the owner of Uusi Kiss) wants to continue testing DVB-H-technology in 2006 and is said to gear for its commercial launch.

"Spodradio"

Another solution for visual radio, called "spodradio", was started by a German based start-up company "Liquid Air Lab" in November 2005. Spodradio in contrast to the system of HP/Nokia uses streaming via UMTS for the audio programme and additional visual information. To use this visual radio solution users have to download a free of charge software. After installing the software on the mobile phone, spodradio is free of charge, but the customer has to pay the mobile Internet connection. The latest version of spodradio also supports podcasts, called mobcasts, which can be downloaded to the mobile phone via UMTS.

As of now only certain Nokia handsets are compatible. By 2006 SonyEricsson models and devices using Windows Mobile will be supported as well.

There are no licence fees for radio stations for the implementation on the spodradio portal. Radio broadcasters only have to deliver the sound streams including meta data which only causes marginal costs for the technical equipment.

Due to the radio transmission via mobile broadband technology, spodradio is also available outside the original transmission area. Presently spodradio offers about 140 live channels from all around the world. 40 radio stations f which are based in the European Union. Currently there stations are from Germany (32), the UK (4), Finland (1), France (1), Ireland (1) and Spain (1).

Technology Issues

Both visual radio solutions use UMTS (though Nokia/HP uses FM/DVB-H to broadcast). As the number of users within one UMTS cell is restricted, depending on several factors only a small number of users (less than 50) can simultaneously receive visual radio within one cell. As a consequence the UMTS standard is not considered to be the best way for the further development of visual radio. Other broadcasting technologies (DVB-H, DMB) are the better choice for big audiences, especially when it comes to live radio shows. UMTS is nevertheless a suitable feed-back channel solution.

Another roadblock is the still very low diffusion of UMTS-compatible handsets in Europe and that figures for 3G subscribers are even lower. Therefore there is only a small listener potential and the market size is not very attractive at the moment. Nevertheless many radio stations carefully watch these developments and are trying to figure out strategies for a future mass market.

Besides both existing visual radio solutions only work on mobile devices equipped with the Symbian operating system. Though many players seem to prefer Symbian, it is still not installed on most mobile phones.

Business Issues

The players involved in visual radio could potentially benefit in different ways.

Although visual radio providers announce new sources of income for radio stations, the interviewed radio managers think that the revenue shares and possible margins are not attractive.

User acceptance of visual radio is low as costumers have to pay for the data transmission via UMTS. The amount depends on the data tariff of the costumer. According to Nokia their model typically causes data traffic of about 200kB per hour, compared to 20 MB per hour (including audio stream) at the spodradio solution. In most European countries flat rates do exist, but monthly flat rates of about €25-40 are still too expensive for most users and especially younger target groups. Only real flat rates (without limitation of data) at reasonable prices could act as a driver for visual radio.

Due to low usage figures, advertisers do not use visual radio as platform.

Several interviewed stakeholders also doubt the success of visual radio, as they think that listeners are not interested in additional visual elements during radio reception.

At the same time spodradio faces problems to convince mobile operators to cooperate as they intend to protect their own music services (e.g. Vodafone's Radio DJ). Additionally there is no interest in implementing an external proprietary system on their mobile handsets.

Radio stations on the other hand face high uncertainty due to various emerging new technologies. As they do not know which technical solutions will prevail, they fear to invest in a possibly unsuccessful service. Additionally many radio managers are not informed about visual radio. This might also be a consequence of an insufficient marketing from visual radio providers.

Figure 82: Nokia/HP "Visual Radio" enabled radio stations

Country	*Radio station*	*Mobile operator*
Finland	● Uusi Kiss ● Radio City	● DNA ● TeliaSonera
Spain	● 40 principales	● Telefónica
UK	● Virgin Radio	● O2

Source: HP/Nokia

Figure 83: Visual radio: potential benefits for involved players

Player	*Potential benefits*
Radio stations	● New forms of advertisement: displaying products on mobile handsets and sponsorships → increased ad revenues ● Stronger brand identity through visualisation of radio logo (branded player) → increased listener loyalty ● Creation of communities through interactive elements (e.g. audience polls/quizzes) → passive listeners become active community members ● Share of sales generated by music, ringtones and other downloads (shared with VR provider)
Mobile operators	● Increase of ARPU trough data traffic/subscription fees → VR as incentive for costumers to adapt 2.5G/3G handsets ● Cooperation with VR-provider
VR platform provider	● Sales generated by music, ringtones and other downloads (shared with radio broadcasters) ● Share in the sales of flat rate packages for 3G from mobile operators
Advertisers	● Real time measurability of audiences → new opportunities for market research ● Interactivity enables direct response campaigns and deeper CRM

Source: Goldmedia

2.5.8 Case study 7: DAB in Sweden and the UK

UK

Very often, the UK is mentioned as an example of how digital radio can work. In the UK the penetration of DAB receivers is the highest in the world. Growth started slowly in 2003 but has increased rapidly since January 2005. Until the end of 2005 about 2.7m DAB receivers were sold, which is equivalent to a penetration rate regarding households of about 10 per cent. The UK Digital Radio Development Bureau (DRDB) estimates that 20m DAB receivers will be sold by 2009.

DAB in the UK was more or less non-existent before the BBC announced to support DAB with five digital-only programmes in 2002. Since then, notable amounts of receivers have been sold. With the foundation of the DRDB, the Digital Radio Development Bureau, an organisation was founded to coordinate marketing activities between public and private stations and to ensure communication amongst content suppliers, hardware producers and retailers, in order to coordinate their activities. Therefore, more variation on the receiver market came along with growing listener numbers, making the DAB platform more attractive for radio station.

Status quo Sweden

Initially, the situation for DAB in Sweden was quite similar to the UK before 2002. Already in 1998 coverage was about 85 per cent of the population, but without any listener interest in DAB.

In 2001 Swedish Radio (SR) also started five new programmes but only as a test during five weeks. Unlike in the UK, digital-only programmes were neither continuously broadcasted nor adequately advertised. While the BBC declared full support for DAB with exclusive stations, no such backing-up took place at SR.

But support by the government was also limited. By 2002, the Swedish government decided to cut back funding for DAB, resulting in the switch-off of transmitters throughout the country. DAB-coverage was suddenly to four major cities corresponding to only 37 per cent coverage of the population. The reason given was the investment costs for DAB, estimated at € 43.5m till 2006. Obviously this move significantly reduced the incentives for potential DAB listeners.

While the government policy for a digital switchover in the UK was clear and already on the way with digital television, Sweden was still unsure about the future of digital radio. An all-party commission on digital radio announced only in 2004 to have a working legislation by the end of 2005, with plans for a gradual transition and a long term switch-off.

The delay further hindered the growth of the DAB market. Hardware manufacturers and retailers started cooperating with radio stations in a similar manner as in the UK with the DRDB – but much later. And only now SR announced seven new, digital only programmes. But in December 2005, the government announced not to follow the plans for a transition to DAB as suggested by the committee. Awarding of commercial licenses was also stopped. The arguments were that DAB should not be considered the only mean of digital distribution, but the Internet, streaming audio on mobiles and podcasts as well. As a consequence of this decision, there will be most probably no future for DAB in Sweden.

DAB failure Sweden - findings:

- coordination of hardware industry and broadcasters from early on is crucial
- legal framework and clear government policy on DAB are crucial for market development
- a high level of DAB transmission costs and infrastructure call for quick decision-making and early support

The relatively positive development of DAB in UK is based on attractive content offered by digital radio stations. For example, there are more digital radio stations in the London area today than analogue ones. Most of them are commercial stations.

In other countries with some DAB experience like, for example, Germany, we encounter a completely different situation. The digital radio offer is characterized by public broadcasters and fewer digital than analogue radio stations.

On British the DAB platform the share of digital-only-brands is about 25 per cent. Therefore, pursuing DAB could be considered a good opportunity for new digital market players and their business plans. On the other hand the market is quite young and its further development has to be watched closely.

Nevertheless, 70 per cent of all DAB brands are already known from analogue terrestrial distribution. The high presence of these well known brands is crucial for the success of DAB in the UK – a platform focused on digital-only-brands is less important. In fact, new digital-only-brands can only be developed on a sufficient client base generated by already well known brands.

But DAB in UK is not only a success story. Users complain about disappointing quality of reception and a sound quality worse than FM. These problems are due to low transmission power of DAB transmitters and to low bitrates being used by the radio stations in order to save on distribution costs. 96 per cent of all stations use a bitrate of 128 kbs for transmissions, which is by many listeners perceived as worse than good FM reception. During the Regional Radiocommunications Conference 2006 (RRC 06) it was agreed upon a potential increase of transmission power.

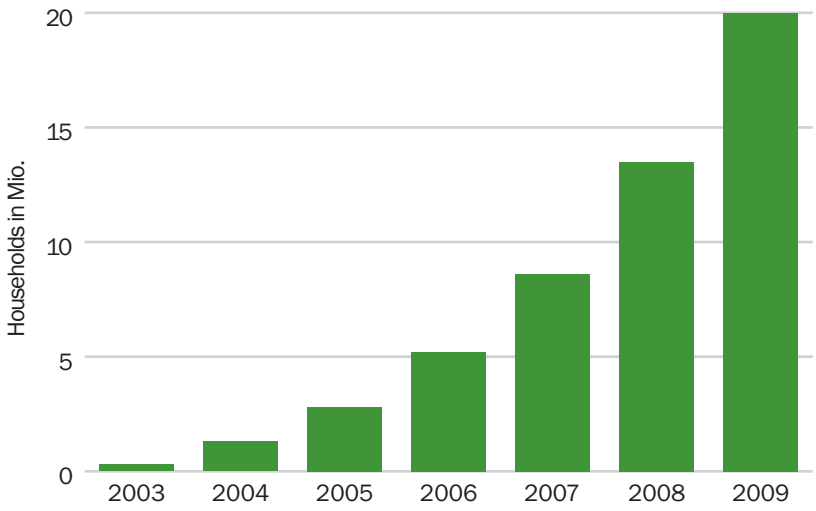
During our research interviewees expressed that the economic outlook of the DAB platform is limited. These experts stated that with the audience being too small and too much competition in the field, DAB-only stations find it very hard to succeed economically. Originally, the management of the companies expected much higher penetration rates of DAB by today. These claims are supported by the trend of DAB capacities being handed back in the UK.

While DAB in the UK is talked about a lot, it is often forgotten that "Freeview" (DVB-T/DTT) is not only a platform for digital TV, but also encompasses 24 digital radio stations. Freeview's household penetration in the UK is more than 30 per cent. Thus DTT, not DAB, is the most common digital radio platform in the UK!

Experiences with terrestrial digital radio in the UK can be summarized as follows

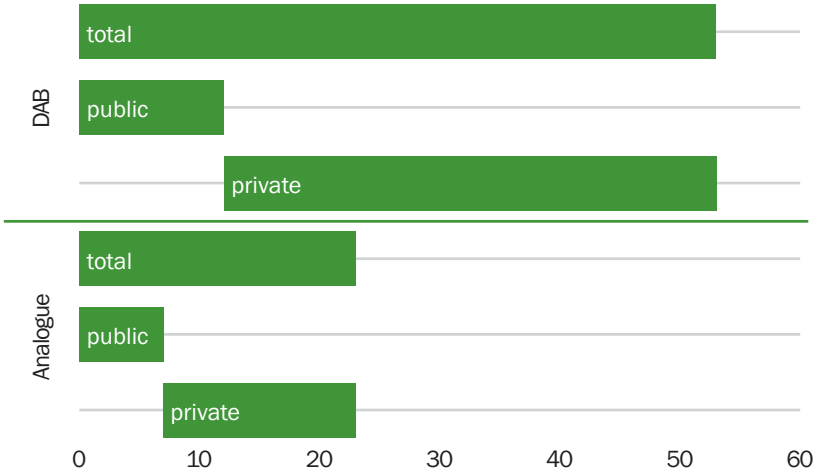
- Offering more digital than analogue radio stations is crucial for developing a viable DAB penetration
- The long-term success of DAB depends on a permanent, attractive offer of digital radio stations
- DTT is often forgotten about when talking about the UK's broadcast digital radio market though more successful in terms of household penetration

Figure 84: DAB-receivers sold in the UK 2003-2009



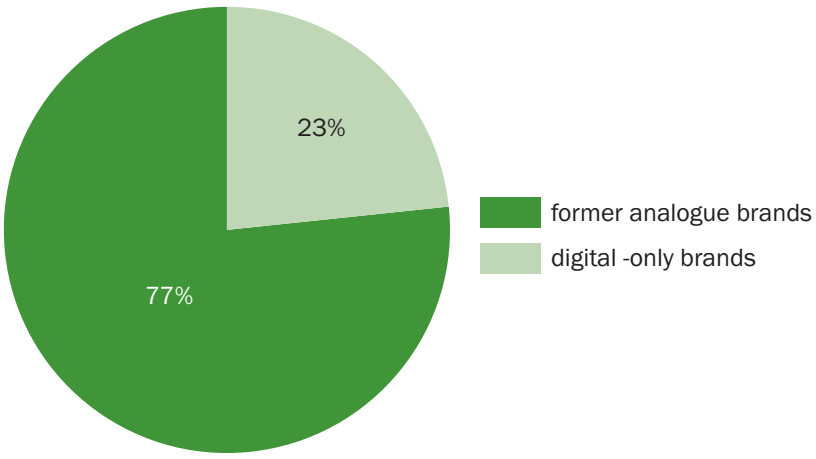
Source: Goldmedia

Figure 85: Number of radio stations by content provider segments in the UK 2005



Source: Goldmedia

Figure 86: DAB-brands in the UK (2005)



Source: Goldmedia

2.6 Publishing

2.6.1 Summary of main findings

Publishers in all sectors interviewed for this report focused on short and medium term obstacles. A minority raised issues that would affect the longer term development of the industry under the impact of convergence, but most of those interviewed were concerned with more immediate problems that were holding back development of the market and their own businesses.

The main categories of roadblocks identified come down to six categories below.

2.6.1.1. Skills (6.3)

This heading encompasses a range of issues mentioned by publishers, including: difficulty of recruiting staff with particular technical 'online' skills; lack of appropriate skills in-house; lack of adaptability of existing employees; labour market rigidities hindering changes in the composition of the workforce. It is applicable to all subsectors.

2.6.1.2. Extension of regulation designed for traditional services to new ones (4.2)

Publishers are concerned about the impact of direct regulation or co-regulation on what has traditionally been a self-regulating sector. They are concerned about regulations they believe might affect both content and advertising.

2.6.1.3. VAT (6.1)

All member states (except Ireland) require publishers to charge the full rate of VAT on electronic products and services. None apply the lower rates (in some case 0%) to electronic products and services that they do to printed newspapers, magazines and books. It is applicable to all subsectors.

2.6.1.4. Market power of certain gatekeepers (5.1)

Mainly this applies to the mobile market, where mobile operators have control over pricing, standards and revenue shares (news providers, magazines) but also technology platform suppliers in education (education publishing).

2.6.1.5. Reuse of copyrighted content by internet 'pure players' (5.7)

Reuse of copyrighted content by internet 'pure players' (portals, news aggregators, digital libraries and digitisation projects) is a major concern to publishers in all sectors. Most believe that this represents a threat to the sustainability of their businesses: either by taking content sales (threatened by book digitisation programmes); or by competing for advertising revenue without the costs of generating original content (news aggregation services, search engines).

2.6.1.6. Fragmentation and complexity due to different platforms - lack of mobile content and DRM standards (1.4, 5.5)

Publishers have only a small degree of influence over technical standards in mobile and over the development and deployment of DRM systems. Applicable subsectors: mainly news providers and magazines, though book publishers may also be affected by DRM systems.

These six families of roadblocks, that are sometimes a combination of technical, economic and legal factors, are analysed below.

2.6.2 Digital value chain and market trends

The traditional publishing industry is made up of a number of relatively discrete sectors: newspapers, magazines, books and directories.

However, **these categories are changing under the impact of online publishing**. Many organisations that would not have been recognised primarily as "publishing companies" are now making information, education and entertainment content available online, and new companies are also entering as online-only publishers or internet 'pure players'. Some of this content competes directly with that produced by the traditional publishing industry. Publishers are also a source of much of this content. Traditional BtoB information companies such as news agencies and financial information providers are also now becoming publishers in their own right rather than sources of content for other publishers.

Of the activities essential to the publishing process, the key areas that contemporary publishing enterprises regard as core and of which they have largely remained in control are:

- Product development
- Editorial strategy
- Content creation
- Brand identity and management
- Marketing

However, these are managed in different ways: content creation in particular is carried out very differently across the sectors and this has implications for the way in which online publishing will develop. A notable feature of the sector structure is the general tendency to develop "cultures" for each sector. People working in each sector tend to stay within it.

This may not be permanent. It is changing under the influence of online publishing: publishers interviewed are trying to recruit and manage people with good online skills and experience rather than specifically newspaper or magazine experience, and see online publishing as a generic skill rather than specific to the original medium.

Online publishing is also blurring the boundaries between content categories: magazines can offer daily or hourly news in their field; national newspapers can develop locally-focused classified advertising services that compete with established local or regional newspapers.

2.6.2.1. Sectoral data

There is a body of data available for print publishing that allows limited comparability across Member States. However, for digital publishing there is very little reliable data available that will allow reliable comparisons between Member States. This issue will need to be addressed if the competitiveness of the online publishing sector is to be monitored. This lack of data makes it **hard for some of the publishers interviewed to assess their international position** in a business that is increasingly exposed to international competition.

In some sub-sectors (e.g. online services operated by newspapers) the US has more detailed data publicly available.

2.6.2.2. Newspapers

Daily newspapers include those published between four and seven times each week. National newspapers are available throughout a country, but are not always high in circulation: in some countries, the leading regional papers can sell more than some national papers. Some newspapers published for major cities such as Berlin and Frankfurt are in effect national papers.

Regional daily newspapers are a significant force in several European countries. In some major markets they have larger combined circulations than the national papers. They are usually supported by extensive classified advertising as well as income from circulation.

Non-daily newspapers are, for the most part, weekly local papers, sometimes carrying strong classified advertising content as well as local news.

Sunday papers are published in six EU countries, and are modelled on national daily papers.

Free newspapers include weekly local free newspapers of the type published widely as advertising-based "shopping papers", as well as daily "commuter" newspapers such as the newspapers often distributed at transport nodes. The business models and performance indicators for these categories are very different.

Some European markets sustain newspapers dedicated to **sport**.

In some European countries, newspapers are mainly sold on subscription; in others, they are sold copy-by-copy by retailers.

2.6.2.3. Books

The book industry in different European countries does not conform to a standard classification.. However, the industry in all countries falls broadly into four groups:

Consumer publishing (sometimes known as "trade publishing") covers both fiction and non-fiction books written for a general audience and usually sold through retail outlets.

Educational or schools publishing consists mainly of school textbooks and related materials, covering all levels from nursery to college (post-school) education.

Academic publishing includes both academic monographs and textbooks for university-level and above.

Business and professional publishing includes fields such as legal publishing and more practical technical works, as well as "general management" books.

In some countries, two **other categories** are sometimes also considered as significant enough to separate out in statistical analyses: these are children's books and religious books.

Where these are not separated out, children's books are usually considered part of consumer publishing as they are sold through the same channels on the same basis, and religious books as educational (although they are often retailed as consumer rather than educational books).

2.6.2.4. Magazines and journals

The magazine and journal publishing sector falls into three sub-sectors:

Consumer magazines are aimed at individual buyers, usually with leisure or entertainment content. However, the sector also includes titles that concentrate on news, information and analysis. Consumer magazines are available both through subscription and through single-copy purchase (the proportion differing between Member States). Advertising provides a significant proportion of the revenue for consumer magazines.

In some European countries, consumer magazines are mainly sold on subscription; in others, they are sold copy-by-copy by retailers.

Business-to-business magazines are aimed at readers at work or at least in support of their professional lives: they usually focus on a particular industry or business sector, occupation or profession. Content is usually based on industry news and features. The business model can include single copy sales, but is mainly based on subscriptions and advertising. Some titles have only advertising revenue, and are sent to "qualified" readers ("controlled circulation" magazines). At the other extreme, some newsletter publishers (included within the business-to-business sector) have a subscription-only model and carry no advertising. Business-to-business publishers sometimes exploit a key brand across several channels such as exhibitions and directories as well as for a magazine.

Academic journals are mainly sold to libraries in universities and colleges and to research departments of large companies. The primary content model is refereed papers contributed by researchers: the content is not paid for. Revenue comes almost entirely from subscriptions, although leading titles carry limited advertising.

A fourth category, **customer magazines**, is also growing in importance in some countries: these are magazines produced for large companies (or other large organisation) that are distributed free of charge to customers or users. These will typically include professionally written content driven by the marketing strategy of the organisation, and third party advertising as well as house advertising.

2.6.2.5. Directories and databases

Directories exist to provide information allowing people or organisations to identify and contact one another, often as either buyers or sellers. Directories are important channels for buyers and sellers to identify one another. Directories provide information for a wide range of important non-commercial activities such as research and development, identification of expertise, and location of social and cultural resources.

The directories publishing industry comprises two main sectors, although they are not entirely discrete:

Consumer directories are mainly classified directories of business telephone numbers and addresses listing suppliers of products and services for a locality. These directories are distributed free of charge and are paid for through advertising, which accounts for nearly 100 per cent of their revenue. However some extra revenue is achieved through "user pays" models: for example, voice-based services. Although these directories were originally created by telecom operators, many are now owned by other companies. Some localities may have competing titles, as independent publishers have also moved into the sector.

Most consumer directories now have an online version and in some cases CD-ROM. Voice services have the potential to become a significant channel.

"White pages" (unclassified alphabetic listings of telephone subscribers) also carry advertising, but are published by telcos as part of their service to subscribers.

Consumer directories are the larger part of the industry. Precise figures are not available, but according to estimates made by the European Association of Directory Publishers (EADP), consumer directories comprise around 80 per cent-90 per cent of the industry's revenue, with 10%-20% accounted for by business-to-business directories (see next section).

Consumer directories compete with a range of other local media for advertising revenue, including local newspapers and magazines as well as direct marketing.

Online-only directories: in addition to directories published in the traditional way, there is now a new generation of directories available only online. Most of these have been developed by online firms such as Yahoo! which are outside the traditional directory-publishing sector. These are a significant commercial force, and may be substituted for the use of traditional directories by both businesses and consumers.

This is becoming a very varied sector. Many of the directories offered by portal services do not aim to be comprehensive, but may only offer entries to organisation that have paid for entry. Some are funded on the basis of either generating traffic to an advertisers website or even on through a percentage of transaction value resulting from a lead generated by the directory. These services can offer flexible business models that are very different to the traditional enhanced-entry or display advertising model available to printed directories, but lack the universal coverage of traditional printed consumer and business directories. They have tended not to challenge specialised business directories other than through substitution.

2.6.2.6. Online-only publishing

An increasingly important part of the publishing sector is comprised of various types of "online-only" publishing. This is a very diverse sector, and hard to quantify. Online-only publishing does not had a strong traditional print analogue, and many of the organisations involved in it do not have recognised print brands.

Some of these companies publish a very diverse range of content; others can be focused on a particular sector such as news about an industry or a leisure sector.

Examples from various EU country include: Agence France Presse, Reuters, Motley Fool, Bloomberg, Photograhie.com, About.com, Gumtree, Yahoo!, Mobile.de, Silicon.com/.fr/.de, Playreview.it, Sportmedia.hu.

Although it is hard to generalise, **the dominant business model for many of these publishers is based on advertising** (including classified advertising) and sponsorship rather than subscriptions, although some financial information services can charge a subscription. Few consumer online publishers can charge a subscription, although some do.

Many online publishers also have strong print operations and their websites often share content and revenue with the printed magazines or newspaper. Increasingly, however, online publishers have no print products in their portfolio. Some, such as Silicon.com and Photographie.com, and focused on particular subjects. Others, such as the large portal operators, are aiming to be the consumer's way into the online experience, and are also aiming to provide a range of content of their own, either through their own editorial resources or through syndicating content from other creators.

However, online opens up opportunities for entire new classes of "publisher". Not only organisations, but **individuals can have access to an audience through blogs** and contributions to community or social networking sites. Some publishers have services which have no editorial content at all, but act as a framework for users to create and communicate their own content. Many magazine and newspaper publishers are aware that this is a phenomenon that they must engage with, even if it seems alien.

Online publishing, whether through the PC-based web, through mobile phones or on devices such as games consoles, is a product of convergence of publishing and ICT. Without the "communication" aspect of ICT it would not exist in its present interactive form, providing a bidirectional medium for many-to-many as well as one-to-many communication.

The inclusion of new types of content is also a direct effect of convergence. Many newspaper and magazine online services include not only traditional text and still pictures, but also:

- Videoclips – streamed and downloadable,
- Podcasts (for instance the online Guardian offered the hugely popular Ricky Gervais podcast show),
- Downloadable MP3 audio and ringtones,
- Games.

This type of content further serves to blur the boundaries between different categories of publishers. A large news publisher may include a great deal of audio and video on its site; a broadcasting organisation with access to a much wider range of audio and video may in fact decide that the web is essentially a text medium, and publish transcripts of its news stories and still images: a count of the volume of each datatype may put the newspaper and the broadcaster in a very similar position, whereas in the traditional media world they would be very different: the online medium itself imposes constraints. Several of the publishers consulted in the survey commented that their competition could now come from many different sources, and that the task they faced in beating off competition was more arduous and more complex than it has been in the past.

Some book publishers are also including a wider range of content online, both to support marketing and promotion and to enhance books. This is a common technique among educational publishers, but also used by consumer publishers.

Online publishers

Many magazine and newspaper publishers have established online products and services. These range from close analogues to their printed products to entirely new services that contain unique content and may even be a new brand. In some cases, they have amalgamated several print publications into one online brand. However, most still seek to preserve the link between the print and online products in the reader's mind.

Among the new publishers are many who are involved for reasons other than money. This represents a serious challenge to the traditional world. Free classified advertising services, for example, which are built at small cost by people who want to serve a community, are already posing a competitive threat to traditional newspaper classified advertising revenue.

At the other end of the scale, some large enterprises are also making content available online without any strong drive to monetise it. Public sector broadcasters in some member states have developed sophisticated web presences (especially in the field of news) without revenue from either subscriptions or advertising. Public health services are creating extensive public service websites with consumer-oriented medical information. Large organisations have launched their own recruitment sites that compete with traditional and online paid-for recruitment advertising.

Relying on users for a significant volume of content (or even all of it) has become an attractive option as the need for a steady flow of new content becomes apparent. New content can be available every few minutes through user interactions with one another. It can also have other impacts, by demolishing traditional boundaries between types of competitor. In the print sector, in general newspapers compete editorially with other newspapers (although they compete with all other media for advertising). Online, a newspaper running an online travel service featuring user-generated content may compete for readers' attention with a similar service run by a travel book publisher.

It should also be asked if a service without any traditional editorial control should be considered to be publishing in the first place. The main reasons for including it in a study of convergence are that it competes with more conventional publisher-based services both for attention and for advertising revenue. Another reason is that publishers themselves have signalled an interest both by including this type of content and by acquiring companies that specialise in service built around user-generated rather than around traditional editorial content. Several of the magazines and newspaper publishers interviewed described this type of content as important both in terms of material for their branded magazine and newspaper websites, and as an indication of an important trend for the future. For these reasons, we consider such services as "publishing" for the purpose of this report.

2.6.2.7. Mobile publishing

Mobile devices such as mobile phones, PDAs, portable audio players (MP3 players), portable games machines and portable video players are expected to be important platforms for music, and television content. However, the publishing sector at the moment is often ambivalent about mobile opportunities and few of the publishers interviewed had invested significant time or resources in mobile developments, deeming the market not yet ready.

One that had invested and was gaining considerable success noted that the it operated mainly in India, and that it had a large volume SMS business for text information services. The end-user price was 2 rupees (€0.04), a low enough price to allow a very large number of users to access the service. Even though the telecommunications operators took 70 per cent of the revenue, the publisher found the volume sufficient to make the service profitable.

Mobile content can either be delivered "over the air" (OTA) direct to a device through GSM 2.5G, 3G or wifi, or "sideloaded". Sideloaded content is downloaded to a PC over a broadband connection and then transferred over a local link (typically a cable or Bluetooth connection) to the device. The very large majority of music is currently sideloaded in this way from services such as iTunes to MP3 players. The sideloading model is also used for digital audiobooks, although audiobook services will allow users to listen on the PC as well as using a device. At the moment, audiobooks

are too large to download direct to the device over the air (an unabridged audiobook might typically be 55 mb of data: at GSM or 3G data rates of €2.50/megabyte: this is clearly not an economic proposition for users at present, even if divided into chapters).

Text publishing does not create this volume of data, and many text services are feasible as OTA services. The major current forms are:

- Wireless Access Protocol (WAP) and similar browser-based services using specialised markup languages designed for the display of content on small screens, including XML variants such as WML and C-HTML;
- Messaging protocols such as SMS and MMS

WAP services include news and feature content available through the mobile operators' portals, or via a URL that the user enters directly (just as with a conventional web browser). SMS publishing includes headlines, sports results and financial information.

In both forms there are some economic roadblocks to be overcome before they can become widespread publishing services. Pricing to the users is still high: a session browsing news and reading articles using a mobile phones can cost the user €1.50 in data charges. Such pricing is a barrier to widespread takeup, and although usage is increasing, it starts from a low base and is not growing very rapidly.

SMS news services are readily available, offering information such as sports results and news headlines. The platform has limitations in the amount that each message can carry, and the costs of premium SMS services to the end-user.

More unusually, one or two services in Japan deliver novels as text messages, with the story evolving in fragments over the course of a week. Such services have provided popular with younger female readers in particular. One must beware of generalising from the Japanese market, however: it has certain characteristics that distinguish it strongly from the current European one: the most significant are the lower costs of phone ownership and use, and the relatively low numbers of internet-enabled PCs in people's homes: the mobile is the dominant platform for web access.

In the audio field, publishers are now exploring MP3 players as platforms: some education publishers have launched services based on the Apple iPod, including audio content such as revision notes and podcasts for teachers as well as students.

2.6.2.8. Publishing value chains

This is a generic view of the traditional print publishing value chain.

Content and context creation can take place either inside or outside the publishing enterprise: in the case of newspapers employing journalists it largely takes place inside; in the case of book publishers commissioning authors it largely takes place outside the firm. Many publications use both models: a magazine will contain work by both staff and freelance writers and freelance photographers.

Context creation includes advertising sales.

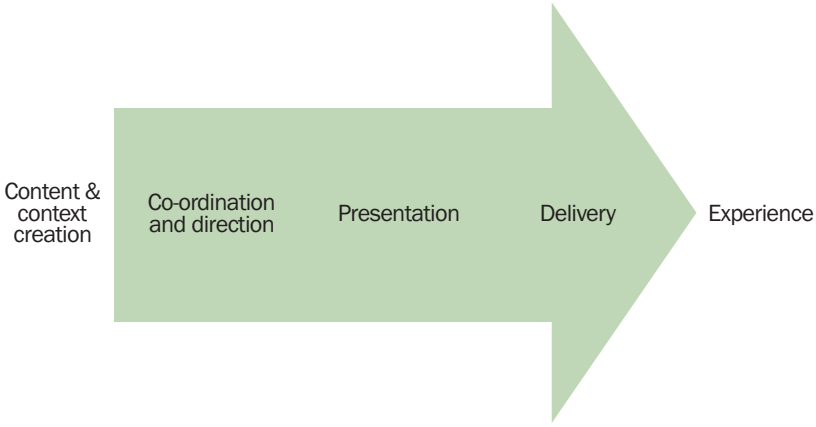
Co-ordination and direction includes activities such as commissioning books or articles, marketing, setting editorial policies, editing a magazine or newspaper and managing relationships with advertisers.

Presentation includes overall design strategy, design and layout for individual issues or books, and design of websites – including functionality.

Delivery includes physical manufacture, stock distribution and retailing. It may take place outside the firm but is largely controlled by the firm's policies. In the online sector, website hosting is part of delivery.

The readers' **experience** is the thing that no publisher can control directly, or have direct access to. Publishers can ask users about their experience in surveys, but this is expensive and only small numbers can be studies.

Figure 87 : A generic value chain for publishing



Source: Rightscom

Note that the traditional value chain is a one-way flow between content and context creation and experience.

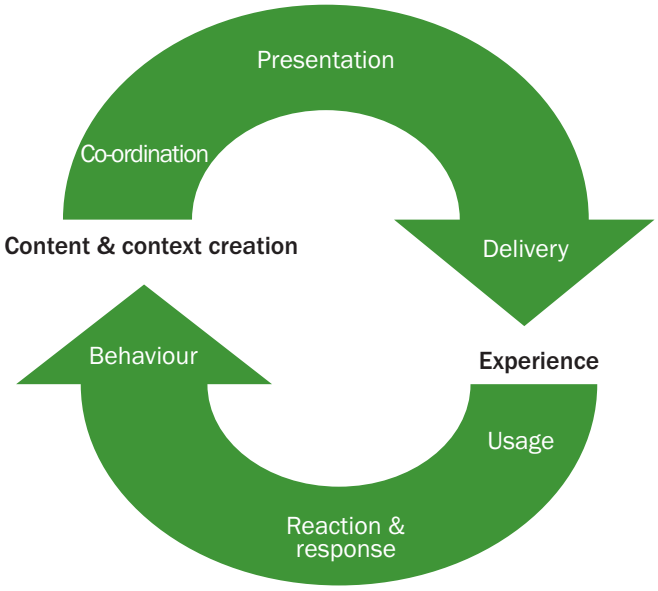
Online publishing offers the publisher a new way to benefit from value created by the readers' experience and to understand the readers' behaviour in much more detail.

The essential elements of the traditional value chain remain in place (although they may be operated by new people or enterprises). However, the process becomes an iterative and interactive one in which the readers' experience is accessible and can be used in a number of ways.

The implication is that online publishing may be better seen as a process of communication rather than publishing, and the publisher becomes a participant in the flow of communication, albeit a particularly important and well-resourced participant.

Many of the newspaper and magazine publishers interviewed for this study indicated that increasing their mastery of direct relationships with readers was a very important opportunity for them, but also a significant challenge in respect of the skills available.

Figure 88 : A new approach to the publishing value chain



Source: Rightscom

Some of this activity can be monetised. The information on simple aspects of user behaviour can be used to aid advertising sales both by attracting advertisers and by demonstrating effectiveness. Personal information such as addresses can be used to market other publications or offers to them (assuming they have given permission for the publisher to do so). Many of the magazine and newspaper publishers interviewed indicated that making use of this flow of data was very important to them.

New elements in the interactive value chain

- Usage: publishers can see what content individual readers use, when, how often etc. This is a new ability that has not been easily available in the past.
- Reaction and response: publishers can see what they do next. This might be in terms of other pages they visit, external links they click on etc. They can also encourage response (e.g. a vote)
- Behaviour: publishers can encourage contribution or interaction. This can take the form of making a comment or posting a message in a forum, uploading a photograph, taking part in a vote, looking at additional material or downloading software or content.
- This leads to new content and context creation: users have contributed additional content that will be of interest to other readers, which in turn will provoke new contributions. It also creates additional context for the original item, as well as for advertisers in the form of new keywords that can be used to trigger display of advertisements. Blogs and moblogs (mobile blogs) are making use of this in a structured way; forums are making use of it in a less structured way.

Sites which have only user-contributed content are currently among the most interesting to investors, and appear to be taking a significant part of he online attention of younger readers in particular. There are some important questions to be resolved, such as:

- Who is best-placed to take advantage of these opportunities?
- How could they be monetised ?
- What level of control over content will society, legislators and regulators expect?
- How can the publisher introduce control without damaging the value of the service?

Many of these issues were raised by the newspaper and magazine publishers interviewed.

2.6.2.9. Circulation, advertising and sales revenues

Table 89 illustrates the dramatic **decline in the circulation of paid papers** and the importance of daily free papers in maintaining overall circulation levels in Europe in recent years.

Advertising revenue in the major markets is generally still rising, while trends in sales revenue are still unclear, partly as data is less current than for advertising. Data on shares of newspaper advertising in several major markets illustrate the varied market positions of newspapers and also the degree to which they are maintaining market share.

Newspaper revenue from online advertising

There is very little data available on the contribution to advertising income which comes from newspapers' online operations; WAN's *World Press Trends* gives 2005 data only for the Czech Republic (3 per cent); Hungary (1 per cent) and Sweden (3.9 per cent). In Sweden that amounted to SKr349m (€37.6m).

The Newspaper Association of America does have a regular statistical release, and the latest one, referring to the first quarter of 2006, gives contribution of 5.5 per cent by online to total ad revenues, with online revenues rising by 34.9 per cent compared with the first quarter of 2005. The different ways in which online advertising is sold by newspapers in combination with print ads

Figure 89 : Circulation: dailies (000)[10]

Paid	*2001*	*2002*	*2003*	*2004*	*2005*
North America	61,324	60,739	60,657	60,074	58,559
Europe	96,786	95,200	93,177	91,260	90,654
Paid and free					
N America	61,324	60,739	60,657	60,074	58,559
Europe	101,574	100,818	100,426	99,996	101,151

Source: WAN World Press Trends, 2006

Figure 90 : Paid-for dailies advertising revenues, selected countries

€m	*2001*	*2002*	*2003*	*2004*	*2005*
USA	34,757	34,598	35,255	36,638	37,192
France	1,041	1,173	1,211	1,364	1,393
Germany	3,942	4,061	3,927	4,360	4,390
Italy	1,150	1,265	1,347	1,515	1,564
Netherlands	413	415	555	655	643
Spain			1,078	1,246	1,349
Sweden	607	677	729	814	845
UK	2,724	2,916	3,024	3,492	3,502

Source : WAN World Press Trends, 2006 (conversion to euros using current exchange rate)

Figure 91 : Share of newspapers in total advertising spend

%	*2001*	*2005*	*2008*
USA	31.1	30.2	28.3
France	18	18.9	n/a
Germany	42.1	41.7	41.3
Italy	21.9	19.4	18.8
Netherlands	45.2	39.4	39.1
Spain	29.1	25	23.8
UK	41.1	37.3	34.8

Source : WAN: World Press Trends, 2006 (conversion to euros using current exchange rate)

obviously can make it difficult to calculate the numbers and difficult to compare like with like.

Online newspaper sites and usage

Trends in the number of daily newspaper websites have been fairly stable, with some advanced markets showing falls (which may be partly attributable to mergers and acquisitions of titles) and newer markets still rising.

Figure 92 : Paid-for dailies sales revenue

€m	*2001*	*2002*	*2003*	*2004*	*2005*
USA	5,248	5,358	5,471	5,360	
France	1,525	1,793	1,977		
Germany	2,572	3,203	3,479	3,845	
Italy	837	1,169	1,403	1,668	
Netherlands	590	724	795	871	909
Spain	795	938	1,023	1,248	1,239
UK	2,316	2,600	2,661	3,081	

Source: WAN: World Press Trends, 2006

Figure 93 : Audience for Newspaper Web sites (USA, 2004-2005)

	Average monthly unique audience(000)	*Average monthly reach*	*Average time per person (mm.ss)*
2004Q1	41,847	27.52	37.13
2004Q2	40,447	26.65	34.06
2004Q3	40,566	27.61	35.47
2004Q4	41,151	27.65	36.32
2005Q1	42,393	28.51	37.56
2005Q2	42,494	28.66	37.00

Source: NAA: The Source: Newspapers by the Numbers, 2005

Figure 94 : Germany: examples of online readership, 2005

Publisher	*Site*	*Page impressions million per month*
BILD	www.bild.de	318
Suddeutsche Zeitung	www.suddeustche.de	48.1
FAZ	www.faz.net	47.1
Rheinsiche Post	www.rp-online.de	26.6
Handelsblatt	www.handelsblatt.de	22.4

Figure 95 : Netherlands: examples of online readership

millions of page impressions	*2003*	*2004*	*2005*
De Telegraaf	2.65	3.15	3.3
NRC Handelsblad	1.78	0.956	1.042
de Volkskrant	1.6	0.714	1.091
Wegener Dagbladen	n/a	1.112	1.04
Algemeen Dagblad	1.4	0.511	0.554
Het Financieele Dagblad	0.202	0.216	0.156
HDC Media	0.384	0.629	0.81
NDC Holding	0.212	0.317	0.428

Source: WAN: World Press Trends, 2006

Usage data for online newspaper sites is not consistently collected or reported in Member States. The Newspaper Association of America does report on the reach and audience of newspaper web sites. This shows audience and reach climbing gradually and time spent generally stable.

Other countries do provide some data on page impressions and unique users for newspaper websites, but these are generally reported in different ways:

Figure 96 : Online readership in Spain, 2005

Publisher	*Site*	*Unique users*
El Mundo del Siglo XXI	www.elmundo.es	7,001,683
Marca	www.marca.com	4,021,014
As	www.diarios.com	2,396,811
ABC	www.abc.es	1,533,786
Sport	www.diariosport.com	1,008,319

Source: WAN: World Press Trends, 2006

Figure 97 : Where people got news in the US, Dec 2005

%	*All respondents*	*Non-internet users*	*Dial-up users*	*Broadband users*
Local TV	59	57	65	57
National TV	47	43	50	49
Radio	44	34	52	49
Local paper	38	37	41	38
Internet	23		26	43
National paper	12	8	12	17

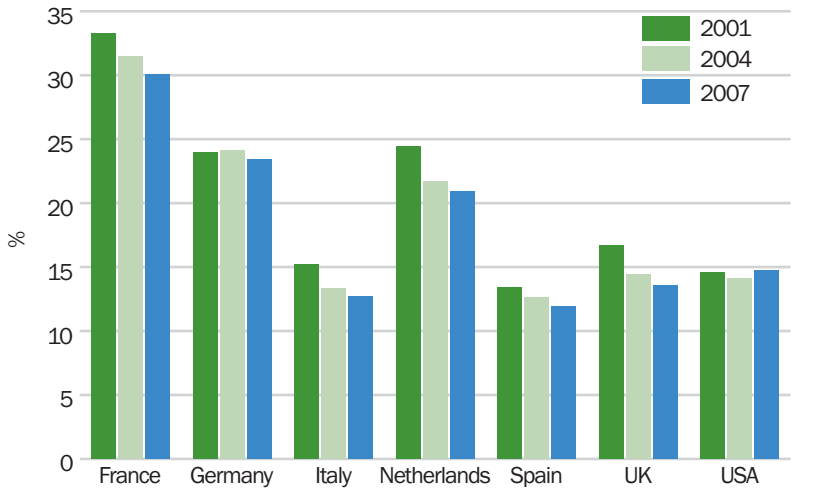
Source: Pew Internet & American Life Project

Figure 98 : Magazine advertising and copy sales (shares of total revenue)

2004, % (except where stated)	*Advertising*	*Copy sales*
Austria (2001)	80	20
Czech Rep	60	40
Denmark	8	92
Estonia	40	60
Finland (2002)	28.5	71.5
France	30	70
Germany	49	51
Ireland	30	70
Italy	25.9	74.1
Portugal (2002)	43.9	56.1
Spain (2003)	64	36
Sweden (2003)	28	72
UK	36.7	63.3
USA	67	33

Source: FIPP, World Magazine Trends, 2005-6

Figure 99 : Marketshare of magazine advertising, selected countries (%)



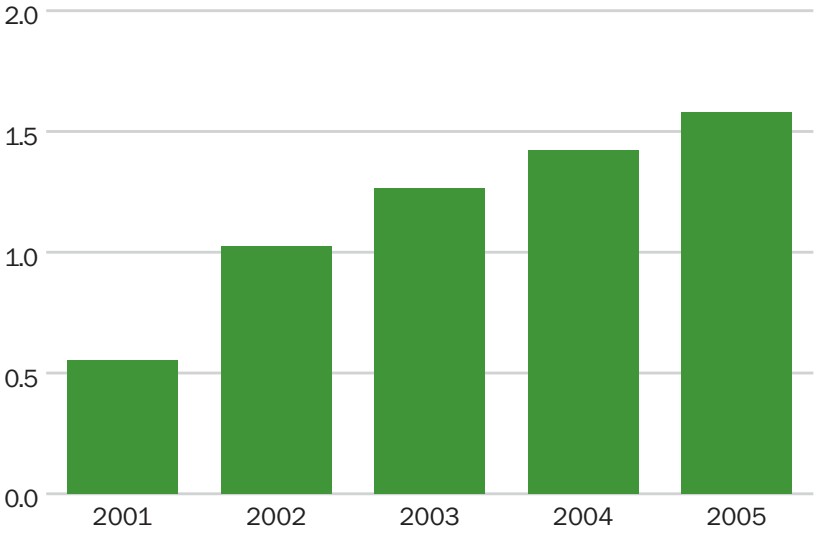
Source: FIPP, World Magazine Trends, 2005-6; 2007 forecast from Zenith Optimedia

Figure 100 : Number of consumer magazine websites

	2002	*2003*	*2004*
Czech Rep	131	143	206
Denmark	68	76	81
Estonia	20	26	29
Finland	150	na	na
Ireland	102	107	125
Latvia	8	22	na
The Netherlands	103	105	na
Poland	891	1083	1140
Sweden	180	na	na

Source: FIPP, World Magazine Trends, 2005-6

Figure 101 : Online paid-for revenues in the US (€bn)



Source: OPA

2.6.3. Market data

2.6.3.1. Market data - Magazines

According to the European Federation of Magazine Publishers (FAEP), European magazine publishers have combined annual revenues in excess of €40 billion and employees more than 300,000 EU citizens. The share of magazines' revenue derived from advertising and copy sales varies considerably across countries, and is a measure of how important it is for the industries to capture online advertising revenue for their markets; however, copy sales may also be challenged by new media consumption patterns.
On the whole the advertising market share - or in some cases the revenues - of magazines have been declining over the last 5 years, under the pressure of internet advertising and television advertising.

Paid-for content trends

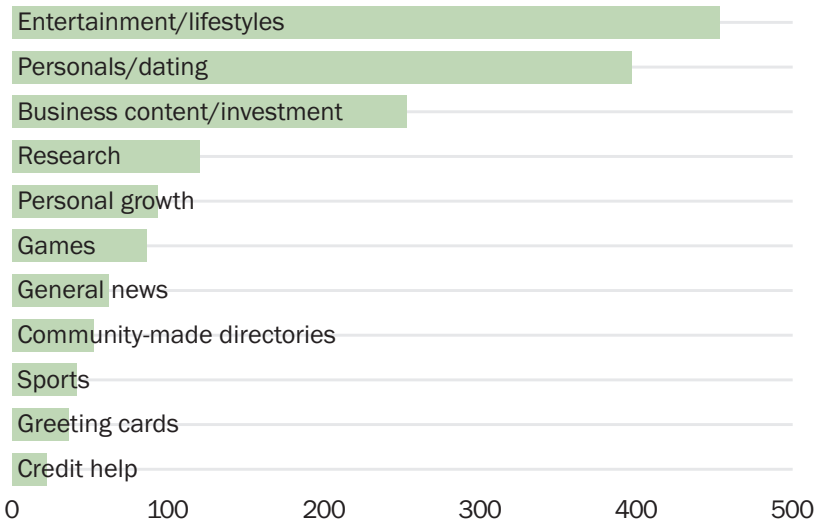
There are some differing perspectives on the degree to which consumers are prepared to pay for content, and very little hard information from European countries, though the Online Publishers' Association (OPA) in the USA releases regular information.

A recent survey in the UK by the Association of Online Publishers (AOP) whose membership encompasses newspapers, magazines, pure-play and broadcast-based publishers found a big drop in the percentage charging for content, reflecting the renewed ability of publishers to get significant online ad revenue as well as the difficulty of getting consumers to pay for online content (see Country focus UK section). On the other hand, French publishers say they have seen encouraging results from their payment aggregation service, Kiosque Internet Plus (see Country focus France). Individual publishers are still actively experimenting with selling certain kinds of content, e.g. both Sanoma in the Netherlands and Emap in the UK are selling diet plans though their online women's magazines.

Trends in paid content revenues in the USA see a steady rise, but nothing like as rapid as the growth in online advertising.

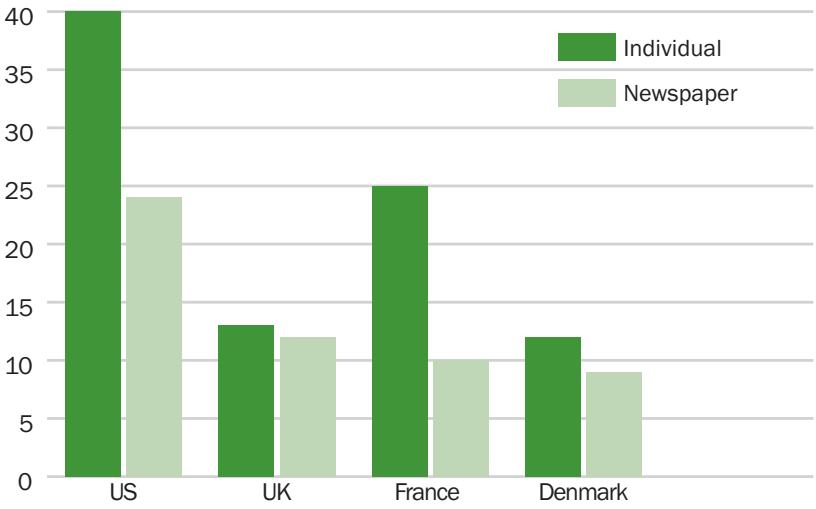
Looking at the categories also shows that traditional print content such as general news is not attracting much spending, and that it fell last year. Business investment personal growth and research fare better, but dating and lifestyle/entertainment are the largest and fastest-growing areas. Newspapers in

Figure 102 : Paid content spending by category in the US, €m



Source: OPA

Figure 103 : Readership of blogs (% of respondents having read one in past week)



Source: Telegraph Media Group/Metro International survey, May 2006

for more on this) also found that while 54 per cent of users have registered at news sites but **only 6 per cent have paid for news content online**.

Figure 104 : Selected UK Internet properties featuring user-generated content

Total UK - Home and Work Locations	Rank (vs. Top UK Properties)		Unique Visitors (000)		Change (%)
YoY comparison (July)	*2005*	*2006*	*2005*	*2006*	
Wikipedia Sites	78	16	1,852	6,545	253
MySpace.com	89	27	913	5,173	467
Piczo.com	91	43	820	4,049	393
YouTube.com	N/A	47	N/A	3,918	N/A
Bebo.com	90	48	912	3,902	328

Source: comScore Media Metrix

Europe have certainly taken this on board in their acquisition and partnerships with dating services.

Research by the Pew Internet and American Life Project in March 2006 into sources of news for consumers (see below

Figure 105 : Engagement Among User-Generated Content (UGC) Sites v. Non User

July 2006 - Total UK Locations	*Average Usage Days per Visitor*	*Average Minutes per Visitor*	*Average Pages per Visitor*
Average of select UGC sites	4.2	79.9	217
Wikipedia Sites	2	10.1	13
MySpace.com	5.4	122.7	333
Piczo.com	4.8	60.9	238
YouTube.com	2.9	60.9	70
Bebo.com	5.6	145	428
Average of non-UGC sites among top 50	3.5	33.2	52

Source: comScore Media Metrix

Figure 106 : Book publishers revenues from sales of books

€000	*2002*	*2004*
Educational (school) books	2,993,349	3,398,508
College/HE/university/reference/professional	5,389,789	6,190,910
Consumer (Trade) books, exc children's	10,374,681	10,705,673
Children's	1,693,505	1,975,944
Total	20,451,324	22,267,900

Source: FEP

User-generated content

There are some quantitative indications of users either using or contributing to content that has often been created by other users, rather than by more traditional content providers, though blogs and podcasts may also be created by newspapers, magazines and broadcasters. Research shows a variable usage of individual and newspaper blogs. Social networking sites are also locations for much user-generated content e.g. photos, video clips etc.

This is an area that will benefit from more accurate and comprehensive statistical survey as it grows in importance.

In a survey late 2005, 13 per cent of European were 'regularly contributing to blogs' and another 12 per cent were 'downloading podcasts at least once a month'.

There is also recent evidence of the popularity of user-generated sites, for instance in the UK, and perhaps more interesting, the degree to which they engage users compared with other popular sites. These are powerful motivations for the mooted and actual acquisitions of such sites by traditional media organisations (eg MySpace.com acquired by News Corp).

2.6.3.2. Books

Because of the addition of seven new member states, it's not possible to draw direct comparisons between the revenues of book publishers in Europe in 2004, compared with 2002, or titles published.

Trade books were the largest category, but educational books were not far behind in importance.

Revenues rose in the UK, one of the region's biggest publishing nations. According to the Books and the Consumer study in the UK, carried out by BML, UK consumers spent £2,396m on books in 2005, up by 8 per cent on the year, and the volume of books rose by 6 per cent, from 292m to 310m, following a 2 per cent rise in 2004.

There do not appear to be any statistics on e-book sales in Europe but anecdotal evidence suggests that although publishers are keeping these in mind for the future, not many are currently being sold, except of academic books to higher education institutions. Much depends on whether the new generation of ebook readers (such as Sony's eReader and iRex's iLiad) prove more acceptable to consumers, both in usability and business models, DRM etc. than previous devices.

Data from a special study by EITO in 2005 estimated the size of the online consumer publishing content market at €373m

in the broadband PC platform and €288m for mobile platforms. EITO estimated that online consumer content was worth only 0.8 per cent of the offline market. Clearly, business content presented a very different picture as the market for business online content is well-established.

There are no regularly collected data on the value of consumer publishing content online in Europe, as mentioned in the paid content section above. US data from the OPA shows a small rise in the value of consumer publishing content sold online, while surveys in the UK and France point in different ways. There is certainly nothing which would suggest a massive increase either in the short or medium term.

2.6.3.3. Online advertising revenues

The outlook for online advertising as a whole is for rapid growth to continue, with rates of growth coming down somewhat towards the end of the decade.

There is no data measuring the current size of that proportion of online advertising revenue accruing to traditional publishers, but there is some evidence that on average, publishers are currently deriving upwards of **two per cent of their total advertising revenue from online**. Some are getting much more and others nearer to one per cent.

Given that we know how much total advertising is worth, the other important variables to estimate are therefore the rate of growth of print advertising and the rate of growth of publishers' online advertising revenues. Print advertising revenues are likely to decline gradually. The big question is how the growing online advertising pie will be shared between the online activities of print publishers and all other contenders. Search engines have around 30-50 per cent of the market, depending on the particular country, and there is no immediate reason to suppose that this will fall; in some countries it may continue to rise, though there may be some revenue flow back to content providers if they succeed in gaining royalties on the use of their content. There are also other entrants vying for share, such as video sites and Web TV channels and games, as well as pure online publishers. Although some print publishers, particularly of consumer magazines, are starting from a very low base, and therefore might be expected to experience higher rates of growth than the market as a whole, others, such as the large national newspaper sites, already have mature presences. They will see bigger amounts of revenue, but their rates of growth are not likely to exceed the market as a whole. Given that they face acute competition in some areas, especially classifieds, their growth may well be lower than that of the market as a whole. Internal competition between print publishers for online revenue will be intense, regardless of overall growth

Figure 107 : Online advertising revenues

€m	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*
Western Europe total	1,779	2,893	4,283	5,821	7,297	8,768
USA	5,712	7,567	9,859	12,223	14,542	16,743

Source: PWC/IAB (converted from US$ at current euro rate)

Figure 108 : Forecast for online revenues of traditional publishers (on existing brands)

	2005	*2006*	*2007*	*2008*	*2009*	*2010*
Online advertising revenue for publishers - growth rate		33	23	18	12	9
Online advertising revenue for publishers - €m	849	1,129	1,389	1,639	1,835	2,001
Online revenue share of total advertising revenues for publishers - %	2.0	2.7	3.4	4.1	4.7	5.4
Press advertising revenue - growth rate %		-2	-2	-3	-4	-5
Press advertising revenue - market size in €m	41,172	40,349	39,542	38,355	36,821	34,980
Total publishers' advertising revenues	**42,445**	**41,478**	**40,930**	**39,994**	**38,656**	**36,981**
All online advertising – growth rate %		36	25	20	14	11
All online advertising - total market size in €m	4,292	5,832	7,312	8,785	10,047	11,148
Publishers' share of online advertising (existing brands) - %	20	19	19	19	18	18

Source: Rightscom, Screen Digest

patterns, and this is likely to restrict any opportunities for increasing prices.

However, this outlook does not take into account revenues which may derive from the ownership by traditional publishers of other types of Internet ventures, such as social networking sites (for example, News Corp's revenues from MySpace), or the possible creation of more innovative vehicles for gaining advertising share on the back of their brand strength.

2.6.4 Technical roadblocks

As far as infrastructure is concerned, the publishers interviewed are pleased with the way that broadband is being rolled out and the increasing pace of take up. Prices are not seen as an obstacle to consumer adoption, but this picture may not apply in all member states. Newspaper publishers interviewed in countries where broadband is being taken up rapidly felt that this has boosted usage and helped their business model by increasing the value of online advertising.

2.6.4.1. Cost of authoring for different platforms (1.4)

This is a technical and economic concern related to the necessity of supporting different browsers and the uncertainty about the technical environment that may need to be supported in future.

Publishers are largely at the mercy of decisions and processes happening elsewhere, rather than being in the driving seat, for example, advertising display formats online, the need to build sites around search engine requirements, blog and RSS technology developments. These offer opportunities for publishers but they also require constant changes to their sites to accommodate them.

2.6.4.2. Lack of common and open standards for mobile platforms and DRM (5.5, 1.41)

The mandating of GSM was critical in the 1980s to ensuring that mobile telephony took off – the faster growth in mobile penetration in Europe compared with the USA where competing standards persisted shows the importance of interoperability in network environments. If content-based services are to act as a driver for the take-up of 3G by European consumers, a similar effort will be needed for display and presentation standards to reduce content providers' costs in preparing material for what is currently a very small market. At present, things are going the opposite way: content providers have to deal with differing handset standards, different displays and browsers and different streaming media players.

One company facilitating content from magazine publishers to mobile platforms across Europe needs a fulltime employee simply maintaining a database of handsets, operators, video standards etc. They point out that there are different video standards not just between operators but between the same operators in different countries, plus the different standards of HTML, WML, and different screen sizes, and each phone has its own browser. Billing systems add another layer of complexity. This is a business opportunity for that particular company (which offers a service to adjust content to suit the combination of phones, network operators, bandwidth etc.) and other technical and content service providers, but it does act as an obstacle in that it adds cost and complexity for them and therefore for the originating publishers, and also ultimately for the consumer.

While more standardisation has been discussed in the last 5 years (especially in the context of the Open Mobile Alliance), in practice, things are moving in the direction of more complexity, rather than less. This may stabilise in the future, but it appears that at the moment the standards process is not alleviating the problem in practice (see note on DRM standards below).

DRM interoperability

The tendency in DRM is still towards the creation and maintenance of closed proprietary systems which can prevent consumers from migrating content freely between devices. Though this applies principally to non-publishing areas such as music and TV/movie content, it is relevant to publishing in both a general and a specific way.

Most consumer publishers have not made use of DRM in the past. Some business-to-business publishers have used systems such as Sealed Media or relied on security features in Adobe Acrobat Distiller which set rights to print, copy and make extracts from pdfs. Journal publishers have made use of other systems such as ArticleWorks. Publishers of e-books have either used the proprietary features of particular readers, Adobe Content Server with eBook Reader (Content Server is now discontinued; Adobe offers an alternative

in LifeCycle Policy Server) or Windows Media DRM.

The main concern of publishing organisations is to ensure that there are open interoperable standards but also sufficient legal support for any protection measures to be taken by content owners.

Mobile DRM

There have been developments on open DRM standards for mobile; the Open Mobile Alliance (OMA) agreed such standards, but the licensing fees proposed were rejected by mobile operators as too high, and the operators have instead adopted proprietary DRM standards such as Windows DRM. The eventual outcome remains unclear at present (April 2006) with both proprietary and OMA standards being used.

2.6.4.3. Complexity of billing and payment systems (1.5)

As well as the multiplicity of mobile billing systems, there is no universal solution to micropayments online, as e-wallets and similar initiatives have generally failed because of privacy and security concerns. Publishers have had to either use subscription models employing credit cards or opt for the micropayment aggregation solutions that are available (such as BT Click and Pay, which is based on the German Firstgate) while being aware a consumer may need to sign up to several schemes to pay for a variety of content. This tends to place further obstacles in the way of consumers paying for content, which is hard enough to achieve.

2.6.4.4. Managing customer data (6.3)

A number of newspaper and magazine publishers were beginning to identify ways in which they could use some of the data about customers that they now have available. They recognise its long-term value in building relationships and convincing advertisers of their strength. However, this is not straightforward and publishers lack experience in this field. The obstacles to using the data effectively are both skills-related and culture-related. Publishers have traditionally had very limited access to customer data, which has naturally been available mainly to others in the supply chain, such as wholesalers and retailers, and consequently, they have not had to develop an infrastructure for raw data analysis. They have mainly relied on third-party sales data or surveys of readers. In the advertising-supported publishing subsectors, this data has mainly been gathered at a fairly high level for the purposes of pitching the demographics and reach of their publications to advertisers. Many publishers also lack a culture of responsiveness to customer data, preferring to rely on their own expertise to make decisions. Several of the publishers interviewed were open about the need to do better in these areas.

2.6.4.5. Control of access/privacy

It is technically challenging to devise systems which control access to content in order to protect young people while respecting user privacy and the freedom of expression of adult users. These issues are becoming more pressing as publishing companies acquire social networking sites and incorporate blogs and other user-generated content in their sites. While publishers want to tap into the advertising revenue being generated by sites like MySpace, and increase the attractiveness of their own sites to young users, they fear a backlash if inappropriate content is displayed to under-age users.

Remedies/best practice

UK social networking site **Bebo** has recently recruited a leading expert in Internet safety as head of corporate and social responsibility and implemented a range of anti-bullying tools which users can deploy to pre-screen content and block other users. Microsoft has implemented a 'Report abuse' icon linked directly to the police within its Windows Messenger Live service, so that users can instantly report suspicions that they are being targeted for sexual abuse. This initiative is in collaboration with the UK's Child Exploitation & Online Protection Centre.

2.6.4.6. Search and navigation

Finding appropriate navigational structures that accommodate a range of users who differ in purpose and experience continues to present technical challenges, especially as user expectations rise and content becomes more complex. Local (site-level) search engines are often used as substitutes, but users are often reported to be disappointed by the results. This limits the quality of user experience.

Attaining a good placing in search engines, especially gaining a high ranking in Google, is important for publishers in driving users to their sites, and many attempt to optimise their sites for search

engines. However, this too presents technical challenges as there are no standards and the optimisation has to be different for each search engine. This creates issues of both cost and revenue if not enough users are attracted to the site.

Remedies/best practice

Companies can optimise their performance in terms of search engines, either themselves or through the services of Search Engine Optimisation (SEO) providers. Those companies that aim to get the best rankings constantly measure and tune their strategies. They have teams dedicated to this task or employ SEO agencies. The experience of outsourcing varies widely, but there is no real substitute for constant evaluation and adjustment to enhance performance.

2.6.5 Economic roadblocks

2.6.5.1. Skills (6.3)

The barriers presented to creating new services arise from a number of skills-related issues.

One is an absolute shortage of the right technical skills in some segments of the market. Another barrier arises from labour market rigidity which inhibits the employment of people with the right skill set, who tend to be younger than the existing workforce.

A third arises from the changing nature of the skills required by editorial staff from traditional print-related skills to those involved in producing electronic media (general information handling and technical skills, understanding and handling different content types and platforms, flexibility of working to continuous deadlines, creating interactive content, openness to user-created content and so on).

These are also cultural and to some extent generational issues, which cannot necessarily be solved by retraining existing employees. This may be compounded by a lack of clear leadership by management in emphasising the importance of new services and platforms, especially when the business models for these services remain precarious.

All these issues are not uniformly applicable across Europe, but nor are they confined to one or two countries. The issue of migrating from a print-related skill set to a 'convergent' skill set has been identified everywhere, but it is at different stages of development depending on the length of time publishing businesses have been engaged in new media activities and the intensity of their involvement. This varies both between countries (northern Europe being generally earlier in developing online services, but not necessarily mobile, than southern Europe, mirroring consumer take up of access) and between businesses in the same country, for example, some newspaper publishers have been much more wholehearted than others in developing online services and in creating digital newsrooms.

Other skills mentioned by publishers interviewed include dealing with more interactive content and dealing with the speed with which workflows have to operate to make content available online rapidly.

It was reported by some stake-holders that the shortage of software engineers was "definitely affecting the company's ability to grow its activities; there is more business that we could do if we could get enough people with the right skills". In this case it was a shortage of generic skills of the right kind being produced by higher education; the company was not seeking any particular specialist media skill. An online newspaper publisher in Italy said that rigid labour laws prevented them from shedding staff with outdated skills and taking on younger ones on a permanent basis, instead making do with a series of short-term contracts with student 'trainees'.

2.6.5.2. Varying consumer behaviour across Europe (6.2)

Consumer behaviour varies across the EU, making it easier for publishers to launch online and interactive services in some countries than others. For example, in the UK and the Netherlands there is more demand for mobile content than in Germany, and in the Netherlands more willingness to pay for news content than elsewhere.

Demographics also vary. Several publishers interviewed noted that younger people read newspapers much less than older people, but made much more extensive use of online news services. They were also more willing to use podcasts and download video clips. However, those magazine and newspaper publishers who have developed complete "digital editions" (in effect a digital representation of the print magazine, downloadable to the reader's PC and viewable offline) have noticed that these can appeal to a more conservative audience as they preserve

much more of the look, feel and experience of the print magazine than a website does. However, digital editions have yet to have a major impact on the market, partly because they are usually a subscription product whereas website use is normally free of charge.

For newspaper publishers, including those interviewed, the expatriate market is an important target audience.

Groups of interest to particular groups of publisher are also less willing to embrace technology. For one publisher interviewed, the reluctance of teachers in some countries to make full use of online and interactive digital technology presented a significant barrier.

2.6.5.3. Gatekeeping issues (5.1)

The example given by several publishers is the extent to which mobile operators take a high percentage of the revenue for content – this undermines the case for doing the services (this is a pan-European issue but varies in severity). The percentage taken by mobile companies was reported by publishers interviewed as around 60 per cent in general, with some paying up to 70 per cent and a few 50, but little below that. Business models for content among mobile operators vary not only from country to country but also between types of content in one country. Some stake-holders suggested that the slice of revenue left to them by the mobile operators meant it was simply too unattractive to launch the service, so it has not at the moment been launched. It was also suggested that it is the need to fit different types of content (ringtones, wallpaper, editorial) from different content providers into a rigid operator model that made the service impossible, as there was simply not enough return for each of the providers.

Other gatekeeping issues concern platforms for electronic educational content in schools (Virtual Learning Environments, Managed Learning Environments) where there are concerns that providers of these who also provide content are able to privilege their content offerings over those of other publishers.

2.6.5.4. Access to information (5.7)

Besides technological gatekeeping, the European Publishers' Council has highlighted the problem of restrictive behaviour by holders of key rights e.g. FIFA's decision to refuse accreditation to journalists for the World Cup if they do not accept the organisation's strict policy on publishing photos of matches on web sites; these restrictions impose both time limits (no pictures during matches) and on the absolute number of photos which can appear. This is a specific instance of the general issue of sporting events rights holders maximising returns by granting exclusive exploitation rights to particular broadcasters, and arguing that the value of these will be undermined by online coverage. There have also been instances where sports organisations want to reserve online coverage for their own websites. This has tended to become less of a problem as sports organisations have come to realise that media companies are better at maximising audiences.

2.6.5.5. Investment and ongoing costs of online and interactive services (6.6)

Many of the book, newspaper and magazine publishers interviewed noted the comparatively high cost of investment in platforms, new or changed processes and expertise required to launch effective online services. They also noted that the continuing need to produce high-quality content created a cost-base that had not existed in the past, especially if they now had to either produce or licence content such as video clips, games or podcasts. Even if the content was licensed-in, each development would require modification to the website and content management systems.

These costs are often considerably in excess of what book publishers and smaller magazine publishers in particular are used to spending on the development of print titles. Several newspaper and magazine publishers interviewed indicated that the risk of cannibalising print revenues had deterred some senior managers from investing in online services, and that in general they were operating with very small and under-resourced teams because of management lack of confidence in the online market. A minority of newspaper publishers interviewed also reported under-investment in marketing once an online service had been established.

Some newspaper publishers felt that they had been investing significant sums in online operations for several years but has yet to see a return.

More positively, some noted that the recent increase in online advertising had encouraged management to invest.

New platform investment to support multimedia services such as IPTV or streaming video is likely to be needed, and will not be low. Nevertheless, some newspapers are making this investment to set up fully-digital newsrooms and reporting teams capable of creating multimedia content for use online.

2.6.5.6. Competition from other media players in online publishing (5.2, 5.6)

The role of public broadcasters in providing free online content to consumers affects publishers' willingness to invest in online e.g. educational publishers, local newspaper publishers and the BBC: this was mentioned by some of the newspaper publishers interviewed. The European Newspaper Publishers' Association has called for more transparency in the accounts of public broadcasters.

However, new competitors are not limited to the public sector. Online services such as Yahoo! are now generating their own news content, and companies such as news agencies which previously did not reach the general public are now developing and operating consumer news websites. The websites of many other organisations could be regarded as containing significant "published" content and much of this content is provided without charge either for public information or to enhance the brand of the company publishing it.

2.6.5.7. VAT on electronic products/services (6.1)

Many European countries have a reduced rate for VAT for publications as seen in the table below.

However, all countries except Ireland charge their full rate of VAT on online services. This may serve to keep the cost of electronic publications to the consumer at a similar level to print publications, despite the saving resulting from the elimination of manufacturing and distribution costs.

A further problem is the VAT treatment of combined electronic and print products. Many publishers offer subscriptions that include a print edition and access to electronic content – for example, for newspapers. The treatment of such services is uncertain and may vary: this makes it hard for publishers to plan such services. The publishing industry would prefer zero-rating for both print and online publications throughout the EU, believing that it would lead to increased sales. The reduction of VAT rates for print publications in Sweden did lead to increased sales as it was passed on directly to the consumer. This increase appears to have been sustained.

Figure 109 : VAT rates for publications in Western Europe (%)

Country	*Books*	*Periodicals*	*Newspapers*	*CD-ROM/ online*	*Standard VAT Rate*
Austria	10.0	10.0	10.0	20.0	20.0
Belgium	6.0	6.0	0.0	21.0	21.0
Denmark	25.0	25.0	0.0	25.0	25.0
Finland	12.0	22.0	0.0 (22.0)[11]	22.0	22.0
France	5.5	2.1	2.1	20.6	20.6
Germany	7.0	7.0	7.0	15.0	15.0
Greece	4.0	4.0	4.0	18.0	36.0/ 16.0
Ireland	0.0	12.5	12.5	12.5	21.0
Italy	4.0	4.0	4.0	19.0	19.0
Luxembourg	3.0	3.0	3.0	15.0	15.0
Netherlands	6.0	6.0	6.0	17.5	17.5
Portugal	5.0	5.0	5.0	17.0	17.0
Spain	4.0	4.0	4.0	16.0	16.0
Sweden	6.0	6.0	6.0	25.0	25.0
United Kingdom	0.0	0.0	0.0	17.5	17.5

Source: European Publishers Council

Remedies/best practice

The publishers involved are of the view that the best remedy would be to reduce VAT on electronic products.

2.6.5.8. Cultural roadblocks (6.3)

In addition to market obstacles, publishers mentioned conservatism in organisations, for example, management not taking new platforms seriously enough, not investing enough, not overcoming employees' inertia and scepticism, or lack of experience. One interviewee said that cultural differences between countries were more inhibiting than legal or regulatory factors in developing new services. For example in some newspapers there is still no convergence of digital and print newsrooms, or lack of co-operation with digital newsroom from print journalists, lack of investment in video content. Fear of online cannibalisation persists, not grasping opportunities to capture younger readers/ readers in other countries via the online platform. There has been some alleviation of this by the recent rise in online advertising to validate business models.

Lack of collaboration between existing print teams and online teams was also raised by some of the magazine publishers interviewed.

Magazine publishers and their editorial staff in Germany and France are not as advanced as those in Scandinavia, the Netherlands and the UK in terms of familiarity with the Internet, and still less with mobile, as a publishing platform. In Germany, many publishers are smaller and more traditional, family-owned businesses, though this is changing. It may be part of the reason why even though Germany is a big and advanced mobile marketplace, the publishing services available for that market are less sophisticated than they are in other countries e.g. more text-based, less interactive

Openness to doing business with foreign companies – one interviewee from the Netherlands offering a technical facilitation and advice service for magazine publishers wanting to launch mobile services said that French publishers seemed unwilling to deal with a company that was not French, whereas this was not the case elsewhere

2.6.5.9. Consumer resistance to DRM (5.5)

While the owners of premium content need assurances that they will be able to stop its unauthorised use and distribution, if DRM is too restrictive it irritates and frustrates consumers and retards the growth of the market for converged content.

The failure of the earlier Sony e-book reader was attributed partly to its DRM-enabled 'rental' business model, and the well-publicised problems with copy protection technology on Sony CDs has raised the issue up the agenda.

2.6.5.10. Affordability of international roaming charges (1.1)

Mobile data costs are too high for some users, and international roaming costs for data are more so. Growing travel for short breaks, driven by low air fares, is increasing demand for content to travel across borders but the cost of receiving data while travelling makes consumers extremely wary. This was identified by several publishers interviewed as a major constraint on the development of content-based mobile services.

Remedies

The Commission is already addressing this problem ; from the point of view of publishers, it is important that charges for data as well as voice are reduced.

2.6.6 Legal and regulatory roadblocks

2.6.6.1. Legal liability (4.3)

There are complex issues of liability for defamation across borders – these are inhibiting to publishers if it is possible for plaintiffs to choose the most favourable country in which to sue. Soccer players suing over the use of pictures was mentioned by one publisher. The exclusion of media from the scope of the "Rome II" regulation (the law applicable to non-contractual obligations within the EU) has been welcomed by publishing trade organisations, but the case brought by the Barclays, owners of the Telegraph group, against the Times newspaper for criminal libel, which has been allowed to proceed in Paris, shows there is still lack of certainty which could lead to inhibitions about making content more widely available across borders through the web and mobile services (which in practice means across platforms as well). There is a general view that 'country of origin' principles should apply.

Some newspaper and magazine publishers interviewed said that defamation ands liability issues were either inhibiting them entirely from developing services that used

content from users, or were limiting them in what they felt safe in doing. Uncertainly about the progress of a standard approach to defamation across the EU focused on the Rome II treaty, but few of those who commented on this felt that the issue had yet been resolved.

2.6.6.2. Regulation of non-linear audiovisual services (4.2)

The proposed extension of the TV without frontiers directive is viewed by some organisations in publishing as a potential inhibitor to the development of services on online and mobile. Companies and trade associations argue that it may drive investment outside the EU.

The main concerns are from advertising-dependent text publishers, who are sensitive to the ways in which regulatory changes affect the relative attractiveness to advertisers of different media outlets. Much depends on how the scope of the directive will be defined.

The industry is not opposed to regulation per se (although publishers have a history of and general preference for self-regulation) but it is concerned that when media and platforms are changing rapidly, regulation could hamper innovation. An example is the problem of user-generated video content being uploaded onto social networking sites (increasingly owned by major media companies) or as part of "citizen journalism" initiatives by online newspapers and how that may be regulated.

Related to this is the concern that controls on advertising content may restrict the ability of publishers to create viable business models for new platforms. Rules on product placement may also change the relative attractiveness of media to advertisers, and could undermine news media credibility, according to some newspaper publishers.

2.6.6.3. Content and protection of minors (4.1)

Social networking and virtual community services have entered the mainstream, and are therefore now attracting many younger users. Many Member States as well as the European Commission are concern to protect minors from problems such as "online grooming" and revealing too much of their own private information, as well as from pornography and other adult material. The success of services such as MySpace and Bebo with teenage (and younger) users has focused attention on these issues.

None of the publishers interviewed raised this as an issue at present, although it is being monitored by industry associations.

2.6.6.4. Copyright issues for directories (4.2)

As well as copyright being viewed as a crucial weapon in the defence of business models, publishers of databases and directories argue that proposals to modify or remove copyright protection for databases and directories will undermine some of the publishing businesses which have invested most in extending their services onto digital platforms.

2.6.6.5. Aggregators of publishing content by third party players (5.6)

Publishers in all sectors are concerned about the aggregation/exploitation of their content without payment and without licence.

One major search engine, Google, has been particularly active in this area, developing a library of digital books based on scanning the content of many US libraries.

News aggregation services are also troubling newspaper and magazine publishers (although news aggregation services also draw their content from many other sources, including broadcasters and news agency services). Although they do not take the full content, a news aggregator will typically reproduce a headline and the first few lines of the text of an article. Some publishers believe that this is in breach of their copyright.

For example, in early September Google lost a case in Belgium brought against it for copyright infringement by Copiepresse, acting for French and German language publishers. Similar cases have been brought in the USA, with courts sometimes ruling for Google and sometimes for the publishers.

Publishers also believe that they lose potential readers as the information on the aggregator's website is sufficient for many people, who never follow the link through to the website.

They are also concerned about the deep linking aspects of such services: the summary takes the reader straight to the story, rather than through the news providers' home page: this, some publishers believe, loses them the opportunity to gain readers as the reader has no incentive to explore the remainder of the content. Other publishers take a different view, and regard deep linking as an inevitable cost of the additional overall traffic they gain from aggregation services.

One news agency raised a further issue: the aggregation services tend to take information from publication, especially newspapers. However, the publication may well have licensed the story and associated images from an agency. Where the newspaper will credit the original source, the news aggregator generally does not but credits the newspaper instead. This can be a particular problem with images; although the text for a story is not reproduced in its entirely by an aggregator, an image often is.

Not all publishers were so pessimistic: one newspaper publisher indicated that news aggregators brought more benefits in terms of traffic than risks. Taking a longer view of the future, they believed that with Web 2.0 architectures, the individual website would have less relevance and Web 2.0 services would assemble content from many different sources at an even more granular level than today's aggregators. Content originators such as newspapers and magazines would be better learning how to deal with that environment today rather than fighting it.

Remedies/best practice

A solution to the conflicts between search engines on one hand and newspaper, periodical and book publishers on the other hand, has been proposed by a group of organisations representing publishers (WAN, the IPA, ENPA and the EPC)[12], who have described it in the following terms:

> *'The new project, ACAP (Automated Content Access Protocol), is an automated enabling system by which the providers of content published on the World Wide Web can systematically grant permissions information (relating to access and use of their content) in a form that can be readily recognised and interpreted by a search engine "crawler", so that the search engine operator (and ultimately, any other user) is enabled systematically to comply with such a policy or licence. Effectively, ACAP will be a technical solutions framework that will allow publishers worldwide to express use policies in a language that the search engine's robot "spiders" can be taught to understand'.*

2.6.6.6. Journalists', photographers' and artists' copyright (2.5)

Some publishers interviewed (newspapers and magazines) expressed concern that they did not benefit from **automatic transfer of rights from journalists** – either freelance or employed. This situation does not apply in all Member States.

This, they believed, has made it **difficult to establish online services that re-use text and pictures**, especially in archive services. Other publishers did not identify this as an issue. The main solution proposed by publishers and their associations, to establish a legal framework for an automatic presumption of transfer of copyright, is a very controversial one: **journalists' organisations** are advocating a different position, proposing that they should retain rights and be able to deal with them through collecting societies, as well as receive payments from Reproduction Rights Organisations (RROs).

A book publisher interviewed did not have quite such an acute problem, but did express the view that full ownership of the content would enable it to deploy online services for niche markets more rapidly. The best authors can be very careful to retain all their rights. In general, however, book publishers have operated in an environment where they have not in any case expected to acquire rights from authors.

2.6.6.7. Digital libraries (5.6)

Book publishers in particular are concerned about the impact of digital libraries. This includes both those being developed by commercial services such as Google (see above) and also the Commission's *i2010 Digital Libraries Initiative*, which *"…aims at making European information resources easier and more interesting to use in an online environment"*[13] and identifies three key areas for action:

- *"Online accessibility, a precondition for maximising the benefits that citizens, researchers and companies can draw from the information.*
- *Digitisation of analogue collections for their wider use in the information society.*
- *Preservation and storage to ensure that future generations can access the digital material and to prevent precious content being lost."*

The proposal for a European virtual digital library acknowledges that it will focus on works that are no longer in copyright or for which the rightsholder will grant permission for digitisation and access. Book publishers are, however, very concerned that digital libraries should respect relevant national copyright legislation, and that changes to that legislation would be undesirable.

The European Commission adopted a Recommendation in August 2006[14] which

spells out the approach in relation to copyright:

> *'Only part of the material held by libraries, archives and museums is in the public domain, in the sense that it is not or is no longer covered by intellectual property rights, while the rest is protected by intellectual property rights. Since intellectual property rights are a key tool to stimulate creativity, Europe's cultural material should be digitised, made available and preserved in full respect of copyright and related rights. Particularly relevant in this context are Articles 5(2)c, 5(3)n, and 5(5), as well as recital 40 of Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society (1). Licensing mechanisms in areas such as orphan works — that is to say, copyrighted works whose owners are difficult or even impossible to locate — and works that are out of print or distribution (audiovisual) can facilitate rights clearance and consequently digitisation efforts and subsequent online accessibility. Such mechanisms should therefore be encouraged in close cooperation with rightholders.'*

2.6.6.8. Access to other copyright content

One magazine publisher had experienced particular difficulty in obtaining the right to use small extracts of music being reviewed as part of a podcast. Some rightsholders had refused permission, even though the publisher believed that it was likely to enhance sales. In other cases it had taken a long struggle with labels and collecting societies to get permission.

2.6.6.9. Copyright and use

One book publisher indicated that developing sufficiently flexible ways of licensing Intellectual Property Rights (IPRs) that would allow, for example, teachers to incorporate online content into their lessons easily and with a predictable cost.

An issue that arises for all publishers is ensuring that they have the necessary rights clearance in the case of cross-border access. Many rights contracts are still territorial in nature, but access to a website can come from anywhere in the world.

Remedies/ best practice

Work is ongoing in relation to alternative licensing systems e.g. Creative Commons. But there is no industry standard and no widespread co-ordinated activity to arrive at an industry standard. One approach that offers a way forward which may be particularly suitable in the educational context is the fuller exploitation of the potential of Digital Rights Expression Languages (DRELs). Rights expression languages can be used quite independently of both payment and enforcement mechanisms such as Digital Rights Management. They may be used simply to make attribution a condition of use, for example, or just to ensure that both parties to an agreement understand its nature. DRELs and their application to education are fully discussed in a report commissioned by JISC in the UK[15].

In terms of what individual publishers themselves can do, there is no doubt that systems which track rights in relation to content assets need to be improved. Research recently undertaken by Rightscom into Digital Asset Management (DAM) in book and journal publishers in the UK and USA suggests that even publishers who have invested in DAM systems have in general not yet grappled with systematising rights information at the level of the content asset (article, image etc), though they have found the systems useful for their sales force in selling rights in different territories.

2.6.7 Focus on newspaper and magazine publishing

2.6.7.1. Dominance of the advertising business model

Very few consumer magazines or newspapers have been able to attract significant revenue from users: almost all depend very heavily on advertising, even in countries where subscription for print magazines and newspapers is the norm. A small proportion of revenue is generated either through annual subscriptions or through payment for specific types of content such as ringtones or maps. Some publishers (but none of those interviewed) have charged for individual articles, but many report that this does not create significant additional revenue.

This is a worldwide problem: US publishers find a very similar attitude towards paid-for content. It is also a continuing one: there seems little sign that more publishers will be able to add to their content revenues by more than a small percentage. Those that are successful generally have unique content that is of value (for example, some investment magazines).

Some newspaper and magazine publishers have, however, found some revenues in syndication, mainly to broadband and mobile portals that are prepared to pay for well-known branded content to attract users and realise the perceived value of their service offerings. This has not been the case, however, for those interviewed.

Some magazine publishers interviewed have also begun to exploit the opportunities presented by cross-selling advertising in their print and online brands, presenting an attractive package to consumer advertisers. This also capitalises on reputation and performance built up by the print titles.

2.6.7.2. Changing nature and distribution of advertising revenue

Advertising revenue is essential to newspapers and magazines. The advertising market in general is undergoing a period of rapid change. Online media offer advertisers several perceived advantages to allow advertisers to focus their campaigns and obtain measured results.

While the increased flow of advertising revenue is enabling online publishing to move for the first time towards a viable business model, it is by no means a given either that online revenues will rise sufficiently to offset any fall in the value of advertising in print media, nor that even if they do, they will be captured by the print publishers' own online activities. Much of online advertising revenue is accruing to paid search advertising and there is no sign of that declining as yet (see below).

There is also the issue of how advertising is sold. If publishers have offered deals to advertisers which bundle online with print advertising, it will not necessarily be easy to begin charging more for the distinct online exposure, even though it is increasingly valuable, because the advertiser has many choices in terms of how they reach the online audience. They could decide to continue to advertise in print but take their online spend elsewhere and this is particularly a worry for newspapers if they continue to suffer dwindling print circulations. In addition, there is the question of price: one estimate suggests that when an advertiser switches part of their schedule from print to online, the online advertisement generates only 20-33 per cent of the lost print revenue.

2.6.7.3. Free classifieds challenge newspaper revenues

A trend now noticeable in North America and becoming a factor in some European countries is the growth in free classified advertising services, which can take significant revenue from, newspapers in all tiers (local, regional and national). According to the CEO of a major Scandinavian newspaper company "traditional newspapers should try to establish a cost base where they can live happily without too much income from classified ads." Services such as Craigslist (which is mainly free, but charges businesses for some job advertisements in a few US cities at very low rates) are attracting significant numbers of users and advertising in the traditional classified sectors such as accommodation, recruitment, for sale and personals. The number of users of all online classified advertising services in the USA increased by 80 per cent in 2005. The auction site eBay has perhaps had an even stronger impact and has begun to purchase existing online classified advertising websites in Europe. At present, this has mainly served to restrict European newspapers' ability to raise prices rather than caused direct revenue loss, but in the US direct revenue loss has been reported by many newspapers. As a decline is classified advertising revenues does not significantly reduce the fixed costs of either print or online operations, such losses tend to go straight to the bottom line.

Newspapers also face online competition from groups which were (and may still be) their clients, for example, car dealers and real estate agencies.

Data from a survey by the World Association of Newspapers shows that there is considerable variability in the performance of different segments of the classified market. While newspaper print classified revenues as a whole rose by over 5 per cent in developed countries in 2005, the recruitment category rose by 14.4 per cent and property by 10.7 per cent, the automotive, travel and 'other' categories (including private classifieds) all fell. Newspapers' online classifieds revenue rose by 52 per cent, and now accounts for 6.8 per cent of total classified revenue. As the report points out, market share is a more crucial indicator of how newspapers are dealing with competition and this shows that the newspapers' combined print-online share of the market slipped slightly from 45 per cent in 2004 to 44.8 per cent in 2005. Encouragingly,

the newspapers increased their total market share in recruitment and property, but lost share in automotive.

2.6.7.4. Impact of search engine advertising (5.6)

Although the total amount of online advertising revenue is growing, search engines continue to secure 40 per cent-60 per cent of that (with Google alone getting almost a quarter of all online advertising revenue), which makes it hard for online publishers, especially newspapers, to maintain viable business models when their offline revenues are declining in many cases. It might have been expected that the dominance of search engines would decline as online advertising grew and matured but this does not seem to be the case so far. The key advantages to advertisers are low cost, accountability and the opportunity to launch and change campaigns very quickly.

Online advertising increasingly competes with both display and classified advertising, affecting both newspapers and magazines.

It is clear that internet advertising revenues are growing in most member states. For many publishers, this indicates a change in the distribution of revenue between their print and online activities. Some are experiencing absolute growth, and some an absolute decline.

However, the growth in internet advertising is achieved at the expense of other sectors such as television, radio and press advertising. There is little overall growth in advertising revenue. A high percentage of internet advertising revenue is being attracted by the search engines, which offer a very different advertising model based on sponsored links, small text advertisements and (in some cases) better rankings in search results. These are usually charged to the advertiser using a rate per thousand impressions or per thousand click-throughs.

Where the free classified services impact on newspaper classified advertising and does not directly affect display advertising, search engine advertising has an impact on both types. Online display advertisers have a choice between banner advertisements at the top or side of a web page on a content-based site or smaller but much cheaper text-based advertising on search engines that is displayed alongside search results for a search term.

The two types of advertising have different roles: keyword-based search engine advertising is used to drive traffic to the advertiser's website; display advertising can drive traffic and can also raise brand awareness as it offers the opportunity to use brand graphics and messages.

2.6.7.5. Supporting quality news content production in a world of free news aggregation (5.6)

Many but not all newspaper publishers see threats to the business models of online newspapers from search-based aggregation services such as Google News; though they drive traffic to newspaper sites, they arguably take audience and advertising revenue from the newspapers, as they aggregate rich content on their site which they obtain free of charge, but which the newspapers and other news publishers bear the cost of producing. In return they do deliver some readers to the site, but mostly to a single page, and this does not compensate by delivering enough value to the site's advertisers. It also undermines branding and loyalty and contributes to the commoditisation of news, with wider cultural and political ramifications. This is an issue at root of how to support quality content production in the new information and news 'ecology'.

2.6.8 Focus on digital books

2.6.8.1. Book publishers fear third party digitisation threats (5.6)

Book publishers believe they face threats to their business models from Google's digitisation programmes. Google's actions in digitising the contents of whole books, with what the publishers regard as a disregard of copyright, has led one publisher, Bloomsbury, to call (at the recent London Book Fair), for a consumer boycott of Google because it was damaging publishers with its Google Library programme to digitise library collections. The French Publishers' Association also said it was considering suing Google for digitising French works in copyright without permission.

Google has since announced ways for publishers to sell book content online from its Book Search service as well as clicking through to e-retail sites to purchase print copies. Opinions are divided as to whether Google's Book Search (and to a lesser extent Amazon's Search Inside feature) actually offer opportunities to publishers to widen their audiences and sales or threaten revenues. Some publishers (e.g. Blackwell's and HarperCollins)

have reported small but significant sales from their backlist as a result of participating in Google Book Search.

2.6.8.2. The specific case of eBooks

E-books are gradually re-emerging as an attractive proposition for publishers, who are increasingly digitising their titles and building electronic warehouses so that titles can be retrieved and made available for different uses and channels (partly as a response to Google's actions). Motivations include monetising the backlist more effectively and taking advantage of niche markets such as readers with visual impairments who need large print (an increasing number of people as the population ages) and who could not be served economically before.

The latest reader device (from Sony), called the Sony Reader, looks as if it could be attractive technologically in its interface and use of E-ink, an electrically charged proprietary 'ink' which is processed into film for integration into displays called Electronic Paper Displays (EPDs). EPDs resemble paper in that they can be read in bright sunlight or dim environments and from any angle, and are also extremely thin. Because they don't require power to maintain an image, EPD devices can work for long periods from batteries.

But there are fears that players like Sony might be reproducing the "walled garden" approach of Apple's MP3 music players, which it has already adopted for its own music players. Sony launched an eBook reader, the Librie, in Japan several years ago which did not succeed and this was attributed mainly to the business model of only having titles to rent for a fixed period, after which they expired. With the latest device, it was originally reported that all titles will only be available from Sony's online Connect store and using its DRM system, though subsequently there have been reports that the eBooks as well as the Reader will be sold by Borders online. There are many more titles available for the device from a wide range of publishers than was the case with the Librie, and they will be owned not rented. However, it is probable that the fact that the eBooks will be in a proprietary format and therefore tied to the reader device, will limit its appeal to consumers. This means it may not lead to a significant market for publishers. Another similar device is to be launched by Philips this year, called the iLiad. No details are yet available on its DRM system or the model for title sales.

A secondary barrier is the limitation imposed by the size of the screen on many mobile devices. This is changing, but there is an inherent conflict between the device manufacturers need to produce compact, light devices and the need to have a larger screen to display text and images comfortably.

If such issues were resolved, an OTA-based model for ebooks seems more feasible. The data volume need not be high, so the cost to download a book over a mobile network would be acceptable, leaving publishers free to set a reasonable price for the ebook itself. Ebooks on mobile phones are already popular in Japan, as are comics. In the US, one major book publisher is providing language-learning materials as downloads to mobile phones.

Educational markets

Education publishing is an important sector of book publishing, and is a good example of convergence in action. Aggregators are taking content in all formats (A-V, text, image, audio) and packing it for teachers and students. In many cases they are taking content under licence from traditional publishers, but the publisher is losing the identification and relationship with the user.

An education publisher interviewed noted that there were many other sources of content and that in education many governments were funding public sector content initiatives (sometimes through a public sector broadcaster) that would compete directly with the commercial publishers.

Platform ownership is also an issue for education publishers: they are subject to standards for learning environments and other systems that have been introduced by a variety of different authorities and therefore can require content repurposing.

2.6.9 Case study 8: Guardian Unlimited (best practice)

The Guardian Media Group's (GMG) newspapers, The Guardian (daily) and The Observer (Sunday) have one of the most respected online presences of any newspaper in the world, and **have been in the forefront of exploiting digital media**. The umbrella brand for this presence is Guardian Unlimited.

GMG has an unusual ownership structure, as it is owned by a trust. The Scott Trust, named after The Manchester Guardian's (as it was) most famous editor, C.P. Scott, lays particular obligations and limitations on the business, as expressed in a formal declaration made in 1992 during a period of re-evaluation:

"To secure the financial and editorial independence of The Guardian in perpetuity: as a quality national newspaper without party affiliation; remaining faithful to liberal tradition; as a profit-seeking enterprise managed in an efficient and cost-effective manner."

This ownership has had some implications for the direction of the paper online, for example it cannot deviate from the requirements of quality, independence and liberal stance. Though it has sometimes been suggested that The Guardian is comparatively free to make investments in loss-making online ventures because of its ownership, in fact it is a profit-seeking enterprise, and perhaps the main impact has been a strategy which concentrated on steady investment year on year in digital media rather than periods of enthusiastic spending followed by withdrawal which has been the pattern for some newspaper companies. The character of its readership, as comparatively well educated and so likely to be heavier users of the Internet at an early stage, has also been influential. The company says it is now making a profit on its online operations, giving a figure of £1m in the last year.

One feature of the Guardian Unlimited's digital strategy has been that it has resisted the temptation to put up barriers to readers' use of content through subscription, even when online advertising was a tiny revenue stream. Registration is required for users to contribute and this is likely to drive registration throughout the site in future, but in the early years it was generally avoided. This strategy is reflected in an editorial stance in favour of open access to information in general e.g. publicly-funded research and data. It has also been one of the first papers to embrace user-generated content and openness of its columnists to readers' input.

Some examples of the paper's innovations are:

- **Comment is Free:** this is a collective group blog, bringing together regular columnists from the Guardian and Observer newspapers with other writers and commentators; readers are invited to comment on anything they read with the aim of creating a space for open debate. The blog is updated regularly through the day with the best blogs featuring on a pick of the day. The site also carries all the editorials from the Guardian and Observer newspapers, giving readers the chance to comment on these articles directly for the first time. There is also a photo-blog from one of the paper's photographers.
- **Been There** is a travel site which relies on readers writing in with their experiences, recommendations for hotels, sights, bars, clubs, beaches, restaurants etc., including submitting pictures. Extracts form a regular feature in the printed paper's Travel supplement on Saturdays.
- **Web-first policy:** in June 2006 The Guardian announced it will become the first British national newspaper to offer a "web first" service that will see major news by foreign correspondents and business journalists put online before it appears in the paper.
- **Podcasts** – including political and cultural debates, a regular Media Guardian podcast and a comedy podcast featuring the comedian Ricky Gervais which topped the iTunes charts in January 2006, having been downloaded more than 2m times in a month.
- **Customized print:** The Guardian announced in June 2006 that it will launch G24, a new, free, 'print and read' service for news content, updated every 15 minutes. Users log onto Guardian Unlimited and download an eight to twelve page A4 pdf featuring the latest news. They can select any of five news-streams: general news, international, economics, sport and media stories. It hopes to appeal to a lunchtime and evening commuter market wanting a live print-based update. It will be launched later in the summer with BT as the launch sponsor.

The paper has concentrated on the broadband online platform so far; Emily Bell, editor of Guardian Unlimited, believes that mobile will in future have an important role to play but that at the moment, for a quality paper it offers little as the bandwidth constraints and functionality of handsets tends to produce a commoditisation of news content, while the dominance of the operators over content and over revenue shares also make it unattractive, though she believes this too will change in the next few years.

Guardian Unlimited has tended to embrace rather than resist new intermediaries such as Google, believing that there is a revolution underway in the way media will be consumed in the future, and that Web 2.0 will tend to make even the concept of sites irrelevant, with the main issue being bringing content and readers together in a myriad of ways.

Probably the major concern of the company is to avoid a situation where regulators intervene to protect incumbents in the media (for example the refunds given to commercial TV companies in the UK on the money they paid for their

franchise licences) or to extend regulation inappropriately to new platforms. It faces **intense competition** in a whole series of arenas, with many of its innovations placing it up against new competitors. It has also seen **the BBC build a text and image newsroom** larger than those of national quality papers without any variation to its licence, which presents particular challenges to The Guardian as they serve similar audiences.

Obtaining and **clearing rights for content** to use on the websites, especially for images of major sports and other events, and for images contributed by readers and freelancers, is also of concern, as it takes up a great deal of time and in some cases, rights are becoming much more expensive and some rightsholders are becoming more restrictive.

2.6.10 Case study 9: Hubert Burda Media

Profile

Hubert Burda Media is a German magazine publisher also operating in the UK, France and Eastern Europe.

The company publishes over 250 magazines in Germany and worldwide: 184 of those titles are published outside Germany, in 19 different countries. It also produces online content, radio and television programming and direct marketing campaigns. It has a staff of around 7,300.

It earns around one-third of its €1.5 billion (2005 figure) revenues outside Germany. Approximately €128 million comes from internet activities.

Online strategy

The company invested €35.4 m in digital developments. Investments are shifting from print to digital: this shift emphasises investment in content rather than infrastructure.

Burda's online strategy is largely based around linking print, online and direct marketing activities for specific sectors together in what it describes as "media communities." It is one of the publishing companies most focused on user-generated content and social networking. The magazines used to set the agenda for the readers; now the readers set their own agenda. The company will activate and facilitate communities and let them create their own content, which it will mediate and moderate. The print brands are the company's biggest asset and it is developing its online services based on those brands. Some communities may create their own identity and these may be able to be branded differently.

There is a lot of mindset-changing to be done. The company (like almost all other publishers in Germany) has many people in the traditional print magazine sector and attitudes have to be changed top-down.

Roadblocks

Accumulating an audience for the communities is the major challenge: the traditional demographic divisions may well not work. It is not clear if the important factors are large numbers or reaching opinion-leaders. It is also uncertain how consumers will react to the new phenomenon of user-generated content. Social networks, the company believes, will turn the whole publishing model upside down as people start organising their whole world over the net. A survey it carried out with T-Online suggested that by 2015 total media consumption will be 10.3 hours/day and 148 minutes of that will be spent on the internet.

It can be misleading to look at what is happening in the USA and assume that it will also happen in Europe – the demographics and mentality are different. The internet is still used in Europe as an "add-on" to other forms of communication.

The advertising market will be even more complex and competitive in future. The number of magazines has exploded. This will become more so with many new channels such as IPTV. There will be thousands of competing outlets for advertising, but the total value of advertising will only grow slowly. Brands give the leverage for attracting advertising revenue.

All regulation (national/EU) affects its business as it is now far more than just print: online, audiovisual and mobile are all important to the company – including IPTV and radio. These have traditionally been much more heavily regulated than print: press freedom has come from a totally different background to these other media and had been self-regulated. The company would like to see as much self-regulation as possible: it is in favour of self-regulation for linear as well as non-linear services.

The company feels that regulators do not always understand this as there is no-one with a print background. A further problem is that it is hard to draw a line between linear and non-linear services. Extension of magazine brands to include A-V content should not make them linear.

The lack of clarity is hindering business development, the company believes, as the it cannot tell which of its services might eventually be regulated. The market is developing so fast that it is hard to see how the relationship between content derived from the print side and new A-V content will develop. All restrictions on advertising could be lifted – this would help the development of the market. Current bans could be lifted and no new ones introduced.

Standards for IPTV and digital TV are important. It would be helpful if the EC could encourage agreement on standards, especially in the TV area.

Standards for DRM are also an important issue.

Payment systems are going to be important as business models move away from being based only on advertising revenue. Everyone involved in generating the content will need to be incentivised. The flow of money will be multilateral rather than bilateral as it is today.

2.6.11 Case study 10: MoMac

Profile

MoMac is based in the Netherlands but has a pan-European focus. Its key business is to facilitate the creation and distribution of content from publishers to consumers on mobile devices; it is also a publisher of mobile content itself. It offers a service to publishers wanting to transfer brands and content to the mobile space, including technical integration with all mobile operators and billing platforms, and direct relationships with mobile operators' portal managers, as well as handling of contracts and support for new handsets. If publishers prefer to manage their own mobile sites, it provides publishing tools for doing so.

Its major clients are in the magazine sector, and include Emap and Conde Nast. For Emap, MoMac developed a site for its FHM title, which works with three mobile operators in the UK, blending editorial content, quizzes, voting and user-generated content; the plan is to extend it to other European countries. For Conde Nast, an initial site focused on its Glamour title has evolved into a cross-brand 'Style' category on Vodafone and O2 in the UK, bringing together content and directory services from the company's other titles (Vogue, Easy Living, GQ, and Traveller). The company has also been given responsibility for the Dutch newspaper De Volkskrant's relaunched mobile services, which include news photos, news alerts, cartoons, weather and traffic information, as well as streaming video for 3G UMTS devices.

The key competences of the company are its knowledge base of the myriad combinations of mobile networks, handsets, browsers and standards operating within different European territories, its technical expertise in helping publishers to deploy their content, and relationships with both publishers and operators. One of its key executives, Laurens Rutten, has a background in the magazine industry so he has a direct understanding of the business.

Roadblocks

The fragmentation of the mobile technical environment is clearly an issue for the publishers and the operators in terms of adding cost and complexity to service development. MoMac believes that the trend is still towards greater complexity rather than more standardisation.

The company is in a good position to observe the various obstacles to publishers developing mobile content. It believes that:

- Consumer acceptance of services and willingness to pay is very variable across markets with more willingness to pay for news in the Netherlands for example.
- Mobile operators also vary in the share of revenue they take from content services (between and within countries) and this can make a crucial difference to the viability of services for publishers.
- Rigid operator business models for different types of content can make hybrid content offerings difficult e.g. ringtones combined with editorial content in a branded package
- Some publishers' internal organisation, skills and culture are more well-adapted than others to seizing the opportunities presented by new platforms; smaller publishing companies can have the greatest difficulties

3 Horizontal focuses

Plan of the chapter

3.1 Focus on legal and regulatory issues

3.1.1 Introduction

Today, we witness a breathtakingly rapid development of new and improved communication channels and platforms. While these channels and platforms so briskly and continuously increase and become so efficient that they hypothetically assure the dissemination of any form of content, the reality falls a bit short of this. Even though content is available, it is sometimes not transmitted over new platforms as extensively as one could imagine or wish. This seems to stem from the fact that content distributors, producers or consumers, in addition to economic and technical concerns they contemplate, also often encounter legal and regulatory difficulties. Copyright issues, for instance, have been extensively quoted by stake-holders as creating difficulties with new media exploitation for all the content categories analysed in Part Two of this report.

This section concentrates on explaining where legal and regulatory problems occur and the determination of their importance. However, it cannot provide an exhaustive analysis of all possible obstacles. We have in fact identified the legal drawbacks as they are actually named by the industry. This elaboration of the issues of priority could provide a basis for further assessment and a deeper analysis of possible action to be taken. The chapter will not specify if and what specific remedies should be adopted.

3.1.2 Summary of the key legal issues

We have identified a **list of key topics** covering the most important legal issues with regard to the distribution of content, based on our practical experience, interviews with stakeholders as well as from an academic background.
These key legal topics can be divided up into three main categories:

- copyright-related issues,
- regulatory issues,
- consumer issues.

3.1.2.1. Copyright-related issues

a. Definition of rights / Clearance of rights (2.5-2.9)
When new technologies emerge, the question arises whether exploitation in new technologies requires new rights. The market is reluctant to seek clarification of the legal situation through the courts because of the costs and time involved. In certain cases, even if a company has entered into agreements covering digital exploitation, there is still a great deal of uncertainty as to what rights are needed to exploit content in new media.

b. Content Piracy – DRM & Enforcement (3)
It is common opinion among stakeholders that the persistence of piracy is one of the biggest obstacles to lawful business in digital content distribution. In this context, DRM systems are an important driver for a broader distribution of digital content and new (electronic) business models. Hence, it is important to analyse the legal inhibitions that are experienced by stakeholders regarding DRM systems and anti-piracy enforcement.

c. Non-exploitation of rights and bundling of rights (2.3, 2.4)
When needing to acquire rights for the use and distribution of digital content, companies may discover that rights are "blocked" by another distributor. In the past, rights in audiovisual content were often granted on a "total buy-out" basis. Once holding those rights, the licensees are not willing to grant third parties a sub-licence to exploit content through new communications channels like VOD, even if they do not make use of these rights themselves, because they are concerned that this could damage their own transmission/ distribution channels. If one company holds all relevant exploitation rights in a territory, it will be extremely difficult for competing companies in that market because they will be unable to acquire the rights required for new media. It can also hinder the development of the market and harm content owners, too.

d. Territoriality of rights (2.11)
The use of the open Internet, as one way of distribution, implies the accessibility of the content worldwide. Due to the fact that rights are granted on a territorial basis, the exploitation over the Internet may infringe third party rights. Although there are already technical ways to prevent accessibility outside the licence territory, some players suggest a uniform legal framework might be needed to enable the free movement of goods and services.

3.1.2.2. Regulatory issues

a. Regulatory framework for new media services (4.2)
EC law refers to three different concepts as starting points for the regulatory framework for the digital economy:

- "electronic communications networks and services" (Framework Directive, Access Directive),
- "information society services" (E-Commerce Directive),
- "television broadcasting"/ "audiovisual media services" (Television Without Frontiers Directive in the current and proposed revised version).

Furthermore, in many Member States, several national regulatory bodies are in charge of the supervision and/or regulation of the digital economy. Due to technological developments, the market players tend to combine various electronic communications, information society and audiovisual media services. As a consequence, they are increasingly confronted with several national regulatory bodies and regimes.

b. Access to platforms (5.1)
In certain cases, digital content owners have limited means of exploiting their content through new communications channels because they do not have access to the channels or platforms concerned. This access is only possible with the agreement of the communications platform owner: In particular, no content can be exploited if the communications platform operator is not willing to add third-party content to its platform. On the other hand, a communication platform operator may not be willing to invest in new communication channels if it cannot control the ensuing business model based on this communication channel.

c. Issues related to the regulation of new media services (4.2)
The EU and (many) MS are currently considering to introduce a basic set of rules for extending media regulation to encompass

new media (or 'non-linear') services. In particular the European Commission has presented its proposal for an 'Audiovisual Media Service Directive', which is currently discussed at the European Parliament and Council.

Although this move has been widely approved by MS and industry players, in order to achieve better legal certainty, some stakeholders, e.g. telecom operators, broadcasters and pay TV operators, are concerned with regards to regulation and the new obligations that might affect new media services

d. Public broadcasters and new media (5.2)

Some issues result from the fact that in some Member States certain broadcasters are partly financed by public funding. Some commercial operators are concerned by the fact that public service broadcasters do venture in new media operations. Considering that it affects the development of their own services they argue that is not, or should not be, in the remit of public broadcasting service.

e. EPGs and other Navigators

Access to content and to platforms is only the first step to minimise obstacles for digital exploitation. Navigators and browsers, as electronic program guides or search engines, will play a more central role than expected. The navigator will be the first level for the end user to access content or platforms. No end user device will be operable in the near future without a kind of "navigator", which will also be used as an interface to manage the content owned by the end user. This applies to broadband VOD as well as on-demand mobile distribution. Due to their central importance the existing regulations on navigators have to be assessed.

f. Legal liability of Internet intermediaries (4.3)

Platform providers are likely to present a variety of content to the public, including content that they are unable to control. In particular, new interactive services may give end users or other third parties new opportunities to distribute content to the public via a platform. In light of such technological and economic developments in the field of information society services, the Commission is continuously examining the need for amendments of the current liability limitations of internet intermediaries (cf. Article 22 of the E-commerce Directive 2000/31). The next application report of the E-commerce Directive will be published in 2007.

3.1.2.3. Consumer protection issues (4.1)

Companies offering digital B2C content services are confronted with various consumer protection laws in regard to:

- e-commerce (e.g., the requirement to disclose detailed information about the company, products, etc.),
- protection of minors,
- advertising,
- data privacy.

Some national regulations are still quite complex and require a rather administrative procedure. The extent to which such laws constitute obstacles to the realisation of new digital business models or are necessary to ensure consumer acceptance of new services remains to be established.

3.1.3 EU legal framework for digital content

The digital content market falls within the ambit of a multitude of different fields of law. An exhaustive presentation of the entire EU legal framework would therefore go beyond the scope of this report. We will rather focus on those regulations and decisions which are most relevant in view of the above-mentioned key topics, i.e. concerns raised by stakeholders.

3.1.3.1. Copyright-related issues

Copyright, DRM and Intellectual Property Rights enforcement

At the European level, the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society forms the central and most relevant regulation regarding copyright in the digital environment and Digital Rights Management. The directive is of horizontal character and forms the EU's implementation of the two 1996 WIPO Treaties. Notwithstanding its name, the directive lays down rules both for the analogue and for the digital world.

Rights and exceptions

Articles 2 - 4 of the directive set out the rights harmonised by the directive. Article 2 obliges Member States to provide for the exclusive right to authorise or prohibit the direct or indirect, temporary or permanent reproduction of works and other protected subject matter to authors, performers, phonogram producers, film producers and broadcasting organisations. Article 3 contains the right of communication to the public, including the right to make contents available to the public. It has been worded with a view to on-demand services on networks and, as explained in Recital 23, covers any transmission of a work to the public not present at the place where the communication originates, including broadcasting. Article 4 finally deals with the distribution right and its exhaustion.

Article 5 sets out an exhaustive list of exceptions to the rights provided in Articles 2 - 4. The only mandatory exception restricts the broad definition of the reproduction right. It allows transient and incidental reproduction if it is an essential and integral part of a process whose sole purpose is to enable a transmission in a network by an intermediary or a lawful use of a work and has no independent economic significance.

Article 5 (2) provides optional exceptions, some of them requiring fair compensation. For this study, the private use exception of Article 5 (2) (b) is most important. Altogether, a fair balance between the different categories of right holders and users must be safeguarded in these exceptions. When fair compensation is required, the level set should take account of the possible harm to the right holder by the exception. Moreover, according to Recital 38, due account should be taken of the differences between the digital and analogue private copying. The "three-step test" under Article 5 (5) limits copyright exceptions to special cases which do not conflict with normal exploitation of copyright materials and do not unreasonably prejudice legitimate interests of right holders. In order for the Three-step-test to apply, the three conditions have to be met.

Protection of technological measures

Article 6 requires that Member States provide legal protection against the deliberate circumvention of technological measures. The latter are defined as mechanisms which are applied to material protected by copyright or the neighbouring or database rights, designed to prevent or restrict acts which are not authorised by the right holder. The provision covers any act of circumvention, regardless of whether such an act infringes any copyright. However, only if a person knows or has reasonable grounds to believe that an act leads to the circumvention of a technological measure does the act have to be declared unlawful.

Article 6 (2) expands this protection to the manufacture, import, distribution, sale, rental or advertisement of circumvention devices or services – and also their possession for commercial purposes. This applies to any device or service that is marketed or primarily designed to circumvent technical measures, or has only limited other commercial purpose. Moreover, Member States may further ban private possession of circumvention devices.

The scope of protection is limited by the requirement of effectiveness which is defined in Article 6 (3) as where the access control or copy control mechanism achieves the protection objective.

The relation between Articles 5 and 6

Because technological measures must not be circumvented, even if they hinder activities covered by the above-mentioned exceptions, Article 6 (4) specifies the procedures that should be used to reconcile the exceptions in Article 5 with the technological measures protected under Article 6. Primarily, it requests right holders to take voluntary measures to facilitate certain (only six of the twenty-one) exempted activities. Though there is no obligation to do so, they may also facilitate the private use exception, but may restrict the number of private copies. If voluntary measures are not taken, Member States must take "appropriate measures" of their own to ensure that users may benefit from the exceptions. In doing so, they are free to decide themselves when it is necessary to introduce obligations for copyright owners and which means they will have to provide. However, it must be noted that Member States may not oblige copyright owners to provide the means to enable the usage of works which are made available to the public on agreed contractual terms, in such a way that members of the public may access them from a place and at a time individually chosen by them.

As already mentioned, certain exceptions permitted by Article 5 require fair compensation. When setting the level of such compensation, one of the factors which have to be taken into account is the use of technical measures. The object is that fair compensation levels will be reduced as the use of technical measures increases.

Sanctions and remedies

Under Article 8, the directive requires that the EU Member States must ensure appropriate sanctions and remedies in respect of the infringement of rights and the circumvention provisions. Right holders must be able to bring actions for damages and apply for injunctive relief and for the seizure of infringing materials and circumvention devices. However, it is left to the discretion of the Member State to decide whether or not penal sanctions are also necessary. Moreover, Article 8 (3) requires that right holders must be able to apply for injunctions against an intermediary whose services are used to infringe their rights.

Article 7 of the Copyright Directive puts an obligation on Member States to provide adequate legal protection against knowingly, or with reasonable grounds to know, inducing, enabling or facilitating copyright infringement by removal or alteration of electronic rights management information or dealing in copies of works from which such information has been removed without authority.

Additionally, Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights (Enforcement Directive) has harmonised and strengthened the instruments for the enforcement of claims under copyright law. It envisages **provisional measures** to preserve evidence (e.g., seizure of infringing goods), to prevent impending infringements and to forbid the continuation of such infringements (e.g., interlocutory injunctions). Furthermore, the directive provides for a broad **right of information** against infringers and persons who are involved in the infringement on a commercial scale. Harmonisation is also strived for regarding **damages** and legal costs.

The liability framework for Internet intermediaries will be explained below.

Non-exploitation of rights and bundling of rights

At the European level, the debate over access to content basically focuses on **competition law** issues.

The general ban on cartels as provided for in Article 81 of the EC Treaty also applies to horizontal agreements for the joint selling and buying of media content. In the context of sports rights, the issue of joint selling of rights has recently been examined by the Commission (*see Case study 11: De-bundling of audiovisual football rights on page 186*).

Copyright, by its nature, involves some form of exclusivity pursuant to which one rights holder can monopolise rights to premium content. Though the lack of access to content might not only hinder competitors, but also affect technological developments and consumer choice, EU copyright law does not provide for a possibility to restrict the rights holders in the event of non-exploitation. However, the idea is not completely alien to the system of copyright law. Several civil law copyright statutes provide for a right to terminate a licence agreement in the event the licensee does not exploit the transferred rights.

Territoriality

Copyright is strictly governed by the principle of territoriality. In general, the requirements of the relevant laws of all the countries of protection have to be met when content is distributed via the Internet. As a result

Case study 11: De-bundling of audiovisual football rights

In the **UEFA Champions League Decision** (Commission Decision 2003/778/EC), the Commission found that the arrangements among individual football clubs resulted in a coordination of the pricing policy and all other trading conditions on behalf of football clubs participating in the Champions League and thus restricted competition.

On the other hand, the Commission recognised important benefits of a central marketing of media rights. In particular, central marketing allows for an efficient production and marketing of a branded league-focused media product desired by customers.

One of the important drawbacks of the original joint selling arrangement was that not all matches were seen live on TV, while Internet and IPTV operators were simply denied access to the rights. UEFA's joint selling arrangement therefore had the negative effect of restricting competition between broadcasters. By barring access to key sport content, it also stifled the development of sport services on the Internet and of the new generation of mobile phones. This was not in the interest of broadcasters, clubs, fans and consumers.

In addition, the Commission stated that sports and films, as key ingredients for television channels, are also critical for the development of new technologies. In order to provide a broader and more varied offer of football on television and **to give an impulse for the emerging new media markets such as the Internet and UMTS services, UEFA proposed a new joint selling arrangement**.

According to this new arrangement, **UEFA agreed**, *inter alia*:

- to segment the media rights into television, radio, Internet, mobile phones and physical media rights (such as DVD, VHS, CD-ROM, etc.),
- to license specific live rights packages to third parties, and
- to oblige its licensees to exploit the granted TV rights.

However, if UEFA does not manage to sell a certain live rights package within a certain cut-off date, the individual clubs will be able to market the matches themselves.

Similar principles can also be identified in the **Deutsche Bundesliga case** (COMP/C-2/37.214) and the **Premier League case** (COMP C.2/38.173 and 38.453), two Commission decisions under Art. 9 Regulation 1/2003.

In both decisions the associations' marketing entities have the right to exclusively market the most important exploitation rights segmented according to media and/or content (in particular, live and first exploitation rights for television and Internet). Individual clubs mostly only retain the right to market, on a non-exclusive basis, a deferred exploitation of their home matches. However, as in the Champions League case, if the exploitation rights which the leagues exercise exclusively vis-à-vis the clubs remain *unsold* or *unexploited*, home clubs are given the opportunity to market these rights on a non-exclusive basis simultaneously: if the associations are unable to sell their exploitation rights within a certain period of time ("unsold rights"), the home clubs are to be entitled to sell these exploitation rights for the respective matches on a non-exclusive basis for the remainder of that season, while the associations retain the right to market these rights on a non-exclusive basis.

If exploitation rights are sold but not adequately exploited by the purchasers ("unexploited rights"), the approaches taken in the Bundesliga and the Premier League decisions differ slightly. In the Bundesliga case, unexploited rights do not affect the validity of the exploitation agreement, but home clubs are to be entitled to sell, on a non-exclusive basis, exploitation rights with respect to matches for the remainder of that season. In the Premier League case, the association committed itself to ensure that each purchaser of exploitation rights is subject to a contractual obligation to exploit the core rights. If the exploiter fails to do so, the exploitation agreement is to be terminated for breach of the purchaser's contractual obligations. Only if the association fails to resell the respective exploitation rights within a certain period are home clubs to be entitled to sell the respective rights on a non-exclusive basis for the remainder of the season.

Lessons from the case study

In order to give an impulse for the emerging new media markets, the Commission introduced in these decisions a system of de-bundling of media rights and the obligation to exploit the granted rights. It remains to be seen if such an approach (applied in the specific context of sports premium content and collective management) could or should be extended to other areas.

copyright licenses are granted basically on a country by country basis.

In contrast, the cross-border exploitation of programmes via satellites and the cable-retransmission of programmes is subject to the country-of-transmission principle according to the Satellite and Cable Directive 93/83/EEC. This means that it is only subject to the jurisdiction of the Member State from which the programme signal is being transmitted to the satellite and generally governed by the law of the country of transmission.

The E-Commerce Directive and the Television Without Frontiers Directive lay down the country-of-origin principle. Within their scope, providers only have to meet the legal requirements of the Member State in which they are domiciled. However, copyrights and associated rights are expressly exempt from the country-of-origin principle. Therefore the relevant laws of all the countries of protection have to be met when a content service is marketed on a Pan-European or multi-territory basis.

3.1.3.2. Regulatory issues

Regulatory framework applying to digital content distribution

The regulatory framework includes first of all Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).
Moreover, there are 4 directives on electronic communications:

- **Authorisation Directive - Directive 2002/20/EC** of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services
- **Access Directive - Directive 2002/19/EC** of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities
- **Universal Service Directive - Directive 2002/22/EC** of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services
- **Directive on Privacy and Electronic Communication - Directive 97/66/EC** of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector

Finally, it comprehends directives on specific services:

- **Television Without Frontiers ("TWF") Directive – Council Directive 89/552/EEC** on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities
- **E-Commerce Directive – Directive 2000/31/EC** of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market.

EC law refers to three different concepts as starting point for the regulatory framework for the digital economy: "electronic communications networks and services" governed by the Framework Directive and the Access Directive, "information society services" governed by the E-Commerce Directive and "television broadcasting" governed by the TWF Directive.

The **Framework Directive** creates a single legal framework for electronic communications networks and services as defined under the directive. It requires independent national regulatory authorities to be established and to act as neutral supervisory bodies for the development of competition in the field of provision of electronic communications networks and services. Their task is, amongst others, to ensure that users derive maximum benefit in terms of price, choice and quality. They also manage the radio frequencies for electronic communication services. Furthermore, providers of digital television services are encouraged to use an open application program interface to ensure interoperability of services.

Apart from providing for general definitions used in the different directives, the Framework Directive contains the common provisions underlying the other measures in the new framework. It also deals with rights of way, standardisation, interoperability and significant market power of companies. It lays down that regulation can only be imposed (according to the specific directives) after a market analysis has found that a market is

not sufficiently competitive, which is the case when an undertaking has "significant market power".

The term is defined in Article 14 (2) and equivalent to the EU competition law concept of dominance: An undertaking is considered to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, i.e., a position of economic strength affording it the power to behave independently of competitors, customers and the consumers. Any particular regulation is left open to the Member States. As a result, each Member State has its particular regulation, which means that networks or service providers have to face different definitions of regulation and administration procedures when offering in different Member States. Due to this fact, the directive asks for cooperation between the national authorities and the European Commission in order to achieve consistent regulatory practice and application of the new telecommunications regulatory framework in the internal market.

Companies providing electronic communications networks and services need a licence according to national legislation based on Article 3 (2) of the **Authorisation Directive**. Such licence has to be granted as a general licence which is to ensure an equal (and not individual) granting of rights. The principle of general authorisation, rather than the grant of individual rights, should also apply to the use of radio frequencies and numbers if possible.

Both the general authorisation and the rights of use of radio frequencies and numbers may be specified (by national authorities) only according to the conditions listed in Annexes A, B and C of the Authorisation Directive. National authorities may charge administrative fees to providers of electronic communications networks and to service providers and for the rights of use of radio frequencies as well as for the rights to install facilities. For companies providing such networks or services within several countries, this means they have to approach the national authorities of each country.

The relationship between suppliers and providers of electronic communications networks and providers of electronic communication services is subject to the **Access Directive**. (End-users are not covered by this directive, but regulations aim for a maximum user benefit.) The directive mainly provides for rights and obligations for operators of public communication networks and for undertakings seeking interconnection and/or access to their networks. In order to ensure provision and interoperability of services throughout the Community, the directive in Article 4 requires operators of public communications networks to negotiate interconnection with each other for the purpose of providing publicly available electronic communications services. Member States must not prevent negotiations on interconnection between operators. Operators may also be obliged to negotiate. Article 12 allows national authorities to impose obligations on operators to meet reasonable requests for access to, and use of, specific network elements and associated facilities in order to assure sustainable competition; such conditions must be non-discriminative, transparent and fair.

The relationship of electronic communications networks and services to end users is regulated by the **Universal Service Directive**. The aim is to ensure the availability throughout the Community of good quality, publicly available services through effective competition and choice and to establish rights of end users and the corresponding obligations on undertakings. This directive ensures that a minimum set of services of specified quality is available at an affordable price to all end users in their territory (Article 3). Some of the particular obligations in relation to universal services include the obligation that Member States must ensure connection to the fixed network, which includes functional Internet access (Article 4), reasonable geographic access to public call boxes, the provision of a text relay service for customers with hearing impairment.

The current version of the **TWF Directive** aims to ensure the free movement of broadcasting services within the internal market by establishing the country-of-origin principle: Member States shall ensure freedom of reception and shall not restrict retransmission on their territory of television programmes from other Member States. At the same time it is intended to preserve certain public interest objectives such as cultural diversity, the right of reply, consumer protection and the protection of minors and human dignity.

The TWF Directive encourages the distribution and production of European television programs. For instance, Member

States have to ensure that where practicable broadcasters reserve a major part of their broadcasting time for European content. Following a first amendment[16], the TWF Directive sets out conditions allowing events which are considered to be of major importance for society to be broadcast freely to the public. Moreover, the TWF Directive restricts television advertising and sponsorship to a maximum duration of 15 per cent of the daily transmission time and to 20 per cent maximum within a given one-hour period. Further public policy objectives concern the protection of minors against programmes which might seriously impair the physical, mental or moral development of minors, in particular programmes that involve pornography or gratuitous violence and the prohibition of incitement to hatred.

Following the tendency of technological convergence in the audiovisual sector, the TWF Directive has been subject to a revision process from June 2001 at the end of which the Commission has presented its proposal for an **Audiovisual Media Service ("AMS") Directive**[17].

The draft proposal provides for a combination of a platform-neutral approach with a graduated degree of regulation depending on the *type* of services concerned.

Thus, **the proposal distinguishes between linear and non-linear audiovisual media services**.

- Linear audiovisual media services designate services where an audiovisual media service provider decides upon the moment in time when a specific program is transmitted and establishes the programme schedule. It comprises conventional television, IPTV, streaming or web-casting.
- By contrast, non-linear services allow the user to decide upon the moment in time when a specific programme is transmitted on the basis of a choice of content selected by the media service provider, as it is the case for on-demand television, on-demand-video and comparable services.

The proposed AMS Directive subjects both non-linear and linear audiovisual media services to the Directive's fundamental rules, such as the **country-of-origin principle**, protection of minors, prevention of incitement to hatred, identification of the media service provider, regulation of product placement and sponsoring and some qualitative restrictions on advertising (platform-neutral approach). However, these rules will be modernised by introducing more flexibility in particular with respect to advertising.

The **E-Commerce Directive** is based on the **country-of-origin principle**. It prohibits Member States from making the taking up and pursuit of the activity of an information society service provider subject to prior authorisation (or any other requirement having equivalent effect). In addition, certain transparency obligations are set out in the Directive, in particular identification obligations concerning the actual service provider (name, contact details, trade register number, VAT number), identification obligations concerning commercial communications (such as online advertising, online direct marketing, online promotional offers, games and competitions), as well as obligations to provide certain information at the pre-contractual stage (on steps leading to contract conclusion and on mechanisms for correction of input errors). The Directive obliges Member States to remove any prohibitions and restrictions on the use of electronic contracts.

Access to platforms

The regulatory framework concerning the issue of access to platforms is basically governed by the Access Directive (2002/19/EC, OJ L 108/7, 24.04.2002) and the Framework Directive (2002/21/EC, OJ L 108/33, 24.04.2002).

According to these directives, the access regulation regime for the communications markets follows a two-stage approach: it primarily lays down the principle of autonomy of the contracting parties and therefore the model of free market economy. In markets with efficient competition, it is incumbent upon the market players to negotiate the conditions of access to the communications infrastructure themselves. Only markets without efficient competition are to be regulated by specific measures such as imposing certain rules for the access to relevant platforms. Regulation in this area is necessary because lacking competition leads to an imbalance of market power and dependencies between weaker and stronger market participants.

Electronic Navigators

Recital 10 of the Access Directive (2002/19/EC) states that competition rules alone may not be sufficient to ensure cultural diversity and media pluralism in the era of digital television. Therefore, the Members States are to review the obligation to provide access on fair, reasonable and non-discriminatory terms, already provided for in Directive 95/47/EC, on account of the ongoing technological change and changes in the market economy in order to ascertain whether it appears reasonable to extend this obligation to new gateways such as electronic programme guides. In this context, Article 5 (1) (b) of the Access Directive, in particular, gives the Member States the power to impose, to the extent necessary to ensure accessibility for end users to digital radio and television broadcasting services specified by the Member State, obligations on operators to provide access to electronic programme guides on fair, reasonable and non-discriminatory terms.

Articles 12 to 14 of the E-Commerce Directive (2000/31/EC) provide for clearly defined limitations of liability for information society services that consist of mere conduit, caching or hosting. Pursuant to Article 21 of the E-Commerce Directive, in the subsequent applications reports, the Commission shall analyse the need for proposals concerning the liability of providers of location tool services. In the First Application Report of 2003 the Commission noted that in addition to implementing Articles 12 to 14, some Member States have established limitations on the liability of providers of hyperlinks and search engines as well. In addition, the Commission stated that, at that time, there was still very little practical experience with the application of Articles 12 to 14 of the Directive and therefore, it indicated that it would continue to monitor and analyse new developments (national law, case-law, administrative practices) related to liability of internet intermediaries in order to asses, inter alia, the need for additional limitations on liability for search engines. The publication of the Second Application Report that will examine the need to adapt the present framework in light of these developments has been scheduled for 2007.

Public broadcasters

Public funding schemes established in favour of public service broadcasters (PSBs) are mainly subject to the EC Treaty. Moreover the Amsterdam Protocol gives the Member States large discretion as to how they organise their public service systems. Especially it leaves it up to the Member States whether or not they want to provide public funding for PSBs. According to this the funding of PSBs is legitimate as long as it is used to fulfil the public service remit and insofar as it does not affect trading conditions and competition to an extent which would be contrary to the common interest.

Articles 87 and 88 of the EC Treaty refer to state aid and Article 86 (2) to the application of the rules of the Treaty and the competition rules, particularly to services of general economic interest.

Whether state financing of public service broadcasters is regarded as state aid within the meaning of Article 88 (1) is assessed on a case-by-case basis and also depends on the specific nature of the funding. State aid to public broadcasters is examined by the Commission in order to verify whether it can be found compatible with the common market according to Article 87 (1) or whether it affects competition in the common market in a disproportionate manner. In accordance with Article 151 of the EC Treaty, cultural aspects have to be taken into account in order to respect and to promote the diversity of the cultures of the Community. Article 86 (2) of the EC-Treaty, which is of fundamental relevance for PSBs, provides for derogation from Articles 81, 82 and 87 of the EC Treaty for services of general economic interest.

At the level of secondary legislation, public broadcasting funding has to be assessed in the context of Directive 80/723/EEC on the transparency of financial relations between Member States and public undertakings. Furthermore the Communications from the Commission on the application of State aid rules to public service broadcasting set out the principles to be followed by the Commission in the application of articles 87 and 86 (2) of the EC-Treaty to state aid funding of PSBs.

Legal liability of Internet intermediaries

Articles 12 to 15 of the E-Commerce Directive (2000/31/EC) establish precisely defined limitations on the liability of internet intermediaries providing services consisting of mere conduit, caching and hosting. The limitations on liability in the Directive apply to certain clearly delimited activities carried out by internet intermediaries with respect to the access provision, transmission and storage of

third party information (provided by recipients of this intermediary service).

The directive provides for limitations to civil, administrative and criminal liability for all types of illegal activities initiated by third parties online (copyright piracy, defamation, misleading advertising, unfair commercial practices, child pornography, hate speech).

The exoneration conditions which depend on the degree of possible control over the third party information transmitted or stored are the following:

- Where the activity of an ISP consists of mere conduit (access or transmission provision), immunity is subject to the requirement that the ISP does not initiate the transmission, does not select the receiver of the transmission and does not modify the information contained in the transmission. (Article 12)
- With regard to caching, immunity is given when the ISP does not modify the information and complies with the conditions on access to the information and the industry practice regarding the updating of the information. Moreover, once the ISP obtains actual knowledge that the original source of the information or information at the initial source of transmission has been removed from the network or access to it has been disabled or that a court or an administrative authority has ordered the removal or disablement, the ISP has to expeditiously remove or to disable access to the information stored. Moreover, the ISP is required not to interfere with the lawful use of technology to obtain data on the use of the information widely recognised and used by the industry (Article 13).
- In respect of hosting, ISPs are exempt from criminal and administrative liability if they have no actual knowledge of illegal activity or information and from civil liability if they are not aware of facts and circumstances from which the illegal activity or information is apparent or if upon obtaining such knowledge or awareness they have acted expeditiously to remove or to disable access to such information. (Article 14).
- According to Article 14 para. 3, the member states shall be free to establish "procedures governing the removal or disabling of access to information". However, such "notice and takedown procedures", offering a fast out-of-court solution between the parties (ISP, alleged rightsholder, alleged infringer) based on certain formal requirements and an exclusion of the ISP's liability when complying with such procedures, have been rarely implemented by the member states. Only Finland and Hungary have chosen to define specific arrangements to deal with copyright infringements, whereas the other member states have not provided for explicit provisions and/or left further steps to industry self regulation[18].

Article 15 of the directive prevents Member States from imposing on internet intermediaries, with respect to activities covered by Articles 12 to 14, a general obligation to monitor the information they transmit or store, or a general obligation to actively seek facts or circumstances indicating illegal activity.

The limitations of liability of intermediary service providers established in the E-Commerce Directive do not affect the possibility of injunctions of different kinds that may be issued against intermediaries by national courts or administrative authorities and require the termination or prevention of a third party infringement, including the removal of illegal information or disabling access to it (cf. Articles 12 (3), 13 (2) and 14 (3)).

Furthermore, Directive 2001/29 on copyright in the information society and Directive 2004/48 on the enforcement of intellectual property rights provide for the possibility to issue injunctions against an intermediary whose services are used by a third person to infringe a copyright or related right.

3.1.3.3 Consumer protection issues

For the purposes of this study, we have summarized several legal aspects under the "consumer protection" section, ranging from privacy and data protection over e-Commerce specific regulation (information duties, etc.) to advertising regulation and protection of minor concepts. All those legal aspects – directly of indirectly – aim at providing a reliable basis for consumers using digital content (for details, see the legal questionnaire, Sect. 4.1).

Protection of privacy

Consumer protection in the field of electronic communications is provided for in the

Directive on Privacy and Electronic Communications of 12 July 2002 (2002/58/EC), which supplements the Directive 97/66/EC of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector and the Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and the free movement of such data.

The Directive on Privacy and Electronic Communications aims to ensure an equivalent level of protection of fundamental rights and freedoms, in particular, the right to privacy, with respect to the processing of personal data in the electronic communications sector and to ensure the free movement of such data and of electronic communication equipment and services in the Community. The directive only applies to publicly available electronic communications services in public communications networks.

In terms of the directive, companies which collect or store information from clients in relation to electronic communications must disclose certain information. Furthermore, users must be able to opt out of any disclosure and must be advised about the use of their data and of the use of cookies.

The directive also contains provisions about "non-requested communications" (including so called "spam"). Under Article 13 of the directive, the use of automated calling devices, facsimile or email for direct marketing purposes is generally prohibited unless the recipient had consented to receive the advertisement before it was sent (opt–in principle).

The directive also covers the issue of interception. According to Article 5, Member States "shall prohibit listening, tapping, storage or other kinds of interception or surveillance of communications and the related traffic data by persons other than users, without the consent of the users concerned, except when legally authorised to do so".

Information to consumers

Consumer interests in the field of e-commerce are further protected by the E-Commerce Directive which addresses Internet service providers. In terms of Article 5 (1) of the E-Commerce Directive, those providing information society services are required to disclose necessary information such as name, address and registration details of the company in a form and manner that is easily, directly and permanently accessible to consumers. The directive also lays down what information is to be provided in regard to commercial communications and spam. Article 7 (2) requires Member States to take measures to ensure that service providers undertaking unsolicited commercial communications by email consult regularly and respect the opt-out registers.

Protection of minors and advertising regulation

In relation to protection of minors and advertisement, the TWF Directive has to be mentioned. Above all, it lays down detailed rules on the content of television advertising, sponsorship, teleshopping and in regard to children, tobacco and alcohol etc. According to Article 10 (1) advertising and teleshopping must be readily recognizable as such and kept separate from other parts of the programme services by optical and/or acoustic means. Article 13 requires Member States to prohibit all forms of television advertising and teleshopping for cigarettes and other tobacco products. Advertisement of alcoholic beverages has to comply with the criteria listed in Article 15, for example it may not be aimed specifically at minors. Criteria for advertisement in order to protect minors are provided for in Article 16. Chapter V refers to minor protection in television broadcasts.

The Television Without Frontiers Directive only applies in regard to the content of traditional broadcasting (television programmes). The proposed AMS Directive combines a platform-neutral approach with a graduated degree of regulation. Whereas linear audiovisual services are already governed by the current TWF Directive it is the intention of the amendment to have services of non-linear nature benefit from the legal certainty of a Community-wide light touch regulatory regime.

Further regulation in the field of advertisement is provided by the Tobacco Advertising Directive (2003/33/EC), which took effect in July 2005, amending the old Tobacco Advertising Directive (98/43/EC). This directive bans tobacco advertising in the print media, on radio and on the Internet.

Comparable sector specific regulation with possible impact on advertising can be found in the medicine product directive (2001/83/EC).

The Council Recommendation (98/560/EC) of 24 September 1998 on

the development of the competitiveness of the European audiovisual and information services industry by promoting national frameworks aimed at achieving a comparable and effective level of protection of minors and human dignity is a further legal instrument on the content of audiovisual services and online information broadcast on the Internet. Related thereto is the Proposal for a Recommendation of the European Parliament and of the Council on the protection of minors and human dignity and the right of reply in relation to the competitiveness of the European audiovisual and information services industry[19].

After the above summary of the relevant regulatory framework, and in the light of it, the following sections will discuss the legal/regulatory dimension in various obstacles identified by stakeholders.

3.1.4 Copyright-related issues

3.1.4.1. Definition of rights and clearance of rights (2.5-2.9)

The development of new technologies also raises the question of whether a rights holder is still entitled to exploit the work within the rights granted or whether such new technology requires *new* rights.

Problems occur especially when new forms of exploitation are developed during the licence term. **Older copyright licence agreements generally do not mention "new media" or "online" rights**. Hence, the licensor will usually claim that he did *not* intend to include the new media rights in the licence. On the other hand, the authors are often not willing to grant global rights for all presently unknown forms of exploitation. This would restrict their autonomy to freely negotiate future revenues. In an age of extremely fast-paced technological development, it could soon happen that agreements reached today could no longer be applicable tomorrow. This is especially true as most of the copyright laws of the Member states do not allow a transfer of rights regarding future exploitation forms.

Therefore, the central question is whether a new technology is a new exploitation requiring a new right or an old form of exploitation vested only in a new technological robe.

The uncertainty of the answer puts the majority of the market players in a situation in which a long-term foreseeable exploitation is impossible. The current legal uncertainty might lead to the point that valuable content remains unexploited in the new media. There are two aspects which have to be distinguished from one another:

- The first aspect refers to the extent of a right granted to a third person. For example, does a broadcasting right include every method of transmission (e.g. not only terrestrial and DTH broadcasting but also IPTV) - even methods developed in the future - or only those explicitly defined in the agreement?
- The other aspect refers to whether a new technological way to exploit content leads to a new exploitation right, such as "the right of making available" with the development of the Internet.

Two kinds of remedies were pointed out by stakeholders from different industries and countries, to achieve an exploitation of unexploited content in the new media:

- a definition of exploitation rights that is independent from the technology, and
- the right to transfer rights also for unknown forms of exploitation.

Definition of rights

It is a frequent observation that valuable digital content remains unexploited in the new media due to an uncertainty in the market as to what kind of rights are needed to exploit content in new media such as the Internet or mobile devices, etc. Especially owing to the constantly ongoing development of new devices and new ways of transmission such questions continue to be raised. As a result, some rights holders are reluctant to exploit content in new media in order to avoid possible damage claims.

On the other hand, this uncertainty is being used by assumed rights holders to license certain exploitation rights for every new technology anew, even if this technology does not offer any new functionality to the end customer. This leads to increasing costs for the consumer and has impacts on the revenue for those new media services - an area where many new services are being tested/launched but few are profitable.

It was pointed out that in general there is a tendency amongst authors and other individual rights holders to declare every single new technology as a new right. With the development of the Internet, there was immediately a call for a new right called the Internet right for IP-based exploitation. The same happened to mobile phones when

the relevant rights holders claimed that exploitation via mobile phones would require a so-called 'mobile right'. On this basis, **various terminologies are been used in the market**, such as "Internet rights", "online rights", "new media rights", "IPTV rights", "on-demand rights", "wireless-LAN rights", "Wi-Fi rights", "mobile rights", "UMTS rights", "interactive rights", "multimedia rights" or (in case of mobile exploitation of music) "ring-up-tone rights", "ring-tone rights", etc. It can generally be noted that the definition of exploitation rights in contracts is rather technology-related.

Overall, the stakeholders pointed out that the terms used in specific agreements still prevent a clear understanding as to what concrete extent a single right can be used if single aspects of the technological environment change in which the work is or is going to be exploited. Some stakeholders stated that **the market is reluctant to seek clarification of the legal situation through the courts** because of the costs and time involved in a court decision.

The problem concerning the definition of rights does not only refer to older copyright licence agreements. This concern has already been addressed by the industry and taken into account to adapt licensing agreements to new technologies. However, the problem still persists and will persist in the future. Technology is gradually evolving, bringing up new paths of communication, new end user devices and new forms of content. Also new business models constantly bring up changes.

The latest example on this issue is the conflict between the German Bundesliga and Deutsche Telekom about the extent of the "Internet Rights" which took place in Germany in summer 2006.

A few stakeholders mentioned a possible remedy in form of a **'legal fiction'**[20] stating that rights are granted regardless of the underlying technological infrastructure. As a statutory provision would be needed to introduce such legal fiction, it could only be applied to future contracts and not retroactively. Thus, granting a broadcasting right would give the licensee the right to broadcast regardless of the transmission method (satellite, cable, DSL), the concrete form of the transmission signal (IP, unicast, multicast, etc.) and the end user device (PC, TV set, etc.). In addition, the author would be entitled to claim a separate adequate remuneration if a modified technological infrastructure would increase the economical potential to exploit the work.

However, some stakeholders (representing associations of content aggregators and rights holders) claimed that no new regulation in this sector is needed at all: the definition of rights in new agreements, as well as dealing with conflicts in relation to older agreements, should be left to the (industry and legal) markets and the appropriate courts.

Unknown forms of exploitation

Licence agreements do not provide legal certainty regarding future forms of exploitation, even if the wording of the agreements entitles the licensee to exploit the work in "all forms of exploitation". Problems occur especially when new forms of exploitation are developed during the licence term. As the agreements generally do not specify what kind of future technologies or forms of exploitation are intended to be covered, it remains unclear whether or not a given form of exploitation is permissible under the agreement (in particular due to the fact that general references to, e.g., "any future form of exploitation" may in most cases be void under statutory law).

Accordingly, stakeholders in many European countries complain that they have to **renegotiate their older agreements in order to obtain legal certainty**. This is generally very time- and cost-consuming, especially when it is unclear who the author of the work is and whether the author is still the rights holder in the individual case. In the event the author has already died, the heirs have to be found. In this context the questions of how to deal with situations where the author or right holder is difficult or even impossible to locate or identify (so called "orphan works") has to be raised. This special problem will be analysed below. Hence, exploitation with new means is not started until the ownership of rights has been cleared. As a consequence, the rights very often can only be exploited very late by new technologies or are not made available to media and users at all (s*ee Case study 12: Legal limitations for new forms of exploitation on page 195*).

However, even if it is allowed to grant rights in relation to new forms of exploitation under the applicable national law, older licence agreements often do not mention these uses explicitly. In the absence of a clear contractual stipulation, **the courts tend to**

rule that the rights in relation to new forms of exploitation are not included in the agreement.

- In France, in the Plurimédia case[21] in 1998, the French court held that the collective bargaining agreement for journalists granting to the publisher the right of the first publication did *not* include the right to re-use the previously printed work on the Internet. The reasoning was that the agreement was concluded at a time when Internet uses could *not* have been foreseen.
- In Austria, the Supreme Court decided in 1998 that the grant of rights in a publishing agreement only included print media, but *not* the exploitation in electronic forms, because at the time the agreement was concluded their economic impact could not have been foreseen[22].
- In 1997 in the Netherlands, the court also held that a newspaper may not put the articles from its print version on the Internet without an additional authorisation from the author. It rejected the argument that in allowing publication in a journal, the authors had implicitly granted the right for electronic re-uses of the work. According to the court, Internet and CD-ROM are new means of exploitation which could not have been foreseen when the licence was originally granted[23].

These cases illustrate that despite no explicit prohibition by law, the courts tend to allow the transfer of rights regarding new forms of exploitation only to a very limited extent. This brings the industry to the point where there is no way to predict with certainty how a court will rule on a future technology or a new form of exploitation (*see Case study 13: The German copyright law reform on page 196*).

Case study 12 : Legal limitations to new forms of exploitation

The need to renegotiate agreements in order to obtain the relevant right for the new form of exploitation is a result of the relevant copyright law of the Member States. **Most of the copyright laws of the Member States do not allow a transfer of rights regarding future exploitation forms**.

Under **German** copyright law, the copyright itself cannot be transferred during the lifetime of the author. He can only grant an exclusive or non-exclusive licence to exploit the work to a certain extent. Moreover, according to section 31 sub. 4 of the German Copyright Act, it is impossible to transfer to another party the right to use the work in forms of exploitation that are not known at the time of the conclusion of the agreement. Such a transfer of rights in respect of new and unknown forms of exploitation is void. "Known" means that the new technology on which the new/future exploitation is based and the commercial relevance of this new kind of exploitation have to be known to the relevant groups of copyright owners.

Even if a new technology may be known by the relevant groups of copyright owners, but the extent of the possible commercial relevance is still uncertain, the new and/or future exploitation method is deemed to be unknown. According to the German Supreme Court, the commercial relevance can be assessed at the time the new form of exploitation is offered to end customers and a relevant analysis gives reliable indications of its real market impact and commercial relevance.

The laws of **Belgium** (Article 3 (1) (6) of the Belgian Copyright Act), **Greece** (Article 13, para. 5 of Law 2121/1993), **Italy** (Article 119 of the Italian Copyright Act) and **Spain** (Article 43 (5) of the Spanish Intellectual Property Law) also explicitly prohibit the transfer of rights in relation to forms of exploitation which are unknown at the time the agreement is concluded.

In **Austria** and the **Netherlands**, there is no explicit regulation in statutory law. However, the courts tend to interpret licence agreements restrictively. The courts of these Member States consequently do not consider including forms of exploitation that did not exist at the time the agreement was drawn up. Moreover, they tend to allow only exploitation which is reasonably related to the original form of exploitation.

Under the **Luxembourg** Copyright Act, the transfer of rights in relation to unknown forms of exploitation is possible under the condition that the author receives separate remuneration. In **France**, article 161-6 of the French CPI also allows the transfer of rights to exploit a work in unforeseen and unforeseeable forms if the transfer is explicitly stated in the agreement. However, the author must participate in the profits from the exploitation.

In the **UK**, under the British copyright system, it is even possible to assign the copyright as a whole (section 90 (1) of the UK CDPA). Moreover, a transfer of rights may – without any restrictions - also include future forms of exploitation.

Case study 13: The German copyright law reform

Copyright law in Germany is in the process of being reformed; a draft of the new law was first published by the Ministry of Justice in September 2004 and amended in January 2006.

Currently the legislative procedure is not yet terminated and the new copyright law is not yet voted. Hence, it can not be anticipated with certainty when it will come into force.

The reform covers, in particular, the **transfer of rights regarding new forms of exploitation**. In this respect, the draft of the new provisions can be cited as an approach to some of the aforementioned problems.

The draft of the new copyright law **allows the transfer of rights regarding unknown forms of exploitation**, according to section 31a of the draft of the German Copyright Act.

(1) In order to protect the author, the transfer of rights related to the unknown forms of exploitation has to be in writing.

(2) Moreover, the draft of the new copyright law provides that the author is entitled – without any restrictions - to *revoke* the granted right with regard to the unknown form of exploitation. He may revoke the granted right either in relation to a single new form of exploitation or in relation to *all* unknown methods of exploitation.

The possibility to revoke the granted right only exists, in principle, *as long as* the new form of exploitation is unknown. However, even if it is deemed to be known, the author may revoke the granted right if the licensee has not yet started to exploit the new form of exploitation in relation to the work in question. The rest of the underlying agreement on which the transfer of rights is based on will not be affected by such a revocation.

In order to provide legal certainty, the right to revoke the grant will, however, *not* apply in the following situations:

(a) The author is not entitled to revoke the rights granted for the new form of exploitation if the contractual parties have reached an agreement about an adequate remuneration for this new form of exploitation.

(b) Moreover, the right to revoke the granted rights expires when the author dies. It may not be passed on by inheritance.

(c) The draft of the new copyright law also deals with the situation where several authors are involved. In order to prevent one author from being able to bar the exploitation contrary to the other authors' interests, the right to revoke the granted rights has to be exercised in good faith.

Furthermore, the draft of the new copyright law extends the presumption under sections 88 et seq. (according to which all rights in cinematographic works are assigned to the producer) to new forms of exploitation. However, the right to revoke the granted rights does not apply to films.

(3) Under section 32c of the draft of the new German Copyright Act, the author is entitled to claim a separate adequate remuneration for these new forms of exploitation in the event the work is used in a new form of exploitation which was unknown when the agreement on which the transfer of right was based on was concluded. In this context, the licensee has the duty to inform the author immediately when exploitation of the work in the new form is begun.

In the event the licensee has already transferred the right in relation to the new form of exploitation to a third party, the latter – and not the original licensee - owes the author the remuneration for exploitation of the work in the new form.

(4) Finally, the author can waive in advance neither the right to revoke the granted rights nor the right to claim a separate adequate remuneration.

(5) With regard to the transfer of rights based on agreements concluded before the effective date of the draft on the new copyright law, section 137 (1) of the new German copyright act proposes the following:

Where the author has transferred comprehensively the essential exploitation rights exclusively and without geographical or time limitations to a licensee, the originally unknown forms of exploitation are to be included in the agreement by a legal fiction. This legal fiction does not apply if the author or his heirs disagree explicitly within the following time frames: in relation to originally unknown forms of exploitation that have become known at the effective date of the new copyright law, the author may object within one year after the effective date of the new law.

In relation to forms of exploitation which are then still unknown, he may object until the licensee starts the new form of exploitation in relation to the work in question. The legal fiction also applies to third parties that have acquired all the exploitation rights from the original licensee. In order to compensate the author, he acquires a legal claim to separate adequate remuneration for the new forms of exploitation.

Lessons from the case study

Altogether, in relation to new forms of exploitation the draft for the new German copyright law basically finds a compromise between the interests of the authors on the one hand and those of the licensees on the other hand. Therefore, many German stakeholders support this draft.

According to the associations representing authors' interests, the author is protected, because he retains the right to revoke the granted rights with regard to the unknown forms of exploitation. This is especially necessary in cases where the

author had to cede these rights because of the stronger bargaining power of the other party. Moreover, he is compensated by the right to claim separate remuneration.

The transitional regulation will provide legal certainty and simplify the situation with regard to many existing agreements. Only in the event the author objects will there be a need to renegotiate the agreement. Otherwise, the licensee is allowed to use the work in the new form.

However, the author of the study considers that some existing or potential problems remain unsolved:

First of all, the draft of the new copyright law does not define any criteria for determining when a new form of exploitation is known. The provisions concerning the right to revoke the granted rights and the right to a separate remuneration only apply if the form of exploitation in question was deemed to be unknown at the time the agreement was concluded. In this context, a form of exploitation should not be deemed to be known until the new technology on which the new form of exploitation is based on is known to the relevant groups of authors. Only if there is reliable data making it possible to measure the extent of the possible commercial relevance should the new exploitation form be deemed to be known.

Moreover, it is not clear how to determine the when the author loses his right to revoke the granted rights. The draft of the new German copyright law refers to the time when the licensee starts to exploit the work in the new form of exploitation. It does not, however, provide a solution to the possible situation that the licensee starts his exploitation in the new form of exploitation even before the relevant form of exploitation is deemed to be known to the relevant group of authors.

According to the German Bundesrat another problem is that, under the draft of the new copyright law, the licensee is only obliged to inform the author when the use of the work in the new form of exploitation has already begun, so that the author can claim adequate remuneration. With regard to the right to revoke the granted right - which is only possible before the licensee has started to use the work in the new form of exploitation – there is no such duty to provide information. This reduces the author's chances to revoke the granted rights considerably, because in most cases he will not know whether the licensee plans to start the new form of exploitation.

Moreover, the draft of the new copyright law does not address the problem of the legal consequences in the event the author revokes the granted right after the licensee has already transferred the right in relation to the new form of exploitation to a third party.

3.1.4.2. Orphan works (2.8)

Another particular problem in relation to the clearance of rights is the **localisation of unknown rights holders** (frequently discussed as "orphan works" issue).

Orphan works are copyrighted works whose authors or right holders are difficult or even impossible to identify or locate. This causes major difficulties if someone wishes to make use of the work and needs the permission of the copyright holder.

The problem is particularly relevant for the **digitisation of archives and libraries**. But also other stakeholders complain that they are not able to use older material because they cannot locate the rights holders. As already mentioned above, it is often necessary to renegotiate agreements when the licensee wishes to exploit older material in new forms, for example, in on-demand services. Especially in relation to films or other works that include contributions from a variety of authors and right holders, it can be impossible to locate all of the holders of the relevant rights.

The reasons why the rights holders cannot be located are various.

In some cases, especially with regard to individual photographs, there is no information about the author on the work itself. Hence, it is even difficult to know where to start when seeking permission to use the work.

In many cases, the author has already died, and no information about his heirs is available. Or the company which held the copyright no longer exists. Even if the author is known, it can be difficult to *locate* him because he has moved or ceased his business operations.

Moreover, the original author can have transferred the rights to another party, and the user must thus trace the current rights holder. In other cases, it is not possible to determine whether a work is still protected by copyright because the potential user has not managed to discover the date of the author's death.

In any event, conducting searches can be very costly and time-consuming and still may not succeed. Then **the risk of liability for copyright infringement is enough to prevent many stakeholders from making use of the work**. Hence, many valuable material is not exploited in the digital

environment or re-used and integrated into new creative efforts.

Consultations by the US Copyright Office as well as by the European Commission[24] have shown that **the issue of orphan works is not only of cultural value, but also of economic interest**.

Existing Remedies

There is currently very little legislation worldwide dealing with the problems presented by 'orphan' works.

Danish copyright law provides a system of extended collective licensing[25]. As adopted by several Nordic governments, this licensing regime provides that once an organisation represents a large enough number of copyright owners from a particular sector, its authority to license is "extended" thereby allowing it to license the works of all of the copyright owners in that sector, *including* non-member nationals and foreign copyright owners. It allows the user to obtain licenses issued by collecting agencies *without* having to locate the rights holder. This applies to certain cases of non-commercial use of orphan works, for example, copies for the purpose of educational activities, for internal use, reproductions by libraries or by governmental or municipal institutions and other social or non-profit institutions for the use of visually handicapped and hearing-impaired persons. Such licences require the remuneration of the author in the event he is identified because the law provides that both members of such collectives and non-members alike receive the same distribution of amounts collected.

Under **Canadian copyright law**, the Copyright Board of Canada is authorised to grant a licence to use an orphan work[26]. An application must be submitted in writing and contain considerable details: the applicant must describe the work that he wishes to use and explain how, when or for how long the applicant intends to use it. Moreover, he must report in detail on the efforts taken to locate the copyright owner. When all the required information has been received, the board determines on a case-by-case basis within 30 to 45 days whether the applicant has made every reasonable effort to identify the copyright holder. When the licence is granted, it sets the terms and conditions in relation to the permitted use. Furthermore, it determines the amount of royalty fees which have to be paid to the copyright collecting society that would normally represent the unknown copyright owner. The copyright collecting society has to reimburse the person who establishes, within five years after the expiry of the licence, ownership of the copyright of the work covered by the licence. However, this system has not been extensively used.

In the United States, a bill on orphan works has been introduced in Congress after months of debate and negotiation on 22 May 2006 (*see Case study 14: US Orphan Works Act of 2006 on page 199*).

EC i2010 initiative on Digital Libraries[27]

The European Commission published, in 2005, its communication "i2010: Digital Libraries"[28], an **initiative to address preservation and use of European cultural heritage**. In this context, the Commission conducted the "online consultation on digitisation and digital preservation" in order to investigate the challenges of digitisation and digital preservation. Moreover, a High Level Expert Group has been set up to advise the Commission. Among other topics, the suitable copyright framework is on the work agenda, and **the experts identified the issue of 'orphan' works as one of the topics to be addressed as a first priority**.

Comments

When addressing solutions in order to overcome the obstacles of 'orphan' works and simplify the procedures of rights clearance, it seems to be most important to **define criteria for the designation of a work as orphaned**. This should be limited to situations where after a reasonably diligent search, the author cannot be identified or located. Primarily, the system should encourage users to make all reasonable efforts to find the owner of the work they wish to use in order to negotiate a voluntary agreement over permission and payment for the intended use of the work. In this respect, it has to be clearly defined what will satisfy the requirements for a reasonable search.

Where after a reasonably diligent search the user cannot identify and locate the copyright owner, then the system should allow the user to make use of the work and determine the legal situation in the event the owner surfaces after the use has commenced. These provisions should balance the interests of the right holder with the interest of the user.

In the users' interest, the system should provide legal certainty about his copyright

liability exposure in the event that an owner might surface in the future. A possible solution could be to introduce limitations on the remedies that a copyright owner could obtain against the user of an orphan work comparable to those proposed in the US bill. At the same time, the rights of the author must not be deprived of his rights. He should still be able to recover compensation for the use of his work, and prevent further use of the work.

Another solution could be to establish an agency in charge of granting licences in respect of orphan works comparable to the Canadian model. However, this system involves the risk of long application procedures. Therefore, it might not be an effective way to simplify access to orphan works. Moreover, it has to be taken into account that it has not been really successful in Canada.

3.1.4.3. Issues related to collective management of underlying rights (2.7)

In relation to the clearance of rights, many stakeholders consider the current system of collective rights management creates obstacles to the establishment of new cross-border services.

The current system of collective rights management

In all European countries, different collecting societies are charged with the management of copyrights and related rights. Especially in relation to mass exploitation, the author generally has neither the time nor the means to exercise his rights individually. Hence, authors or owners of neighbouring rights transfer to a collecting society rights to negotiate rates and

Case study 14: US Orphan Works Act of 2006

In the United States, a bill on orphan works has been introduced in Congress after months of debate and negotiation on 22 May 2006. The Orphan Works Act of 2006 (H.R. 5439) is based on a recommendation from the U.S. Copyright Office. It introduces Section 514 in chapter 5 of title 17, United States Code, which provides for "limitation on remedies in cases involving orphan works". Basically, the law provides that - if certain conditions are fulfilled - in an action for infringement of copyright in an orphan work the remedies against the infringer are limited.

The requirements are as follows: the user was unable to locate the copyright holder, although he performed and documented a reasonably diligent search in good faith before using the work. A search to locate the right holder is reasonably diligent if it includes steps that are reasonable under the circumstances to locate that owner in order to obtain permission for the use of the work. The necessary steps include, at a minimum, review of the information maintained by the Register of Copyrights and the use of reasonably available expert assistance and reasonably available technology, which may include, if reasonable under the circumstances, resources for which a charge or subscription fee is imposed.

The Copyright Office has to put information online to help people find copyright holders. Relevant documents that are designed to assist users in conducting and documenting a reasonably diligent search must be made available to the public.

The limitations on remedies in a case in which the conditions are met are the following:

Monetary relief (including actual damages, statutory damages, costs, and attorney's fees) is limited to an order requiring the infringer to pay reasonable compensation for the use of the infringed work. An order requiring the infringer to pay reasonable compensation for the use of the infringed work is, however, excluded if the infringement is performed without any purpose of direct or indirect commercial advantage and primarily for a charitable, religious, scholarly, or educational purpose, and the infringer ceases the infringement expeditiously after receiving notice of the claim for infringement, unless the copyright owner proves, and the court finds, that the infringer has earned proceeds directly attributable to the infringement.

If the infringer fails to negotiate in good faith with the owner of the infringed work regarding the amount of reasonable compensation for the use of the infringed work, the court may award full costs, including a reasonable attorney's fee, against the infringer.

Injunctive relief may be imposed to prevent or restrain the use, but it is to account for any harm that the relief would cause the infringer due to its reliance on having performed a reasonably diligent search.

In a case in which the infringer alters, transforms, adapts or integrates the infringed work with his own original expression in a new work of authorship, the court may not, in granting injunctive relief, restrain the infringer's continued preparation or use of that new work if the infringer pays reasonable compensation to the owner of the infringed copyright for the use of the infringed work and provides attribution to the owner of the infringed copyright in a manner that the court determines is reasonable under the circumstances.

The law will apply only to infringing uses that commence on or after 1 June 2008.

terms of use and grant non-exclusive licences to users, to collect royalties, to monitor and enforce their rights and to distribute collected royalties.

There is a variety of different bodies in each country collectively managing the different kinds of rights in relation to the different categories of works or rights holders. Moreover, the practice of collective management differs in relation to the kind of work involved. In many situations, especially in the case of multimedia productions, the user has to clear the rights in relation to works which involve many different rights holders and many different rights. Hence, the user has to deal with several different bodies and different licence practices in order to acquire the necessary rights.

Moreover, **only some parts of the rights are issued by collecting societies, while others are still issued individually**. For example, in relation to the related rights of record producers, the right of making available applying to on-demand services is *not* administered collectively. The record producers' and performers' right to communicate to the public, by contrast, is managed collectively. Furthermore, in some Member States, such as Germany, the **rights to ringtones are simultaneously issued by the author and the collecting society, establishing a "double-licence" for the exploiting party**.

Under the current structure, the collecting societies manage the rights of their members, who are rights-holders from their own country. Additionally the repertoire of collecting societies includes works managed by virtue of bilateral reciprocal agreements with collecting societies from other countries. In relation to these works, the relevant rights holders are not members of the foreign collecting society and do not authorise them directly.

Most of these agreements provide for a limited territorial licensing authority, which means they limit the representation of each collecting society to the exploitation of works within the relevant territory. Hence, the collecting societies administer a wide repertoire of works, but may only manage this repertoire within their own territory.

Under this structure, the user has to seek authorisation from the collecting societies in each country where the rights are exploited. This requires a multitude of negotiations, which is time-consuming and costly. Moreover, the differences in the management of the collecting societies often oblige the user to comply with **different reporting formats**.

Taking into account the ubiquity and worldwide scope of distribution networks and the need for multi-licences, **some collecting societies have developed management systems for online exploitation** (*see Case study 15: Management systems for online exploitation on page 201*).

Altogether, under the current system collecting societies are mostly restricted to one class of work (e.g. music or movies or TV programmes), to a limited number of types of use and to one national territory only. Moreover, they mainly act as a national monopoly. According to some stakeholders, this current system can no longer satisfy the needs of users and rights-holders when it comes to online exploitation.

New technologies, especially Internet-based delivery solutions, have led to more cross-border activities of content providers. Hence, the commercial users are in need of multi-territorial licences. Under the current system, in most cases the rights have to be cleared on a territory-by-territory basis. As mentioned above, the Santiago Agreement and the Barcelona Agreement could not been renewed.

In any case, the clauses in these agreements providing that a content provider can only obtain a multi-territorial licence with the collecting society in the country where the provider has its residence would no longer be sustainable. This clause mirrors the one that the IFPI - when announcing the actual agreement - had to abolish in order to comply with the Commission's competition policy and obtain an exemption under EC competition rules[29]. These clauses restrict competition because they enable each collecting society to exercise a monopoly in relation to a group of users in their country.

It can be assumed that the absence of EU-wide copyright licences has been one factor that has made it difficult for new Internet-based services providers or mobile operators to develop their full potential and that services such as webcasting or on-demand downloads would benefit from the introduction of pan-European licences covering their activities throughout the EU.

Furthermore, one of the main reasons justifying national licensing systems is progressively fading away: In the long term deployment of DRM technologies should

enable collecting societies to monitor all relevant use of rights even outside their own territory.

Also from the point of view of rights holders, the introduction of DRM technologies suggests a review of existing rights management systems. Because those technologies allow for a far-reaching monitoring of online uses of protected works, rights holders are able to manage their rights or certain categories of rights individually.

Moreover, today collecting societies do not always distribute royalties directly to rights-holders whose works are exploited abroad. Some consider it would be beneficial to rights-holders if they were free to designate the collecting society on the basis of who provides the best service.

Commercial users are also in favour of more choice as to which collective rights manager can grant a licence.

Finally, in the digital environment, the co-existence of multiple societies for all different types of works could be an obstacle for an efficient clearing of rights for multimedia productions and other works involving several types of works and rights holders.

However, according to some collecting societies the problem with national collective management is overestimated. They observe that online retailers are mainly operating in one country only. Moreover, they consider the current network of reciprocal representation agreements as an effective system. Therefore they tent to think that no further regulation is necessary.

Nevertheless collecting societies are open to a dialogue with the European Commission in relation to options for improving the conditions of collective rights management as long the reciprocal agreement system is not put into question. In this context collecting societies stress that there have to be safeguards against dumping of valuable content and that open competition must not result in forum shopping.

Case study 15: Management systems for online exploitation

The **IFPI Simulcast Agreement** is the model agreement for record producers' societies, covering **neighbouring rights for the simulcast of music**.

Each collecting society that is party to the agreement enters into bilateral agreements with the other collecting societies providing that each society grants to the other societies the right to authorise simulcasting of sound recordings that belong to the repertoire of the other contracting party. Under the agreement, **each collecting society is allowed to grant multi-territorial licences to broadcasters wishing to transmit sound recordings simultaneously over the Internet and air-to-air channels**. Moreover, the contracting party may collect all licence fees and receive indemnification or damages for unauthorised simulcasts, and bring legal action for an illegal simulcast.

Also the Santiago Agreement covering the author's right of the public performance of music on the Internet and on similar networks, provides for a multi-territorial licensing system.

The agreement was concluded by the authors' societies BMI (United States of America), BUMA (Holland), GEMA (Germany), PRS (United Kingdom) and SACEM (France), and subsequently all collecting societies in the EEA (except the Portuguese society SPA), and SUISA (Switzerland) joined. Under this agreement, the collecting societies grant each other the right to license their repertoires on a worldwide basis to content providers.

However, the agreement was subject to a considerable limitation: each collecting society was only allowed to licence content providers with an actual or economic residence in its own territory. This system no longer applies, since the agreement expired at the end of 2004 and has not been renewed due to concerns of DG Competition. According to DG Competition analysis, the clause providing that a content provider can only obtain a multi-territorial licence with the collecting society in the country where the provider has its residence enable each collecting society to exercise a monopoly in relation to a group of users in their country, leading to competition restriction.

In relation to the reproduction rights of music compositions, the Barcelona Agreement entered into between the collecting societies that are members of the "Bureau international des sociétés gérant les droits d'enregistrement et de reproduction mécanique" (BIEM) provided for an similar system. This agreement expired at the end of 2004 as well and was not renewed.

Lessons from the case study

When it comes new media exploitation, some collective management societies are putting in place model agreements at national levels and also trying to cope with the inherent cross-border nature of online exploitation by setting up multi-territorial licensing systems.

EC recommendation on the management of online rights in musical works

The European Commission published in April 2004 the Communication to the Council and the European Parliament on the Management of Copyright and Related Rights in the Internal Market[30]. It describes the current situation in relation to the management of copyright and related rights in the European Union and presents a number of options for improving the conditions for developing Community-wide licensing of rights.

In May 2005 the European Commission adopted a recommendation on the management of online rights in musical works[31]. The recommendation puts forward measures for improving the EU-wide licensing of copyright for online music services.

Prior to the recommendation, stakeholders were consulted on three different options in order to improve the online licensing of music, which has been the object of an impact assessment by the Commission. The options considered were:

(1) do nothing;
(2) improve cooperation among collecting societies, allowing each society in the EU to grant an EU-wide licence covering the other societies' repertoires; or
(3) give rights holders the choice of appointing a collective rights manager for the online use of their musical works across the entire EU.

On this basis, the Commission recommends that the Member States take appropriate steps that rights-holders and commercial users of copyright-protected material should be given a choice as to their preferred model of licensing.

The recommendation proposes the elimination of territorial restrictions and customer allocation provisions in existing licensing contracts, while leaving rights-holders who do not wish to make use of these contracts the possibility to tender their repertoire for EU-wide direct licensing. Moreover, rights-holders should have the right to withdraw from existing agreements with collective rights managers and entrust their management, on a territorial scope of their choice, to a collective rights manager of their choice, *irrespective* of the Member State of residence of the collective rights manager or the rights holder.

The recommendation also includes provisions on the governance, transparency, dispute settlement and accountability of collective rights managers in order to enable all relevant stakeholders to make an informed decision as to the licensing model best suited to their needs.

Member States and collecting societies are to report back on the measures taken in this regard. The Commission intends to use the recommendation as an opportunity to monitor the market. If the measures taken by the Member States do not provide sufficient progress, the Commission will consider "the need for further action at Community level"[32].

Comments

In any event, the introduction of a multi-territorial system of collective copyright licensing for online music services will provide commercial users with greater certainty when clearing the rights for the online exploitation of music and encourage the development of new services. It remains, however, to be seen whether this recommendation, which is *not* binding, will be forceful enough to achieve all that is envisaged by the Commission.

Moreover, the scope of the Commission's initiative so far only covers the collective management of copyright and related rights for online *music* services. Even if music has been "the forefront of online development"[33], today the issue of multi-territorial licensing becomes relevant in *all* content sectors. Hence, it could be necessary to conduct further assessment in order to evaluate whether the scope of the Commission's activities should be expanded in the future.

3.1.4.4. Piracy and IPR-enforcement (3)

The persistence of piracy is seen by content players as the prime factor hindering the development of digital distribution markets. Therefore, the lack of efficient regulatory tools in European or national law to fight piracy is highlighted by stakeholders as the single biggest legal obstacle.

At present, DRM systems are used by most providers and distributors of digital content. This shows that such systems have become more accepted in the last years since the European Copyright Directive was passed. One reason for a wider acceptance is surely the fact that **legal protection of DRM systems has been included in most national laws, as a result of the implementation of the Copyright Directive**.

By this, **unlawful circumvention of DRM systems is illegal** and can be prosecuted by law.

Most players expressly appreciate the possibilities of copy protection and of limitation of piracy with view to the adaptation of new business models, whereas opinions diverge when it comes to the question of the sufficiency of DRM systems. Most stakeholders consider the current DRM systems as not yet sufficient and recognise that a 100 per cent guarantee of copy protection is not yet available. Hence, stakeholders call for more robust anti-piracy enforcement. In order to facilitate legitimate services, they would need clear signals that copyright abuse and unauthorised file sharing of copyright content is unacceptable and will not be tolerated.

Some stakeholders put forward the practical economic problem that the costs involved in installing, policing and controlling DRM systems (i.e., encryption costs/legal costs, etc.) are high compared to the costs incurred by someone who commits online piracy.

Moreover, the current practices of DRM use are to a certain extent heavily criticised by **consumer protection associations**. In their view, the use of DRM is likely to prevent customers from exercising statutory rights (e.g. 'fair use' exceptions), and currently used DRM systems even have the potential for hidden damage to consumers from a technical or data protection perspective. European consumer associations, therefore, have conducted various campaigns against certain aspects of DRM use and legislation (*see Case study 23: Music download and consumer rights in Norway on page 244*).

The most important issue in relation to the question of 'insufficiency' is the problem of enforcement of existing rules. Enforcement is mostly considered not to be effective at present, and a tighter criminal prosecution is asked for. Ineffective enforcement, in their view, is illustrated by operating peer-to-peer networks still providing illegal distribution of digital content. Any legal digital content distribution could not compete with such costless (illegal) distribution. Thus, for many stakeholders tighter criminal prosecution seems the only chance to combat online piracy. They suggest that the protagonists of illegal peer-to-peer networks and offline piracy should be prosecuted and private infringers at least threatened with such criminal prosecution. This is expected to deter the vast majority of users taking part in piracy activities and direct them to the existing legal business offers.

The European Commission has already taken the initiative of tackling the problem.

Enforcement Directive[34]

The Enforcement Directive (which had to be implemented by 29 April 2006) aims, as outlined in Article 1, to achieve an adequate level of protection within the European Union through presetting the measures and procedures necessary to ensure the enforcement of intellectual property rights. Such measures and procedures have to be sufficiently effective and dissuasive to avoid any barriers to legitimate trade.

The directive envisages **provisional measures** to preserve evidence (Article 7 (1), e.g., seizure of infringing goods), to prevent impending infringements and to forbid the continuation of such (e.g., interlocutory injunctions). An interlocutory injunction may also be issued against an intermediary whose services are being used by third parties to infringe intellectual property rights. Once an infringement has been judicially found, judicial authorities may, in terms of Article 10, order the recall or removal of infringing goods from the channels or the destruction of the goods. Moreover, according to Article 12 and Recital 25, judicial authorities may order pecuniary compensation instead of such measures only in the case of unintentional infringement and if the execution of such measures would constitute a disproportionate harm.

Furthermore, the directive provides for a broad **right of information** against infringers and persons who are involved in the infringement on a commercial scale, because they are found in possession of the infringing goods, to be using the infringing services, to be commercially providing such services or to be involved in the production, manufacture or distribution of such infringing goods or services (Article 8). The right of information encompasses information in regard to the persons being involved at different levels of the infringement procedure (producers, manufacturers, distributors) and in regard to the quantity and the price of the infringing goods or services.

Harmonisation is also strived for regarding **damages** and legal costs. Judicial authorities must be competent to grant damages to the injured party if the infringement is committed knowingly or with reasonable grounds to know (Article 13 (1)).

In contrast, in the case of negligence, it is left to the discretion of the Member States to equip judicial authorities with the competence to order the recovery of profits or the payment of damages (Article 13 (2)). The directive also envisages the approach for setting such damages (Article 13 (1)). It requires taking into consideration all aspects of the suffered prejudice, economic aspects such as lost and unfair profits, as well as non-economic (immaterial) factors such as reputation loss, etc. Alternatively, a lump sum on the basis of the amount of royalties or fees may be set. Finally, Article 14 requires Member States to adapt the general rule that reasonable and proportionate legal costs and other expenses incurred by the successful party must be paid for by the unsuccessful party (unless equity does not allow this).

The Enforcement Directive is generally appreciated, as it upgrades the position of rights-holders *by creating further rights* providing them with further legal means to combat piracy. Above all, the right of information in Article 8 is acclaimed and considered the most important provision of the directive.

First, such right constitutes an important step to combat against piracy, as it is crucial for the rights holders to be able to identify the direct and indirect infringers. This applies especially to the field of online piracy, where the identification of direct or indirect infringers is only possible through information claims against the ISPs. In this respect, it can be recorded that the directive took an important step forward to relieve the initiation of prosecution procedures. Identifying the potential infringer makes it possible for the rights holder to file an action. Especially for the phonogram producer industry, this provision abolishes a major annoyance in fighting against infringements through peer-to-peer networks.

Second, the inclusion of such provision is welcomed because it will harmonise the current legal landscape with respect to such information claims. The existing legal framework in this regard is considered as not sufficiently consistent. For example, in Germany, there are no such information obligations under civil law for access providers to identify their customers as direct infringers. Only the state prosecuting attorneys have the right to demand such information under criminal law. So the enforcement of information claims are not in the hands of the rights holders themselves, which makes prosecution less effective and creates a bottleneck at state authorities, which generally do not have the resources to tackle the mass problem of Internet piracy.

In regard to damages, rights-holders would prefer having the possibility to claim a multiple sum of the amount of royalties which would have been paid for by the infringer if he/she had been granted authorisation to use the intellectual property right. Only this would be a satisfactory deterrent, in their view.

European Commission proposal on criminal law provisions to combat intellectual property offences

Harmonisation on the criminal prosecution level is now focused on in the European Commission proposal on criminal law provisions to combat intellectual property offences. This proposal for a directive was adopted by the European Commission on 26 April 2006, amending the proposal of 12 July 2005.

The proposal aims to bring national criminal law into line and to improve European cooperation in order to deal effectively with counterfeiting and piracy activities. According to the proposal, intentional infringements of an intellectual property right on a commercial scale and attempting, aiding or abetting and inciting such infringements are treated as criminal offences. Member States must provide for criminal penalties of at least four years' imprisonment and an applicable fine of at least EUR 100,000 to EUR 300,000 for cases involving criminal organisations or posing a risk to public health and safety. The proposal permits Member States to apply stronger penalties.

Set into relation with the given statements, the proposal must be deemed the right path to go. Only with the aimed approximation of the Member States' criminal prosecution in the field of intellectual property rights can business restraint due to legal insecurity be eliminated.

The Film Online Charter

Moreover, with regard to the combat of piracy a set of best practices in terms of an improved cooperation between industries has developed which is taken up and promoted by the "European Charter for the Development and the Take-up of Film Online"[35] (*see Case study 16: The film online charter on page 205*)

3.1.4.5. DRM related issues (5.5)

In view of technical means to prevent piracy, it is common opinion that DRM systems are the important driver for a broader distribution of digital content and new electronic business models. This emphasises the importance of analysing the legal inhibitions that are experienced by stakeholders in regard to DRM systems.

Problem of DRM technology licensing and interoperability (1.6, 5.5)

According to many stakeholders, the problem of the insufficiency of DRM systems often relates to the question of compatibility and interoperability of such systems. The fact is that different content providers use different DRM systems, by which they create a situation where digital services and devices do not interoperate and therefore hinder the future development of new digital business formats, especially within the music and film market, where DRM is particularly applied. The lacking compatibility between DRM systems is therefore considered by many stakeholders to be a major inhibition of further development in the digital environment. This confirms the assumption and findings of the **High Level Group on DRM** of 2004[36].

In relation to the interoperability problem, some stakeholders refer to the case of Apple (*see Case study 17: Access to Apple's FairPlay DRM below*).

Consumer-related concerns with DRM

Stakeholders consider the problem of interoperability to be an important factor

Case study 16: The Film Online Charter

A severe and effective system of copyright protection is largely considered indispensable for the success of the business models linked to online film distribution.

In this regard, the Film Online Charter has to be mentioned, a campaign initiated by the European Commission, aiming at facilitating the emergence and development of a legal film online market. Representatives of the IT sector and the film industry of both Europe and the US signed the Charter in May 2006. The bigger picture of the introduction and development of 'Film Online' to offer a greater chance for the distribution of European movie, to contribute to a dynamic and competitive movie creating industry and to promote the further development of broadband distribution within Europe.

Therefore, the Charter addresses the question of how to make a legal offer to download films attractive to consumers and of how to effectively fight Internet piracy. It is considered to be necessary to raise stronger awareness among the public about the value of copyright. The Charter lays down examples of recommendable practices in this respect.

In relation to the above-mentioned demand for tighter prosecution, the Charter suggests a closer cooperation between producers and ISPs in fighting piracy, especially regarding illegal up- and downloading.

The Charter further lays down requirements that have to be fulfilled before online film services can be realised by content providers and infrastructure operators.

Lessons from the case study

We consider the Film Online Charter to be an important step in the direction of digital content business in Europe. The Charter will facilitate both access and distribution of European films within the European and world markets. Similar initiatives at national levels indicate that the charter model is appreciate by stakeholder (see, inter alia, the Music Charter signed in France in December 2004 under the auspices of the Ministry of culture, by representatives of content and IT industries.)

Case study 17: Access to Apple's FairPlay DRM

In relation to the interoperability problem, some stakeholders refer to the case of Apple. Apple does not license its DRM system Fairplay to third parties. Thus, consumers cannot download content data onto their iPods directly from other online retailer than Apple's i-tunes. According to some stakeholders (consumer associations, music publishers, independent online retailers), this creates consumer inconvenience.

In this context, on 28th June 2004, the Conseil de la concurrence received a complaint from the Virgin Mega regarding practices by the company Apple Computer France, along with a request for interim measures[37]. Virgin Mega asked to oblige Apple to license its DRM system on fair and reasonable terms to anyone interested in the system. The Conseil de la Concurrence dismissed the referral, arguing that due to insufficient evidence access to the Fairplay DRM is not essential for the development of legal online music download platforms and that customers of Virgin Mega services could bypass the DRM protection through burning a CD and re-transferring the track to the iTunes library.

However, as the case was not a law suit its value as a precedent is limited. Moreover, Apple had hardly started business in France at the time of the decision, and the digital music distribution was a very native market.

causing a restrictive attitude and frustration of consumers, because they are confronted with many different and complex DRM systems, which makes them insecure about which devices work together and which do not. Often consumers are not yet equipped with all the devices needed to utilise services offered through DRM systems. **Customers would be "locked"** in a particular DRM scheme after they have decided in favour of one device, or they would need to download special software each time they want to access content. Primarily, this would put a heavy burden on consumers in terms of time and money. Thus, according to some stakeholders, demand for digital content, and consequently any further success, is hampered.

These findings correspond with the Report on DRM and Consumer Acceptability by the INDICARE project (supported by EC)[38]. The biggest challenge for DRM technologies is therefore seen in making them operate smoothly enough that they are largely invisible to consumers. Consumers must be able to use the devices they chose with different services without any further modification or adaptation. DRM systems need to be sufficiently open to ensure interoperability and accessibility and flexible to facilitate the use of different business models. In this regard, the introduction of a standardised DRM system would be highly appreciated by most respondents, primarily those with lower market power.

In contrast, respondents with higher market power, e.g. music majors, do not take position in this regard. They stress that any future legislation should not prevent the rights-holders from using technology to serve the relevant markets. Stakeholders complain that such major companies would profit from incompatibility and would use DRM practically as a "weapon" against market rivals. They underline that it would be technically feasible to produce a player that is compatible with all music file formats, but industry (i.e., market players) would prevent this from happening. This is considered problematic because DRM systems aim to protect copyright works against infringements, and not to empower market positions. It is claimed that such issues could so far only be addressed by competition law.

Finally, stake-holder consultation shows that there is need for such standardisation/ interoperability in view of the desired opening-up of the digital content market. Stakeholders suggest that the distribution of digital content and equipment should not remain in the hands of only a few major companies, as this would restrict, if not lock up, the whole digital content market. Solutions are therefore seen in the introduction of a DRM standard form.

The responses show that non-interoperability and incompatibility are a problem to be resolved in the future in order to activate free development within the digital market.

Initiatives from the European Commission and Member States

The problem of incompatibility and non-interoperability has been recognised at the European level.

In particular, it was intensively worked on by the EU **High Level Group on Digital Rights Management** in 2004. The High Level Group also defined a near universal interoperability as needed to produce mass market benefits in the sector. Both commercial and technical concerns have turned out to be the reasons for lacking interoperability. The HLG further concluded that for the achievement of a comprehensive interoperability the adoption of internationally defined standards is needed. Thus, at least one technology should be supported in most devices.

As further presented by the High Level Group, different forms of standards exist, basically open standards, proprietary standards and de-facto standards. Open standards are preferred by most stakeholders because they are publicly available and applicable, and therefore would increase compatibility between various components and platforms.

However, the future task in this regard will be to further examine the technical possibilities for such standardisation and initiate exchange between the stakeholders, before creating any legal framework.

Examples of cross-industry standardisation initiatives such as OMA, MPEG and DVB, enabling larger corporations to seamlessly align internal workflow with external networks, can serve as guidelines and best practices for this.

Furthermore, the **Copyright Directive already addresses the question of interoperability** in terms of Recital 54, requiring that "compatibility and interoperability of different systems should be encouraged" and stating that "it would be highly desirable to encourage the development of global systems" (of standardisation). Recital 48 states that DRM systems should not inhibit "the normal operation of electronic equipment and its technological

development". The directive does not provide for any standardisation of DRM systems at the EU level, but addresses the Member States; they are instructed to consider compatibility, interoperability and standardisation issues when implementing the directive.

So far, none of the Members States has addressed the question of DRM interoperability in its laws. Thus, France has been the present focus regarding the question of a regulatory approach to address the issue of DRM interoperability, since France has recently implemented the Copyright Directive into the French Copyright Act (DADVSI)[39].

In regard to the issue at hand, the draft – aiming at opening up the market for digital music - originally arranged for a broad DRM-interoperability provision[40]. DRM developing or providing companies would have been required to provide all technical information necessary for the seamless interplay of different systems and playback devices to any rival that wants to offer compatible music players and online stores. In short, DRM technology providers would have been *forced* to interoperate with each other by handing over exclusive copy-protection technologies.

Whereas some stakeholders were in favour of such regulation, others criticised that such a bill would not require DRM technology vendors to provide their own interoperability features, but would give anyone with a proprietary playback technology the right to demand that major companies provide "interoperability" with it.

After several modifying proposals, the interoperability clause has been extensively restricted by the French Senate. The compromise final bill declares that **companies should share the technical data essential to interoperability**. Upon request of technology or service providers, a company having rights on a DRM technology should release the technical documentations and programme interfaces necessary to allow a technical system to get access to DRM protected work. In case of refusal, the interested company can approach the "Regulatory authority for technical measures", consisting in representatives from different institutions. This authority will decide on the conditions under which the interested company will get access to the technical documentations and programme interfaces In this context, DRM developer may prevent the publication of source codes of interoperable systems (based on the disclosed information), if he demonstrate that such release would undermine the security or efficiency of the DRM systems. The companies getting access to technical documentations and programme interfaces will have to pay for the provision of this information, obtain licences from the DRM producers and also respect the integrity of the technical measures.

Finally the French Constitutional Council has declared major aspects of the law unconstitutional[41]. In particular it withdrew the interoperability from the DRM circumventions exceptions because it considered the law did not define "interoperability" properly. Moreover, the Constitutional Council said that a company could not be forced to share the technical data essential to interoperability without compensation.

3.1.4.6. Copyright levies and private copy (1.2)

Some stakeholders (mainly consumer associations, consumer electronics manufacturers and content providers) are concerned about the current situation on the European market in relation to copyright levies.

They observe that copyright levies are applied to more and more digital equipment and media. Moreover, there is much dissatisfaction about the fact that the availability and the degree of use of DRM technologies is generally not taken into account in the application of copyright levies. They argue that there is a risk of 'double payment' for making private copies: consumers pay for permission to copy at the time of download, and are charged again in the purchase price of devices used to play the content. Moreover, copyright levies are often due although a work is fully copy-protected. Some stakeholders also complain about a lack of transparency in the application of copyright levies and determination of their rates, making it difficult to calculate the prices of the relevant equipment and media. Finally, it is argued that levies are charged at disproportionate rates to the price of the equipment.

These distortions are regarded as an impediment to the sales of digital equipment and the distribution of new media services. This can especially undermine consumer acceptance of DRM-enabled content delivery. This creates a complex and unclear legal situation, especially when planning cross-national business models.

Collecting societies and some associations representing authors and other individual rights-holders, however, wish to maintain levies as a source of revenue. They consider copyright levies to be indispensable to guarantee the authors' reward vis-à-vis massive private copying. In their view DRMs and private copy schemes are complementary systems, because DRM are not sufficiently secure and not applied comprehensively. According to collecting societies, especially smaller and less successful rights-holders rely on levies as part of their income.

Legal Background

As a means of compensating copyright owners for legitimate private copying, most European Member States impose copyright levies. These are generally paid to collecting societies which in most countries also set the rates for the levies. These levy systems were justified on the basis that there was **no effective means to monitor and license acts of private copying**, hence as a remuneration of unlicensed but legitimate acts of copying.

Before the advent of copy-protection technology they were applied to analogue equipment and media used to copy copyright works. Now private copying takes place largely on digital devices, and copyright levies are now increasingly applied to digital equipment and media, too. However, DRM and TPM technologies are largely available and allow for digital solutions to license rights and authorise copies individually or prevent unlicensed use. In this event, there is no need for an alternative remuneration scheme.

Article 5 (2) (b) of the Copyright Directive provides that Member States may choose whether to introduce an exception for private copying. It allows the Member States discretion on the system of fair compensation for private copies. However, when fair compensation is required according to Recitals 38 of the directive, due account should be taken of the differences between the digital and analogue private copying. Moreover, Article 5 (2) (b) and Recitals 35 provide that one of the factors that have to be taken into account is the degree of use of technological protection measures. The object is that fair compensation levels will be reduced as the use of technological protection measures increases.

Implementation in the EU Member States

While some of the Member States have not yet implemented the relevant provisions of the Copyright Directive, altogether there are divergent policies amongst Member States on the whole issue of private copying and fair compensation.

Most copyright acts do not provide for a comprehensive system in relation to the application of copyright levies. Instead, collecting societies are in most cases empowered to set the tariffs without any detailed guidelines.

There are considerable differences with respect to the equipment or media on which copyright levies are due. Moreover, in many countries there are still no significant differences between digital and analogue copying. Finally, the copyright levy systems of the different Member States generally do not take sufficiently into account the availability and use of DRM and TPM. Even if the laws reflect the application of DRM or TPM in relation to levies, they give no details about the application in practice. Hence, it is not clear at all how copyright levies should be calculated when DRM or TPM are available or applied. Altogether, it does not appear that the provisions of the directive are realised in practice.

Initiatives of the European Commission

A copyright levy reform is included in the Commission Work Programme for 2006. Already in October 2004, the Commission consulted Member States on the scope of the private copying exception and existing systems of remuneration.

The Commission "concluded that there is no common ground amongst Member States on the interpretation of the relevant provisions of Directive 2001/29 (Article 5 (2) (b)) and the extension to digital media and equipment. The consultation also revealed that levies are unequally applied in terms of the equipment, media and the amounts across Member States and that there is a lack of transparency in relation to the collection and distribution. The availability and use of digital rights management technologies have not had an impact on Member States' policy"[42].

In order to harmonise the levy systems throughout Europe, the European Commission is preparing a recommendation on copyright levies in the information society. In this context, the Commission has launched a public consultation with a questionnaire on 'Copyright levies in a converging world' in 2006.

Comments

The above-summarised stakeholder positions are in line with the Commission's findings. Stakeholders call for a consistent system of copyright levies adjusted to the reality of the digital market.

In any event, further guidance from the Commission seems necessary. Only further action on the European level will ensure a uniform approach towards the issue of copyright levies throughout the EU.

The purpose of such guidelines should be to indicate in detail how the availability and degree of use of DRM or TPM technologies have to be reflected when setting the rates of copyright levies. However, in this connection further research on the actual relevance of DRM and TPM will be necessary. If possible, the guidelines provided by the Commission should express in figures the relation between the use of DRM and the corresponding reduction in the rates of copyright levies.

3.1.4.7. Non-exploitation of rights and bundling of rights (2.3, 2.4)

In the TV/Movie sector one of the major constraints regarding the exploitation of digital content seems to be the access to valuable content under appropriate conditions. Especially in the field of new media, certain types of content are of essential importance for the establishment of new platforms (premium content such movies and sports). Most of the interviewees say that this kind of content is hardly offered (especially sports) or is often offered at 'unrealistic' prices. They give different reasons for this phenomenon.

In many cases, all rights (including so-called new media rights) are – sometimes historically - bought exclusively by one company for a given territory, which is not willing to sublicense rights for use on the Internet or via mobile devices (2.3). For example, network operators complain that it is difficult to reach contractual agreements with broadcasters regarding the acquisition of the content they produce or control. While some companies only purchase those rights they actually use, others seem to use the acquisition of rights as a means to prevent third parties from exploiting them on competing platforms, without actually exploiting the rights themselves (2.4).

Many respondents observe that some right holders tend to hold back rights for new media, especially because of inexperienced distribution or communication channels. The reason behind this seems to be that they are not yet able to determine and negotiate the real financial implications of these new communication channels. They try to hold back the rights until the markets have actually developed and the chances for higher revenues become more measurable. According to some stakeholders new distribution channels do not seem to bring any added value yet (2.1, 2.2).

When asked for remedies, the above-mentioned decisions of the EU Commission on sports rights (dealing, inter alia, with separating exploitation rights into several packages and the general obligation to exploit those rights), are generally appreciated as an improvement for competition and the development of new media markets.

The following analysis gives an overview of legal systems in individual European countries which provide regulation remedies in case rights are not exploited (termination of contracts in the event of non-exploitation of rights; automatic devolution of exploitation rights) and other systems in order to prevent the bundling of rights (regulation on minimum terms of trade).

Termination of contracts in the event of non-exploitation of rights (2.4)

Many copyright laws of European Member States provide the possibility to terminate an agreement if the licensee does not exploit the transferred rights after some time. These provisions are generally based on the principle that the licensee has an obligation to exploit the assigned rights in accordance with a common trade practice.

In France, there are two relevant provisions in this context which however apply to very limited cases – book publishing and performance of theatre play. Article L.132-17 (2) of the French CPI (Code de la propriété intellectuelle) states that publishing agreements can be terminated upon formal notice by the author setting a reasonable deadline if the publisher has not proceeded to the publication of the work. Article L.132-19 CPI provides, with regard to performance agreements, that the agreement terminates automatically in the event of interruption of performance for two consecutive years.

Italian copyright law allows the termination of publishing agreements, as well as agreements related to newspaper and magazine articles and to audiovisual works, for non-exploitation of rights.

In Luxembourg, Spain, Portugal, Finland and Sweden too, copyright law provides a possibility of termination of publishing agreements for non-exploitation; a similar provision can be found in the German Law on Publishing Agreements (*Verlagsgesetz*).

The above mentioned provisions following a traditional approach in Continental European Law to specially protect the relationship between an author and his publisher (which was said to be not only of a commercial, but also "personal" nature; as a consequence, authors needed increased protection in relation to their work and its publication).

Some European Member States have introduced more general rules on the termination of copyright licence agreements for non-exploitation, which are not restricted to special types of agreements. In this respect, Danish copyright law and the Greek Copyright Act allow the author to terminate the agreement if the licensee has not exploited the rights appropriately.

Under section 29 of the Austrian Copyright Act, the author has the right to terminate a licence agreement in the event of non-exploitation or inadequate exploitation, provided that the non-exploitation causes serious damage to the author's legitimate interests. However, before the author can exercise this termination right, he must set a reasonable extension of time by explicit notification to the licensee.

A similar right is provided to the author in Germany. According to section 41 of the German Copyright Act, the author is entitled to revoke an exclusive licence if the exploitation right is not sufficiently exploited, provided that the non-exploitation conflicts with legitimate interests of the author. The right to revoke an exclusive licence can only be exercised two years after the date the licence was granted and does not apply to cinematographic works.

Summarising, it can be noted that many European Member States provide legal regulations for cases in which rights on certain types of works are not exploited. This kind of regulation is characterised by a right of the relevant author to terminate the licence.

However, it has been pointed out by most of the interviewees representing interests of authors and/or production companies that this solution is irrelevant and ineffective in practice because such a right still requires an act of reclamation. It is considered unlikely for a rights-holder (an author or a production company) to sue its licensee, which is in most of the cases a broadcaster or similar media company, and risk losing future business opportunities.

Therefore, some rights-holders stated that, overall, these possibilities for the termination of an agreement cannot ensure in practice that rights for new media are made available on a larger scale.

Suggested legal remedy: automatic devolution of exploitation rights

Considering the limitations and the ineffectiveness of a right to terminate an agreement if the relevant right is not exploited, some stake-holders suggest a system providing for an *automatic* devolution of the unexploited right.

A system of automatic devolution of rights with the consequence that the licensee is no longer entitled to exploit the rights after the moment of devolution, is not provided by any European Member State. On a European level, only the decisions of the Commission on the joint selling of media rights for football may be related to such a devolution concept. It provides that in the event the exploitation rights which the leagues exercise exclusively vis-à-vis the clubs remain unsold or unexploited, home clubs are given the opportunity to market these rights on a non-exclusive basis simultaneously. A similar system of parallel exploitation is included in the Channel 4 Commissioning Agreement (*see Case study 18: Parallel exploitation on page 211*).

Pros and cons of automatic devolution

The question of whether such a system of automatic devolution of rights in the event of non-exploitation should be established is obviously very complex and sensitive. While some of the stakeholders (mainly producers) appreciated the idea, others (mainly broadcasters) rejected the proposal and considered it to be counterproductive.

One argument against an automatic devolution of rights is that it would make a defined exploitation strategy impossible, because the licensee would always be forced to exploit all rights at once. However, it would be justified for the investor, who bears the financial risk, to be permitted to entirely control the distribution strategy in order to maximise the returns so as to recoup the investment.

The question whether and to what extent non-exploitation of content may legitimately

Case study 18: Parallel exploitation (Channel 4 PACT)

UK-based broadcaster Channel 4 Television agreed with PACT – the UK trade body for independent producers - on a system of parallel exploitation in case exclusive rights remain unexploited. This applies in respect of "Interactive Rights", which are defined as "Interactive Television Rights, Mobile Technology Rights, Premium Rate Telephone Line Rights, Secondary On-line Rights and Teletext Rights and all future rights of a similar and/or analogous nature hereinafter invented". The **Channel 4 Commissioning Agreement** provides under section 18 (e) that in the event that Channel 4 does not undertake any exploitation of any one of these "Interactive Rights", at the producer's further request, the unexploited exclusive licence is converted automatically after a specific time period into a non-exclusive licence.

As a consequence, the former licensor is – in addition to his licensee - also entitled to grant the unexploited rights to third parties on a non-exclusive basis. Nevertheless, the producer has to inform and consult with Channel 4 on how he intends to exploit these rights. Moreover, the licensor is obliged, according to section 18 (e) of the Commissioning Agreement, to share the revenues generated with the third party with his former exclusive licensee.

be an essential part of the business policy of companies seems to be the core of the matter.

Some interviewees pointed out that such a system of devolution of rights would constitute a significant interference with the freedom of contract. Moreover, any restriction of exclusivity would make the licences less valuable. In this regard, a system of automatic devolution of rights would not strengthen the producers' position on the market in the first place because this system is not based on the assumption that the other contracting party (the broadcaster) has to pay additional fees for the use of new media rights.

However, the supporters of such a system claim that it would help to make the rights holders start using new forms of exploitation in the first place. In addition, it would strengthen the bargaining position of authors and producers to a certain extent. However, the producers' advantages of such a system are limited because they might not be in a position to calculate the devolution of rights in advance. Moreover, there is a risk that the rights are only being returned back to the producer once they have lost their value.

In order to find a compromise, some stakeholders suggest that such a system of automatic devolution of rights should provide financial compensation for those who have financed the content in the event the new media rights are licensed to a third party. Another proposal is to limit the automatic devolution to situations where the licensee really does not use the acquired rights and where this would amount to a market failure. In all other events, this question should be left to the contracting parties to negotiate.

In any event it would be necessary to conduct a comprehensive impact assessment of the suggested automatic devolution of exploitation rights.

Regulation on minimum terms of trade

Another approach to overcome the non-exploitation problem could be a regulatory framework in relation to the contractual relationship between rights holders and companies exploiting the content that clearly defines the segmentation of rights in order to achieve a de-bundling of rights (*see Case study 19 on UK codes of practice on page 212*).

3.1.4.8. Territoriality of copyright protection (2.7)

Due to the territorial nature of intellectual property protection in general and copyright in particular, rights holders usually enjoy a bundle of national rights. Concerning the question as to which country's law applies to transnational cases, the law of the country in which protection is claimed governs the issues of first ownership, transfer of rights, scope of protection and the term of protection. In relation to acts of exploitation, the law of the place of exploitation and/or infringement is applicable.

As digital transmission increases the possibilities to exploit and access works and other subject matter across national borders, service providers more and more often face situations where a multitude of laws apply simultaneously. In the event of a European-wide distribution, for example, all 25 national copyright laws have to be respected.

According to some stakeholders, this constitutes an obstacle to the establishment of transnational services.

In order to avoid the conflict between the territoriality of copyright and the worldwide accessibility, many stakeholders use IP geolocation technologies. Due to IP geolocation, the exploitation of content via the Internet is limitable to a specific territory. Hence, they are not prevented from distributing content via the Internet because they continue to exploit their rights on a territorial basis.

However, some stakeholders bring up the argument that in the digital world the concept of 'territoriality' is itself suspect, because the essence of online services

Case study 19: UK codes of practice

Apart from the decisions of the Commission on football, the regulatory framework in the UK provides rules regarding the de-bundling of rights on audiovisual content.

With regard to the broadcasting market, independent production companies were traditionally in a weak position to negotiate with broadcasters, who often demand a comprehensive transfer of rights, including secondary rights, ("total buy-out") in return for financing the production. Due to concerns that these practices were impeding the growth and creativity of the independent sector, the Independent Television Commission (ITC, now merged into Ofcom) reviewed the UK programme supply market and made a number of recommendations. In conjunction with the ITC's Programme Supply Review and the subsequent passing of the British Communications Act in June 2003, Ofcom was established to regulate the UK communications industries, having been provided with responsibilities across television, radio, telecommunications and wireless communications services.

Under **section 285 of the Communications Act 2003**, every licensed public service broadcaster channel (which, in ITC terminology, comprises commercial broadcasters like ITV, Channel 4 and Five) is required to draw up, maintain and comply with codes of practice, governing the commissioning of independent productions by the broadcaster, which have to be approved by Ofcom. Accordingly, Ofcom published in 2003 a set of guidelines for broadcasters to draft these codes of practice.

The **minimum trading conditions** laid down in the broadcasters' codes of practice shall be based on the principle that the rights to a programme belong to the producer unless explicitly acquired by the broadcaster. The broadcaster has to define clearly which primary rights are to be included in the minimum package that the broadcaster requires. These rights generally cover an exclusive licence for a fixed number of transmissions in the UK television market for a period of **no more than five years**.

Moreover, the broadcaster has an option to renew this exclusive licence for a further period on an agreed basis. To exercise the option, a payment would be made to the producer.

The remaining rights are grouped into a **separate package of secondary rights** which primarily remain with the producer. The broadcasters have to negotiate these packages *separately* and transparently and have to offer **separate prices** in respect of the different categories of rights. In any event, there should be no bundling of these right packages.

The package of *primary* rights that the broadcasters acquire may also include certain new media rights which are linked to the broadcast, including the **right to simulcast the programme on the Internet** and rights in relation to interactive and on-line applications like the use of extracts of the programme on any Web sites. Where such rights are not included in a primary 'bundle', broadcasters may impose a holdback in the use or sale of rights for exploitation over other media, in order to protect the value of at least the initial broadcasts on television networks.

In addition to the principle that there should be no bundling of rights, another core principle concerns the amount to be paid in respect of the primary rights: the broadcasters should pay the full production cost for the package of primary rights. In relation to the value of secondary rights, **Ofcom recommends revenue sharing as appropriate**.

Lessons from the case study

In the meantime, all licensed public service broadcasters have established codes of practice approved by Ofcom. These codes of practice serve as the framework substantiated by a comprehensive set of terms of trade, which have been published separately by each broadcaster in consultation with the Independent Producer's Alliance for Cinema and Television (PACT).

As a result of this regulation, the producer withholds primarily an essential amount of rights to its productions. Broadcasters are no longer able to insist that independent producers assign secondary rights in return for programme funding. Thus, independent producers can license these rights to different parties. Under this system, they are able to exploit secondary revenue streams separately from the primary broadcasting fees, particularly in new media. At the same time, there is no reduction of the fees that the producer is guaranteed. Moreover, the need for separate negotiations on secondary rights under this system will bring forth the establishment of a fair market value of secondary rights.

is to allow the dissemination across traditional geographical boundaries.

This issue can be ranged within the challenges that are addressed by the European Commission in the framework of its "i2010 – A European Information Society for growth and employment"[43]. Its first pillar proposes "the completion of a **Single European Information Space** which promotes an open and competitive internal market for information society and media" as one of the three priorities for Europe's information society and media policies.

Country-of-origin/country-of-transmission principle

As a solution to the afore-mentioned problems, some stakeholders, including representatives of broadcasters, suggest that **the country-of-origin principle should be considered for online services, along the lines of the Cable and Satellite Directive**[44].

Art.1 (2) (b) of the directive reads: *'The act of communication to the public by satellite occurs solely in the Member State where, under the control and responsibility of the broadcasting organization, the programme-carrying signals are introduced into an uninterrupted chain of communication leading to the satellite and down towards the earth'* Thus, the cross-border exploitation of programmes via satellites and the cable-retransmission of programmes is subject to the country-of-transmission principle, which means that it is only subject to the jurisdiction of the Member State from which the programme signal is being transmitted to the satellite and generally governed by the law of the country of transmission.

Stakeholders in favour of the application of the country-of-origin principle to copyright argue that it is necessary to ensure legal certainty, practicability and coherence regarding the applicable law.

They consider that, in particular, Internet streaming/simulcasting is comparable to the case of satellite broadcasting. Therefore, the applicable law should only be that of the country where the act of streaming/simulcasting takes place (as opposed to where the programmes can be received, i.e., in principle all the countries in the world). But the same should also apply with regard to the right of making available. They argue that there is again only one relevant act of exploitation by the broadcaster, taking place in one particular country.

Comments

The rules laid down in the Cable and Satellite directive are not transferable as such to online services.

An analogy is not possible because we do not have comparable circumstances. The country-of-transmission principle was introduced in the Cable and Satellite directive in view of a minimal overspill that could not be avoided. With online services, by contrast, the issue is precisely the worldwide accessibility.

In addition, the introduction of the country-of-origin or country-of-transmission principle would not per se entail simplification.

First of all, the user could no longer rely on the applicability of his national copyright law in relation to his activities on the Internet. He would have to find out for each act of download, etc., where the material originates from. Moreover, he would have to comply with foreign copyright law. Depending on the country of origin, the loading and any further use would be either permitted or prohibited. Such legal uncertainty is not acceptable from the user's perspective.

Moreover, due to the rules of international competence, in most legal proceedings concerning transnational cases of copyright infringement a court in a country different from the country of origin will have jurisdiction. Hence, in the event the applicable law is determined by the country-of-origin principle, the competent court would always have to apply foreign law, which will definitely not simplify the situation but, on the contrary, give rise to more important problems.

Furthermore, difficulties in locating the origin of the relevant act of digital transmission would arise. This will lead to uncertainties as to which law applies. In the case of satellite broadcasting, the only applicable law is that of the country where the physical act of broadcasting originates, i.e., from where the programme-carrying signals are transmitted towards the satellite. However the Internet is not a structured network, and the location of the relevant operator is more difficult.

Moreover, stakeholders mention a risk of devaluation of copyright if a single tariff and licence were to apply to the whole of the Internal Market.

Finally, the European Commission found already in its "Follow-up to the Green Paper on Copyright and Related Rights in the Information Society"[45] that it was preferable to keep the existing regimes, although this means in many cases the application of a number of different national laws to an act of exploitation. Therefore, the county-of-origin principle has deliberately not been introduced in the Copyright Directive.

To conclude, before approaching the issue of introducing the principle of origin, further analysis will be necessary. It has to be worked out in relation to which matters (initial ownership, scope and term of protection, transfer of rights, infringements,

etc.) the principle of origin should be applied. Moreover, a detailed impact assessment of the practical consequences in view of the aforementioned problems seems necessary.

Altogether, in order to facilitate the often complex legal situation, a further harmonisation of substantive copyright law – especially in relation to the exceptions to copyright – seems to be a more comprehensive solution.

3.1.5 Regulatory issues

3.1.5.1. Regulation of non linear audiovisual service: proposed Audiovisual Media Services (AMS) Directive

This section briefly summarises the stakeholders' positions regarding the proposed AMS Directive amending the TWF Directive[46]. When adopted by the European Parliament and Council, the new Directive should enter into force in 2009.

The positions expressed by stakeholders in this survey are mostly in line with the concerns already expressed in the Commission public consultation of July 2005[47] and reflected in the Commission Staff's Impact assessment[48].

The respondent did not generally question the potential benefits yielded by an **increase of consumer confidence** in the digital arena. Some stakeholders, such as free-to-air commercial broadcasters, pay TV operators, IPTV operators and non-linear VoD operators will have to tailor their business model to the coordinated regulatory framework in respect of, inter alia, the protection of minors, identification rules, restrictions on certain products for commercial communications for non-linear services as well as linear service commercial communications. A number of stakeholders believe that the AMS Directive is likely to bring about certain improvements, because the TWF Directive has significantly contributed to the development of a European audiovisual area and that with respect to new audiovisual media services the proposed AMS Directive will do so, too, because of its similar regulatory approach.

However a number of stake-holders – in line with the outcome of the above mentioned public consultation of July 2005 - clearly stated that some aspects of the proposed Directive could *inhibit* the development of new media audiovisual services. There is no general consensus on a technology-neutral approach according to which a future AMS Directive would cover both linear and non-linear audiovisual media services. Some stakeholders consider the proposed regulation, lack of legal certainty or that lack of consistency between the Directive and national regulations could become a barrier to further investments in the development of new digital content services.

1. **The definition of audiovisual services and line of separation** between linear and non-linear services seems to be the crucial question as to whether the further development of non-linear services would be significantly affected by new rules.
2. Non-linear digital content developments could be affected by the **rules of the AMS Directive on audiovisual commercial communications** which aim at protecting minors and consumers.
3. Some stakeholders raised some **potential inconsistencies** and potential legal uncertainty as a result of the scope of application of the various directives applying to online services and the corresponding national implementing measures, e.g. regarding the scope of application of the **country-of-origin principle**.
4. Some stakeholders addressed a **lack of legal certainty regarding the application of the national substantive law**. Reference was made to certain specific services (e.g., mobile applications, IPTV).
5. As for **procedural aspects**, some legal uncertainty is feared by some stakeholders due to the existence of a variety of potentially competent authorities with respect to the granting of permissions that are required for the provision of certain services.

3.1.5.2. Access to platforms (5.1)

Preliminary remark

As regards Access to platforms the main concerns expressed by the stakeholders are on hand the problem of Market power of vertically integrated organisations, the fear of content providers that network operators will not be interested in circulating their content and the fear that network operators could have a monopoly on contact to end customers.

On the other hand network operators state that it will be difficult to obtain valuable content and so-called premium content.

Therefore the goal of a legal framework should be to balance the interests of both groups to ensure sustainable and balanced market uptake.

In this context it will be shown that the Access Directive and the Framework Directive essentially deal with electronic communications networks and electronic

communications services. They do not, however, regulate the circulation of content via communications networks, such as radio content or financial services.

Definitions

Before a discussion concerning access to platforms can take place, it is necessary to define the term "communication platform" in more detail. There are a great number of possible definitions. According to a broad definition, the term "communication platform" would include all types of conceivable places at which it is possible to provide content to a user. Narrowly defined, the term "communication platform" would be equivalent to the term "network" or might even apply only to individual parts of such a network.

In the framework of this legal examination, the term "communication platform" is understood to mean a technical platform serving to distribute content. This also conforms to the assessment of the interviewed organisations for whom, above all, the transmission and distribution of contents have priority. Virtual marketplaces, such as B2B or B2C marketplaces, are not included in this definition.

On the basis of these differences, it already becomes apparent that any possible new legal framework will have to specify an exact definition of the term. Otherwise, there will be difficulties associated with interpretation and scope already based on the different understanding of the term "communication platform".

Irrespective of this, however, the question arises whether a term such as "communication platform" is even needed. If it is understood technically as and is thus almost identical to the term "network", it is likely to be unnecessary.

General requirements

The Commission informed the Council, the European Parliament, the European Economic and Social Committee and the Regional Committee of the new broad guidelines for the information society and the media on 1 June 2005[49].

The goal is to facilitate the circulation of new digital services and content.

This is an integrated overall concept which also includes drawing up proposals for the improvement of the existing legal framework for electronic communications, the services provided by the information society and the media.

Access-specific regulatory framework for electronic communications

The central element of the existing legal framework is the Framework Directive[50]. Four other directives fill this framework: the Authorisation Directive[51], the Universal Service Directive[52], the Data Privacy Protection Directive[53] and the Access Directive[54]. In addition, there is also the Radio Spectrum Decision[55].

These directives essentially deal with electronic communications networks and electronic communications services.

The Authorisation Directive and the Data Privacy Protection Directive

The Authorisation Directive concerns authorisation for the operation of electronic communications networks and the provision of communications services. Only a general authorisation is required. It is no longer the case that an express decision by the national regulatory authority is needed. Such a general authorisation also covers the use of radio frequencies and numbers.

No access rights can be derived from this directive. Neither can access rights be derived from the Data Privacy Protection Directive.

Universal Service Directive

The Universal Service Directive ensures that operators of communications networks and providers of electronic communications services provide a defined minimum set of services to all users at an affordable price without distorting competition. The aim is to ensure a standard good quality of publicly accessible services within the Community. This is primarily to be facilitated by establishing effective competition and creating end users' rights.

Unlike the Framework Directive and the Access Directive, the Universal Service Directive generally serves the purpose of consumer protection (Recital 2 of the Universal Service Directive). The result is that the access rights arising from the Universal Service Directive are addressed to end users. Organisations whose business is the transmission of news or the circulation of content cannot derive any access rights whatsoever with regard to platform operators.

Framework Directive

In addition to general definitions, the Framework Directive contains basic provisions that apply to all of the directives and the most important requirements for the specific directives. This includes the establishment of national regulatory authorities to fulfil the

tasks of the specific directives, inter alia, to assess significant market power.

The Framework Directive provides for a procedure according to which the preliminary regulation only becomes applicable if a market definition and a market analysis have found that a relevant market is not effectively competitive. This is the case when one or more undertakings have significant market power on the relevant markets for the products. In line with European law on competition, the term itself is defined in Article 14 (2) of the Framework Directive as follows:

An undertaking is considered to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave independently of competitors, customers and ultimately consumers.

The directive provides for cooperation between the national regulatory authorities and the European Commission in order to ensure consistent application. This is to prevent network operators or service providers from being faced with different regulatory measures and procedures in different Member States.

Access Directive

The relevant directives for access to networks on the European level are primarily the Access Directive and the Framework Directive behind it.

The regulation of access aims to standardise the prerequisites and the procedure for access in the individual Member States. A legal framework is to be created for the relationship between network operators and service providers that will promote sustainable competition and warrant the interoperability of electronic communications services. The directive is addressed to operators of electronic telecommunications networks and providers of electronic telecommunications services and their users. End users are not covered by this directive. Nevertheless, the directive is supposed to achieve the greatest possible benefit for end users.

The regulation of access to the telecommunications markets is done in two stages. The directive's starting point is market economy. In markets with effective competition, it is thus up to the market participants to negotiate conditions for access to telecommunications infrastructure themselves and without restrictions. The regulation only applies to markets which are not effectively competitive. Specific measures and rules can be put in place for access to the relevant platforms. Regulation is considered necessary in these areas because a lack of competition leads to an imbalance of market power and to dependencies between stronger and weaker market participants.

Rights to access are largely linked to the existence of significant market power.

Market definition and market analysis procedures

The national regulatory authorities – in cooperation with the European Commission – are to analyse whether a market is effectively competitive or not. According to Articles 15 and 16 of the Framework Directive, this is to be done by means of a market definition procedure and a market analysis procedure.

The national regulatory authorities are to define the relevant markets and analyse whether they are effectively competitive. They are to determine what organisations have significant market power and what the competition problem is and decide what actual measures are most appropriate in the specific situation.

In doing so, the national regulatory authorities must take into account the principles of market economy (Recital 13 of the Access Directive) and the principle of proportionality (Recital 15 of the Access Directive). The market analysis should therefore consider all of the economic aspects and be based on the methodology of competition law. Article 5 (1) of the Access Directive explicitly provides that the national regulatory authorities should exercise their responsibility in a way that promotes effective competition and gives the maximum benefit to end users. On the other hand, the principle of proportionality requires that no excessive regulatory measures be imposed. For this reason, the access obligations must be objective, transparent, proportionate and non-discriminatory.

Obligations for undertakings with significant market power

In the event the national regulatory authorities find that a market is not effectively competitive, they are justified in imposing specific regulatory obligations on undertakings with significant market power (Article 14 (2) of the Framework Directive) or in upholding or improving existing obligations (Article 16 (4) of the Framework Directive). Pursuant to Article 8 (2) of the Access Directive, the national regulatory authorities may impose the obligations specified in Articles 9 to 13 of the Access Directive. The obligations to be imposed concern transparency (Article 9 of the Access Directive), non-discrimination

(Article 10 of the Access Directive), accounting separation (Article 11 of the Access Directive), price control and cost accounting (Article 13 of the Access Directive) and finally – crucial for the undertakings seeking access – obligations concerning access to and use of specific network facilities (Article 12 of the Access Directive).

According to Article 12 of the Access Directive, the national regulatory authority may require operators to meet reasonable requests for access to, and use of specific network elements and associated facilities, inter alia in situations where the national regulatory authority considers that denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end user's interest.

According to Recital 19 of the Access Directive, the national regulatory authorities should balance the rights of an infrastructure owner and the rights of other service providers. This also applies, in particular, to access to certain platforms. If access is denied, the injured party make seek redress by means of the proceedings described in Articles 20 and 21 of the Framework Directive.

Article 6 of the Access Directive, in conjunction with Annex 1, Part 1, contains a provision concerning access to digital radio and television services. This provision applies independently from the other principles of the Access Directive. The reason for this special status is the special importance of the radio and television market for a democratic society, in addition to the fact that there were already rules (Directive 95/47/EC) concerning this subject matter in existence in 2002, when the above-mentioned directives were adopted. Operators providing access to digital television and radio services are obligated to offer all radio and television broadcasters, on a fair and non-discriminatory basis, technical services enabling their digitally transmitted services to be received by viewers and listeners. In deviation from the general approach of the directives, Article 6 of the Access Directive and Annex 1, Part 1, do not impose this obligation only on operators with significant market power, but on all operators, regardless of their market position.

Applicability of existing access obligations to content providers

The aim of the directives of 2002 was to take convergence into account by extending the scope of applicability of the directives to cover all electronic communications services and networks. Whereas different European and national sets of rules previously applied to different networks and services, there is now a harmonised framework for the regulation of electronic communications services and networks.

In the existing set of rules, convergence only covers the technical area. The directives do not take the technical platform into consideration, and they thus follow the doctrine of "technology neutrality". This means that the directives provide the national regulatory authorities with standardised, technology-neutral regulatory instruments.

The provisions concerning the content of communications, however, are exempted from this convergence. The Access Directive and the Framework Directive essentially deal with electronic communications networks and electronic communications services. They do not, however, regulate the circulation of content via communications networks, such as radio content or financial services.

This is already demonstrated by the definitions contained in Article 2 (a) of the Access Directive, according to which access means the making available of facilities and/or services to another undertaking for the purpose of providing electronic communications services.

These terms are defined in Article 2 of the Framework Directive as follows:

"Electronic communications networks" means transmission systems which permit the conveyance of signals by wire, by radio, by optical or by other electromagnetic means, including satellite networks, fixed and mobile terrestrial networks, networks used for radio and television broadcasting and cable television networks.

"Electronic communications service" is a service, normally provided for remuneration, which consists in the conveyance of signals on electronic communications networks, including telecommunications services and transmission services in networks used for broadcasting. The term does not include services providing content transmitted using electronic communications networks and services and information society services (as defined in Article 1 of Directive 98/34/EC) which do not consist wholly or mainly in the conveyance of signals on electronic communications networks.

The definition of electronic communications services thus explicitly does not include services providing content via

electronic communications services. The main concern is the transmission aspect.

The set of directives thus does not affect the content of services made available by means of electronic communications networks and services, such as radio content or financial services and specific services of the information society. Content providers cannot derive any access rights whatsoever from the Access Directive and the Framework Directive.

The treatment of the content providers was, however, debated by those involved in the legislative process. The lawmakers ultimately refrained from including provisions benefiting content providers – in particular, radio broadcasters – to avoid blurring the intended clear definition between content on the one hand and infrastructure and transmission services on the other[56].

For example, the Commission ultimately refused all proposals for amendments having the aim of including the regulation of content in the legal framework of the new set of directives or of imposing obligations on the national regulatory authorities with respect to content. In the view of the Commission, it was necessary to separate the regulation of transmission from the regulation of content.

However, the Commission also understands that, despite the separation of the regulation of transmission services from the regulation of content, links between the two have to be taken into account.

Services of the information society existing wholly or mainly in the transmission of signals are thus covered by the Access Directive or the Framework Directive.

The only exception to this rule is the radio and television transmission obligation resulting from Article 31 of the Universal Services Directive. This enables the Member States to impose transmission obligations with regard to specified radio and television services on operators of electronic communications networks used for the distribution of these services to the public ("must carry" obligations). This power applies to all networks having the main purpose of transmitting radio and television broadcasts, therefore to cable, satellite and terrestrial broadcasting networks. This provision, which only concerns the operators of broadcasting-specific networks, is not to be applied to mere platform operators/content distributors (Recital 45 of the Universal Service Directive). The obligations must be proportionate and transparent.

Apart from that, the basis for content providers' access rights is not to be found in the Access and Framework Directives.

Access rights for content providers based on other legal sources

The content of television broadcasts are subject to Council Directive 89/552/EEC of 3 October 1989 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities, amended by Directive 97/36/EC of the European Parliament and of the Council "Television Without Frontiers". There is also a proposal for a directive of the European Parliament and the Council to amend Directive 89/522/EEC[57].

Directive 2000/31/EC of the European Parliament and the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ("E-Commerce Directive"). In Recital 10 of the Framework Directive, it also says: "most" of the activities subject to the E-Commerce Directive are not covered by the Framework Directive.

As examples for services covered by the Framework Directive, voice telephony and electronic mail conveyance services are named, and the provision of Web-based content is named as a counterexample. It should be noted that the same undertaking can offer both types of services (Recital 10 of the Framework Directive).

Neither the "Television Without Frontiers" Directive nor the E-Commerce Directive contains direct provisions on a general access right for content providers.

Under certain conditions, however, competition law provides an access right. The "essential facilities doctrine" included in Article 82 of the EC Treaty states that undertakings are acting in abuse of their dominant positions if they deny other undertakings access to facilities to which they alone have access and are therefore in a position to impede or prevent the access of competitors to the market[58]. For this to apply, it must be impossible for or cannot be reasonably expected of the competitor to obtain its own facilities.

A conflict of interests between undertakings seeking access and the operator of the facilities can be concluded from the fact

that the operator of the facilities uses them for its own activities on the aftermarket and thus has no interest in another competitor's entering the market by also using them. It is also necessary here for the owner of the facilities to dominate the market.

If a network operator has such a key position and also offers content on the aftermarkets, access obligations can thus be imposed under general laws regulating competition unless the operator can justify itself on the basis of objection reasons – for example, capacity limits.

Stakeholders' assessment of the rules concerning access

Platform as bottleneck?

Especially with regard to access to platforms, the current regulatory framework is considered to be adequate by a considerable number of market participants, in particular network operators. This stakeholder group provided detailed comments in view off access issues. They are almost unanimously of the opinion that competition between operators of the different platforms will become fiercer in the future. This is based on the demand of end users, who wish to obtain digital and, in particular, audiovisual content via various platforms at any time, at any place and by means of very varied end devices.

Many stakeholders from the network business claim that they are already now observing an increase of alternative platforms. Service providers are responding to the demand and offering innovative services such as Web streaming, interactive digital television and digital television via DVB-H.

One example – mentioned by a network operator - for the willingness of platform operators to provide content providers access is a radio broadcaster in the United States that asks private and commercial content providers to circulate their products.

Some network operators also highlighted that the Internet makes a simple distribution of content possible.

In the view of network operators, any regulatory requirement has a negative effect on the process of developing new offers. The development and enhancement of innovative platforms is obstructed if the operators have to fear being subject to regulation.

In this context some network operators pointed out that a general access obligation would make it impossible for a platform operator to create customer loyalty via the provided content and to achieve recognition value.

A large number of network operators argue against access rights for content providers. The rules contained in the Framework Directive and the Access Directive do not have to be extended to cover content providers.

Considering the principle of freedom of contract, these market participants hold the view that platform operators should essentially be free to decide what content should best be circulated in the framework of their business models.

According to various market participants, there are at this time no reasons to believe that the demand of content providers for access to platforms is not satisfied.

However, a few market participants mention the risk of the platforms becoming so-called bottlenecks. In this context, content providers fear that platform providers could have a monopoly on contact to end customers. For this reason, they are calling for a right to access. These observations refer primarily to the position of those platform operators offering content themselves, so-called vertically integrated organisations.

A great number of the interviewed companies emphasise the need to balance the freedom of platform operators and the interest of the pubic in the circulation of different media. In doing so, the different functions of new audiovisual media must be taken into account.

Therefore some market participants conclude that the great number of transmission possibilities thus adequately ensures freedom of information. In their opinion, the importance of audiovisual media services to form opinions will also decrease owing to interactive broadcasts and the growing ability of users to find what they are looking for. The aspect of pluralism will thus also have less significance.

To some extent, therefore, content providers also hold the view that access obligations – if at all – should only be imposed on organisations holding significant market power.

Content as bottleneck?

As already stated above, many of the interviewed organisations – especially network operators – presume that competition will arise between platform operators, which will

result in a great demand for content. An individual provider of content will then be able to choose the platform on which it wishes to circulate its content. These organisations are convinced that the supply of content will be more important in the future than the transmission of content. Infrastructure providers, in particular, believe that it will be economically necessary in the future to also provide content themselves.

Some network operators come to the conclusion that the bottleneck for the marketing of digital content will soon be found to be holders of rights or content providers, rather than network operators. A right for content providers to access platforms will thus lose importance.

Sporadically organisations claim that they are already now encountering difficulties when they try to conclude agreements with content providers on the circulation of specific content.

Some network operators state that it will be difficult to obtain valuable content and so-called premium content, especially, such as rights to transmit football games, at reasonable prices in the future. From their point of view, this problem can already be seen now in the decisions of the Commission concerning the awarding of rights to sports events.

Market power of vertically integrated organisations

From the perspective of a considerable number of the interviewed organisations, one problem of the existing regulatory framework – as already indicated above – seems to be the horizontal approach of the regulation. They claim that relevant markets are currently only being examined on the horizontal level.

It is, however, generally apparent that ever more network operators are proceeding to pursue an integrated business model in order to provide content themselves, either content of their own or content of others.

Some **content providers** fear that network operators will therefore not be interested in circulating their content. In their view this is especially the case where the content provided by one party competes with the content provided by the other. Especially when network operators invest in premium rights and would like to market them through their own distribution channels, they are potentially not interested in distributing third-party content. Vertically integrated infrastructure providers are in competition with content providers. Restrictions of competition that possibly cannot be countered by the current set of rules can result from such vertical integration.

In addition to that content provider stress, that it could be possible for vertically established infrastructure providers to abuse their market power linked to their control of infrastructure in such a way as to restrict competition in the content markets.

Some content providers thus call for restrictions on the acquisition of premium content by network operators. Some of them even call for a strict separation of content and network. The general opinion of these undertakings is that vertically integrated organisations that market content themselves should be subject to particularly strict supervision to prevent abuse.

Content providers seeking access to infrastructure also demand pass-through rights from vertically integrated organisations. They claim that this is the only way content providers themselves can distribute marketing packages to end customers.

Some content providers refer to the possible imposition of transmission obligations on radio and television broadcasting services pursuant to Article 31 of the Universal Service Directive with regard to radio and television broadcasting ("must carry" obligations).

One possible solution, suggested by some content providers, would be to impose these "must carry" rules on all platform operators. This would mean that it would no longer be decisive whether the main purpose of the network is the transmission of radio and television broadcasting.

An amendment of the Universal Service Directive is suggested as a way of implementing this.

Access to radio and television broadcasting services

Participants in the radio and television broadcasting market consider themselves subject to special rules. There are already access rights in this area for content providers in many countries, which is not the case for other content. This is – as already shown above – owing to Article 31 of the Universal Service Directive.

Statements of various market participants concerning these rights show scepticism. Some market participants are even

sceptical about the "must carry" rules for radio and television broadcasting.

According to these organisations, the great variety of possible transmission channels is an adequate safeguard for freedom of information. Interactive offers and the targeted demand of consumers here too diminish the importance of audio-visual media services for the formation of public opinion.

In Germany especially, the dual carriage obligation, meaning digital and analogue transmission, is partly regarded as a great burden for platform operators. This obstructs the marketing and development of digital services.

In this concern some market participants point out that, in addition, abuse is controlled in the "non-must carry" area in Germany, for example, by Article 53 of the Seventh German Interstate Broadcasting Agreement (Rundfunkstaatsvertrag), which makes a right of access to platforms possible.

Efficiency of general competition law

A great many of market participants – mostly network operators – consider the general laws on competition adequate to solve arising conflicts between content providers and platform operators. Accordingly these interviewed market participants consider the currently applicable competition regulations basically sufficient for the facilitation of access to platforms.

But also network operators admit that enforcement could be a problem. The organisations complain primarily about the great deal of time required.

Main findings

Content distribution could be more largely marketed in the information society if operators of communications platforms are willing to include third-party content on their platforms.

On the other hand, platform operators and network operators only develop new circulation methods or new transmission channels if they are able to control the business models to be built up on these methods or channels and can expect to reap economic benefits, meaning that they see a chance that they will not only recoup their initial investments. This issue is similar to that arising currently with respect to the regulation of emerging markets. There, too, providers of new services argue that they initially need a regulation-free zone in order to recoup their investments.

The goal of market regulation should be to balance the interests of both groups to ensure sustainable and balanced market uptake.

Remedy suggestions by stakeholders showed different ways to solve the problem.

Vertical integration as a problem regarding the development of competition?

It seems to be of crucial importance for the question of access to platforms whether platform operators themselves provide content. If this is the case, these operators may not be interested in circulating more of the same or competing content via their communications channels.

It is economically desirable for organisations to have control over the entire production process of digital services, from provision and production of content, through control of access to transmission possibilities, to transmission channels and access to customers.

This could also make them able to discriminate against other content providers wishing to offer their programmes via their transmission channels or even exclude them from use of their transmission channels.

Many market participants see this danger. Even some network operators mention this problem. However, market participants are currently not aware of any concrete cases in which access was refused.

Nevertheless, regulation or supervision under competition law will have to respond appropriately if any denials of access or similar obstructions appear.

It must, however, also be noted that not every vertical concentration is per se detrimental. Concentrations can be a result of internal growth and economic progress with the goal of lowering costs, optimising processes and, in particular, recouping often considerable initial investments.

Serious obstructions of competition, however, are possible if it is shown that vertically integrated platform operators are permanently able to prevent potential competitors from having access.

Creation of a new regulatory framework and improvement of the previous one?

One way to rule out future anticompetitive conduct by platform operators could be to create a new legal framework in which access

rights for content providers are also regulated. However, if such an access right were to exist regardless of the market position of the platform operator, this could arguably be a disproportionate burden for the platform operator, which would obstruct innovation. This danger is shown, not least, by the statements of market participants.

As a connecting factor, an asymmetrical approach could be considered. Regulatory requirements could be limited to organisations having "significant market power". In the process of determining the dominant position in the market itself, special attention could then be paid to vertically integrated organisations.

It would suggest itself to choose a structure similar to the Access Directive.

There are here, however, differences to the communications services regulated by the Access Directive. The regulated markets for such communications services also have different structures, and the market participants have different interests.

Platform operators, for example, have a greater need to create consumer loyalty via the provision of content. An obligation to circulate third-party content could potentially interfere with this objective. Furthermore, there are more ways for content providers to circulate their content. The Internet, for example, is one way to reach end users with content.

Another problem involved in such a framework is segregation from the previous regulatory requirements.

Instead of a general access right, a right to non-discriminatory access could be established. This would have the advantage that platform operators would be able to have greater influence on the offers and business models provided on their platforms, since they would be able to completely deny access to certain groups of content providers.

Another alternative would be the extension of the "must carry" rules from the area of radio and television broadcasting to apply to all platform operators and content providers.

In view of the fact that the purpose of the "must carry" rules is mainly to ensure a diversity of opinions and pluralistic structures in the area of radio and television broadcasting, it would be questionable to apply these rules to the entire provision of content via platforms. This is also confirmed by the statements made by the market participants, which in many cases already fear an application of the regulation of radio and television broadcasting to new types of services.

Control by means of the general laws on competition?

One connecting factor for the purpose of safeguarding equal opportunities for access to platforms and networks could be an application of the instruments of competition law.

The aim of EC competition law is primarily to implement the goals of the Internal Market. General competition law is thus basically suitable for preventing market participants from acting in an anticompetitive manner. The purpose of competition law is also to prevent the formation of market structures that jeopardise competition.

Competition law thus aims at the risks mentioned by the market participants that arise from the position of vertically integrated organisations in the market.

First of all, the provisions of Article 81 et seq. of the EC Treaty can be taken into consideration as a basis for action (antitrust, prohibition of abuse of a dominant market position). With regard to the problem of vertical integration, a prohibition of abuse could, for example, first be based on Article 82 of the EC Treaty with respect to the denial of access to certain content providers by the owner of the infrastructure and technology relating to access. This would, however, be an ex-post control that would not apply until the anticompetitive effect had already appeared.

In addition to the control of abuse, Council Regulation (EC) 139/2004 (the "EC Merger Regulation"), in particular, could play an important role. Here, competition law already applies beforehand with regard to the assessment of mergers.

It can thus already be reviewed on the level of a merger of businesses whether a merger might result in anticompetitive structures. This would apply especially in the event a network operator merges with a content provider or establishes a joint organisation.

The Commission concentrated very early on the problem of the merger of content providers and network operators.

For example, in its decision on the planned establishment of a joint venture "MSG Media Service Gesellschaft" (MSG) by Bertelsmann AG, Deutsche Bundespost

Telekom and Taurus Beteiligungs-Holding as a member of the Kirch group[59] or in the proceedings of the Commission with regard to the establishment of the company British Interactive Broadcasting (BiB) by British Broadcasting Group plc and British Telecom (BT)[60].

In the MSG decision, the Commission ruled that the new organisation was intended to be engaged in terms of a vertical concentration in the entire area of production of digital pay TV – content provision, access control and transmission channels – causing a non-discriminatory selection of content providers to be jeopardised. In doing so, the Commission also took the aspect of market power transfer into account.

In the BiB case, the Commission's deliberations were similar. In this case, digital, interactive television services, such as E-Commerce services, email, learning online and games were supposed to be transmitted via BT cable and set-top box receivers. The focus was supposed to be on on-demand services. In the assessment of the restrictions on competition, the Commission carried out an overall assessment of the markets, since, in addition to the position of the organisations in the content and services markets, it also examined the customer access infrastructure.

Altogether, it is apparent that also competition law offers ways to find and prevent anticompetitive conduct of platform operators towards content providers seeking access. A considerable number of market participants also appear to hold this view; they seem to consider the control provided by competition law to be adequate.

However, arguments against protection being provided by general competition law alone are the lower degree of legal certainty it provides than that provided by established regulatory requirements and the problems of legal enforcement. Especially with respect to rapidly developing services and content offers, there is a risk for content providers that the legal protection provided by competition law will take too long.

Final remark

As a result it has to be stated that both a strict regulation of platform operators and a control by means of the general laws on competition cause advantages and disadvantages. Mainly network operators refuse any access regulation. On the other hand content providers embrace access obligations for platform operators. Therefore it is a political decision whether the platform operators or the content providers are more in need of protection.

3.1.5.3. Role of public broadcasters in new media (5.2)

Introduction

Public broadcasting, also known as public service broadcasting or PSB (though this term has a specific different meaning in the United Kingdom)[61], characterises radio and television services and potentially other electronic media outlets that receive public funding.

PSB has traditionally been the dominant form of broadcasting around the world. The public broadcasters' funds either come directly from consumers through donations or fees, or indirectly as state subsidies that originate in taxes or other national funding sources. In some countries the PSB supplements this with advertising revenue. Since the 1970s commercial broadcasting has increasingly occurred in many Member States, while the number of countries having only public broadcasting has been declining continuously during the same time. Economic and technical developments made it possible to allow other (private) operators to broadcast. Competition has been introduced to the markets this way. Nevertheless publicly funded PSB was considered necessary because private broadcasters could often not warrant the coverage of a number of areas and the satisfaction of needs to an optimal extent.

The increased competition, combined with publicly funded operators, led to growing concerns of private broadcasters regarding a level playing field and the compatibility of the public funding scheme in force pursuant to Articles 87 and 88 of the EC Treaty.

Moreover, it was stated in the **Amsterdam Protocol**[62] that the provisions of the EC Treaty should be without prejudice to the competence of the Member States to provide the funding of PSB. Accordingly, public funding of PSBs is permitted as long as it does not affect the trading conditions and competition in the Community to an extent which would be contrary to common interest and as long as it is used to fulfil the public service remit as conferred, defined and organised by the particular Member State. This has been confirmed lately by the Broadcasting Communication[63], which sets out the principles to be followed by the Commission in the application of Articles 87 and 86 (2) of the EC Treaty in relation to the public funding of PSBs:

Legal Framework on PSB

At the level of primary law, the framework for PSBs is provided by the rules of the EC Treaty. The public funding schemes of PSBs have to comply with EC competition law (Articles 81 to 86 of the EC Treaty) and with Articles 87 and 88, which cover the legitimacy of state aid. At the level of secondary legislation, public broadcasting funding has to be assessed in the context of the Transparency Directive[64]. The Broadcasting communication, which contains the detailed view of the Commission on how to deal with the public funding of PSBs, is also important in that context.

Article 87 (1) of the EC Treaty

According to Article 87 (1) of the EC Treaty, the granting of aid by a Member State or through state resources is usually illegitimate and incompatible with the common market if it distorts or threatens to distort competition by favouring certain companies or products and affects thereby the trade between Member States. State financing of PSB is normally to be regarded as state aid, insomuch it meets the above criteria. The effect of state intervention, not its purpose, is the decisive element in this context. Public funding out of the state budget or through a levy on owners of TV sets is normally attributable to the public authorities and involves the transfer of state resources. Such a proceeding usually favours only certain broadcasters and may therefore distort competition. However, the existence of state aid will have to be assessed on a case-by-case basis, and depends also on the specific nature of the funding[65].

Altmark-Trans Decision of the Court

According to the case law of the European Court of Justice[66], there are exceptions if state measures have to be regarded as a compensation for the services provided by the recipient undertakings in order to discharge public service obligations: "Such undertakings do not enjoy a real financial advantage and the measure thus does not have the effect of putting them in a more favourable competitive position than the undertakings competing with them"[67]. State measures compensating the net additional costs of a service of general economic interest do not qualify as state aid within the meaning of Article 87 (1) of the EC Treaty if the compensation is determined in such a way that it does not confer any real advantage on the undertaking. According to the Court, such compensations have to satisfy certain conditions in order to "escape" the classification as state aid:

- The recipient undertaking must actually have public service obligations to discharge and the obligations must be clearly defined.
- The parameters on the basis of which the compensation is calculated must be established in advance in an objective and transparent manner.
- The compensation cannot exceed what is necessary to cover all or part of the costs incurred in the discharge of public service obligations, taking into account the relevant receipts and a reasonable profit for discharging those obligations.
- If the undertaking which is to discharge public service obligations is not chosen in a public procurement procedure, the level of compensation needed must be determined on the basis of an analysis of the costs which a typical undertaking, well run and adequately provided with means of production so as to be able to meet the necessary public service requirements, would have incurred in discharging those obligations[68].

If one of these four conditions is not fulfilled, the public funding has to be regarded as state aid, according to Article 87 (1) of the EC Treaty. However, this does not necessarily mean that the state aid in question is incompatible with the common market. The particular measure has to be notified to the Commission, according to Article 88 (3) of the EC Treaty. After its notification, the Commission has to check whether a given measure can be justified under Article 86 (2) of the EC Treaty.

Article 87 (2, 3) of the EC Treaty

Further exceptions to Article 87 (1) are defined in Article 87 (2, 3) of the EC Treaty: Article 87 (2) contains three legal exceptions: state aids of social kind, state aids which cover extraordinary occasions or natural disasters, and state aids which result from the division of Germany are generally compatible with the Common Market. However, these exceptions have little practical relevance owing to their restricted application by the Commission. In contrast, Article 87 (3) of the EC Treaty leaves the decision concerning the legitimacy of state aids in certain sectors to the Commission's discretion. According to Article 87 (3), the Member States may grant aids to promote economic development, projects of common European interest and cultural and heritage

conservation (as stated in Article 151 of the EC Treaty) under certain conditions. The Commission states that state aid, which have been granted to PSBs did often not differentiate between those three needs. As a consequence such aid could only be approved under Article 87 (3d) of the EC Treaty if the Member State provided for the separate definition and the separate funding of state aid to promote culture alone[69]. The Commission has announced that it will increasingly include an economic angle in its exercise of discretion. This so-called "more economic approach" derives from the European competition law and contains a consideration of negative distortions resulting from a possible state aid on the one hand and the market failure that led to the necessity of the state aid on the other.

Article 86 (2) of the EC Treaty

Public funding schemes that constitute forbidden state aid under Article 87 (1) of the EC Treaty may be justified under Article 86 (2). The Court has consistently held that Article 86 provides for derogation from Articles 81, 82 and 87 of the EC Treaty and must therefore be interpreted restrictively. In order to benefit from such derogation, the following conditions have to be fulfilled[70]:

- The service in question must be a service of general economic interest and clearly defined as such by the Member State.
- The undertaking in question must be explicitly entrusted by the Member State with the provision of that service.
- The application of the competition rules of the EC Treaty (in this case: Article 87 (1)) must obstruct the performance of the particular tasks assigned to the undertaking, and the exemption from such rules must not affect the development of trade between the Member States to an extent that would be contrary to the interests of the Community (proportionality test).

Transparency Directive[71]

Commission Directive 80/723/EEC requires that undertakings which enjoy special or exclusive rights granted by a Member State as referred to in Article 86 (1) of the EC Treaty or are entrusted with the operation of a service of general economic interest as referred to in Article 86 (2) of the EC Treaty and therefore receive state aid in any form maintain separate accounts. As a consequence of the Altmark Trans decision of the Court, the Commission has adopted Directive 80/723/EEC lately[72]. According to this directive, the obligation to maintain separate accounts applies to all undertakings receiving public service compensations and carrying out activities outside the scope of the service of general economic interest irrespective of their legal classification in the light of Article 87 (1) of the EC Treaty.

Broadcasting Communication[73]

The Broadcasting Communication gives a summary of the Commissions point of view regarding the application of State aid rules to PSBs. The Commission points out that the State financing of PSBs is subject to Article 87 (1) of the EC Treaty. Thus public funding to PSBs has to be examined by the Commission to determine whether or not it can be found compatible with the common market. According to the Commission the compatibility of state aid has to be assessed under Articles 87 (2) and 87 (3) as well as 86 (2) of the EC Treaty. Therefore the public service remit is important as the Commission cannot assess otherwise whether the derogation under Article 86 (2) is applicable. The definition of the public service remit has to be as precise as possible and shall leave no doubt concerning the question whether a certain activity performed by a PSB is in fact intended by the Member State. To benefit from the exemption under Article 86 (2) of the EC Treaty the public service remit has to be entrusted to the particular PSB by means of an official act. Finally the Commission carries out a proportionality test. Therefore the Commission will consider whether any distortion of competition arising from the aid can be justified in terms of the need to perform the public service as defined by the Member State and to provide for its funding.

Neelie Kroes, Member of the European Commission in charge of Competition Policy, an-nounced in her opening address at the Austrian Presidency Expert Seminar: "Content for competitiveness" in Vienna, 2nd March 2006 that the European Commission would revise the Broadcasting Communication in 2007 to 2008. Developing technology had blurred the traditional concept of broadcasting as content was more and more distributed over new plat-forms such as the Internet. Therefore policy makers needed to reflect on the mission of public service broadcasters in this new media environment.

Legal Roadblocks according to the Stakeholders

The questions that the stakeholders were asked to answer dealt with the possible role of PSBs in view of a changing (digital) media landscape and a possible discrimination of competitors resulting from the public funding of PSBs. The answers to these questions can be divided in three different groups:

- answers by PSBs
- answers by private broadcasters
- answers by parties who are no broadcasters but nevertheless also operate in the new media sector

Due to the particular role they play the aforementioned groups differ in their views regarding this issue to a considerable amount: Private broadcasters argue against a public funding of PSBs and complain about a distortion of competition. PSBs on the other hand regard their public funding necessary to fulfil their public service remit properly. Other undertakings want the PSBs to play a similar role as they already do in the area of "classic" television. PSBs should therefore provide area-wide, all-embracing and objective information to the people and promote the development, trial and launch of new service forms also.

The role of public broadcasters is judged ambivalently: on the one hand, it is broadly accepted that PSBs fulfil an important purpose in the formation of public opinion. Furthermore, there is agreement that due to their public funding, PSBs can act as drivers for new technologies and push the development and distribution of digital content. The digital progress hereby achieved may compensate for possible distortions of competition. On the other hand, according to some stakeholders, there is the risk that public broadcasters could possibly tend to cross-subsidise their very costly streaming offers on the Internet with public funds. This would enable them to enter into commercial deals with platform operators containing the provision of publicly financed content in exchange for access to the technical infrastructure. According to them private competitors could hardly compete with this – especially when public broadcasters could use their public funding to acquire premium rights. The competition for the best content could thus be distorted, since a publicly financed company has a completely different financial leeway for manoeuvring. Such content – especially in the sports sector – would make PSBs an interesting partner for platform operators and would open new platforms and markets to them, whereas private competitors would often be barred from such possibilities. However, there is consensus among the stakeholders that PSBs should play a promotional role and be the driving force for the development of new digital service forms. Nevertheless, their participation should not constrict free competition among private operators.

According to the stakeholders, the above-mentioned general conflict leads to the following legal roadblocks.

Lack of Adequate Public Service Remit for new media services

A major problem seems to be that there is often no adequate public service remit for PSBs in the Member States. The public funding of PSBs is generally justified with the fact that PSBs provide services of general (economic) interest. In other words PSBs are publicly funded to ensure the provision of the service to the optimal extent. The entitlement to spend public funds therefore results from the assignment laid down in the public service remit. The traditional responsibility of public broadcasters is the area-wide provision of television and radio services. They therefore have to guarantee impartial and accurate information as well as universal access to their services.

PSBs are obliged to produce and distribute radio and television services and thereby promote the process of formation of opinion. This requires a provision of independent, accurate, impartial, balanced, objective information and a guaranteed diversity of programming and viewpoints. The citizens in a particular Member State should be enabled to form their own free and individual opinion, which requires objective and comprehensive press coverage. In order to ensure the satisfaction of these needs to an optimal extent and to prevent coverage limited to certain opinions, certain service models or certain areas, it is essential to entrust this remit to broadcasters, which do not have to work profitably and therefore do not depend on any third parties' interests. Because PSBs do not have to rely on economically reasonable or profitable programmes, they play an elemental part in the process of formation of opinion.

Since PSBs receive public funding, it is necessary to clearly define their remit because the financing of audiovisual media service

offers with public fees may distort competition if these activities are not covered by a clear public service remit.

Whether and to what extent PSBs may use their public funding to also offer other services than "programmes" in the traditional sense is unclear according to some of the stakeholders. In their opinion, some national regulations lack definitions concerning the PSBs' activities in the sector of digital audiovisual media services or are at least unclear in this regard. Private broadcasters, especially, are therefore afraid that PSBs could use their public funding to cross-subsidise their very costly streaming offers in the Internet, providing them with economic advantages that private broadcasters cannot cope with. Because traditional forms of advertising play an only subordinated role compared with new forms of audiovisual media services, public funding may cause distortion of competition. To prevent such a distortion of competition, they call for a clearly defined public service remit, which clearly determines whether and to what extent public fees may be used to produce and publish digital content.

Then again, PSBs themselves claim that the offering of audiovisual services and the distribution of digital content via platforms other than "classic" television would be covered by their public service remit. A "broad" definition of the particular public service remit would be necessary to allow for the current rapid technical progress in the area of "new media". Although the Commission regards a "broad" definition as adequate in the sector of traditional TV activities[74], this statement cannot be transposed as such to the new media environment. The Commission points out that the public service remit might even include new forms of digital media when they address the same democratic, social and cultural needs of the society in question. Still, "whenever the scope of the public service remit is extended to cover new services the definition and entrustment act should be modified accordingly"[75].

Private broadcasters, on the other hand, call for a strict definition that would not allow PSBs to use their public funding for the production and distribution of digital content at all or at least would determine to what degree television licence fees may be spent that way: in their opinion, a severe distortion

Case study 20: The public service remit for PSBs

The German Interstate Broadcasting Agreement (Rundfunkstaatsvertrag) states in section 11 (1) that German PSBs[76] are entitled to offer audiovisual media services as long as they comprehend content that bears reference to the programme. This public service remit is – or at least has been – subject to arguments between German PSBs and private broadcasters: the PSBs refer to the cited clause of the German Interstate Broadcasting Agreement and to similar clauses of the ARD-State Treaty and the ZDF-State Treaty[77], according to which the offering of audiovisual media services, is also covered by the public service remit. Furthermore, they point out that permission to offer audiovisual media services has already been limited in the course of the 7th amendment to the German Interstate Broadcasting Agreement. According to this amendment, PSBs may provide audiovisual media services as long as they bear reference to the programme. Before this amendment, section 11 (1) of the German Interstate Broadcasting Agreement stated that PSBs were allowed to provide such content inasmuch it would bear reference "predominantly"[78] to the programme. Nevertheless, private broadcasters claim that the existing regulations are not clear enough, considering they do not clarify what "reference to the programme" means. Anyway, the current proceeding of PSBs regarding the financing of their multimedia offers with public funds would not be covered by the national regulations in force. PSBs on the other hand point out that section 11 (1) of the German Interstate Broadcasting Agreement explicitly names the operation of audiovisual media services as part of their remit. The existing formulation of the public service remit would therefore be precise enough.

Similar to the situation in Germany the public service remit for the French PSBs France 2[79] and France 3[80] also merely states that it is their duty to offer audiovisual media services in order to inform the public and to encourage the development of new audiovisual media services.

In contrast to that the public service remit of other PSBs clearly defines the scope and the boundaries of their multimedia offers. For example the remit for the BBC's online activities aligns them with the BBC's five public purposes (democratic value; cultural and creative value; educational value; social; community value; global value) and requires the provision of innovative and distinctive content. The remit shall also ensure that investment decisions balance the potential to create public value against the risk of negative impact on the market. As a result, a number of sites of the BBC have been closed down, either because they were too similar to the sites of commercial competitors or because their value to audiences did not outweigh their risk of negative market impact[81].

of competition can only be prevented if a clearly defined public service remit lays down in what fields PSBs may operate with public funds and in what fields they have to rely entirely on commercially viable business models as well (*see Case study 20: The public service remit for PSBs below*).

Lack of External Cost Control

Another problem named by the stakeholders is derived from the first one: Because it is often not defined to what extent PSBs may use their public fees for the operation of audiovisual media services, there is also no external control of the usage of fees. According to some private broadcasters, external control is necessary in a double way: on the one hand, it has to be ensured that public funds are used as defined in the public service remit. On the other hand, only external control would allow detailed examination whether and to what extent PSBs may use their public funding to purchase so-called "premium" rights. The acquisition of such rights enables PSBs to produce attractive and high-quality digital content and to distribute it via their own audiovisual media services. Due to their less attractive content and owing to the fact that PSBs are able to offer their audiovisual media services free of charge, private competitors are afraid that they cannot compete with such multimedia offers. This might lead to a situation where PSBs expand unhindered into new markets by offering conditions that private competitors cannot refinance. Private broadcasters therefore claim the necessity to legally restrict the acquisition of premium rights with public funds.

Still, reality often looks quite different these days: according to the rights-owner, new media licenses for the 2006 FIFA World Cup have been sold in six Member States. While private broadcasters and other service providers have purchased licences to broadcast over the Internet in five Member States, only one public broadcaster has purchased such licences. PSBs in other Member States have restricted their streaming offers to editorial contributions which do usually not include any extracts of the actual matches. Given the fact that PSBs broadcast the matches of the World Cup in 19 out of 25 Member States, it becomes clear that PSBs do not necessarily use their public funding to purchase premium rights for the distribution of digital content via new audiovisual media services. On the other hand, the German public broadcaster ZDF has recently announced that it would broadcast its programme (including 24 matches of the 2006 FIFA World Cup) over the new DMB[82] platform MFD[83] also.

According to the interviews, PSBs consider themselves drivers for new technologies when it comes to the production and distribution of digital content. In their opinion, due to their public funding only PSBs have the possibility to promote the development and the adoption of new technologies. Accordingly, the function of a driver includes the entitlement to purchase premium rights with public funds. Facing the growing number of new multimedia platforms, a commercially successful audiovisual media service requires attractive content. The provision of attractive content on the part of PSBs therefore enables them to expand into new markets on the one hand, but also smoothes the way for private competitors as they benefit from the broader acceptance which the particular new service enjoys among potential customers. A limitation of public funding on the traditional broadcast sector would therefore obstruct possible technical progress. This function as a driver of new technologies is also laid down in some national regulation, for example, in the preamble, as well as in Article 14 (2), Nr. 2 of the German Interstate Broadcasting Agreement. According to these clauses, the German PSBs should use new technologies and promote their operation and distribution. To ensure this, PSBs have to be adequately financially provided (*see Case study 21: Cost control of PSBs in particular Member States on page 229*).

Competition issue

Private broadcasters allege that there is a distortion of competition because PSBs (may) use their public funds to operate in the new media sector and spend them for the acquisition of premium rights. The adoption of public funds would generate a distortion of competition because PSBs would thereby be allowed (and sometimes even be forced) to operate on a non-profit basis and distribute digital content for free. Private broadcasters, on the other hand, would have to limit their digital content offers to economic viable models and therefore work so as to cover their costs. They would be obliged to refinance their expenses for content by means of advertising, teleshopping and other forms of audiovisual commercial communication. This would generate a competitive disadvantage for private

Case study 21: Cost control of PSBs in particular Member States

The issue of cost control differs throughout the Member States. While there are external control bodies in some Member States, which decide on the amount of funding as well as on their spending, other Member States only decide on the amount of public funding and leave the decision on how to spend the funding up to the PSBs themselves:

- In France the amount of the budgets for the PSBs are jointly drafted every year by the Ministry of Communication and the Ministry of Finance. After the budgets are approved by the Prime Minister, the Parliament has to decide on the budgets. In doing so, the Parliament does not only decide on the amount of funding, including the advertising revenue which the broadcasters are expected to receive, but also sets up the expenditures and their spending on salaries, investments or other activities.
- In Italy the amount of the licence fee is decided every year by the Minister of Communications. As the licence fee represents only a part of its revenue of the Italian PSB, RAI has also to rely on commercial activities. The amount of advertising revenues is also limited by the law, in order to ensure that RAI is not harming any commercial players.
- The level of the licence fee in the UK is set by the government. It is linked to the Retail Price Index and is set at 1.5 per cent above the rate of inflation, according to an agreement between the government and the BBC. Currently, however, it is suggested that the assessment of the level of the fee be removed to an independent body.
- In Poland the licence fee is set every year on the basis of a prognosis of licence fee payments provided by the National Broadcasting Council (KRRiT). As it covers less than half of the expenses of TVP at the moment, TVP is also competing for advertising revenue with the commercial stations.
- The control of the expenses of the German PSBs, as well as the evaluation of the financial requirements, is incumbent upon the KEF[84]. KEF is made up of 16 independent experts, one for each of the Federal States, who have their professional backgrounds in consultancy, management, broadcasting law, media economy, technology or media research. Every two years, the German PSBs report their financial requirements to the KEF, which considers these and submits a proposal concerning the level of the licence fee in the next period. This proposal has to be approved subsequently by the German Federal States. If they all vote in favour of the proposal, a new licence fee can be introduced, through an inter-state treaty. Because of the independency of this commission, German PSBs claim that there would be no necessity for another external institution to watch over the PSBs' expenses and their acquisition

broadcasters whose commercial success mainly depends on the attractiveness of their programme. Accordingly PSBs become competitors to private undertakings regarding the purchase of digital content and especially of premium rights if they expand into new markets like the offering of audiovisual media services. Subsequently, PSBs and private service providers would no longer compete for "classic" television rights only, but also for the rights to distribute certain content over other audiovisual media services that are not "programmes" in the traditional sense (new media rights). Therefore PSBs would be favoured by this fact.

Some private broadcasters also claim that the use of public funds would allow PSBs to acquire premium contents at rates that private competitors could not afford. This would enable them to conclude contracts with platform operators and thereby expand into new markets for new audiovisual services. The more attractive content of PSBs would make them an interesting partner for platform operators and would allow them to exchange publicly financed content for access to certain platforms and technical infrastructure. PSBs, on the other hand, argue that there would be no competition in the traditional sense between PSBs and that private broadcasters as PSBs would not compete for advertising revenue. Therefore, the issue of publicly funded broadcasting would not be subject to European Competition law. A possible acquisition of premium rights with public funds would not cause a distortion of competition.

According to some stakeholders the difficulty for private competitors to gain premium content would be further complicated by Article 3a of the Television Without Frontiers Directive and the particular national regulations based on this clause. Pursuant to these regulations, certain designated events of major importance for society (e.g., the Olympics, certain matches of the FIFA World Cup, the final match of the UEFA Champions League) have to be made accessible via live coverage or deferred coverage on free television. An exclusive publication and distribution of such events via new audiovisual media services would therefore be made impossible. Though Article 3a when referring to free television

does not distinguish between public and private. Moreover, the limitation of exercise of exclusivity is justified by public interest to have access to events of major importance for society.

In the opinion of some private broadcasters interviewed a potential distortion of competition results from the opportunity for PSBs to spend parts of their public funding on the acquisition of multimedia rights. According to them, the public funding of PSBs aimed at a guaranteed provision of an objective and all-embracing coverage and information of the public. It could therefore only be justified by the fact that it is used to fulfil this task of general interest in an adequate way. The provision of new audiovisual services by PSBs as well as the production of digital content allowed a promotion of new technologies or at least increased their attractiveness towards potential customers. However the provision of new audiovisual services by PSBs does according to these private broadcaster neither necessarily serve the formation of the public opinion nor is required for an objective and all-embracing area-wide coverage They point out that the usage of public funds for the operation of such services could therefore not be justified with the public service remit of PSBs offhand, as corresponding public service remits did sometimes not cover the promotion of new technologies.

Assessment

Considering the specified legal roadblocks, the participation of PSBs in the development and distribution of digital content basically faces the same concerns as publicly funded broadcasting in general. In both cases, it comes down to the crucial question whether and to what extent public funding of broadcasters is compatible with the common market and the regulations of the EC Treaty. The legitimacy of publicly funded broadcasting has traditionally been assumed due to the PSBs' obligations. These obligations are usually based on three main principles: programming tailored to public service broadcasting, impartial and accurate information as well as universal access. In most Member States PSBs are therefore required to offer independent, accurate, impartial, balanced, objective news and information, to ensure diversity of programming and viewpoints and to broadcast a certain proportion of news, cul-tural, artistic, educational, minority, religious, children's and entertainment programming.

To guarantee an effective implementation of these public service remits, certain broadcasters – the PSBs – receive public funds. Private competitors consider this a distortion of competition because some PSBs are not only publicly funded, but are also allowed to finance themselves by means of advertising. This generates competitive advantages because PSBs, due to their financial background, are generally able to submit better offers for certain premium rights and are not obliged to refinance such expenses as well.

According to some interviewees the offering of such audiovisual media services that cannot be classified as programmes in the traditional sense is - unlike the coverage via free TV and radio programmes - not necessarily covered by the particular national public service remits for PSBs. They argue that while "classic" broadcasting was essential for the formation of public opinion and therefore had to be regarded as an institution of general interest, digital audiovisual media services did not yet play a comparably important part in that context. They consider that due to their lack of distribution and availability, such services are neither necessary to ensure an all-embracing coverage nor do they have a significant influence on the formation of the public opinion today. New audiovisual services therefore could supplement the actual press coverage via "classic" broadcasting, but currently not replace it as a matter of fact. Accordingly, private broadcasters demand clearly defined public service remits for PSBs which explicit state whether and to what extent PSBs may use their public funding to finance possible multimedia offers. They consider the current practice on the part of PSBs to be illegitimate according to the regulations of the EC Treaty and incompatible to the common market. Spending public funds on the development and trial of new technologies as well as on the production and distribution of digital content is therefore sometimes regarded as a forbidden state aid pursuant to Article 87 (1) of the EC Treaty.

Whether publicly funded broadcasting violates Article 87 (1) of the EC Treaty is nevertheless doubted. People argue, for instance, that the public funding of broadcasters is not state aid pursuant to Article 87 (1) of the EC Treaty because it is neither granted by a Member State nor through state resources in any form. In many

Member States (such as Germany and the UK), the public funding of PSBs results from a television licence fee and is therefore not a public benefit of the particular Member State. Others consider the public funding of PSBs an exception to Article 87 (1) of the EC Treaty according to the Altmark Trans decision[85] of the Court although this case-law has not yet been confirmed by the Commissions practice. Public funded broadcasting could also be justified pursuant to Article 86 (2) of the EC Treaty as a service of general economic interest.

Still the Commission has considered the various forms of funding (including licence fee funding) as State aid (i.e. involving State resources) within the meaning of Article 87 (1) of the EC treaty. Furthermore the Commission did not consider the Altmark criteria to be fulfilled in any of the cases dealt with so far.

For example in its decision on measures implemented by Denmark for the Danish PSB TV2[86] the Commission stated that the financial measures benefiting TV2 had to be regarded as State aid because at least two of the Altmark criteria were not fulfilled: The parameters on the basis of which the compensation is calculated were not established in advance in an objective and transparent manner. Moreover TV2 had not been chosen as the public service broadcasting provider on the basis of a tender[87]. In addition to that, the Commission seems to doubt that TV2 had been entrusted with the discharge of public service obligations.

The Commission[88] has also regarded the licence fee and certain other financial advantages, which the French PSBs France 2 and France 3 received in the early 1990s, as State aid within the meaning of Article 87 (1) of the EC Treaty. The Commission points out that the second condition laid down by the Court in its Altmark-Trans-Decision has not been met in this case: The investment grants and capital injections were one-off support measures granted by the French State to France 2 and France 3 to enable them to cope with the deterioration in their economic situation. Such finance had been granted only a posteriori and in order to address an unforeseen situation, and therefore not on the basis of parameters established in advance in an objective and transparent manner[89].

Hence, some stakeholders doubt that the offering of publicly financed audiovisual media services of PSBs is generally covered by the particular public service remit. Still there can be no doubt that basically multimedia offers of PSBs can also be **directly related to the democratic, social and cultural needs of each society and to the need to preserve media pluralism. Furthermore**, due to their public funding, PSBs play an important role in the development and distribution of digital content and the operation of new audiovisual media services. Even private broadcasters agree upon this. Their financial background resulting from the public funding allows PSBs to run audiovisual media services without depending on instant commercial success and therefore also to try out new (digital) technologies. Otherwise, new service forms would often not even be introduced to the markets in the first place – especially if they require the expensive installation of new infrastructure. PSBs are therefore generally expected to act as drivers for new technologies and use their economic and market power for the provision and the development of digital content and new audiovisual services.

Nevertheless, the stakeholders claim that competition must not be constricted by the participation of PSBs. Proposals to ensure a functional competition include an obligatory co-operation between PSBs and proven service providers. According to these proposals, only co-operations between PSBs and service providers should be allowed to participate in the distribution of the public funds, whereas other multimedia offers of PSBs would have to rely completely on economically viable models. Whether such proposals are reasonable has to be doubted: it has to be taken into account that many private broadcasters vote precisely against such possible co-operations between PSBs and private service providers because the competition would thereby be distorted: According to their opinion, PSBs could completely rely on the existing infrastructure of their business partner and would be enabled to consolidate their market power as well as expand into new markets this way. At the same time, private broadcasters would be blocked from the possibility to contract such co-operations due to their less attractive content. They are therefore afraid that PSBs might use their economic power to occupy new emerging markets and thereby expand their position. Accordingly, they claim that public funding may be used for the trial and the development of new media services, but not for the purchase of premium rights.

Otherwise, in their opinion the public funding might distort competition. In other words, according to some private competitors, PSBs may spend their public funds for the build-up of infrastructure as well as the promotion of new procedures, but not for the production of (digital) content.

3.1.5.4. Electronic Navigators (EPGs and Internet Search Engines)

The digitalisation of contents has been fundamental for the multiplication of available information. Whereas the provision of information used to be characterised by a scarcity of available information, in recent years the development has been in the opposite direction. The key problem of today's information society is no longer how to get information but how to find the information desired.

Owing to the great number of information sources offered today, they can, in fact, only be used efficiently by drawing on electronic means, so-called "navigators". Such navigators are bi-directional gateways: they have become an indispensable means not only for consumers to find contents but also for content providers to distribute content products.

Legal discussions on electronic navigators revolve around "access to content" and "liability for content". Access to content refers to content provider accessibility to the services of electronic navigators on non-discriminatory terms. Liability for content refers to the extent the operators of electronic navigators shall be legally responsible for the displayed third-parties' contents.

Electronic programme guides (EPGs)

In prior times, some sort of electronic navigators were only needed for the Internet. However, now the need for electronic navigators has expanded into the digital broadcasting world. In particular, the continuously growing number of available broadcasting programmes accentuates the need for electronic navigation tools.

Introduction and definition

In broadcasting law, this topic is discussed under the heading "electronic programme guides" ("EPGs"). Electronic programme guides in the broadest sense are all electronic selection tools for broadcasting programmes. In this context, electronic programme guide is a synonym for a digital version of a printed programme guide which, unlike the latter, is integrated within the receiving unit, for example, a set-top box or a television set, in a way similar to teletext but with the possibility to interact with the end user device in order to record the viewing.

The scope of services offered by such EPGs is very broad. Basic functions include the overview of the available programmes which can be viewed according to channels, genres, broadcast time, or other individually defined criteria. Additional programme information such as the title and length of the show, actors involved, age limits, editors' ratings, etc., can usually also be shown, and the programme can be searched for key words. Broadcastings on interrelated topics can be organised by "bookmarks" by means of which alternative programmes can be suggested to viewers. There is also the possibility of having extracts from the ongoing programme shown as kind of a "preview". New on the market are so-called "interactive programme guides" which are capable of adapting to individual viewing habits.

The term electronic programme guide is not restricted to a navigation tool for television programmes. Similar navigators are also available for radio programmes. Mobile network operators have even started offering such services for mobile phones; comparable services are also available for PDAs and PCs. However, the main emphasis is on electronic programme guides for digital television, which will therefore be the focus of the following discussion.

Risk potential of electronic programme guides

EPG as meta services have grown enormously in importance due to the flood of information. This in turn involves the risk that communication processes become more dominated by power structures. The function of EPGs is comparable to Internet search engines, however, the risk potential of EPGs in a practical sense is different. For example, the majority of legal discussions on Internet search engines to date revolve around the legal responsibility for third-parties' content, yet the legal discussions on EPGs are predominantly based on non-discriminatory access to their services. Examples of the risk potential of EPGs are:

Providers of electronic navigators could attempt to open access only to specific – most often their own – contents and to exclude

alternative offers from the programme guide. Such situations would be unacceptable not only for the programme providers concerned but also with respect to the equality of opportunities in the communication process. The Commission has underlined this aspect in its Newscorp/Telepiù decision of 2 April 2003 (Case COMP/M.2876 – Newscorp/Telepiù, Margin No. 138).

It is known from the area of Internet search engines that the reception of search results is directly linked to the order in which the results are presented. Search results that are not displayed on the first two pages of results are usually not noticed. Navigators for broadcasting programmes present a similar, although not completely identical, risk potential. Apart from the extreme case in which specific content is intentionally excluded from a programme guide, the positioning of certain programmes could also be influenced in such a way that they would be placed either ahead of, or behind, their real position, thus in contradiction to their actual relevance. The Commission also emphasised this aspect in its Newscorp/Telepiù decision of 2 April 2003 (Case COMP/M.2876 – Newscorp/Telepiù, Margin No. 137).

A direct threat to the variety of opinions would, for example, arise if programmes with high relevance for shaping public opinion were only displayed at lower programme positions. Such programmes would most likely be noticed less frequently than programmes which are prominently offered in the first few programme positions.

An unbalanced way of displaying the programme overview in favour of only a few individual providers would have a similar risk potential. Furthermore, there is the (commercially sold) possibility, also known from the area of Internet search engines, of drawing attention to one's own offer by making it conspicuous (by way of font sizes, bold print, colour, graphics, or "tips" or "recommendations"), thus making it accessible to a larger circle of recipients.

Even a (commercially available) influence on the form of search routines to the effect that the offers of some providers would be presented more favourably than their competitors would be in principle conceivable.

Legal frame conditions for EPGs at EU level and in certain Member States

European Union

Recital 10 of the Access Directive states that competition rules alone may not be sufficient to ensure cultural diversity and media pluralism in the era of digital television. Therefore, the Members States are to review the obligation to provide access on fair, reasonable and non-discriminatory terms, already provided for in Directive 95/47/EC, on account of the ongoing technological change and changes in the market economy in order to ascertain whether it appears reasonable to extend this obligation to new gateways such as electronic programme guides.

In this context, Article 5 (1) (b) in conjunction with Annex I, Part II, of the Access Directive, in particular, gives the Member States the power to impose, to the extent necessary to ensure accessibility for end users to digital radio and television broadcasting services specified by the Member State, obligations on operators to provide access to electronic programme guides on fair, reasonable and non-discriminatory terms. According to Article 2 (e) of Directive 2002/21/EC of the European Council and Parliament on a common regulatory framework for electronic communications networks and services (the Framework Directive), electronic programme guides count among the "associated facilities".

Germany

Section 53 of the German Interstate Broadcasting Agreement (Rundfunkstaatsvertrag) contains a special regulation for electronic programme guides. In the version of the Third Agreement to Amend the Interstate Broadcasting Agreement of 1997, section 53 imposed the obligation on the providers of navigators to make their navigators available on equal opportunity, reasonable and non-discriminatory terms. Pursuant to section 53, all systems controlling the selection of television programmes and being used as a superior user interface for all services offered via that system had to ensure, as far as technologically possible, that in a first step the public and private television programmes were presented on an equal basis and that it was possible to access all programmes directly.

In 2005, section 53 of the new version of the Interstate Broadcasting Agreement was completely rewritten by way of the

Eighth Agreement to Amend the Interstate Broadcasting Agreement. Pursuant to section 53 (1) of the Interstate Broadcasting Agreement, providers of telecommunications services distributing broadcasting services or comparable telemedia are obliged to ensure that the technology used allows for diversity of offers. In order to ensure diversity of opinions, providers of broadcasting services or telemedia must not, neither directly nor indirectly, be unfairly impeded or treated differently from other similar competitors without any objective justification (i) by access rights systems, (ii) by interfaces for application programmes, (iii) by systems which also control the selection of television programmes and which are used as a superior user interface for all services offered via that system, or (iv) due to the way fees are structured in connection with the distribution of their offers. The list contained in section 53 (1) is intended to cover the crucial interfaces where discrimination is technically possible.

Section 53 (1) No. 3 will, like section 53 (2) of the old version of the Interstate Broadcasting Agreement, require that the first page of any programme guide contain an overview of the entire range of programmes offered. Under the aspect of equal treatment of all providers, this listing of the programmes offered will have to be complete, whereby comparable services must not be presented differently. It is also argued that section 53 of the Interstate Broadcasting Agreement should be taken to mean that providers are required to provide for a search system which is objective with respect to all programmes and services offered.

Pursuant to section 53 (2) of the Interstate Broadcasting Agreement, the competent regional media authority (Landesmedienanstalt) has to be notified immediately of the use of such a navigator. This notification duty covers all technical and economic conditions of further distribution. The notification duty of the telecommunications service provider is matched by an extensive information right on the part of the regional media authority.

Precise specifications on how electronic programme guides should be structured are to be found in section 14 of the regulations – uniform across the regional media authorities – that accompany section 53 of the Interstate Broadcasting Agreement (old version). It was provided that:

- Accessibility to navigators must be ensured in such a way that the finding and use of individual contents is not impeded in comparison to other contents.
- Especially the privileged (must carry) programmes (public broadcaster of each German state including the programme bouquets, private broadcasting programmes with regional contents, regional and local television programmes and open channels) have to be taken into consideration.
- Each provider of a navigator is obliged to ensure, as far as technically possible, that the receiver has the possibility to use other navigators and electronic programme guides by means of connections.
- As far as technically possible, navigators have to be designed in such a way that the user can access all programmes directly, go back directly from the programme to the navigator, or change the order of the programmes.
- In a first step, the public and private programmes offered are to be presented on an equal basis.

Austria

The regulation of broadcasting in Austria is mainly based on the Private Radio Act (Privatradiogesetz) and the Private Television Act (Privatfernsehgesetz). Pursuant to section 25 (2) of the Private Television Act, the regulatory body KommAustria has to ensure, with respect to electronic navigators, that:

- If digital programmes and auxiliary services are bundled into a comprehensive service under one electronic programme guide (navigator), consumers must be able find all digital programmes and auxiliary services under fair, equal and non-discriminatory conditions.
- The navigator must be organised in such a way that all digital programmes and auxiliary services represented in the multiplex platform have equal data rates according to their volume.
- All digital programmes and auxiliary services are given equal treatment with respect to their optical appearance, accessibility and clarity of information, enabling direct selection of the individual programmes and auxiliary services.

United Kingdom

In the UK, the ITC Code of Conduct on electronic programme guides was adopted in 1997 by the UK's Independent Television Commission (ITC) as a first attempt to set forth a comprehensive set of rules for EPG providers and to ensure media pluralism by guaranteeing broadcasters' access to EPG services on a fair, reasonable and non-discriminative basis.

Electronic programme guides are today covered by the Communications Act of 2003. Providers of "television licensable content services", including electronic programme guides pursuant to section 232 (2), must apply for a licence to operate such services at the regulatory body OFCOM.

According to section 310 (8) "electronic programme guide" means a service which consists of (a) the listing or promotion, or both the listing and the promotion, of some or all of the programmes included in any one or more programme services the providers of which are or include persons other than the provider of the guide; and (b) a facility for obtaining access, in whole or in part, to the programme service or services listed or promoted in the guide.

OFCOM set up the so-called code of practice on electronic programme guides, based on section 310. According to the code of practice, providers of navigators are, in particular, obliged:

- to ensure that any agreement with broadcasters for the provision of an EPG service is made on fair, reasonable and non-discriminatory terms;
- to publish and comply with an objectively justifiable method of allocating listing. This does not preclude different methods – for example, objectively justifiable methods could include "first come, first served", alphabetical listings, and those based on audience shares;
- to refrain from giving undue prominence in any listing or display to a channel to which they are connected, except as required by the appropriate prominence provisions set out at paragraphs 2 to 4 above;
- to carry out periodic reviews of their listing policy and of channel listings made in accordance with that policy, in consultation with channel providers;
- to ensure that viewers are able to access all television and radio services included in the EPG service on the same basis, provided that the viewers are equipped to use the EPG service and to receive the relevant programme services;
- to ensure that free-to-air services are at least as accessible as pay TV services, and that reception does not require additional equipment or commercial agreements over and above those required for the acquisition for the receiving equipment; and
- to refrain from imposing any condition in an agreement for EPG services between an EPG operator and a channel provider specifying exclusivity to one EPG for any service or feature, including the ability to brand services and access to interactivity.

Furthermore, according to section 310 (2), OFCOM can oblige EPG providers to give the degree of prominence that OFCOM considers appropriate to the listing and promotion of public service channels, for members of the intended audience. OFCOM also is entitled to impose obligations on a person providing electronic programme guides as OFCOM considers to be necessary for securing (a) that persons are able to have access to such programme services provided in digital form as OFCOM may determine; and (b) that the facility for using those interfaces or guides is provided on terms which (i) are fair and reasonable; and (ii) do not involve, or tend to give rise to, any undue discrimination against any person or description of persons.

France

In France, the fundamental set of regulations for broadcasting is the Freedom of Communications Act ("loi relative à la liberté de communication"). Since August 2000, services providing access rights are governed by Article 95 of this law. There is no express provision for other digital auxiliary services such as electronic navigators, for which, thus, no licence is required and for which access is not regulated by any special provision. However, it is argued that electronic programme guides can be regulated by the regulatory authority CSA on the basis of Article 17 (1) of the Freedom of Communications Act. Pursuant to Article 17 (1), any conflict in connection with the distribution of a radio or television service falls within the competence of CSA if the conflict is, among other things, capable of infringing the requirements of media pluralism or the quality and diversity of

programmes, or if the conflict is linked to the equal opportunity, reasonable and non-discriminatory access of programme providers to the programme receivers. In particular, it can be inferred from the wording "access of providers to receivers" that conflicts over access in connection with electronic navigators would also be within the competence of the regulatory authority.

It is also argued that special provisions apply for navigators that display all digital terrestrial programme services. Such navigators are to be considered "television services" and would thus require licences. In addition, there are far-reaching obligations to preserve neutrality, as well as concentration restrictions set out in broadcasting law. This would not apply if only services of individual programme providers are displayed; this does not require a licence.

Responses from companies operating in the market

The analysis of interview responses from companies reveals that there is no urgent need for action at present, at least from the companies' point of view. The majority of the interviewed companies does not consider it to be necessary to provide a legal basis for electronic programme guides beyond the scope of the existing legal framework. On the contrary: the majority of companies argued against further regulation.

Only a few companies pointed to the risk for the distribution of digital content if electronic programme guides are not regulated sufficiently. According to them, the central role such navigators will have in the future has not been recognised yet. It was suggested that, as a basis to start from, the existing electronic programme guides could either be regulated further, or public services could be established that are provided with a clear role without any discriminatory effect. This group of companies stated that the current legal situation (in Germany) was at least inadequate because it only provided for the non-discriminatory display of the programmes but not for the access of the electronic programme guides of the hardware providers. In this context, some respondents called for access rights for public broadcasters to electronic programme guides, similar to the "must carry" rules. Another problem discussed was that, when assessing the power of a content provider to shape consumers' opinions, it should be taken into account whether this company is also the provider of an electronic programme guide which has already established its position in the market.

However, the majority of the interviewed companies considered the currently existing legal framework to be sufficient. The possibility of controlling the audience flow was identified by the companies as an important element of entrepreneurial freedom, and the majority of the interviewed companies declared themselves in favour of also having this possibility in the future to a great extent. The companies demanded that, in view of the multitude of services available, electronic programme guides should be allowed to be shaped, to quite a large extent, by market forces. There was a trend among the companies to emphasise that it should only be ensured that electronic programme guides do not entail any unjust discrimination. The possibility of concluding agreements with individual content providers regarding the placing of specific offers in order not to restrict the financing options for new types of multimedia services should not be excluded. It also was suggested that the question on how to structure an EPG should be in the sole discretion of the service provider in line with his marketing strategy. The EGP provider and the content industry were, however, encouraged to cooperate more closely in order to design an attractive offer including a great choice of (graphical) content in every possible format to be edited by the service provider for its EPG "look and feel".

Conclusions on EPG

The responses from companies operating in the market showed that further regulation of electronic navigators is not deemed to be necessary, at least from the companies' point of view. This view is confirmed by the fact that no case of discrimination due to an electronic programme guide has been reported in Germany.

However, if the views expressed by legal scholars are also taken into account, it becomes clear that there is still a number of legal uncertainties in connection with electronic programme guides which could be avoided by means of a Community-wide legal framework: Particular attention should be directed to issues analysed in *Case study 22: Section 53 of the German Interstate Broadcasting Agreement on page 237*.

Case study 22: Section 53 of the German Interstate Broadcasting Agreement

Personal scope of application

At present, there are significant uncertainties about the personal scope of application which shall be exemplified by section 53 of the German Interstate Broadcasting Agreement. At the time the original version of section 53 was drafted in 1997, the regional media authorities argued that not only the manufacturers of end user devices (e.g. set-top boxes) were bound by the provisions of section 53 but also cable network providers or broadcasting companies. Moreover, the "provider" within the meaning of section 53 of the Interstate Broadcasting Agreement could also be the one who put the navigator into the market, especially if the manufacturer of the navigator were given specifications concerning significant parameters and structural elements.

The new version of section 53 only seemed to remove these uncertainties. The wording is clear in that "providers of telecommunications services" providing broadcasting or comparable telemedia services are the exclusive standard addressees. However, taking into account the definition of telecommunications services (section 3 No. 24 of the German Telecommunications Act) and of telecommunications networks (section 3 No. 27 of the Telecommunications Act), section 53 of the Interstate Broadcasting Agreement is meant to address satellite operators, mobile network operators (insofar as they provide networks for broadcasting services) and all cable companies on network levels 3 and 4.

Given the clear wording of section 53 of the Interstate Broadcasting Agreement, however, – in contrast to the previously held opinion – equipment manufacturers and distributors would no longer be bound by the provisions of section 53. This also seems to be suggested in the official recitals to the Eighth Agreement to Amend the Interstate Broadcasting Agreement, whereby section 53 only covers the actual application of these technologies but not the manufacturing and distribution of such technologies. This would mean that the provider of a navigator who does not provide any additional transmission of signals, even though it is a distributor of broadcasting services, is not an addressee of section 53. However, the consequence would be that this provision would be irrelevant to a considerable number of cases. It can be doubted whether this had been the intention of the legislator.

There is also uncertainty in situations involving electronic programme guides that are discriminatory or cause disadvantages which are distributed by providers of telecommunications services exclusively via their own network. In particular, it is unclear whether this situation results in a position of guarantor, requiring action. Section 53 of the Interstate Broadcasting Agreement thus seems to be specifically tailored to cable network operators who have their own electronic navigators, distribute broadcasting services and, at the same time, provide telecommunications services through the transmission of signals. It seems doubtful whether this is sufficient.

Material scope of application

There are also significant uncertainties as to the scope of the material application of section 53 of the German Interstate Broadcasting Agreement, especially with respect to what types of electronic navigators are actually covered by section 53. In part, these uncertainties can be attributed to the many and various definitions of electronic programme guides.

For instance, there is the view that section 53 should only cover so-called "basic navigators", with electronic programme guides being covered only to the extent that they also serve as a superior user interface and display all available content services. So far, no clear distinction has been made between "basic navigators" and "electronic programme guides". "Basic navigators" are to be used for extracting service information, and preparing it for consumers mostly with respect to content and time, which is transmitted via the DVB standard (DVB-SI) and contains descriptive data concerning the broadcast programmes. Nevertheless, the term "electronic programme guide" should only be used if the level of user guidance is advanced, that is, if the additional information is used to create a kind of electronic TV guide and if users are provided with advanced possibilities of use such as background information on the programmes, editors' ratings, extracts from the ongoing programme, or cross-references. However, it is unclear where to draw the line between basic navigators and electronic programme guides.

Furthermore, the regional media authorities classified the various services under different aspects:

- A portal which acts as a home page and allows selecting the various services offered on the respective platform (e.g., broadcasting, video on demand, Internet, email) is not to be covered by section 53 because the portal itself does not allow direct access to the individual programmes.
- Proprietary navigators, that is, bouquet or programme EPGs that only allow navigation within one programme bouquet, thus not representing a superior user interface for all services offered via the system, do not, unlike EPGs applicable to all programmes, fall within the scope of section 53 either. The European market, however, is largely driven by the operators of such proprietary networks which usually provide their own electronic programme guides tailored to the specific content package.
- In turn, such bouquet EPGs are to be treated as subject to section if switching to EPGs provided by other providers is impeded. This aspect was already taken into account in the Commission's Decision of 15/9/1999 (Case IV/36.539 – British Interactive Broadcasting/Open) (Margin No. 110 et seq.).

- A "basic navigator" is to be covered by section 53 if the service information is presented from the DVB data stream without filtering and without selecting individual programmes, but this is to be unproblematic if the available programmes are presented according to neutral criteria in terms of content (e.g., channel allocation, or in alphabetical order).
- On the other hand, "electronic programme guides" which edit data in terms of graphical presentation and content for the purpose of a sort of television guide magazine will have to satisfy the requirements of section 53. However, section 53 does not apply if the EPG does not include the functions of a "basic navigator".

Determination of specific requirements regarding the operation of EPGs

The requirements regarding the operation of electronic programme guides are also considerably uncertain. It is true that section 14 of the regulations of the regional media authorities (before amendment) contained a few specific provisions. However, very little was said about permissible criteria for selecting the choice of programmes. A recent paper developed by an interest group recommends to producers and providers of EPGs that EPGs should not draw attention to certain programmes by making them conspicuous, in particular that

- EPGs or their programme lists should be neutrally designed and should not show any commercial advertisements. In particular, the user's access to the programmes should not be restricted or delayed in any way by the appearance of any commercial ads.
- All programmes should be displayed equally, which means that some programmes should not be displayed in a more favourable way than other programmes, for example, by means of smaller or larger font sizes, by using colours or graphical effects, by underlining programmes, etc.
- All receivable programmes should be displayed in full and without any recommendations (e.g., "tip of the day").

This paper recommends that the primary navigation level should include of the equally displayed categories "Favourites", "Free-TV", "Subscription-/Pay-TV", "All Programmes", "Bouquets/Genres" and "Radio". The category "Favourites", for example, should not contain any default programme settings, but the users should rather be free to programme their settings. The programmes in the category "Free-TV" should be sorted according to market-driven criteria, whereas the category "Subscription-/Pay-TV" should be sorted in a non-discriminating way, for example, in alphabetical order. In the category "All Programmes", it is even required that all Free- and Pay-TV programmes are in alphabetical order

Due to the variety of different sorting criteria, for legal certainty it would be desirable to have a (non-exhaustive) list of examples showing what criteria are assessed by the competent authorities as being no cause for concern. With a view to the code of practice introduced by OFCOM, the criteria might include alphabetical sorting, sorting according to the priority principle "first come, first served", according to objective categories (e.g., sport, film, documentaries, etc.) or according to the scope of the programme. In addition, it could be required that the order in which the channels are presented can be changed individually.

Any demands to the effect that EPGs or their programme lists should not show any commercial advertisements seems, from the author's point of view, at least at present neither necessary nor recommendable. In particular, such demands could block advertising-sponsored/financed business models. Due to the cost-intensive implementation of an EPG service the industry, the hardware industry, in particular, is not willing to pay for the implementation of an EPG in the end user devices. Therefore, the providers of an EPG are looking for new business models in order to achieve compensation for the provision of such services. A prohibition of advertising would eliminate such compensation and prevent third parties from providing such services. As a consequence, only the broadcaster itself would provide an EPG about its own programme. The promoters of such a prohibition do not explain what the relevant difference is in comparison to Internet search engines or to printed programme guides which are also largely refinanced by commercial advertisements. This regulation involves a risk of eliminating third parties, especially programme magazines, inform the provision

of programme information in the digital world.

Moreover, such a set of regulations could clearly define the basic relationship between free TV and pay TV programmes and between the privileged programmes (e.g., public broadcasters, regional or local programmes) and other providers. It seems logical that if cable network operators are required to distribute "must carry" content, they must present that content in any navigator that may be provided. However, this does not indicate whether equal treatment of private or unprivileged programmes is sufficient or if the privileged programmes have to be privileged with respect to their presentation, that is, to be given priority placing.

As already pointed out by the Commission in its communication dated 24 May 2005 (COM(2005) 204 final), accessibility for older people and people with disabilities could be also be made a requirement (key word "accessibility requirements").

A type of option model for EPG providers could also be considered. Providers of electronic navigators could be given the choice between two assessment regimes: in the case in which the recipient can replace the EPG by alternatives or define it individually, controlling the EPG as originally designed could become unnecessary. Only if the EPG does not offer this feature, the EPG would have to be assessed according to the statutory provisions and would have to satisfy the requirements of equal opportunity, non-discriminatory access (at least if an obstruction to competition must actually be feared).

Further need for regulations

Furthermore, it seems to be unclear to what extent the Member States can deviate from the concept of fair, reasonable and non-discriminatory terms of access as required by Article 5 of the Access Directive with respect to the regulation of electronic programme guides. This question arises in the context of section 53 of the Interstate Broadcasting Agreement in the version of the Eighth Agreement to Amend the Interstate Broadcasting Agreement, which seems to deviate from the regulatory concept of preventively ensuring accessibility in order to control abuse – prohibition of unfair obstruction without any objective justification – laid down in Article 5 of the Access Directive.

Furthermore, it seems to be necessary to understand the way in which cross-ownership between television programme broadcasters and providers of electronic navigators are taken into account when assessing power to shape opinions.

In addition, the question could be asked whether the decision on whether a navigator is a cause for concern should be based merely on the display which the navigator shows to the consumer, or whether the contractual conditions for access to the navigator or other declarations by the provider can also be taken into account. A similar case in which this approach was taken was the BSkyB/Kirch Pay TV decision in which the Commission also took into account the declaration of an EPG provider to offer access to third parties (Commission Decision of 21/3/2000, Case No IV/M.0037 – BSkyB/Kirch Pay TV) when assessing its market power.

Copyright as a Roadblock

Because the information necessary to provide programme guides for future programming is exclusively provided by the individual TV broadcasters on special (Internet) portals (DVB-SI only contains information of the ongoing programme), copyright could also be a roadblock to the distribution of broadcasting programmes via electronic programme guides due to the fact that, in reference to their copyright, the broadcasters' general terms and conditions frequently prohibit the usage of this programme information in EPGs. Within this context, the question arises whether or not the programme information is covered by copyright and whether or not third parties can legally be excluded from using this information in EPGs.

This context demonstrates a parallel to a case ("Magill TV Guide") heard before the ECJ in 1995 (ECJ dated 6 April 1995 – C-241/91 P, C 242/91 P – Radio Telefis Eireann and Independent Television Publications v. Commission). The ECJ had to rule on a refusal of broadcasting companies to grant licences for their programme information based on copyright conferred by national legislation. The television stations, who published television guides covering only its own programmes, claimed copyright protection for its own weekly programme listings in order to prevent their reproduction by a provider of a weekly programme guide. However, the ECJ held that the television stations' refusal to grant licences for their

basic programme information in order to prevent the appearance of a new product, a comprehensive weekly guide to television programmes which the television stations did not offer and for which there was potential consumer demand, constitutes an abuse of a dominant position under Article 82 of the Treaty. The ECJ therefore confirmed that the Commission was entitled to require the television stations to provide the programme information to the provider of the weekly programme guide.

This idea of a compulsory licence is also found in a recent judgment of the Cologne Higher Regional Court. In this case, an EPG provider was required by a broadcaster to cease and desist from the display of pictures taken from the broadcaster's programmes. The broadcaster argued that it is the owner of all rights to use the programme and that any use of the pictures from these programmes in EPGs is prohibited according to its general terms and conditions. However, the Cologne Higher Regional Court ruled on 1 October 2004 (Case 6 U 115/04) that the broadcaster's programmes have to be considered cultural occurrences, irrespective of their content. Therefore, the use of the relevant pictures is covered by section §50 of the German Copyright Act (fair dealing with a work for the purpose of reporting on current events).

Despite these judgments, it is still unclear whether or not or to what extent broadcasters can viably rely on copyright protection to refuse to provide third parties with their programme information.

Internet search engines

The Internet is an example that brings up similar questions. Particularly due to the decentralised structure of the Internet, meaning the individual user's possibility of publishing content outside any central control, the usability of the Internet largely depends on how easily content can be found. Special navigators, the Internet search engines, have taken over this task.

Risk potential of Internet search engines

Internet search engines play a central role: if a content cannot be found through them, it virtually does not exist. For the distribution of content, however, it is not only crucial that the content is stored in the databases of the search engines. In addition, the position within the list of search results in relation to a particular search term is of significant economic importance.

At present, almost the entire market for search services worldwide is dominated by a handful of search service providers. The Internet search engines as gate keepers therefore have considerable responsibility. After all, the search engine providers determine what content can be found and what cannot be found. Any unlawful use of information by search engines, as well as any discrimination regarding access to search engines thus incurs a considerable risk to the equality of opportunities in the communication process.

Though the function of Internet search engines is similar to EPGs, the risk potential in a practical sense is different. The majority of legal discussions on Internet search engine to date did not revolve around non-discriminatory access to their services but rather around the legal responsibility for third-parties' contents.

Legal frame conditions for internet search engines

European Union

Articles 12 to 14 of the E-Commerce Directive provide for clearly defined limitations of liability for services that consist of mere conduit, caching or hosting.

Pursuant to Article 21 of the E-Commerce Directive, in the subsequent applications reports, the Commission should analyse the need for proposals concerning the liability of providers of location tool services. In the First Application Report of 2003, the Commission noted that in addition to implementing Articles 12 to 14, some Member States have established limitations on the liability of providers of hyperlinks and search engines as well. In addition, the Commission stated that, at the time, there was still very little practical experience with the application of Articles 12 to 14 of the Directive and therefore, it indicated that it would continue to monitor and analyse new developments (national law, case-law, administrative practices) related to liability of internet intermediaries in order to assess, inter alia, the need for addition limitations on liability for search engines. The publication of the Second Application Report that will examine the need to adapt the present framework in light of the developments has been scheduled for 2007. In order to get an overview of the interpretation and application of the liability section of the Directive by

national courts, a study on liability of internet intermediaries is being commissioned this year.

Austria

In Austria, the requirements of the E-Commerce Directive have been implemented by the Electronic Commerce Act (E-Commerce-Gesetz, ECG). Section 14 of the Austrian Electronic Commerce Act contains provisions on the liability of Internet search engine providers. Section 14 of the Electronic Commerce Act provides that a service provider providing a search engine or other electronic tools to users for the purpose of searching third-party information is not liable for the requested information if the provider (i) does not cause the requested information to be transmitted, (ii) does not select the receiver of the requested information, and (iii) does not select or modify the requested information.

Spain and Portugal

Spain and Portugal, for their part, decided that the liability of search engine providers should be limited, in line with the model provided by Article 14 of the E-Commerce Directive.

Germany

In Germany, the provisions of the E-Commerce Directive were implemented in section 9 to 11 of the German Teleservices Act (Teledienstegesetz, TDG). No special liability privilege was included for Internet search engine providers. On the contrary, it was not the intention of the legislator to regulate the liability of search services. The federal government at the time did not consider itself authorised to regulate these liability issues because the European legislators also deliberately left these issues open. It was argued that, with respect to the complexity of the various different procedures and operational forms of hyperlinks, the development in science and case law rather remained to be seen which would first be subject to the general liability provisions.

Even if the issue of liability of Internet search engine providers is governed by the general provisions in Germany, providers of search services do not seem to be at a disadvantage compared to other European Member States. Legal commentaries and case law usually consider that, due to their significance for the general public, search service providers have only a limited obligation, even under the general provisions, to review the contents linked to in the search results. The majority of court decisions in Germany have assumed that a pro-active review of contents cannot reasonably be expected owing to the multitude of contents.

This is not only assumed with respect to organic search results but in the same way also for commercial advertisements placed in relation to the search terms. Only for Web directories maintained by editors may a review be acceptable in some cases, because contents are selected purposely; however, this is not likely to change the fact that any content that is indexed could be changed at any time.

Responses from companies operating in the market

Despite the important role Internet search engines play regarding access to and the distribution of information, the regulation of access has not been an issue so far in practice. In practice, the more relevant question is the liability for third-party content. In this respect, however, the responses from interviewed companies do not indicate any urgent need for action. The majority of companies considers the E-Commerce Directive to be an adequate legal framework; the cautious responses to questions concerning liability for third-party content can only be taken to mean that providers do not see any further need for regulation. Only a few respondent companies criticised that, in Germany, the duty to monitor contents could be factually justified via a cease-and-desist claim, even if such a duty should normally be ruled out pursuant to the provisions of the E-Commerce Directive. It is also the view that it might be worth considering the introduction of a notice-and-take-down procedure based on the DMCA.

Conclusions

In the First Application Report of 2003, the Commission expressed no concerns about the court decisions on Internet search engines rendered in the Member States up to that date with respect to the Internal Market, referring, in particular, to the decisions "Paperboy" (German Federal Court of Justice (BGH) decision of 17 July 2003 – I ZR 259/00) and "Lorie c/M. G.S. et SA Wanadoo Portails" (Regional Court (TGI) of Paris, 12 May 2003).

In the First Application Report of 2003, the Commission, even with respect to those Members States where liability for search engines is not expressly regulated by law, did not see any danger of fragmentation of

the Internal Market, probably because even in those countries (e.g., in Germany) search engine operators are normally only liable if they gained prior knowledge about the infringement of third-party's rights.

At the moment, DG MARKT is commissioning a study on liability of Internet intermediaries to provide an overview on the interpretation and application of the liability section of the directive by national courts (including Internet search engines, hyperlinks and auction platforms). This study will in turn provide input for the Second Report on the application of the E-Commerce Directive scheduled for 2007.

If the Commission recognizes a necessity of regulating the liability of providers of Internet search engines in the Second Application Report, it might – from the author's point of view - be worth considering that Article 12 of the E-Commerce Directive assumes a mere transmission of information and a technical impossibility to block such transmissions and that this purpose seems not to be transferable to Internet search engines which could easily remove a dataset found to be unlawful. An exemption from liability based on Article 14 of the E-Commerce Directive – as is the case in Spain and Portugal – might therefore be more appropriate for the activity of search service providers.

3.1.5.5. Legal liability of Internet intermediaries (4.3)

As discussed in the publishing section in relation to cross-border prosecution of defamation and possible "forum shopping" (a plaintiff searching for the most favourable jurisdiction for his claim), there are still complex issues involved in legal liability for international distribution of content.

As already discussed above, a legal framework in relation to Internet Intermediaries was enacted with the E-Commerce Directive (2000/31/EC), providing detailed requirements for immunity of ISP's.

Nevertheless, most stakeholders interviewed with a legal focus claim that they still fear legal uncertainty and as for either further clarification with regard to claims for information and/or injuction proceedings or ask for the general application of a country of origin principle.

Even in view of the liability concept set out by the EU directives discussed above various stakeholders report that – due to implementation of directives into national law and, in particular, the approach of national courts – the reliable basis intended by the directives has not been reached yet in any case.

3.1.6 Consumer protection issues

3.1.6.1. Introduction

Digital content is marketed extensively to end consumers, and most value chains include the end consumer as only or (at least) the important target for the sale of digital content. Even in sectors traditionally not considering end consumers in their income schemes (like television), means of interactivity in connection with traditional broadcasting (e.g., audience voting in casting shows, television gaming, etc.) are generating a steadily increasing stream of revenue.

Convergence has and will, therefore, necessarily lead to B2C concepts being included in every business concept in the field of convergent media to a certain extent.

Because consumer protection is traditionally an important focus of EU legislation, these developments occur within an existing legal framework, consisting – inter alia – of the E-Commerce Directive (2000/31/EC) and the Directive on Privacy and Electronic Communications of 12 July 2002 (2002/58/EC). This framework acknowledges the particularities of such virtual sale of goods and services by, e.g., providing for transparency and consumer information and granting consumers a right to withdraw from an agreement entered into online.

However, in most existing and upcoming B2C applications, digital content is marketed directly via the Internet, mobile networks or other media. Whereas – in e-commerce with physical goods, the "product" is easy to identify, the "sale" of digital content has – from a legal point of view – to be considered as a grant of defined rights for a defined digital content. Consumers are therefore increasingly confronted with licensing issues (formerly known to them only in case of software) when purchasing music, ringtones, pictures, e-books, and distributors of digital content apply known and established licensing procedures – including the use of complex licensing terms. The existing legal framework, on the other hand, acknowledges the particularities of direct digital distribution to end consumers with an exception to the right to withdraw from an agreement if digital content is delivered instantly. If direct digital distribution becomes a mass phenomenon, it can be asked whether the mostly accepted legal framework (targeting the direct distribution of physical goods) is sufficient to protect consumer interests also in direct digital distribution.

The same concerns seem to be raised in view of the established legal instruments for the protection of minors and advertising regulation: are the current and mostly accepted standards applicable in a convergent world, or do the means of complying with such standard need to be reviewed?

As far as data protection (and the strongly related issue of direct marketing) is concerned, stakeholder's reactions strongly vary: apart from voices claiming de-regulation, some stakeholders have embraced compliance with, for example, data protection requirements as a means to strengthen consumer trust; they even demand a stronger enforcement of the existing legal provisions due to widely accepted non-compliance without sanctions.

3.1.6.2. Protection of consumers

Even though B2C business appears to be vital for the distribution of digital content, legal responses to the detailed consumer protection issues in the legal questionnaire (see Sect. 4.1) were quite limited.

In general, the existing legal framework for consumer protection is perceived as sufficient and not identified as a substantial roadblock for the marketing of digital content. Some stakeholders stated that more and stricter rules would harm the development of new services – in particular, the compliance with e-commerce information obligations was perceived as potential barrier for new markets. Stakeholders active in mobile services pointed out that due to technical limitations (e.g., the size of mobile end user devices displays) even existing information obligations were difficult to meet.

Apart from this example, none of the stakeholders addressed, however, raised detailed concerns in relation to specific consumer protection provisions or indicated disagreement with the existing consumer protection concept in general. Interestingly, even companies pointing out potential risks of too severe regulation admitted that a minimum level of protection has to be assured to establish consumer confidence in new services and B2C business concepts.

Some stakeholders, however, tend to not only meet the current requirements, but to establish consumer protection concepts above statutory standards in relation to transparency, data protection/direct marketing and other

Case study 23: Music download and consumer rights in Norway

In May 2006, the Norwegian Consumer Ombudsman ruled that Apple's music download store iTunes violates section 9a of the Norwegian Marketing Control Act.

The regulator ruled that certain contractual terms for the Apple iTunes service violate consumer protection law, and has given the company two weeks to fix the problem. The regulator said it was not reasonable that the consumer must sign a contract governed by English law, rather than Norwegian law. It also said iTunes must accept responsibility for damage its software may do, and said it is unreasonable to alter terms and conditions after a song has been sold. iTunes indicated, in a reply published at the beginning of August, the general willingness to alter the terms and conditions to a certain extent, however, some issues appear to remain unresolved. Furthermore, the Ombudsman may also rule on whether the DRM system itself violated Norwegian Law.

The decision is based on a complaint lodged by the Norwegian Consumer Council in January 2006 against iTunes Music Store Norge for breach of fundamental consumer rights. The decision of the Consumer Ombudsman is considered to be in accordance with what the Consumer Council alleged in its complaint.

Consumer Council representatives even marked the iTunes issues as a frequent phenomenon in direct digital distribution: "We are very satisfied with the decision. There is a general tendency for consumers to meet grossly unreasonable agreements when they download files with cultural content. It is therefore positive that the Ombudsman gets a grip on this so that consumer interests are also protected when such material is downloaded. A trade agreement with a consumer must be balanced, also in the digital sphere. The Consumer Council has seen a trend where terms of agreement, technical blocks and their legal protection have led to a reduction in the rights of consumers and their opportunities to use cultural material. The digital rights of consumers have been dictated by the industry for a long time. This decision marks the start of a struggle to recover them."

After the decision, the Consumer Council wants attention focused on other downloading services operating in Norway, since they use similar technical and written terms, and consumer advocates announced that they would be watching the trend carefully in the time ahead.

A final decision of the Consumer Ombudsman on several issues (e.g., the cooling-off period when purchasing from iTunes, whether the technical blocks (DRM) and geographical limitations are unreasonable) has still to be taken on the basis of the additional information provided by Apple in August 2006. Consumer Council representatives argued that the widespread use of DRM and its legal protection have upset the normal, balanced regulation of copyright and that it is important that such technical blocks do not create unbalanced terms of agreement between the consumer and the industry. Similar complaints by consumer associations have been announced in Sweden and Denmark.

What can be seen from this case study is a tendency of consumer advocates to actively join forces for the enforcement of consumer rights in digital media. Consumer protection provisions, therefore can hardly be neglected by any stakeholder being active in a B2C business: Apart from the significant influence on consumer confidence, non-compliance may have legal consequences and lead to negative effects for business and reputation of the respective provider.

consumer rights. For those market players, consumer confidence appears to be a vital part of their business concept, and over-fulfilling minimum standards set by law a means of taking customers concerns seriously. It is also this group that claims that the current consumer protection standards lack effective enforcement in some respects:

> But even in view of the general acceptance of existing legislation by most stakeholders (which is a positive indication for the standard of consumer protection in relation to digital content distribution), consumer rights groups argue that basic consumer rights are ignored in direct digital distribution (*see Case study 23: Music downloads and consumer rights in Norway on page 244*).

With the Norwegian case illustrating a possible consumer protection roadblock based on the existing legal framework, some consumer interest groups argue that the current concept of direct digital distribution as such violates consumer rights: In mid July 2006, the Federation of German Consumer Organisations published a extensive study on "Consumer Protection in Digital Media"[90], , stating that several common provisions used direct digital distribution of, inter alia, software, e-books, mobile applications like ringtones, games and music are violating consumer protection laws. The study focused on a legal assessment of terms and conditions used towards customers in digital distribution. The findings, inter alia, indicate that a severe lack of transparency is caused by the use of traditional licensing instruments in B2C businesses: extensive licensing agreements setting out rights and obligations are often hardly understandable to a regular consumer. Customers of, for example, music or software download services may hardly know the "product" they are buying, because restrictions in the rights of use are hidden in extensive standard agreements in purely legal language. The claim of "unbalanced terms of agreement between the consumer and the industry" may also apply in this respect on a quite larger scale.

The results of the study seems to support the above mentioned opinion of "grossly unreasonable agreements". As an outcome of the study results, the Federation of German Consumer Organisations not only took the opportunity to launch a public campaign for a "consumer friendly copyright" (also joining forces with INDICARE[91] on an international level), but also sent warning letters to several online music providers (including **iTunes, T-Com, Nero and ciando)**, claiming violation of specific consumer protection provisions due to the respective terms and conditions. Depending on the reaction of the music providers, the Federation may initiate legal proceedings to obtain court rulings on the matters. However, no such legal action has been initiated at the moment, and the parties have indicated to enter into negotiations and to possibly settle the matter out of court.

If and to the extent existing transparency requirements for direct distribution do not cover potential risks for consumers in "direct digital distribution", a possible remedy could be considered in mandatory "consumer licensing information", setting out in comprehensible manner consumer's rights with respect to using digital content (right to copy, right to store on various end user devices, right to sell all rights to a third person, etc.). Such "consumer licensing information" (enabling the consumer to also assess whether a reasonable price is set for a defined digital product) should be placed in a visible manner together with any offer describing the product for consumers.

3.1.6.3. Payment and transaction standards

To most stakeholders, a reliable payment and transaction standard is important. Most of the stakeholders, however, are of the opinion that such standards are set by the market and no regulatory interference is required.

As far as transactional standards are concerned, see also consumer concerns in relation to terms and conditions for direct digital distribution above.

3.1.6.4. Protection of minors

The distribution of digital content to minors depends on either statutory or voluntary rating and age verification systems in most jurisdictions.

As already discussed in relation to games, voluntary age classification is covered by the pan-European rating system known as PEGI and the PEGI online initiative. Legal classification, however, may supersede this system, and national law may set additional or alternative requirements for a legally accepted age verification. German authorities, for example, only accept age verification systems involving a "personal contact" between the person to be verified and the provider of the age verification system.

This requirement involves time consuming systems that may be regarded as a roadblock for direct digital distribution of rated content. To the extent possible, further harmonisation of national laws could lead to a more efficient EU-wide status.

The "Safer Internet Action Plan", the "PEGI online initiative" and the revision of the Television Without Frontiers directive are important steps into this direction.

3.1.6.5. Data protection

The collection and use of personal data seems to be important for certain business models in relation to digital content. Therefore, data protection legislation is partly considered to be an obstacle to business models customised for each consumer. However, as stated in relation to general consumer protection issues above, no specified legal feedback was received in this respect. Apparently, most stakeholders being active in direct digital distribution have accepted the existing legal framework, and their business concepts comply with this framework.

Nevertheless, some companies actually think that control measures in relation to data protection should be improved and sanctions should be tightened. In their view, users favour companies with a fair data protection concept. Therefore, they emphasise the importance of transparency rules.

3.1.6.6. Advertising and direct marketing

Also, when interrogated on advertising issues, most respondents simply ask for deregulation, not mentioning particular provisions to be changed. With regard to the new emerging services, any further regulation would, in their opinion, prevent their development. In particular, any form of advertising ban would be detrimental because it would prevent their financing.

Broadcasters (unlike some mobile operators) state that their digital content business is affected by rules of the TWF Directive which aim at protecting consumers and regulate advertising: There is no need

for any comparable regulation at all in the field of the new emerging services as such regulation would suffocate them. In contrast, other stakeholders emphasised the necessity for the Proposed AMS Directive to ensure that consumers may confide in a certain minimum level of protection of public interest objectives, such as the protection of minors and human dignity, whenever they access publicly available audiovisual content.

The facilitation of marketing in existing customer relations, as provided for by the Data Protection Directive, is considered to be helpful, and the application of the newly implemented provisions in the Member States is therefore expected to constitute a significant improvement, since in the field of online services it is an effective marketing model to approach customers by means of electronic communication.

3.2 Focus on mobile distribution

3.2.1 Defining 'mobile' content

There are several ways to get content onto a mobile device:

- Downloading content OTA (over the air) through a mobile network operator's transmission network.
- Transferring content from another device, such as a home PC (e.g. podcasting). This is often referred to as **'side-loading'**.
- Buying physically distributed product, such as memory cards, which can be inserted into a mobile phone.
- Broadcasting through a mobile TV network

In this section we focus on 'mobile' content as being exclusively content which is delivered OTA. It is precisely because of the unique distribution method that specific roadblocks arise. Not only is the value chain different to other forms of distribution, the technologies also influence how content reaches the end user. The content itself is generally very similar to content consumed on other devices, and certainly the content categories are broadly similar. Where there are differences in content either affecting or being affected by the unique market for mobile, these have been noted.

The content for phones sold via side-loading is distributed over the internet. Music, for example, is often consumed in this way. The roadblocks to broadband distribution of content are generally much more important factors for this market.

Finally, physically distributed content represents only a tiny proportion (we estimate less than one per cent) of the market for mobile content in terms of revenue, and as far as we are aware there are no roadblocks specific to this form of distribution.

3.2.2 An overview of the mobile content marketplace

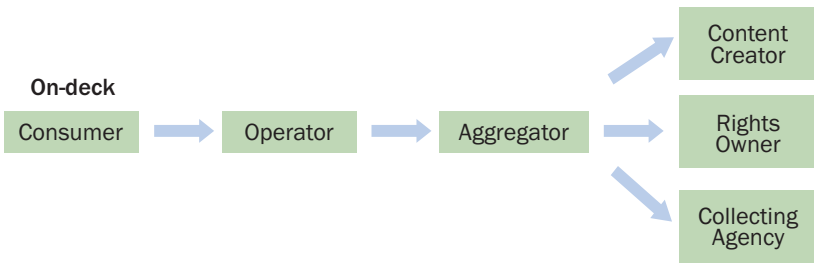
The market for mobile distribution of content can be divided in two; 'on deck' and 'off deck'.

3.2.2.1. On deck

The 'deck' is the network operator's data portal. On deck is also often referred to as 'on portal'. The vast majority of mobile phones are pre-set to have the operators' portal as a home page for the browser. Examples include Vodafone's Live! service and O2 Active. Initially, this was the only way to buy content on a mobile device, as network operators typically had a 'walled garden' approach, preventing content being delivered in any other way.

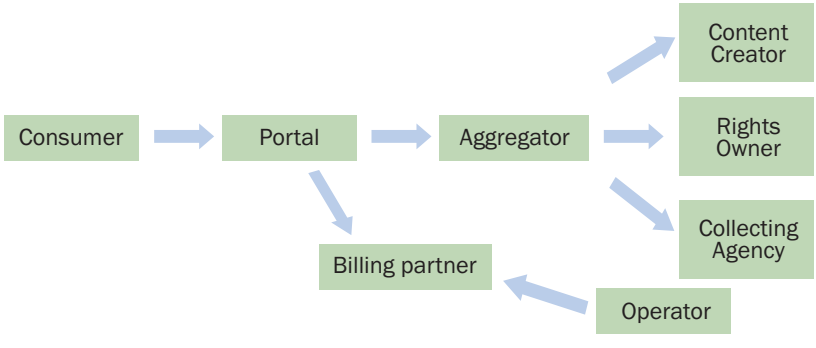
In Europe, there is now no major operator solely using a walled garden approach. The breaking down of walled gardens began as early as 1999 and the last operator of any scale to continue with such an approach, the operator 3 Group (also known as Hutchison 3), signed a deal in June 2006 with Yahoo! which will facilitate open access. The mature markets of Japan and South Korea also have an open access approach. This contrasts with the US market, where operators have been slow to open up networks to alternative content providers.

Figure 110 : On deck content value chain



Source: Screen Digest

Figure 111 : Off deck content value chain



Source: Screen Digest

On deck sales in Europe account for around 30 per cent of the total mobile content market, but vary significantly according to content category. For ringtones, the figure is much lower. For new services, such as TV and full track music, on deck sales are much more important. This is typical for new types of mobile content – very often the first services are launched in partnership with operators. Once the market for a type of content is established, more and more services launch off deck.

The value chain diagram is rather simplified as there can be multiple content aggregators, sometimes different aggregators for different types of content, or in fact no aggregator at all. Rights owners can collect revenue from wherever in the value chain a deal has been struck. Generally it is at this step in the value chain that collecting societies also collect the appropriate revenue share. Many operators and content aggregators also use content provisioning companies which provide services such as hosting, billing and so on. Since this is a nascent market, the value chain can have considerable variety. However, the general flow of revenues generally follows the pattern above.

Some operators have actually partnered with portals (off deck content companies; see the following section), which were initially competitors. These companies fulfil the role of aggregators. Generally, this sort of partnership has involved a smaller network operator which has recognised that it would not be cost effective to set up its own team to source and manage a content portfolio.

The larger network operators, and particularly operator groups such as Vodafone and Orange, generally leverage economies of scale to effectively source and manage content across the entire group of companies. The only exception to this rule is T-Mobile's deal with QPass, a content provisioning company recently acquired by Amdocs, to manage its content portfolio.

3.2.2.2. Off deck

Off deck content is typically sold by companies referred to as portals. This is rather confusing as on deck content is sold via the data portals of the network operators, and it is important to understand the distinction between the two. Portals are companies which offer content direct to the consumer (D2C). These companies typically advertise in print

Figure 112 : Mobile phone penetration in the EU, Q4 2005

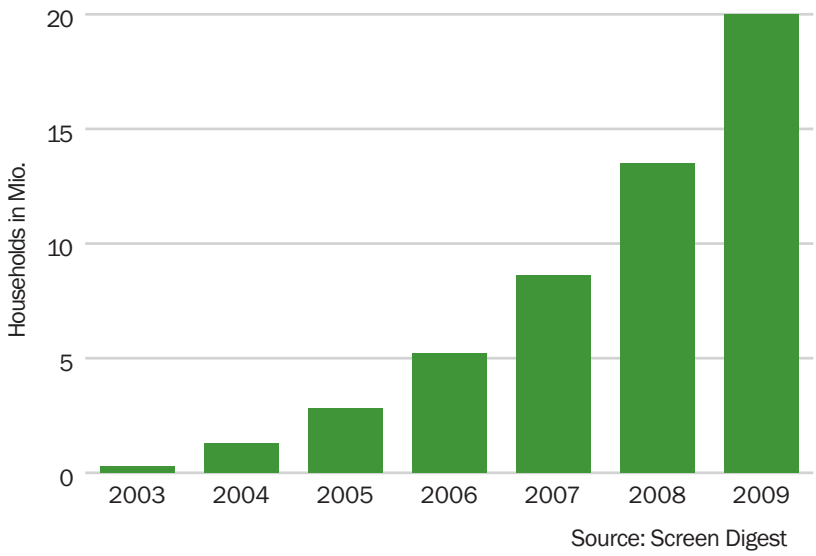
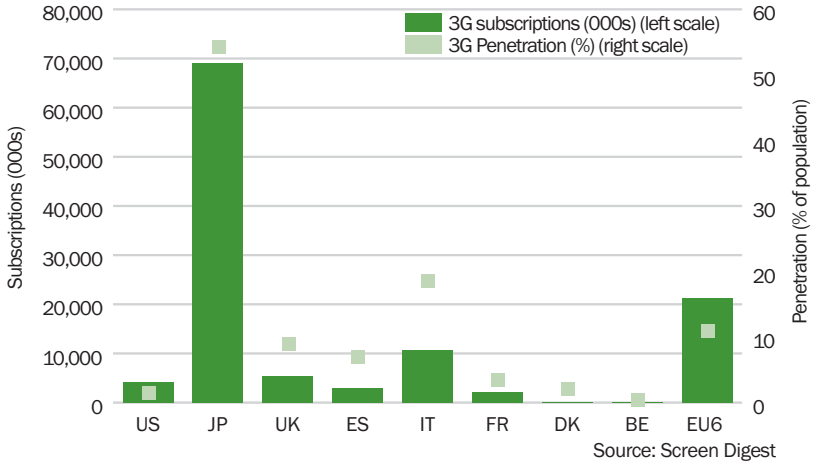


Figure 113 : 3G penetration, EU v. Japan/US

End-2005	*3G subscriptions (000s)*	*3G Penetration (% of population)*
US	4,120	1.4
Japan	69,167	54.2
UK	5,331	8.9
Spain	3,034	7.0
Italy	10,775	18.5
France	2,043	3.4
Denmark	115	2.1
Belgium	39	0.4
EU6	21,337	11.0

Source: Screen Digest

Figure 114 : 3G penetration: Europe's big 6 v. Japan



magazines and newspapers, on TV and online. Much of the content sold is via SMS, which is used as both a payment mechanism (through premium SMS) and for delivering the link from which the consumer can download the content.

Portals offer the main route to market for most content providers. The reputation of portals is poor, and to some extent this bad reputation is deserved. The mis-selling of subscription services to consumers has reportedly damaged the market for mobile content overall.

The largest portals have made significant steps towards better business practice following either stock market listings (e.g. MonsterMob) or the acquisition of portals by listed companies (e.g. Jamba acquired by VeriSign).

Again, the diagram is rather simplified. However, it is important to note that operators are still involved in most transactions. Payment online via a credit card is generally the only way for a portal to avoid paying some of its revenue to network operators. By far the most common payment mechanism for consumers is premium SMS. In this case, the user sends an SMS message to a short code number and a message is returned containing a link to download the content. The messages are charged at a premium rate. The operator takes a cut of this revenue, typically 30 per cent.

In the case of portals, the end user also pays charges to the operator for the data transfer. This is revenue exclusively for the network operator. Data charges can be high, and content providers have noted some extreme examples; for a full track music download, a price of around €2 for the content could be followed by the user paying €20 for the data transfer charges. The 'Operator data tariffs' roadblock identified in the mobile section of this report contains a detailed discussion of this.

Recently, some operators have worked to simplify the payment mechanisms for off deck content. For example, XPay in the UK allows off deck transactions to appear directly on a consumer's phone bill through an agreement between the portal and operator. The operator takes a similar cut as through SMS payment, and the advantage lies in the simplification of the process this offers the user, which should lead to an increased number of transactions being made.

3.2.2.3. Market data

Mobile phone penetration across Europe is generally very high, and in some countries exceeds 100 per cent. This is an artefact of the way the data is collected; what is counted is simply the number of subscriptions, which can exceed the population. Some users have multiple handsets (one phone provided by work and one for personal use) or a mobile phone and a laptop network card which connects to a mobile network.

There are a number of countries, Greece being a good example, where mobile phone usage penetration exceeds fixed line data access. Greece is reportedly also a very good market for mobile data usage. A similar market in Japan in the late 1990s is often cited as a reason for the success of i-mode and other mobile data services in that country. Mobile networks are often cheaper to roll out in rural areas than fixed line access. Mobile access may, in fact, be a better method of addressing the digital divide than fixed line access.

Although Europe lags behind Japan, easily the leader in 3G networks (and mobile data usage generally), Europe is some way ahead of the United States in both mobile and 3G penetration.

3G (third generation) mobile networks represent a leap forwards in terms of data access speeds, which in turn opens up many more possibilities for content sales. 2.5G networks (the standard for non-3G users across Europe) offer data access comparable in speed to dial up fixed line data access. 3G networks are not exactly broadband equivalents but do offer such an improvement that video and full track music content can be downloaded at speeds acceptable to consumers. 3.5G networks, being deployed worldwide and using the same spectrum and transmitter network as 3G do approach broadband speeds and should boost the content market further.

Generally it is held in the industry that **Japan and South Korea tend to be 12-18 months ahead of Europe in the mobile market, with Europe 12-18 months ahead of the United States**. The reason for the advanced market in Japan is described above (mobile was the first data access for many Japanese consumers), while in South Korea heavy government involvement has pushed the mobile market forwards. Europe, with the common GSM standard and a culture of operators working towards a common goal, contrasts with the US. In North America, a number of different, competing mobile standards have held back the market, along with a lack of inter-operator interoperability.

3.2.3 Mobile stakeholders

3.2.3.1. Network operators

The place of operators in the value chain is discussed fully in the overview of the mobile content marketplace. Worth noting is that although there are typically 3 to 6 network operators in any single country, the European market is dominated by a handful of large operator groups which provide services across many different countries.

The major groups are 3 Group (Hutchison Whampoa), Orange (France Telecom), Telefonica, T-Mobile (Deutsche Telecom) and Vodafone.

In addition to mobile network operators, there are also numerous mobile virtual network operators (MVNOs). These companies do not own their own physical transmission network. Instead, MVNOs in effect lease airtime or network access from network operators with a transmission network.

In some cases, MVNOs have their own content services (such as Virgin Mobile in the UK), but more often this is not the case and instead users are directed to the portals of the network operator with which the MVNO has an agreement. Such MVNOs are often referred to as resellers, although the distinction between MVNOs and resellers is ill-defined and the terms are often used interchangeably.

3.2.3.2. Portals

There are many more portals than operators, including a very large number of 'local' portals (offering content in only one country). However, the portal market is dominated by some large companies with operations across multiple territories. Examples include Buongiorno Vitaminic, Jamba (also known as Jamster and owned by Verisign) and MonsterMob. As is the case with network operators, larger portals tend not to use content aggregators, whereas local portals generally do. In some cases, larger portal companies act as aggregators of content for network operators. For example, Buongiorno Vitaminic acts as an aggregator for over 60 network operators.

Mobile content service companies

A number of companies provide various services to portals, operators and content creators alike. Companies in this sector include:

- **Billing partners** (which provide billing mechanisms) and mobile transaction companies (which have links to network operators). Operators command a share of all transactions over the mobile network, so a link into their billing systems is almost a requirement to do business. Companies in this area include MBlox and First Hop.
- **Mobile application service providers**, who provide the storefronts for portals, content management systems and other services. Companies in this sector include Bango and End2End.
- **Content aggregators**, which source mobile content from content creators and rights owners. In effect, these companies fulfil an analogous role to that of distributors in the physical retail sector (and portals equate to shops). Examples include Index Multimedia and Mediaplazza.

Complicating the picture somewhat are companies which provide more than one of these types of services, and even fulfil other parts of the value chain, such as running own-brand portals and aggregating content.

Generally speaking, it depends on the scale of the portal how many other companies are involved. Small, local portals tend to find it more cost effective to use all of these companies. Bigger portals, such as those market leaders listed above, tend only to use mobile transaction companies, which can provide them with links into the billing mechanisms of all the network operators in the territories in which they distribute content.

Operators do not use mobile transaction companies, but some use third party billing partners. Generally, the larger the operator, the fewer services will be outsourced. However, larger operators generally have more content providers, including more content aggregator partners.

3.2.3.3. Content creators

Until the last 18-24 months, most content creation companies involved in the mobile sector were small, specialist start ups. However, the rapid growth of the mobile content sector has caught the attention of many 'traditional' media companies. These companies have moved into mobile content either by setting up mobile divisions or through acquisition.

For example, in the mobile games sector alone, Electronic Arts acquired Jamdat, Real Networks acquired Mr. Goodliving, Cisco Systems has invested in Terraplay and Indiagames, and Time Warner has invested in Glu. THQ, Sony Computer Entertainment and Vivendi Universal Games are 'traditional' games companies which have set up mobile divisions. In response to the increased commercial threat this poses, the remaining specialist mobile content creators have been busy merging with or acquiring peers. Since mobile games is one of the longest established mobile content categories, this is the area to have seen the most merger and acquisition activity. We expect this pattern to be repeated in the other content categories.

3.2.3.4. Equipment manufacturers

Handset manufacturers have benefited from the rise in mobile content as this has created a demand for high end mobile devices. Nokia and Motorola are the two market leaders in Europe. A number of networking and transmission infrastructure companies are also providing equipment for mobile TV, including Ericsson, Arqiva and Crown Castle.

3.2.3.5. Collecting societies

Collecting societies provide operators, portals and aggregators access to the rights to use content without having to deal with hundreds of individual companies. The societies also collect and distribute the authors' share of revenues.

3.2.4 Mobile distribution of major content categories

3.2.4.1. Content 'Discovery' (mobile search engines)

Not a content category in itself, search and discovery is an area seeing considerable investment to the benefit of all other content categories. A problem inherent in the mobile phone device is the small screen size. With thousands of pieces of content available through operators or portals, a prominent position on the deck is key to generating good sales. Mobile search services aim to improve the discovery of content. Companies involved in this area include internet search companies such as Yahoo and Google as well as mobile specialists such as JumpTap.

3.2.4.2. Music

The market for music on mobile is still primarily ringtones. Typically these are sold via portals, paid for by premium SMS and downloaded over the air (OTA). Many portals sell ringtones via subscription services, although it is also possible to buy individual ringtones.

Full track music services began to be launched in the EU in early 2004. Most operators in Western Europe now have a full track music download service. This is an area where portals have been slow to market, though this may be due to an initial reluctance of the major record labels to work with them. Recently, however, Jamba and MonsterMob announced plans to launch full track music services in 2006.

Many operators use a specialist company to run the service. Examples of these companies include Groove Mobile, Musiwave (acquired by Openwave in 2005) and WiderThan.

Business models can include pay per track or subscription services. Since most of these services are run by operators, payment is generally handled through the operator's own billing system. Although there is variation in pricing, the 'industry standard' seems to have settled at a price of around €1.50, around 50 per cent higher than internet music services.

MP3 is the most common format for mobile music, but there is considerable variation in DRM systems used. Some services use the standard mobile DRM, OMA 1. In other cases, operators or music service providers have developed a proprietary DRM solution.

Worth noting is that there are many mobile phones which can play MP3s and will accept music files 'side-loaded' from a PC. There are undoubtedly many consumers using internet music services and consuming the content on a mobile phone. These internet music services do pose a commercial threat to OTA music services and so the difference in price cannot be too great. Very recently some music services have launched which are 'combined', allowing access to the purchased music through either the internet or mobile network.

Ringback tones are the newest form of music consumption to have reached Europe. Already popular in Korea and (to a lesser extent) the US, ringback tones do not actually involve delivery to the user of any content, and in fact the user will probably never hear the music. Instead, the selected track is played to anyone telephoning the consumer instead of the typical ringing sound while waiting for the call to be answered.

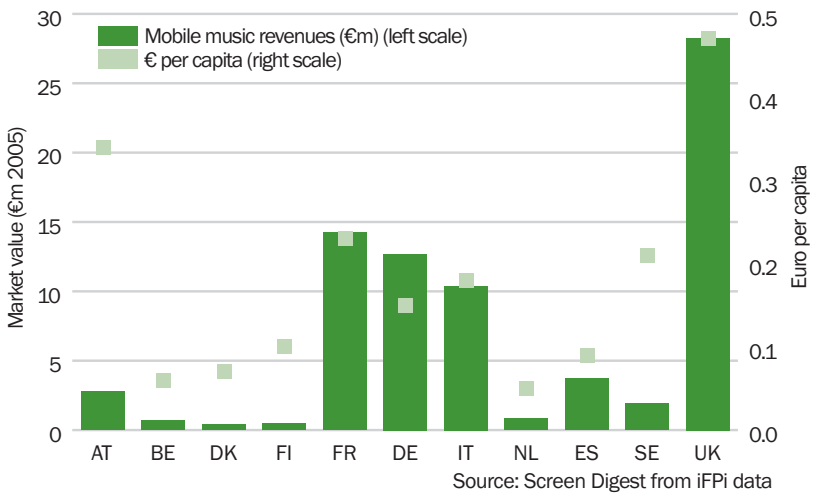
According to IFPI, revenues from downloads of full track songs on mobile networks[92] were €76.3m in 2005, with the UK being the biggest market (€28.2m), UK and Austria being the most successful in terms of average spending (€0.47 in the UK, €0.34 in Austria). The following table shows market size for 11 EU countries. The market is virtually non-existent everywhere else in the EU.

Figure 115 : Mobile music revenues (full track downloads)

2005	*Mobile music revenues (€m)*	*Euro per capita*
Austria	2.7	0.34
Belgium	0.6	0.06
Denmark	0.3	0.07
Finland	0.5	0.10
France	14.2	0.23
Germany	12.6	0.15
Italy	10.3	0.18
Netherlands	0.8	0.05
Spain	3.7	0.09
Sweden	1.9	0.21
UK	28.2	0.47
Total	**76.34**	**0.21**

Source: Screen Digest from IFPI data

Figure 116 : Mobile music consumer spending per country (total and per capita)



3.2.4.3. Games

Unlike most other mobile content categories, the majority of mobile games (Screen Digest estimates 90 per cent) are sold through operators rather than portals. Partly this is because portals tend to sell content through subscription, a model which suits low cost content such as ringtones, but mobile games are higher in price (typically €5 rather than €1 for ringtones) due to the much higher cost of content creation. Operators also have the resources and technical expertise required to test and certify applications and have appropriate delivery systems in place.

Complicating the games market is the issue of fragmentation; a different version of a game must be created for each model of phone, which can lead to literally hundreds of versions being created. Thus delivering the correct version of a game is of significant importance. Network operators are in a unique position to achieve this since they are in the best position to identify a user's handset.

The issue of fragmentation also adds significantly to the cost of creating games content. Around 50 per cent (and in some cases more) of a typical game's development budget is spend on porting - the process of adapting a title to work on multiple handsets and different languages. Reports of over 500 different versions of a mobile game are not uncommon for titles with a wide distribution. Some network operators also have particular requirements which can lead to further versions being required.

Porting is an area which demonstrates the potential for market disruption by proprietary DRM solutions which lack interoperability. DRM is required, and indeed almost all handsets have the OMA 1 DRM system integrated. This allows for 'forward locking', which prevents games (or

other content) being sent to another device. However, the system is rather basic and does not easily allow for (as an example) demo or trial versions to be distributed peer to peer. If each operator developed a proprietary DRM solution to allow this, then the number of versions of games required would increase by a multiple of the number of operators distributing the game, potentially leading to hundreds or even thousands of extra versions. Obviously this would add considerably to development costs. At the moment this is not happening. However, stakeholders have mentioned that the ability to offer demo or trial versions could boost the market.

There are multiple technologies used for mobile games:

- J2ME (Java 2 Mobile Edition), or Java, is the market leader in Europe with almost all games-enabled handsets capable of playing Java games. DoJa is a version of Java which works on i-mode phones.
- Handsets using the Symbian operating system can play both Symbian games and Java games.
- Qualcomm's proprietary BREW system, despite capturing major market shares in North America and Korea, has had no deployments in Europe so far as it has been tied in with the Qualcomm's CDMA network technology. However, Qualcomm has restructured and the CDMA technology is now sold separately to Qualcomm's other mobile technologies. BREW deployments can now be made on any device or network. We anticipate an increase in BREW enabled handsets as a result of this.
- EGE (developed by Mobile Scope, formerly part of In-fusio) and Mophun (developed by Blaze, formerly known as Synergenix) are proprietary games systems which are downloaded onto mobile phones. Any handset which can run these systems can also run Java.

The **multiple technologies add to the fragmentation problem**. Fragmentation is a bigger problem in Europe than the Far East or North America because:

- Java is more dominant in Europe than other territories, and it is the technology which has the biggest problems with fragmentation.
- The number of 'legacy' handsets (old handsets) in the marketplace is higher in Europe than North America, and these handsets must be supported.
- The number of different languages across Europe.

Multiplayer gaming is not common in the mobile sector. For several years, multiplayer has been touted as 'the next big thing', and indeed the device itself is inherently connected. There are several reasons why multiplayer has failed to take off.

- Early handsets tended to have such varied (and in some cases bad) implementations of Java that it was difficult or impossible for Java applications to 'talk' to the network in a consistent fashion.
- Although this has improved, mobile network technologies (such as GSM and its 3G equivalents) are very 'laggy' and have variable bit rates. This affects games more than most other content types; a consistent, fast connection is required for multiplayer gaming. 3.5G networks are considerably better than 3G in this respect.

Screen Digest estimates the market for mobile games in Europe to have been €426m in 2005 and €1698m in 2010. We believe that Europe accounted for 26 per cent of worldwide mobile games revenues in 2005, which will increase to 28 per cent in 2010.

3.2.4.4. Video and TV

Although the terms are often used interchangeably by marketers, mobile TV refers to live services while mobile video refers to on-demand clips. Some mobile video services are sold as mobile TV; an example of this would be a news service which consists of a handful of news clips, updated regularly, which the user can access at any time. This type of solution is not broadcast programming, and so is not a TV service. However, this type of programming does somewhat blur the line between linear and non-linear TV services.

Mobile TV technologies can be broadly divided into two camps; those which depend on a network operator's existing infrastructure, and those which do not. The main technologies which use an operator's existing infrastructure are IP broadcast technologies and 'streaming' TV, which is usually delivered over a 3G or 3.5G network.

There are numerous mobile TV broadcast technologies which do not require

a network operator's mobile network to function and can bypass it completely, transmitting directly to users' handsets. The major technologies are DMB, DVB-H, DAB-IP and MediaFLO - a proprietary system of Qualcomm. These are sometimes referred to as 'disruptive' technologies as they can disrupt the conventional value chain.

A more detailed discussion of mobile TV and video can be found in the TV section of this report.

3.2.4.5. Gambling

Mobile gambling is small in market size at the moment, although sports betting (via SMS, WAP and Java platforms), casino gaming (WAP and Java) and lottery (SMS) games are all available now. It is currently rare for network operators to offer such content.

Very recently there have been some early deployments of player versus player mobile poker and some 'softer' gambling games such as bingo. Mobile gambling is anticipated to be a significant growth market in the medium to long term.

3.2.4.6. Adult content

Adult content includes SMS chat, video clips, graphics, games and some 'video chat' services. Generally, operators have been reluctant to move into this area, fearful of bad publicity. Almost all portals (over 90 per cent) sell some adult content, often alongside other content and without age restrictions, although for any mainstream portal this is generally 'soft' in nature. 'Hard' adult content is typically sold through dedicated adult portals. As with almost any new technology, adult content companies are pioneers in the mobile content sector and were amongst the first to offer video services.

3.2.4.7. News and Information

News and sports information make up a sizable proportion of the traffic on operator's portals, although there are relatively few services which charge the end user for such content. The content creators are typically those involved in equivalent internet news sites.

Growing in this area is the field of user generated content; users are invited to submit text, pictures or videos taken with mobile phones relating to current news stories. The proliferation of camera and video phones should see this area of mobile content grow significantly.

3.2.4.8. Publishing

Publishing literary works accounts for significantly less than one per cent of mobile content. It is not an area which has seen, or is likely to see in the short to medium term, significant investment. The form factors of the devices (primarily small screen size) make this an unsuitable medium for this content. Ebook reader software is available for mobile phones, but such content is typically 'side-loaded' after distribution over the fixed internet. The market for audio books may grow, and any recommendations relating to mobile music apply equally to this area.

3.2.5 Technical roadblocks

3.2.5.1. Digital rights management (5.5)

Digital rights management (DRM) is vital for the electronic distribution of content. Currently, almost all mobile phones have the OMA 1 (Open Mobile Alliance) solution integrated. This open standard has been of great benefit in building the mobile content market so far. However, the functionality of OMA is rather limited. This prompted the creation of OMA 2, but this has run into problems.

There **is a clash** between network operators, represented by the GSM Association, and the MPEG LA technology licensing operation. The MPEG LA is negotiating on behalf of several companies which hold patents relating to the OMA 2 DRM solution. MPEG LA wishes to charge not only a 'per handset' fee to embed the technology on phones (as is also the case with OMA 1), but also a 'per transaction' fee, something which network operators believe will be too complex to implement. It is primarily this second fee which is causing the most consternation.

As a result of this delay, combined with a demand for functionality beyond OMA 1, a number of stakeholders are choosing to deploy proprietary DRM solutions. This could potentially create problems which could hinder the future market for mobile content; interoperability issues, compatibility problems and roaming being some of the larger problems.

Operators have the most to lose from the scheme proposed by MPEG LA since they both subsidise the cost of handsets and distribute content. However, this issue will affect every stakeholder in the value chain. If different operators have different, proprietary DRM solutions embedded on handsets, it becomes almost impossible for portals and content providers to achieve wide distribution of DRM protected content without spending significantly to repurpose the content. Proprietary DRM solutions also typically prevent content being used on other devices. This creates hassle for consumers and can lead to issues for content companies.

The issue of subscriber churn in the mobile sector amplifies the problems of a lack of a standard DRM solution. Around 30 per cent of subscribers change network operator each year, typically changing device at the same time. Proprietary DRM solutions could prevent this large sector of the market from using content purchased legally for one device on a new handset from a different operator.

Suggested remedies

All interviewees have expressed some concern with DRM regulation. Some believe that regulation is required in order to improve interoperability. Some are concerned that any new regulation could either prevent them from using existing DRM solutions, or that any regulation might be out of date by the time it is introduced as this is seen as a fast moving area. There is also concern that regulations on DRM could force a single technology on the market, an anti-competitive situation.

The majority of stakeholders interviewed would prefer not to see regulation on this matter at this stage. Industry players are still looking for self-regulation, but there might be a case for policy makers to encourage the process in the mid-term in order to avoid the problems mentioned above with proprietary DRM while still allowing content to be adequately protected.

3.2.5.2. Spectrum allocation (1.3)

The major technologies for Mobile Digital TV (MDTV) all function only within specific frequencies. Availability of these frequencies across Europe is variable in terms of the timing that the frequencies will become available, and there is some variety in terms of the band of frequencies made available. Auctions may also be held, and with the current system these will vary from country to country. All of these factors will influence the rollout of MDTV services and the ability of consumers to access these services while roaming.

The availability of spectrum could also play a major role in determining the future winners and losers in this sector. As an example, a Spanish operator estimated that once Spain's analogue TV signal is switched off in 2010, the freed spectrum will only accommodate 15 MDTV channels. Spain has three network operators in addition to the broadcasters and MVNOs who may also wish to enter the MDTV market. There will not be enough spectrum available for all of these companies to have *unique* offerings.

The frequency issue is linked with the available technologies, of which there are many. DVB-H and DAB/DMB are likely to be the two major technologies in Europe requiring spectrum. DAB radio services are

already using a significant part of the possible spectrum in some countries for DMB MDTV, so although services can launch now, the number of channels is very limited. For DVB-H, in most countries the required spectrum will be freed when analogue TV services are switched off, meaning more spectrum is available, though not for several years in many cases. IP broadcast technologies, which broadcast over operators' 3G networks, do not require additional spectrum but will place more demands on the existing 3G spectrum.

Suggested remedies

Concern has been expressed over possible regulatory plans to harmonise spectrum. If spectrum is auctioned on the basis of multiple territories, this arrangement could favour larger companies or groups with pan-European operations, such as the large network operators. A number of stakeholders made the point that TV services generally are not suited to cross border operation anyway. Language differences would make it extremely unlikely that subscribers will want to use broadcast mobile TV services locally when roaming because only local channels are broadcast. Access to British television channels from a mobile phone when travelling abroad should be provided through 3G on-demand streaming instead.

As is the case with almost all of the roadblocks regarding mobile TV, stakeholders would prefer not to see early regulation.

3.2.5.3. Infrastructure (1.1)

Companies have mentioned the good mobile infrastructure in Europe generally helping to build a robust mobile content marketplace, particularly in relation to the adoption of the GSM standard on a pan-European basis. However, there has also been some concern mentioned over the potential cost of building the infrastructure required for MDTV services.

Auctions for spectrum could be very competitive, leading to high prices paid, and in addition to the infrastructure costs and uncertain consumer appetite for MDTV, companies involved in this sector could ultimately struggle to achieve a good return on investment. These companies could include broadcasters, network operators and MDTV network builders. Early regulation in the mobile TV sector could limit opportunities further, preventing the market from developing towards profitability.

3.2.6 Economic roadblocks

3.2.6.1. Collective management of rights (2.7)

Collecting societies fulfil an important role in the mobile market, and the mobile music market in particular. However, some stakeholders have reported difficulties in dealing with collecting societies, particularly in relation to the rates set for mobile digital distribution.

Across Europe, collecting societies tend to ask music distributors higher rates for digitally distributed content compared to physical product, such as CD or DVD releases. This is not specific to mobile distribution but affects digital distribution generally.

The collecting societies have a rather different view. The argument is that digital content is different; usage, business models and the cost base differ from physical distribution. The act of transmission, they say, means that this form of distribution is covered by performance rights rather than mechanical rights.

Suggested remedies

The merits (or otherwise) of both arguments are being debated by lawyers in both the UK and Germany. In the UK, collecting societies MCPS and PRS were referred to the copyright tribunal on 30 June 2005 by the BPI (British Phonographic Industry) regarding the joint online licence. The action was joined by several major music providers and subsequently by the four largest mobile network operators. A ruling is not expected until 2007. A similar process is ongoing in the arbitration court in Germany.

In the best case, these rulings could resolve the issue to the satisfaction of all parties and set a precedent for the rest of Europe to follow. In the worst case, two different rulings could leave a confused situation with different rights regimes in different countries.

For the mobile content market, this was regarded by many stakeholders as the single biggest roadblock. It seems pragmatic, however, to consider regulation only after the rulings are made.

3.2.6.2. Operator data tariffs and consumer information (6.8)

Mobile content providers believe there is significant customer confusion over operator data tariff structures and pricing. Different

operators (and in some cases the same operator) can charge consumers:

- By a flat rate subscription
- By the minute or by the kilobyte
- Free to browse certain portals (such the operator's own) but charged to browse elsewhere

This can push the price for content bought from a portal to a much higher level than anticipated by a consumer. For example, a video clip could be advertised by the portal as costing €5, and for a user on a flat rate subscription, that may be all that is paid. For another user on a 'pay as you use' style tariff (possibly on the same network), the content could end up costing a total of €20 by the time the operator data charges are considered. While these costs are not hidden from the user, they are typically not explained very clearly either, and the shock of receiving such a large phone bill can put that user off mobile content.

This situation also makes it impossible for portals to communicate the total cost to the user of any content or service purchased. Part of the cost will be determined by the network operators and is out of the control of the portal. This puts portals in a situation where they may be acting illegally, despite having no control over data pricing.

The point was also made that in the case of the operator's own portal (on deck content), there are rarely data charges. This gives operators an advantage which one stakeholder described as anti-competitive. In effect, operators can not only control the total cost, but can offer the same content for a much lower total price to the consumer.

Suggested remedies

Following our research, we would rate this as the second biggest roadblock (after collecting societies) affecting the mobile content market. This roadblock is also tied in with the operator revenue shares (see below).

Flat rate data plans are being rolled out by a number of network operators in Europe. However, this does not address the issue unless all users are on such data plans.

Opening up operator networks to allow wholesale data purchasing by portals, billing companies and other interested third parties was a solution suggested by a stakeholder. There is a regulatory precedent for this, namely the EC's Access Directive (2002/19/EC) which allows MVNO's access to operator's networks.

Wholesale data agreements would allow content providers to bill network operators (rather than the operators billing end users) for the data, thus giving these companies control over the total price of the content or service provided and improving considerably the clarity to the consumer.

Vodafone in the UK has begun to offer wholesale data, and is an example of industry best practice.

3.2.6.3. Operator revenue shares (5.1)

Several categories of stakeholders have complained that the operators' share of premium SMS revenue is too high and is consequently holding back market development. The share can be up to 35 per cent, which is very high when compared to other payment mechanisms (such as credit cards, perhaps an unfair comparison). On the other hand, the fact that – through use of SMS as a billing mechanism - operators can effectively share in portals' revenues undoubtedly hastened the end of the previous 'walled garden' approach of operators, thus leading to a significant expansion of the market for portals.

Operators in Europe have the highest revenue shares for content sold on deck, taking around 50 per cent of revenues. This compares with 30 per cent in the US and only around 9 per cent in Japan (although it is worth noting that data charges apply for on deck content in Japan, effectively allowing the operator to take a share rather higher than 9 per cent of the total cost to the end user).

Mobile network operators argue that in every country competition authorities are here to make sure they are not abusing their positions.

Suggested remedies

Price capping could of course be considered, although several stakeholders made the point that were this to happen, operators could cut costs by scaling back or stopping investment in content services. This could significantly damage the market.

Price pressure through alternative payment mechanisms should begin to reach the market. PayPal, for example, will be launching a mobile payment mechanism. If wholesale data is available (see above), this could improve the market for off deck content

and so drive down operator revenue shares of on deck content.

Overall, although regulation such as price capping would undoubtedly be welcomed by many stakeholders, there are just as many who would see this as a threat to the market.

3.2.6.4. Mis-selling of subscription services (6.9)

A number of portal companies have been fined for mis-selling subscription services to consumers (please refer to the earlier section on portals for a discussion of this). This has created a number of problems in the market, primarily with consumer perception of mobile content generally, portals in particular, but has also caused problems with operators' attempts to set up correctly managed subscription services.

This has held back the potential market for subscription-based content services. For example, in the US, games companies typically see higher revenues from the same game on the same network operator when it is sold via a subscription model compared to pay per download when both are offered.

There has been some attempt at industry self regulation, for example through the 'STOP' campaign. This self regulation seemed to start in the UK but has since been adopted by most major mobile companies across Europe. Mobile operators have amended contracts with service providers, stating that consumers must be able to exit subscription services when they text the word 'STOP'.

The stock market listing of several portals, or acquisition of portals by listed media companies, has also led to a decrease in unscrupulous actions.

Suggested remedies

Some stakeholders would like to see regulations strengthened – for example, the STOP campaign becoming a European standard through regulation. The point was made, however, that the few companies remaining which were persisting in mis-selling subscriptions were generally operating outside the law anyway, so regulation would have little impact.

Recent regulation in China has meant that subscribers must, in effect, re-subscribe each month to each service. This has been widely regarded as a 'heavy handed' approach. Although it is too early for the effects to be clear, it would be fair to say that stakeholders would not welcome similar regulation in Europe.

3.2.6.5. Royalty issues (2.7)

Some companies have reported problems in dealing with payments to multiple rights holders. This situation is common in the mobile sector where many media companies and rights owners, keen to expand into mobile but with no knowledge of the sector, sold on mobile distribution rights to mobile specialist content aggregators. These aggregators then sold the content onto operators and portals, or in some cases to other content aggregators further complicating the number of companies involved. This has led to confusion because of the complex value chain and the question of ownership of rights.

An example of this would be a network operator selling music content or broadcasting a TV programme. The operator must keep track of the share of revenue for copyright owners, (possibly multiple) content aggregators, record labels, publishers, collecting societies and so on. This presents a challenge to companies which historically are not used to dealing with content sales and their processes and systems are not well developed. Ultimately, we expect that the market should resolve these issues.

3.2.6.6. SMS short code harmonisation (1.4)

EC Regulation around SMS short code harmonisation have had a strong positive effect on the market for mobile content, and have particularly benefited portals. However, operators are also happy as it has grown the market generally, and in any case they receive significant revenues from the premium SMS payments made.

Short code harmonisation is on a country-by-country basis rather than pan-European, so the same short code is not always used for the same service when in different countries. This has implications for the ease of using data services when roaming. Greater harmonisation could resolve this issue but could damage the market for a time as undoubtedly a large number of current short codes would have to be revised.

3.2.7 Legal issues and roadblocks

3.2.7.1. Content regulation for mobile TV (4.2)

That this is the third biggest concern amongst mobile stakeholders. A number of stakeholders expressed concern that too many regulations could:

- Damage a fragile nascent market
- Block the market for particular technologies (this was mentioned in particular relation to concerns over DVB-H being favoured)
- Stop the industry developing its own best practices

The mobile TV market was of particular concern to stakeholders. The point was made that broadcast mobile TV services had not even launched in Europe when regulation was being considered. Stakeholders in general would prefer a stable regulatory regime rather than having to deal with frequent changes.

3.2.7.2. Television regulation crossover (4.2)

There is some concern from companies involved in MDTV that the sector may be impacted by regulations intended for the 'traditional' TV market. Examples include:

- Must carry' regulations could adversely affect the market for MDTV. Spectrum is likely to be limited – DMB services in the UK, for example, will only have enough spectrum for around 6 channels to be broadcast. If public service broadcasters must be carried, then it becomes difficult for providers to differentiate their offering.
- 'Must carry' regulations may also not be appropriate because of the restricted screen on mobile devices. There is a school of thought that successful MDTV content will be specifically made for mobile, and there is an obvious conflict here with 'must carry' regulations.
- If users have to pay for a TV licence (as could be the case in the UK) to watch mobile TV, this will limit the user base.

Stakeholder opinion generally seemed to be that the nascent market for MDTV should be allowed time to develop before regulation is introduced.

3.2.7.3. Mobile TV and rights licensing conflicts (2.5)

There have been a number of rights issues reported as hampering the roll-out of Mobile TV.

- Some MDTV services have been impacted where terrestrial TV stations being broadcast over mobile have not held mobile rights for shows being shown, and so the mobile TV service has had gaps in programming.
- There have been cases where a network operator has obtained TV rights for a piece of content, while another operator in the same country has obtained mobile rights, leading to conflict. For example in France, France Televisions had the broadcasting rights for the French tennis open, while mobile operator SFR had 'mobile' rights with the French Tennis League. This led to a conflict when France Televisions entered into a partnership with another mobile operator (Orange) to show French Open games in Orange phones. A similar situation also occurred with Tour de France rights.
- A number of companies have found rights holders difficult to deal with. Some rights owners want more for mobile rights than (for example) cable rights, though the market for MDTV is tiny. It can take a long time for clearance of mobile rights, and conversely there are often short timeframes attached to the rights, making it difficult to build a MDTV market.

Suggested remedies

The market should resolve these issues over time, and some progress is being made as it becomes more and more common for rights to be allocated by time windows rather than by technology or distribution platforms.

3.2.7.4. Classifications (4.1)

Mechanisms for restricting access to gambling or adult content are very inconsistent across Europe. This can make it difficult for companies doing cross border business as they cannot offer a uniform access point. Many portals and network operators simply ask for a credit card number as an age verification check.

At the moment, the responsibility for categorising content lies with the content provider. As mentioned previously, some portals have a bad reputation and may flout rules, particularly where a country is 'self

regulating'. The inconsistencies could affect consumer confidence and generate bad press for the industry.

While the PEGI system applies to mobile games, age ratings have generally not been used on mobile game titles. As in the early days of the video gaming market, games are generally not sufficiently graphically enhanced to show graphic violence. However, as screen sizes and resolutions are improving dramatically, we anticipate this happening in the short term. Public concern has already been expressed over the game 'Office Massacre' (released by UK publisher Alten8 in 2006). The game was quickly withdrawn from sale. This problem will only increase unless a solution is found.

Games publishers have also mentioned the somewhat difficult situation they have in terms of marketing games to children, as regulations severely restrict companies advertising directly to children. However, they did acknowledge the logic of such regulations and stopped short of suggesting they would wish a change in the regulations on advertising to children.

Suggested remedies

The extension of schemes used in other types of distribution could apply equally well to mobile and help to resolve this potential issue. For example, mobile games publishers could start to use the existing age rating schemes, such as PEGI, which have helped to control this potential problem in the traditional video games sector. EC involvement could make push this forwards.

On this point, one mobile games publisher stated they would definitely be in favour of such a move, while one network operator felt they would be against this. The relatively large number of adult (pornographic) mobile games available (compared to the traditional video games markets) was cited as the reason for mobile games not using a rating system, as it is difficult to agree on a definition of pornography which is acceptable in all countries. Although this may be an issue for operators and portals, this generally does not affect 'pureplay' games publishers – the companies which would be directly involved in the PEGI scheme. Adult games are largely distributed by adult content providers.

In the case of mobile TV and video, some operators have taken a 'watershed' approach where adult content is not broadcast or delivered before an appropriate time, for example 9pm. This mirrors the broadcast TV market and is an early attempt at self regulation. A watershed on mobile content was proposed in 2006 in New Zealand but dropped after it was decided to be unworkable. As with all regulatory points regarding mobile TV, stakeholders would generally prefer not to see early regulation.

Another possible solution could be the creation of an independent, pan-European, non-credit card based age verification organisation. The EC is in the best position to consider creating such an agency.

3.2.7.5. Rights exclusivity and territoriality (2.5)

There was concern that any pan-European collecting societies could lead to a pan-European allocation of rights. This would favour large network operator groups and portals with pan-European operations. Local companies could face difficulty in securing rights within specific countries in order to differentiate their content offering.

The market for mobile content differs significantly from internet distribution as mobile content is geographically restricted as a result of the most popular payment methods requiring network operator involvement. Therefore rights allocated on a country by country basis are much more easily enforceable.

3.2.7.6. Location services

The early lack of regulation governing location based services and confusion over a possible conflict with data protection issues slowed the deployment of location based services. A number of services have now launched, such as services which track the positions of children or employees, and the main issues arise with roaming. Different operators (even the same operator in different countries, for example Orange France and Orange UK) use different, proprietary location solutions. A stakeholder mentioned their understanding of EC regulation was that user locations could not be shared cross border, limiting the possibility of using services while roaming.

3.2.8 Case Study 24: First Hop

Profile

First Hop offers products for the delivery and business management of wireless content and services. The company's main product is a suite of software which enables customers, primarily operators, to manage the entire VAS (value added services) business, including:

- Service provisioning
- Delivery of content
- Data traffic management
- Billing
- Reporting
- Content management

Based in Finland, First Hop operates on a worldwide basis with deployments in over 60 countries reaching a total of over 400m consumers. EC based customers include Vodafone (in various European territories), Telefonica Moviles (Spain), Proximus (Belgium) and Elisa Mobile (Finland).

Aside from regulatory issues which directly affect First Hop's business, the company is also impacted by regulations affecting its customers (operators and portals). Since the company is involved in delivering every different type of content (except broadcast mobile TV), First Hop is impacted by regulations in all of the mobile content markets.

SMS Services

The company noted the improvement from the early days of SMS services, which were compared to the 'wild west'. The few regulations were based on voice and so largely inappropriate. More recent regulation, particularly short code harmonisation, has helped to boost the market overall.

Regulation and Consultation

The general point was made that the 'big players', such as network operators, are generally not pushing mobile content as so much of the revenues of those companies still come from voice and SMS. Since these are usually the only companies involved in the mobile sector to be represented in Brussels, a better consultative process is required when considering regulation in this market. Smaller companies should be more involved in the process.

Parental Control

Since First Hop has customers worldwide, the company experiences a wide variety of parental control mechanisms. In Scandinavia, countries generally have regulations. In the UK, it is largely self regulation. In Spain and Germany, there is almost no regulation of adult content.

Any regulation on adult content must involve the network operators, since they are in a key position to enforce such regulation. However, the regulation must also be in the operator's interest and not too expensive to enforce. In the worst case scenario, operators could go back to using a walled garden approach and severely damage the market for mobile content. In North America, adult content is an easy scapegoat for operators when it comes to defending the walled garden approach which is common in that territory.

First Hop felt that early regulation here would be better so that the 'playing field doesn't change'.

Digital Rights Management

There is some DRM in copyright law, but it is too loose. Terms such as "strong encryption" are too vague to be enforceable. There are big differences in regulation regarding peer to peer distribution in different countries, although they all originate from a common EC regulation. Better definition is required in this area.

There are different forces at work here. Content owners will push for very strict rules, whereas most other parties will favour more loose regulation. First Hop felt that a better understanding of the technical issues was required by regulators.

Lessons

The lack of consistency in regulations across countries makes cross border business more difficult, especially for smaller businesses.

More regulation actually favours First Hop's position in the market, since they have the scale and expertise to implement more complex systems on their platform. This expertise in dealing with different regulatory regimes is part of the reason for First Hop's success.

However, this situation also means that the market will be held back and be smaller overall, which is not in First Hop's interest. A consistent, simple regulatory framework is the best solution for the market.

4 Summarising the main challenges

Plan of the chapter

4.1 Main findings

4.1.1. Digital distribution is happening

Despite many challenges yet to be surmounted, digital distribution of content is fast becoming a reality.

The long-awaited digital 'convergence' is now truly coming of age in Europe. Broadband internet and mobile networks now make it possible to broadcast, stream or download digitised content from a diversity of platforms to a variety of devices, often on an on-demand, interactive basis. 'Interactivity' relates not only to content itself (as in interactive computer games) but to the many options left to consumers in the digital environment: navigation and search modes and multiple ways of accessing content in 'pull' business models, as opposed to the traditional 'push' mode of traditional electronic media. Digital convergence is turning the now ubiquitous TV sets and mobile handsets into a terminal for interactive applications and download services. The new technological environment creates great opportunities for European content providers and platforms operators.

Europe has indeed witnessed **an impressive array of new media developments over the last 18 months** in terms of supply (launch of online and mobile content services, new media deals), as well as on the demand side (usage and technology adoption). This report gives many examples of new innovative European services, content deal breakthroughs, and significant cross-industry agreements in case studies that are, for most, best practices. **Hence the overall trend is very positive** even if this particular report focuses on the challenges that still need to be addressed for digital distribution to become a mass market service more quickly and more widely.

However, European markets are not always at the forefront of digital distribution of content and are **lagging behind more advanced markets** in some aspects. By some measures, Europe is second behind Japan and Korea (but before North America) for mobile content distribution and mobile TV, and second behind the US for broadband content distribution.

But **we forecast robust growth for relevant digital infrastructure penetration and digital content distribution in Europe over the period to 2010**. At the beginning of 2006, around 60 per cent of European households had a PC, and 46.2 per cent had internet access. Broadband penetration per capita[93] was 12.6 per cent by the end of 2005. By the end of 2010 we believe **broadband penetration will almost double to 25.2 per cent** of European citizens. However, the disparity between national markets across the EU will remain wide.

Europe is making **good broadband progress and is catching up with the US**.

Back in 2003 Europe was dramatically lagging behind the US in terms of broadband access (9.1 per cent v. 5.1 per cent); two years later, at end 2005, the gap was reduced (12.6 per cent v. 15. 3 per cent) and we believe it will become relatively insignificant by the end of 2010 (25.0 per cent v.25.2 per cent) with many Western European countries above that average.

In the mobile area Europe lags behind Japan, easily the leader in 3G networks and mobile data usage generally. Japan already enjoys 54 per cent of 3G penetration whereas in the seven biggest EU member States, the average penetration was **11 per cent, representing 21.3m users**. Contrasts were high since Italy alone accounted for half of all those users (10.7m, 18.5 per cent of Italian population), whilst penetration was 8.9 per cent in the UK, as low as 2 per cent in Denmark, and virtually non-existent in Belgium and many other countries (where 3G was not launched or just launched). As a result, Japan and South Korea (with several mobile television services running) tend to be 12-18 months ahead of Europe in the mobile content market.

Music has been the first content to be available for digital distribution. **European online music market generated €120m in 2005** from 'a la carte' sales and subscription 'all-you-can-eat' platforms. The online music market is expected to grow to €1.1bn by 2010. Revenues from mobile music services were already €76m in 2005 and will grow to €687m in 2010. The total digital segment (mobile+online) is thus expected to reach 20 per cent of total European music revenues by 2010. However the European digital music market is approximately one third of the US market size and will remain smaller in the mid-term.

In 2005, digital on-demand **movie** distribution (retail or rental) is more nascent than music as it generated only **€30m revenues in Europe** (€28m from walled-garden VOD systems, €2m online). We expect digital revenues to reach **€1.2bn by the end of 2010**, the bulk of which (€1bn) will come from online VOD (open gateway download services). At that time, digital exploitation will account for 7 per cent of all movie revenues in Europe. UK is and will remain the largest European market for VOD. However, the European figures are still short of those in the US, where the online market alone is expected to generate €1.5bn by 2010, compared to an expected €1bn for Europe.

Online **radio** is already reaching **15m weekly listeners** in Europe and this is expected to double by 2010 to reach 32m or 7 per cent of Europeans. **Mobile digital** radio will reach 5 per cent of European population by 2010. As for **podcasting**, we anticipate almost 11m users on a weekly basis by 2010 (2.4 per cent of Europeans). Usage of digital radio and podcasting will however remain slightly lower than that of the US. By 2010, all forms of digital radio will account for approximately **€250m**, i.e. less than 5 per cent of all radio advertising revenues.

Several forms of digital **games** distribution are being adopted rapidly in Europe (MMOG, GoD, browser-based casual games etc.). We estimate that the total value of the European 'digital' games market was **€698m in 2005**, of which 48 per cent (€334m) was contributed by the mobile sector. This is already 11 per cent compared to a physical retail market of just over €6.2bn in 2005. By 2010, we forecast that the digital games market will grow to **€2.3bn** – 33 per cent of the total. The European market for download of games to mobile phones is running a little ahead of

Figure 117: Revenues from digital distribution and exploitation of content in Europe – forecasts[94]

	2005		*2010*	
	€m	*%*	*€m*	*%*
Music (online and mobile)	196.3	2.0	1,794	20.4
Movies (VOD)	30	0	1,269	7
Games (online, mobile)	699	11.2	2,302	33.4
TV programmes (VOD and digital advertising)	4.5	na	689	na
Publishing	849	2	2,001	5.4
Radio	15	0.3	250	4.8
Total	**1,793**		**8,303**	

Source: Screen Digest, Goldmedia. Rightscom

the US market. Games-on-demand services over broadband networks and interactive TV games are also generally more developed in Europe. However, every other form of online gaming is so far more developed in the US market.

In the **publishing** industry there is no harmonised data indicating the revenues derived from online activity, which are predominantly advertising revenues as online subscription has generally failed as business model, but it is fair to say that European newspapers already draw 1 to 4 per cent of their advertising revenues from online advertising and this is growing rapidly now. From an estimated €849m revenues in 2005, we expect newspaper and magazine publishers revenues to amount to **€2bn in 2010**, almost exclusively from online and mobile advertising. E-books remain a niche market so far and will remain so in the mid-term.

4.1.2. The biggest challenges yet to overcome

What are the main factor hindering market uptake and what obstacles need to be removed or overcome to secure a faster and more encompassing European market uptake?

With digital convergence really happening now, it becomes clear that the **obstacles** hampering the development of digital content distribution **are themselves, 'convergent'**. Some obstacles are affecting all content sectors (music, movies, games, etc), others are more specifically affecting certain sectors; some are affecting all platforms (online, mobile), while others are specific to individual platforms. But on the whole, one of our findings is that many *similar* or even *common* problems affect all the content value chains under consideration in this report.

However these problems do *not* affect each content industry in the same way, to the same extent, or at the same time in the product cycle. The structure and history of value chains, the specific characteristics of the content, and simply the differences in size of digitised files, are the main reasons for this. In assessing the obstacles to convergence, this helps explain why **a content-by-content category approach** (chapter two of this report) **remains useful**.

This study not only looked at obstacles affecting the *roll-out* of digital distribution in terms of market size and value, consumer penetration or spending. It also analysed the factors that are affecting the **position of certain content industries** or certain categories of stake-holders in the process. It reflects on how digital technologies are affecting traditional content value chains and the capacity of traditional content players to embrace digital distribution. It also reflects on some **cultural challenges**, on cultural diversity and the impact of digital distribution on the market share of European content. After desk research and extensive consultation with stake-holders, the study has established a **typology of obstacles** consisting of six categories (and many sub-categories):

- **Technology issues** (mainly consumer access to enabling technologies);
- **Copyright issues** (including difficulties in accessing content, due to the definitions of new media exploitation rights, terms of trade and collective management of rights);
- **Digital piracy issues** (including the disparity of legal means to fight piracy in the different Member States);
- **Legal and regulatory issues** (including the regulation of new media services and non-linear content services);
- **Competition issues** (including gatekeeping issues in the value chains);
- **Various economic issues** (including access to funding, skills, cost of digitisation, consumer acceptance, etc.).

These families of 'generic' obstacles are detailed and analysed in chapter one, and then mentioned in the context of each content sector in chapter two. In chapter three we conduct two 'horizontal' approaches: one focused on legal and regulatory issues and remedies suggested by certain stake-holders; one focused on mobile digital distribution across content categories.

We have identified a number of factors hindering or potentially hampering market growth but **we do not think any of them is currently strong enough to actually 'block' the development of digital distribution** markets in Europe, as is reflected in our forecasts for digital distribution above. However, these obstacles are in some cases clearly slowing down market developments and take up of interactive content services. Thus finding ways to address these obstacles will have a positive impact on the European market for digital content.

The most obvious hindering factor, whose removal is actually a pre-requisite to

any take-up for digital content distribution, is the **penetration of enabling consumer technologies** (PCs, broadband internet access, 3G mobile subscriptions, digital TV). In the broadband area we do not see major roadblocks hampering mass market adoption at least in Western Europe (27.1 per cent of penetration by end-2010). However the disparities remain high from one member country to another. In the *mobile* arena, 3G uptake has proved disappointing so far and the future visibility is not that good for a variety of reasons.

Piracy, and in particular illegal file sharing through P2P networks, remains a burning issue in the digital arena because it simply siphons off part of the revenue that could be made online and thus creates disincentives to legal online business on both the supply and demand sides. Most stakeholders (content owners, distributors) consider the current legal arsenal not efficient and deterrent enough. Besides, it has been extremely disparate across Europe. Now that legitimate content is fully available and awareness campaigns have been undertaken, content stake-holders believe resilient piracy should be tackled with greater energy, through increased liability of internet intermediaries and individual liability of illicit P2P users. Internet service providers now share this concern are increasingly co-operating with content owners to fight online piracy. On the other hand some consumer associations, some consumer electronics players and some artists/authors societies argue for moderation in prosecution of individual users, especially with regard to the use of P2P to share content or even for systems authorising P2P file sharing - P2P being not illegal in itself - through 'blanket licence' systems. A set of measures and actions have recently been taken by the European Commission to reinforce and harmonise legal means to fight piracy.

One of the most acute daily problems in the short term is to adapt existing and new **rights contracts**, and to settle the **terms of trade** between rights-holders, content owners and distributors, when it comes to new business models and technologies. The ubiquity of digital distribution is a challenge for content industries that have always been subject to territoriality and windowing: typically movie and TV businesses. But we see no fundamental reasons why contractual and business practices could not cope with these new forms of content distribution. Lawyers and businessmen are climbing a learning curve that occurs in every industry with every paradigm shift, and we can already see some progress made in tackling new business and legal concepts over the last few months.

Beyond the uncertainties created by new media rights definition, there is a fundamental issue with a lack of **circulation of rights**. Because of the uncertainties, some rights-holders are hesitant to license their content for new media exploitation (e.g. VOD), while some licensees – e.g. TV operators – are reluctant to exploit their exploitation rights or let them go to third party players. Behind these conservative behaviours lies a common and legitimate **concern of jeopardizing existing revenues streams and business models**. However the clear trend is that stake-holders do find new innovative collaborative solutions to prevent or remedy bundling, exclusivity or non-use of new media rights. In most cases industry players find new agreements to define - sometimes share - new media rights without the need for competition jurisdiction or regulatory remedies. However, if after some time the situation remains blocked in certain countries or certain industries, some legal remedies could be considered by policy makers as a last resort.

Efficient **Digital Rights Management (DRM)** systems, allowing management and protection of content in the digital environment, are viewed by most stake-holders as a pre-requisite for a secure and sustainable roll-out of digital distribution. Only consumer associations tend to question some aspects of these systems, as they impact the terms of trade and the usability of the products/services. There is less of a consensus on the question of **interoperability of proprietary DRM systems**. Some stake-holders (e.g. consumer associations, consumer electronics players, independent e-tailers) argue that mandating standardisation or at least interoperability is necessary in order to prevent consumer lock-in and competitor lock-out. Many others (e.g. content owners, TV operators, music publishers) believe that it could not be achieved without jeopardizing robustness and innovation in that sector, argue that the market is not mature yet and suggest a wait-and-see approach before moving towards any regulatory initiative in this field.

The **collective management of rights** in the digital environment has also been mentioned by many stake-holders (content owners as well as distributors) as being a

obstacle to digital exploitation, and especially to multi-country exploitation. Several European **collecting societies have been putting in place new schemes** to address the licensing of new media exploitation (VOD, webcasting, podcasting, etc.). Following the EC recommendation on cross-border management of online music rights, many of them are engaged in streamlining their processes along the lines of the 'option 3 scenario' suggested by the EC, so as to facilitate pan-European licensing of digital rights. However, collective societies insist that the need of 'pan-European' digital distribution remains largely theoretical anyway, as cultural content markets are likely to remain mainly national because of cultural diversity. They also warn of some risks to cultural diversity and to interests of authors if the liberalisation of the collective management 'market' was too drastic.

Finally, **content regulation** has to be adapted in many instances to accommodate the development of digital distribution. The ubiquitous nature of digital distribution calls for more European harmonisation in a number of areas like VAT rates, consumer protection (e.g. classification and protection of minors) and copyright, if cross-border digital commerce is to take-off. Most stake-holders do recognise the need for legal certainty but some service providers are wary to avoid new regulation and obligations (e.g. on non-linear audiovisual services such as VOD) at such an early stage, which, they believe, could hold back growth and inhibit innovation.

The following table summarises what we believe are the **most critical factors** (inhibitors) today (2006), in the short term (in the two coming years), and in the mid term (in five years). It shows that we expect some of today biggest problems to become less acute in the mid-term (broadband penetration, access to content, even piracy). On the other hand, interoperability issues that are not such a priority in early adopter markets, can take on a greater importance in the mid term.

Reading of the table above: 'Circulation of content rights' is one of the biggest problem today, along with piracy and low 3G penetration, rated xxx. However, we believe, as said before, that this particular issue will largely be solved by market players through new business and legal practices over time, so that the issue will not be in the top 3 most acute obstacles within two years. On the other hand, the lack of DRM interoperability is not a significant obstacle to market uptake today (e.g. because early adopters are not deterred by it) ('x' today), but it could become a roadblock in the future, when market matures and tries to reach mass market 'mainstream' consumers.

4.1.3. Remedies

Finally, what kind of remedies are needed to address those obstacles?

This report systematically looks at the **remedies** that have been suggested by stake-holders for each category of obstacles and especially those inhibiting the circulation of digital content. The report analyses the pros and cons of remedies suggested, especially when remedies can cause problems themselves.

To **maximise the circulation and exploitation of digital content rights** in Europe, several approaches are already being explored by industry players and policy makers. Where one-to-one deals are sometimes currently difficult to make

Figure 118: Summary of main hindering factors

	Today (2006)	*Short term (2008)*	*Mid term (2010)*
Broadband penetration	xxx	x	
Mobile content penetration	xxx	xx	x
Circulation of content - terms of trade	xxx	x	x
Piracy offsetting digital revenues	xxx	xx	xx
Collective management of rights	xxx	xx	x
Consumer acceptance	xx	x	x
Skill and management challenges	xxx	xx	x
VAT distortion issues	xx	x	x
DRM interoperability	x	xx	
New media regulation	x	xx	xx

Source: Screen Digest

because of the classic wait-and-see and chicken-and-egg syndromes affecting nascent markets, **self-regulation** and **cross-industry agreements** are being very effective. The report is analysing several examples of such 'best practices' pieces of self-regulation, e.g. British agreement on VOD windows for TV programmes (March 2006); French all-industry agreement on VOD windows for movies on broadband VOD (December 2005).

Regulators can play a role in encouraging and endorsing such initiatives, through 'soft law' initiatives (e.g. recommendations, 'charters' of good practices). The EC recommendation on cross-border digital distribution is one example in the last few years, as well as the DRM high-level group and the Film Online charter. In the UK, the television regulator OFCOM played a crucial role to force producers and broadcasters to an agreement. **Classification** is also an area where policymakers and content industries can work together: the Pan European Game Information system, now recognised in 28 European countries including 24 EU ones, is a best practice that could inspire other types of digital content classification in the future.

Where new media exploitation faces **competition issues** (e.g. gatekeeping issues, bundling issues, vertical dominant positions), existing competition law and competition authorities can play their traditional role.

Finally 'hard law', government policy and **new regulation** are needed in a limited number of cases. in order to give market certainty and provide a regulatory framework well adapted to new business models, if market forces fail to overcome roadblocks after some time. However, any such legal remedies will have to be constructed in a flexible manner in order to adapt to the increasingly fast changing technologies and market conditions.

4.2 Conclusions per category of obstacle

After looking at each market sector and meeting a significant number of parties involved in digital content creation, production and distribution, we have identified a number of factors that are hampering, or may hamper, the development of digital distribution of content.

In the next pages, we examine the main obstacles identified by our research, reported by stake-holders, and analysed in the previous chapter, in a **generic, cross-content, horizontal manner, following the** typology used throughout the report. In the following pages, we:

- describe each category of obstacle;
- assess how widespread each obstacle is (isolated, content-specific, national, pan-European, actual or potential), mentioning what kind of stake-holders or markets are most directly affected;
- assess the most likely causes behind these obstacles;
- describe and qualify the main 'remedies' suggested by stake-holder to solve the most acute problems (mentioning, in particular, whether or not there might be a case for policy or regulatory intervention); assess the pros and cons of those remedies, and the potential drawbacks attached to these remedies.

The factors identified by the study have a variety of impacts.

1. Most factors are really **hindering market take-up** (hindering supply and/or demand in volume, value, consumer usage) and thus affecting all categories of stake-holders (industry players and consumers alike).
2. Some factors are not necessarily affecting global take-up but are **challenging the position of some stake-holders** in the value chain, compared to the pre-digital era. There can be cultural concerns too. The re-structuring of value chains and impacts on cultural diversity can have a backlash effect on the *economy* of digital distribution in the long term.
3. Other factors, again without necessarily hampering global take-up in terms of market penetration, adoption and consumption/revenues, can **affect European players** at production or distribution levels, jeopardizing their competitiveness in new media markets.
4. Finally, although most factors are equally affecting every national market in the EU, while some others may be **affecting some countries** more acutely.

The following box, inserted at the end of each obstacle identified, specifies the main characteristics, scope and consequences.

Figure 119 : Summarising box

[name and two-digit code of the generic obstacle]

Scoring	Average strength of the obstacle (across countries and content categories), according to the consultants, nowadays (2006). Zero star: industry concern but not a significant obstacle in economic terms. One-two: moderate to serious obstacle to overcome. Three stars: roadblock, whose removal is a pre-requisite to market uptake.
Comment	Extent of the obstacle: pan European by default, unless otherwise mentioned. Nature of the obstacle: affecting supply or demand; affecting all industry or certain stake-holders only.
Assessment	How and when the obstacle is likely to remain/alleviate.
Segment affected	Mobile/online, main content categories concerned.
Stake-holders affected	Main categories of stake-holders affected by this obstacle.

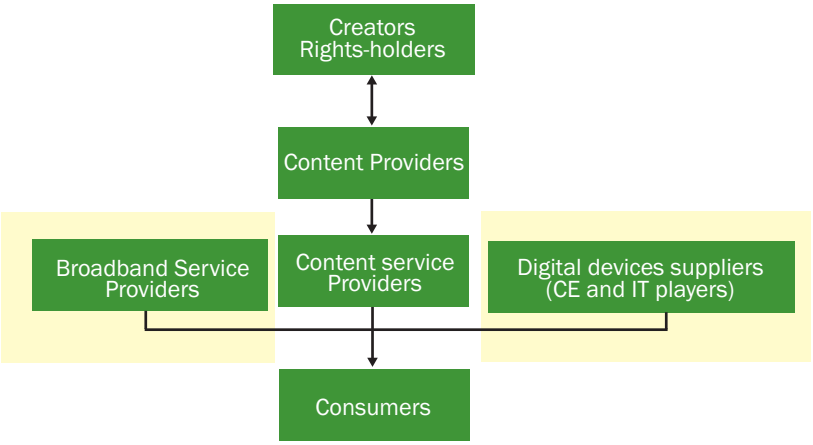
Screen Digest

4.2.1 Technology issues - access to enabling technologies

Digital distribution of content can only develop on a large scale when there is a sufficient penetration of *devices* – allowing consumers to record, playback or store digital content- as well as mass market access to *broadband technologies and networks*.

Insufficient roll-out and lack of consumer access to those enabling technologies is therefore the most obvious and prominent hindering factor, the removal of which is actually a pre-requisite to any take-up for digital content distribution. In the broadband area, we do not see major roadblocks hampering mass market adoption at least in Western Europe (27.1 per cent of penetration by end-2010). However the disparities remain high from one member country to another. In the mobile arena, 3G uptake has proved disappointing so far and future visibility on 3G growth is poor for a variety of reasons.

Figure 120 : Digital enablers – Focus on technology providers



Source: Screen Digest

4.2.1.1. Obstacles to the availability and access to broadband and multimedia mobile networks

The broadband penetration per capita in Europe at end 2005 was 12.6 per cent. Moreover, at end 2005, average downstream bandwidth speeds ranged from 9.2 Mbit/s in Sweden to 0.6 Mbit/s in Greece. It can take over 3 hours to download a two hour movie file (1Gb) over a 1 Mbit/s broadband connection.

This question over the *quality* of the consumer experience is one of the key arguments traditionally raised by the Hollywood studios in delaying the mass launch of full commercial services over the Internet. Although this is becoming less of an issue as bandwidth increases year-on-year, there is still a disparity between not only rural and urban areas, but also those homes that are closer to the local telephone exchange and those that are further away (at least in the DSL environment). Therefore, somebody who lives just 1km from the exchange will have a far better broadband DSL experience than a customer that lives 5km from the exchange, and as a result a far better movie downloading experience.

There is of course also the issue of universal access. Due to geographical issues, not all of Europe's homes are capable of receiving conventional broadband services (i.e. DSL, cable or FTTH), meaning that a small percentage of European consumers will not be able to access any kind of broadband without special provisions being made.

However access to broadband has not been mentioned very often as a roadblock by West European stake-holders (except in the online gaming sector). Although many existing network infrastructures would not support the roll-out of advanced content service, they consider that the penetration trend is encouraging, and that the tipping point has been reached in broadband and mobile multimedia penetration. On the whole,

1.1 Obstacles to the availability and access to broadband networks

Scoring	***
Comment	Prominent factor to clear for a sustainable market take-up in hardware and content services - Critical mass needed
Assessment	Trends are very positive in the broadband arena. Much less visibility in the mobile arena
Segment affected	All. Especially mobile content, MMOG, movie services.
Stake-holders affected	ISPs, all content service providers and rights-holders

Source: Screen Digest

stakeholders are thus confident that the mass market is now close enough to invest significantly in new services. The Japanese/ Korean benchmark suggests, for example, that online games markets are more developed when broadband penetration is broader.

However, in some countries new entrant stake-holders (particularly in the IPTV space) are concerned about the slow speed at which local loop unbundling is progressing. Indeed alternative IPTV services are most usually offered over unbundled networks.

Whilst the bandwidth available in Western Europe generally suits digital music, it is still a concern for the digital distribution of movies and even more for some games services, especially MMOG (Massive Multiplayer Online Games, see below). By contrast, limited access to enabling technologies was regularly cited as a major inhibitor to market development in Eastern Europe.

Broadband penetration is probably the **most important factor in the development of new business models in the games industry**, and that compared to other non-EU country markets, specifically Japan and South Korea, the European market is significantly under developed and therefore disadvantaged. The issue not only extends to overall broadband penetration, but also to the availability of higher-speed services, both for download and upload, comparable to those available in South Korea and Japan. High speed services are preferable for the download of premium PC games, which can sometimes reach over 4Gb in size. High download and better upload speeds are also preferable for playing online games such as MMOGs, where many gamers, sometimes quite a few hundreds, are connected to a graphical complex game world at the same time. Again, the EU in general lags behind the leading global broadband markets by some margin, although download speeds have been increased significantly in major urban centres, upload speeds have stayed low due to the technological characteristics of the most popular broadband technology, ADSL.

One other variant of broadband internet access is **Wi-Fi**, which is used by handheld games consoles to allow online play and to distribute content. Access to Wi-Fi hotspots (public Wi-Fi access points) within the EU and member state markets therefore has an impact on hardware sales, software sales and the digital download of content and its associated revenue streams for these platforms.

Lastly, aside from the broadband penetration issue, many broadband services (particularly digital subscriber line services) have **'caps' on the data transfer** that is allowed. Uncapped services tend to be more expensive. The capping of data transfer limits on broadband accounts acts as a disincentive to online gaming and distribution of large file PC and console games. The capping of data transport seems to be particularly prominent in the UK.

Beside the adoption/penetration issue, there is an **affordability issue** when it comes to mobile content services. Many content providers believe mobile data costs are too high for some users, and international roaming costs for data are even more so. For instance growing travel for short breaks, driven by low air fares, is increasing demand for content to travel across borders but the cost of receiving data while travelling makes consumers extremely wary. This was identified by several stake-holders interviewed as a major constraint on the development of content-based mobile services.

Suggested remedies

Local-loop unbundling and other pro-competition policies have created favourable conditions so that competition between broadband operators provides diversity of choice, better speeds, and more affordable pricing. We believe market forces in most countries will continue to drive broadband penetration.

However **some Member States' markets are lagging behind** and we do not expect them to catch up rapidly. Big disparities in broadband penetration could reduce the profitability of pan-European content distribution (lack of scale effect) and thus, in a knock-on effect, reduce the attractiveness of broadband access where little local content is accessible. Here there might be a situation of market failure and a need for policy intervention for both cultural (diversity) and economic reasons (the digital content market needs domestic scale and uniformity to achieve sustainable growth).

In order to help drive the low-broadband-penetration countries, the EC has shown its support for furthering European broadband connectivity through co-operation with Member States. For example, it most recently provided an exemption under EU

state aid rules enabling significant investment in the roll-out of broadband networks in Greece.

National and local governments should take a more active role in promoting the adoption and introduction of broadband services, which may mean, for instance, speeding up the unbundling of the 'last mile' in countries like the UK, dismantling any incumbent monopolies, or implementing specific regional initiatives to drive adoption. For example, in France the mayor of Paris has set a policy in motion that all residents should have access to 100 Mb/s broadband over the next few years.

A new form of technology underpinning the evolution of wireless wide area networks (WANs) is **WiMAX**. It is suggested that this technology could either compete with Wi-Fi technology (which is local in nature) or work in conjunction with the technology as a more effective way to link up Wi-Fi coverage across wider geographical areas. WiMAX is still at the testing phase, but the adoption of this technology is likely to have a positive impact on the ability of handheld console users to access online games and distribution services.

4.2.1.2. Obstacles to the adoption/penetration of end-user digital devices

Consumer electronics (CE) manufacturers may respond to the prospect of higher **private copy levies** (PCL) on recording/storing devices (PCs, mobile MP3 players, PVRs, etc) by increasing the consumer **price** of those devices. The result could be a reduction of the growth of CE products sales market and a knock-on effect on the penetration of these digital technologies.

CE manufacturers argue that the procedure of setting the level of private copy levies should be made more transparent and should be based on actual consumption of copied content – not the volume of mere copying. Consumer associations share this concern.

Moreover, some consumer associations consider that private copy levies are no longer appropriate when Technological Protection Measures or Digital Rights Management (DRM) are implemented to restrain or control private copying.

Article 5 (2) (b) of the Copyright Directive provides that Member States may choose whether to introduce an exception for private copying. It allows the Member States discretion on the system of fair compensation for private copies. However, when fair compensation is required according to Recitals 38 of the directive, due account should be taken of the differences between the digital and analogue private copying. Moreover, Article 5 (2) (b) and Recitals 35 provide that one of the factors that have to be taken into account is the degree of use of technological protection measures. The object is that fair

1.2 Obstacles to the adoption and penetration of end-user digital devices (affordability)

Scoring	*
Comment	Prices are decreasing quickly in a very competitive market, but CE manufacturers and consumer association concerned that PCL could jeopardize the trend in some countries and create distortions
Assessment	Not a major obstacle today. PCL could affect affordability of essential devices and hence digital services in the future
Segment affected	All. Especially mobile platforms
Stake-holders affected	Consumers, CE manufacturers. Indirectly content service providers

Source: Screen Digest

1.3 Need for spectrum allocation for mobile broadcast television

Scoring	**
Comment	Pre-requisite to mobile content service uptake, esp. mobile TV
Assessment	Regulatory and frequency certainty are a pre-requisite, not necessarily at European level. RRC-06 brought some clarification.
Segment affected	Broadcast television and radio programmes (3G alone may suffice for the roll-out of on-demand content delivery)
Stake-holders affected	Broadcasters, consumer electronics, content service providers

Source: Screen Digest

compensation levels will be reduced as the use of technological protection measures increases.

4.2.1.3. Need for spectrum allocation for mobile broadcast television

Mobile on-demand video, which will be generally a pay service, can be rolled out with 3G point-to-point technologies. A number of such services are already available in Europe.

On the other hand, live mobile television cannot be economically offered on a large scale with point-to-point technologies, and must use broadcast technologies and 'broadcast' frequencies. This requires technological and regulatory certainty and harmonisation, adapted licensing schemes and frequency planning. Otherwise fragmentation and uncertainty will hinder investment and commercial success.

There are several alternative technological options to enable broadcast mobile television (DVB-H, MediaFLO, T-DMB, etc.). They are currently being tested in many technical trials across Europe and in five commercial services across Europe (Germany and Italy).

Each technology requires the use of specific frequencies and allows for a certain bandwidth or number of channels to be broadcast. Each technology needs to be implemented in mobile receivers. Some mobile operators and some manufacturers argue that a diversity of technologies used across Europe, in addition to potential cross-border planning and 'roaming' issues, would oblige manufacturers to implement several technologies in their handsets, and would thus increase the cost and reduce the affordability of devices.

Suggested remedies

Technology is ready for broadcast mobile television. Policy/regulatory intervention is needed to create the legal framework. For mobile simulcasting, specific licensing schemes may be needed on a country-by-country basis and are being discussed at the moment. Frequencies have to be found in each country. However the planning issue has been addressed by the regional radio-communication conference (RRC-06) in June 2006 (http://www.itu.int/md/R06-RRC.06-R-0001/en).

Some stake-holders (equipment manufacturers, network operators) believe regulators should give technological and frequency certainty at pan-European level through standards mandating, but we believe mobile television will be just as national in character as terrestrial television is today and national markets can develop with light-touch European harmonisation at this stage.

4.2.1.4. Fragmentation of industry standards

This was raised as a major concern in the mobile environment, where a service - typically like a game – needs to be repurposed to many different mobile phone platforms, entailing **high re-development/porting costs**, jeopardizing profitability on such short-life products.

A similar problem occurs for Interactive TV (iTV) and, in particular **iTV games**. Developers have to re-purpose their games for a great variety of set-top boxes and different proprietary middleware systems, which reduces the profitability of porting games in the mobile arena.

Another area where fragmentation of industry standard might prove an obstacle or cost in convergent exploitation is **meta-data**.

Operators, technology providers and content owners believe that there would be benefits to a **standardised system for the tagging of digital content with so-**

1.4 Fragmentation of industry standards

Scoring	**
Comment	Has not prevented iTV development or mobile games but increases development costs and undermines profitability in those sectors.
Assessment	Self-regulation standards can and will usually bring certainty – imposed standards can open the market but inhibit innovation without necessarily bring costs down
Segment affected	Television (iTV, iTV games), mobile games
Stake-holders affected	Developers of games and other interactive services for iTV or mobile platforms

Source: Screen Digest

called 'meta-tags'. These are text-based informationa l tags which contain information about, among other things, the content type, copyright and ownership. Standardised meta-tags would help with the gathering and sharing of information on content usage across multiple platforms. Currently many operators working with digital content have developed their *own* systems for meta-tags, information gathering and reporting, and do not particularly see that there is a problem that is preventing the development of the digital television business. However, as cross platform distribution of content develops and advertising models evolve, it will become increasingly important to be able to share information stored in meta-tags.

In the arena of interactive TV, broadcasters and platform operators are concerned about the proposed fee structure for use of the **DVB-MHP** standard which has been relatively widely adopted in Europe (particularly in the Digital Terrestrial Television space). DTT platforms in Italy, Finland, Germany and Spain are based on the MHP standard, for example. Under the current terms set out by Via Licensing by 2009, a free-to-view broadcaster with a family of five channels would be subject to annual license fee payments of half a million dollars just to broadcast in MHP. Several broadcasting stake-holders argue that unless there is a significant reduction in the fees being proposed for MHP, it will no longer be cost-effective to use the technology in Europe. Without a resolution to this problem, the interactive television business (meaning 'red-button' interactive television) will be damaged, they suggest, because multiple standards will be adopted, increasing the development costs of any service or application that runs on the set-top box.

Suggested remedies

Industry open standards are being developed in a number of sectors. Policy makers should encourage such initiatives. Mandated standards can be necessary to give certainty and open the market, but can inhibit innovation without necessarily bring costs down, although European Competition law recommends FRAND licensing terms to encourage fair licensing terms of open standards.

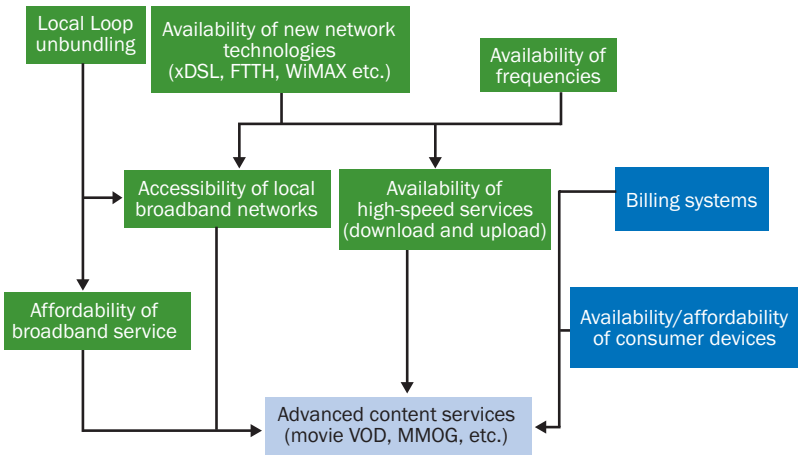
4.2.1.5. Security of payment/Billing systems

Whilst convenient solutions are implemented in the mobile environment, the lack of secure, user-friendly micro-payment solutions in some EU countries for online transactions remains a concern, particularly for the development of on-demand gaming.

Debit cards are not widespread everywhere in Europe and even when they are, consumers are sometimes still reluctant to use them online. The alternative local payment systems are considered extremely expensive and harmful to the profitability and attractiveness of services (see point 6.9).

The figure below summarise the 'category one' technology challenges.

Figure 121 : Technology obstacles/enablers to digital content services



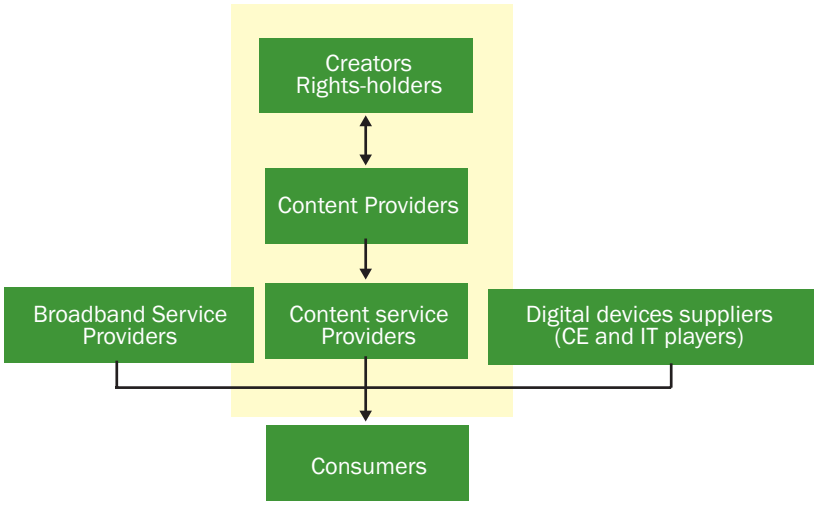
Source: Screen Digest

1.5 Security of payment/Billing systems

Scoring	*
Comment	Important enabler for a la carte online content business models
Assessment	Progress have been made but confidence remains key to market uptake
Segment affected	Open internet
Stake-holders affected	All

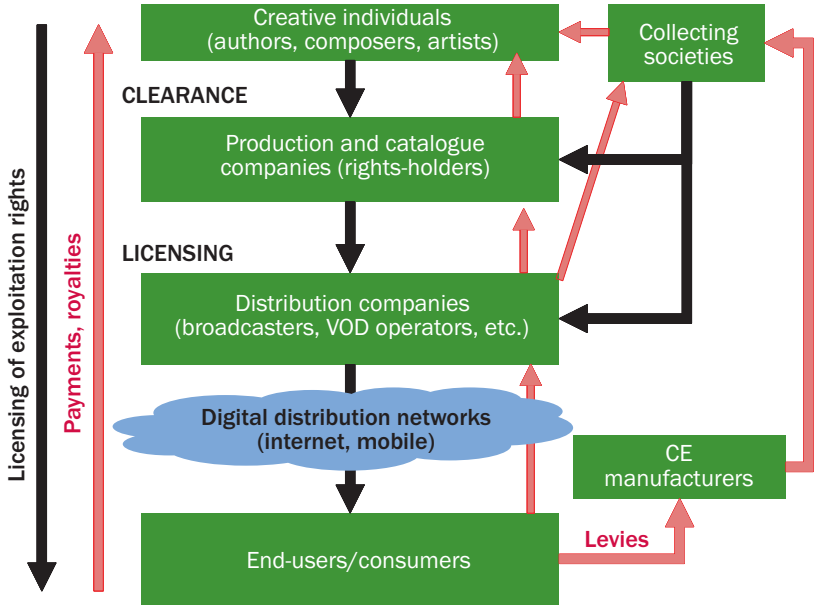
Source: Screen Digest

Figure 122 : Enablers of digital distribution – Focus on content players



Source: Screen Digest

Figure 123 : The licensing of content rights



Source: Screen Digest

4.2.2 Content right issues – licensing of content for digital distribution

If the technological bricks examined in 'category one' challenges are missing, we simply have a no-go situation for content services. But when technological enablers are in place, availability of content becomes the key for market uptake. The volume of content available on new platforms and how attractive it is to prospective consumers will determine the *pace* of uptake of new services and potentially their overall success or failure.

At this early stage, content owners and digital distributors - or would-be digital distributors - are having difficulty coming to terms on licensing deals. There are many reports of obstacles to getting licences from content owners and also *clearance* from underlying rights-holders, for a variety of legitimate reasons analysed in this section. The figure below illustrates the fact that agreements must be reached at several steps in the value chain.

There are many reasons why content owner/rights-holders and distributors sometimes cannot come to terms, or content cannot be exploited:

- Content owner reluctance to license new media at all (fear of piracy, fear of jeopardising existing revenues) (2.1)
- Uncertainty on terms of trade, leading to a wait-and-see approach (2.2)
- Uncertainty on legal definitions of new media rights (2.5), causing conflicting licenses (2.6) and obsolescence of existing licensing contracts
- Non-exploitation or under-exploitation of new media rights by licensees (2.4), sometimes exacerbated by exclusive, bundling deals (2.3)
- Complexity of clearance of underlying rights because of orphan works (2.8), locating rights-holders (2.9) and the national systems of collective management of rights (2.7)

4.2.2.1. Some content owners are simply hesitant or reluctant to licence their content

Some content providers are reluctant to licence their rights for new forms of digital distribution.

Among the reasons identified, some independent content owners are simply not aware of new media opportunities.

Many are wary of jeopardizing existing revenue streams, or upsetting their current

distributors. Many small content players feel the additional revenues anticipated are simply not worth the (fixed) business transaction costs at this point.

Some fear piracy as soon as any 'digital' distribution is mentioned, not fully aware of copy protection systems.

Finally because of low entry barriers for digital distribution, some content providers are also considering distributing their content *themselves*.

Suggested remedies

Many of the causes are legitimate business reasons in a nascent market. The only remedy needed is – for trade bodies and policy makers – to increase the level of information and common knowledge, technological confidence, cross expectations and legal certainty throughout the value chain.

In order to raise awareness in the independent sector, the EC has set out education and increased dialogue between content owners and service providers as an important aspect of the Film Online Charter[95]. The 'European Charter for the Development and the Take-up of Film Online' was initiated in May 2005 by the EC and agreed by business leaders on 23 May 2006. The Charter represents an agreement on basic principles from the key players: content industry, internet service providers and telecom operators, under the auspices of the EC, in order to provide better business certainty and win-win situations when services are rolled-out.

Education plans must include raising awareness amongst independent European rights holders as to the possibilities surrounding the exploitation of on-demand and digital rights.

4.2.2.2. Content providers and distributors sometimes cannot agree on terms of trade

Would-be and new-entrant distributors (which can be telcos or independent distributors) are concerned about what they consider 'excessive demands' from content owners and rights-holders (production and catalogue companies, and collecting societies).

Disagreement on terms can arise under several headings:

- *amount* of payments (or royalties) asked for, or the revenue sharing split;
- *form* of payments (minimum guarantees are sometimes asked by content owner, as in the traditional content distribution environment, whilst distributor would favour revenue sharing);
- *duration* and *exclusivity* of the rights licensed (e.g. with film/TV, broadcasters generally prefer exclusive exploitation windows whilst content owners generally prefer non-exclusive deals)
- *technical requirements*. Protection through a DRM system is now usually required by rights-holders and thus has to be

2.1 Content owners reluctant to licence their content

Scoring	**
Comment	Concerns only a minority of content owners, due to legitimate concerns.
Assessment	Typical of nascent markets. Causes related to economic/legal uncertainty and mis-conceptions are increasingly removed. Deals are now accelerating.
Segment affected	Mainly movies (independent producers) and books. Music producers/publishers have gone the learning curve some years ago.
Stake-holders affected	Would-be content service providers and distributors, unable to secure enough licensing rights.

Source: Screen Digest

2.2 Lack of agreement on terms of trade

Scoring	***
Comment	A big concern on a day-day basis today, but most stake-holders manage to invent new practices.
Assessment	Typical of nascent markets but likely to ease spontaneously quickly. Licence deals are now accelerating. All-industry agreements can help at national levels.
Segment affected	Mainly movies (independent producers) and books. Music producers/publishers have gone the learning curve some years ago.
Stake-holders affected	Would-be content service providers and distributors, unable to secure enough licensing rights.

Source: Screen Digest

implemented by distributors. In addition to DRM, some digital service providers report that some content owners have requirements against the threats of piracy that go beyond local regulations and thus cannot be implemented.

Suggested remedies

Again we believe such difficulties are absolutely natural in a nascent market, when business practices have to be established and the very value of the new forms of distribution are still unknown. Each new content distribution model in the past (pay TV, DVD, PPV and even radio) had to go through a similar business learning curve. Arguably the new paradigm is even more difficult to tackle precisely because digital technology offers so many business model possibilities.

But when there is a real wish to exploit the content on both sides, we see no reason why parties could not spontaneously come to terms in most cases, in the short-mid term. Every week is bringing new examples of new media content deals.

Therefore no particular remedy is needed. All-industry negotiations can be useful to converge more quickly to stable business practices, especially regarding typical duration of licenses/windows.

4.2.2.3. Exclusive distribution deals on new media rights

Rights-holders would often be ready to licence their content for on-demand digital distribution, but then it occurs that relevant rights have *already* been acquired on an exclusive basis by other distributors. The latter, frequently from traditional pay TV businesses, are sometimes accused of not fully exploiting new distribution channels and being unwilling to sub-licence them to new-entrant third party distributors. Consequently, these service providers are sometimes accused of 'blocking' the development of on-demand distribution in order to protect existing business models.

In several countries, pay TV operators are sometimes accused of abusing their 'dominant' position in acquiring 'all rights' to packages of movies and programmes in relevant windows, thus effectively blocking other digital exploitation.

This 'exclusivity of rights' roadblock is especially pertinent to local European movies and TV programmes (drama, documentary). While internet-based VOD, with its low upfront and fixed costs, could offer an important opportunity for distribution of (independent) Europe-originated content (including across borders), the existing structure of rights deals could effectively reduce the proportion of European content within such services.

This concern is not documented on a large scale however: monitoring of early VOD offerings across Europe shows a reasonable proportion of European works available for viewing or download. However, were this to adversely change, it would hamper the attractiveness and thus roll-out of services (the larger the repertoire, the larger the potential audience and market). It would also potentially harm – or fail to benefit – cultural diversity in the European information society, inhibiting local cultural production (which generally creates more employment than distribution activities).

On the other hand, traditional pay TV operators or free-to-air broadcasters like to stress that any undermining of the exclusivity of rights could produce obstacles and disincentives for the development of new services. Nascent markets frequently take off through vertical integration in their early stages. Besides, they argue, they are far more effective than producers in marketing programmes on new platforms, thanks to their skills, brands, and negotiating power with network operators. There are many reports of win-win exploitation of TV programmes on new media, by broadcasters' new media divisions, in full co-operation with producers[96].

2.3 Exclusive distribution deals on new media rights

Scoring	*
Comment	Especially a concern like Germany where independent producers licence all their rights to broadcasters – less of a problem in France or UK e.g.
Assessment	If industry negotiations cannot settle fair terms of trade, regulatory 'push' (e.g. OFCOM role) can help
Segment affected	TV programmes
Stake-holders affected	Independent producers unable to (co)exploit new media rights and therefore unable to invest in this field

Source: Screen Digest

One way to overcome such difficulties would be by industry negotiation. At national level, content providers and distributors could agree on standard, fair business practices in order to avoid unnecessary hold-back control and maximise exploitation of content[97].

Suggested remedies

On the whole we believe market forces are progressively finding ways to ensure fair optimal exploitation of new media windows and business models, but there could be legal/regulator the next section (non-exploitation) illustrating the variety of options.

4.2.2.4. Non-exploitation of new media rights

Some producers, rights-holders and collecting societies complain that licensees of audiovisual works – sometimes retaining unlimited exclusive exploitation rights – are simply *not* exploiting new media, thus depriving producers and rights-holders of potential new revenues.

A faster, more significant development of new digital exploitation platforms and business models seems to be held back by a **need to protect established sources of income**. It is widely assumed in the industry that exploitation of a piece of content in a prior time window or on an alternative platform (either before or simultaneous with the established main platform) devalued the content.

The conundrum is that new digital platforms do not *yet* have the *scale* to produce enough income to make up for the devaluation of content to the established platform. Thus, on-demand exploitation is seen as reducing revenue from the pay TV window, while broadband download or streaming is seen as potentially damaging revenue from DVD. It was thus considered that new digital platforms were restricted largely to niche and second tier content for the time being.

Only in cases where a piece of content was so valuable that it would still maintain its value across all exploitation windows, were experiments with new media platforms widespread. The example of *Desperate Housewives* and *Lost* licensed by Disney to iTunes in the US was noted.

However this concern tends to becoming less acute as a significant number of new services, typically Internet-based VOD, have been launched over the last twelve months in Europe, including by players from the broadcast and pay TV industry.

Suggested remedies

In some instances, it has been proved that, when well managed, **near-simultaneous multi-platform distribution (broadcast, VOD, DVD) can increase the awareness of a given TV programme and maximise primary audience, rerun asset value, and revenue for content owners**, instead of cannibalising.

For instance, in France, high-profile TV drama (*Les Rois Maudits*) and natural history documentaries (*L'Odyssée de la vie*) were made available for streaming and download-to-own from France Televisions' and third party vodeo.fr VoD platforms. In the UK, the near-simultaneous multi-platform distribution deal on the documentary *The Road to Guantanamo*, between its independent producer, broadcaster (Channel 4) and a UK ISP (Tiscali) is another example of best practice.

In the legal section of the report, we also review various approaches to prevent or remedy non-exploitation of rights which is frequently related to bundling and exclusivity of rights. Remedies can come through obligations imposed on licensor and/or the licensee, either by competition decisions, industry agreements, model contract agreement, or even legislation provisions as a last recourse. One legal approach to address the problem is the notion of 'automatic

2.4 Non-exploitation of new media rights

Scoring	**
Comment	Related to operators reluctant to jeopardise existing windows/business models. Particularly acute in some countries like Germany.
Assessment	Industry player overcome this problem – industry negotiations and regulation can help settle best practices.
Segment affected	Mainly television programmes.
Stake-holders affected	Content providers.

Source: Screen Digest

termination' of (exclusive) licences when there is evidence of non-exploitation. Such termination provisions already exist in copyright laws in some Member States, but for them to be activated, rights-holders would have to *sue* their licensee/commissioners, which could take a long time and would not be practical. The automatic character of such provisions could make them more workable but would not give business visibility to content owners, who then tend to prefer ex ante solution to prevent under-exploitation.

4.2.2.5. Definition of rights/windows – obsolescence of existing contracts

There is general confusion in the market over new media rights that is holding back exploitation of content on new digital TV platforms. Older contracts are frequently silent on new media exploitation of rights ('older' in the context of new media can mean as little as a year).

In addition, there is confusion as to whether a time-window right includes exploitation across any platform as long as it is within this time window.

Interpretations vary as to whether or not some 'old' broadcasting contracts between content providers and broadcasters that mention for example terrestrial, cable and satellite transmission but not mobile or DSL transmission should be amended. However a classic interpretation is that contracts that are silent on technical means of distribution do not include rights to that mode of distribution. Thus, the confusion extends both to the time window and the technology and both need to be clearly stated in a contract (along with any specific technology or time hold-backs).

This situation particularly impacts stake-holders with large content archives or libraries who felt that massive amounts of older content could not currently be exploited because the new technologies and platforms

2.5 Lack of definition of rights/windows

Scoring	**
Comment	Lack of clear definitions so far create business/legal uncertainty over obsolescence of existing contracts, conflicting rights.
Assessment	Serious problem today but likely to ease fairly quickly over time.
Segment affected	TV and movies on all new platforms.
Stake-holders affected	Content providers.

Source: Screen Digest

2.6 Conflicting rights

Scoring	**
Comment	Consequence of the lack of universally accepted definitions of new media rights and windows (2.5).
Assessment	Serious problem today but likely to ease fairly quickly over time.
Segment affected	TV and movies on all new platforms.
Stake-holders affected	Content providers.

Source: Screen Digest

Figure 124 : Approaches to preventing or solving the lack of exploitation of new media rights[98]

Ex ante (prior to or through licensing contracts)	Ex post (after licensing contracts)
Preventing non-exploitation/hold-back of rights	*Remedies to non-exploitation/hold-back of rights*
De-bundling of rights/windows: obligations on the rights-holder/licensor, preventing new media rights to be hold back by exclusive all-right licensees. E.g. UEFA Decision, UK code of practice for commissioning,	(Automatic) devolution provided by licensing contracts, possibly through industry agreements. E.g. Channel4 commissioning agreements..
'Time-share' rules based on industry agreement on contractual practices, or commercial practice E.g. PACT agreement with UK broadcasters, multi-platform non-exclusive distribution deals (Road to Guantanamo case).	(Automatic) devolution (termination of contracts) provided by legislation. E.g. provisions in German copyright law

Source: Screen Digest

had not been anticipated at the time the rights agreements were negotiated and thus the majority of contracts were silent on these rights.

There were two reports of a programme that had to be removed from the channel's IPTV simulcast feed because content providers or underlying rights-holders opposed that specific form of transmission, which was indeed not explicitly mentioned in the contract. Although this seems to have been a relatively isolated incident, one broadcast stake-holder noted that 40 per cent of its schedule was currently held back from broadband simulcast because of rights issues.

Suggested remedies

Again we believe business and legal practice will progressively find new ways of ensuring legal certainty in contracts, if need be through jurisdiction, without the need of ex ante policy intervention.

This is not the first time in media history that contracting parties have had to re-interpret or re-negotiate rights licences in order to embrace new technologies. For this reason, many stakeholders are confident that such a process can be handled under existing contract law or industry agreement. However, to avoid such difficulties in the future, many television broadcasters are trying to implement standard contracts focusing only on the *nature* of the service offered to the final-user (like 'free, real-time, uncut transmission in a given territory') avoiding any mention of specific (i) transmission technologies, (ii) delivery networks, and (iii) devices, so as to encompass new technologies yet to appear.

4.2.2.6. Conflicting rights

There are several reports of 'confusing' or 'conflicting' new media rights, due to ambiguous or overlapping contract drafting, and poor definition of windows[99].

Such conflicts seem to be inherent in the difficulty of drafting future-proof contracts when it comes to nascent technologies and new business models. Some stakeholders say there is no reason to believe that such difficulties will be common as IP lawyers and businessmen become more familiar with them. But some IP lawyers suggest legislation could help in indicating standard/default definitions of exploitation rights using new technologies.

Suggested remedies on obsolete or conflicting rights

Again we believe business and legal practice will progressively find new ways of ensuring legal certainty in contracts, if need be through jurisdiction, without the need of ex ante policy intervention.

4.2.2.7. Clearance of underlying rights - Collective management of rights

Some distributors of digital content, notably music, express concerns about the way collective management of rights are managed by some collecting societies.

Their concern refers to:

(i) the complexity of the clearance process,
(ii) the length of necessary negotiations (especially when it comes to cross-border distribution were clearance must be done on a country-per-country basis),
(iii) the disagreement on royalty rates asked by collecting societies, and
(iv) the delay in coming out with new schemes to address new business models.

This was considered the biggest single obstacle to business by online and mobile music distributors and aggregators that are active in *several* countries, but it was also mentioned by VOD operators operating in one country.

Some stakeholders consider that collecting societies have not always been sufficiently supportive of new forms of distribution. Collecting societies deny that assertion, mentioning that they have always put in place new schemes and clearance contracts as soon as new forms of digital business appear. Indeed, clearance contracts for downloading services and webcasting

2.7 Clearance of underlying rights - Collective management of rights

Scoring	***
Comment	Pan-European issue.
Assessment	One of the key issues affecting the digital music business.
Segment affected	Music mainly, movies soon.
Stake-holders affected	Digital retailers, especially when operating cross-border in multiple markets.

Source: Screen Digest

are now largely used and podcasting licence contracts are being drafted[100]. Besides, it is generally tolerated for distributors in new business models to start businesses before clearance contracts can actually be established or signed (retrospective clearance is then due).

Fundamentally there are disparities in the collective management of rights.

There are a variety of different bodies in each country collectively managing the different kinds of rights in relation to the different categories of works or rights holders. Moreover, the practice of collective management differs in relation to the kind of work involved and varies country by country.

In many situations, especially in the case of multimedia productions, the user has to clear the rights in relation to works which involve many different rights holders and many different rights. Hence, the user has to deal with several different bodies and different licence practices in order to acquire the necessary rights.

Moreover, only *some* parts of the rights are issued by collecting societies, while others are still issued *individually*. For example, in relation to the related rights of record producers, the right of making available applying to on-demand services is *not* administered collectively. The record producers' and performers' right to communicate to the public, by contrast, is managed collectively. In some Member States, such as Germany, the rights to ringtones are simultaneously issued by the author and the collecting society, establishing a "double-licence" for the exploiting party.

The use of the Internet, as one way of distribution, can imply the accessibility of the content worldwide. Due to the fact that rights are granted only for single territories, exploitation over the Internet in this way would always infringe third party rights. Although there are already technical ways to prevent accessibility outside the licence territory, some players suggest a uniform legal framework might be needed to enable the free movement of goods and services.

The issue of **'withholding tax'** has been raised by service providers and music artists with an interest in the independent music market, and refers specifically to double-taxation of royalties on digital sales between Member States, and the lengthy process of its reclamation. Multi-territorial major labels tend to be domiciled in each EU member state, and therefore are able to leverage their large internal structure to absorb the temporary effect of double taxation where it appears. Artists signed to major labels are compensated at the expense of the record company, which operates a 'left pocket/right pocket' structure to off-set the temporary deficit.

In the independent sector, where an artist relies on a number of disparate third parties, the problem seems to be a major concern, and can substantially raise the quantifiable cost of doing business.

Similarly, several publishers in some Member States are concerned that they do not benefit from **automatic transfer of rights from journalists** – either freelance or employed. This, they believed, has made it **difficult to establish online services that re-use text and pictures**, especially in archive services. Other publishers did not identify this as an issue.

The main solution proposed by publishers and their associations, to establish a legal framework for an automatic presumption of transfer of copyright, is a very controversial one. **Journalists' organisations** are advocating a different position, proposing that they should retain rights and be able to deal with them through collecting societies, as well as receive payments from Reproduction Rights Organisations (RROs).

Suggested remedies

The remedies proposed by the EC in its recommendation on the management of online rights in musical works are discussed in the report (chapter 3.1).

According to some collecting societies, the problem with national collective management is overestimated. They observe that online retailers are mainly operating in one country only. Moreover, they consider the current network of reciprocal representation agreements is an effective system. Therefore they tend to think that no further regulation is necessary.

Nevertheless collecting societies have entered into a dialogue with the European Commission and service providers in relation to options for improving the conditions of collective rights management as long the reciprocal agreement system is not put into question. In this context collecting societies stress that there have to be safeguards against dumping of valuable content and that open competition must not result in 'forum shopping'.

In any event, the introduction of a multi-territorial system of collective copyright licensing for online music services will **provide commercial users with greater certainty** when clearing the rights for the online exploitation of music and encourage the development of new services. It remains, however, to be seen whether this recommendation, which is *not* binding, will be forceful enough to achieve all that is envisaged by the Commission.

Moreover, the scope of the Commission's initiative so far only covers the collective management of copyright and related rights for online *music* services. Even if music has been at the forefront of online development, today the issue of multi-territorial licensing becomes relevant in *all* content sectors. Hence, the scope of the Commission's activities may need to be expanded in the future. In addition, the scope of the regulatory initiative may need to be expanded beyond internet services. It could usefully be expanded on all platforms able to distribute digital content, such as *mobile* platforms, and therefore be a technological-neutral approach.

4.2.2.8. Clearance of underlying rights - Orphan works

In this case, the content provider (which can be a producer or catalogue owner or even a distributor) cannot locate the underlying rights-holders. Consequently, it cannot renew the contracts licensing exploitation rights or expand them to new forms of digital distribution that were not mentioned in the initial contracts.

Suggested remedies

Some stake-holders claim for 'automatic devolution' legal provisions to tackle the problem of orphan works. However collecting societies in some EU countries traditionally perform a clearance role, authorising reproduction and exploitation. Their role can include searching for missing rights-holders and, if they cannot be located, licensing exploitation on behalf of the missing party so as to prevent blocking exploitation by other rights-holders.

The legal chapter (section 3.1.4) mentions interesting regulatory remedies. Danish Copyright law provides a system of 'extended collective licensing' allowing a user to obtain licenses issued by collecting agencies without having to locate rights-holders. Under Canadian copyright law, the Copyright Board of Canada is authorised to grant a licence to use an orphan work. In the US, the 'Orphan Works Act' of 2006 (H.R. 5439) is based on a recommendation from the US Copyright Office. It provides for 'limitation on remedies in cases involving orphan works' thus limiting the risks of copyright infringement when a works is exploited while some rights-holders are missing.

2.8 Clearance of underlying rights - Orphan works

Scoring	*
Comment	Hampers the potential supply of digital works and potentially the cultural diversity of digital markets.
Assessment	Pre-digital legal tools and new regulation help IP lawyers and collective management societies to tackle effectively the issue.
Segment affected	Mainly movies and TV programmes.
Stake-holders affected	Specialised content providers and archives.

Source: Screen Digest

2.9 Locating rights-holders in the independent sector

Scoring	*
Comment	Hampers in particular cross-border distribution of independent European content and thus can waste opportunities to leverage cultural diversity and 'long tail' market.
Assessment	Not a major market roadblock but affects niche-oriented services.
Segment affected	Mainly movies and TV programmes.
Stake-holders affected	Specialised content providers and archives.

Source: Screen Digest

4.2.2.9. Locating rights-holders in the independent sector

Service providers, especially new entrants to the market, have trouble in locating rights across borders in the European independent film sector. This can be a significant roadblock to the development of their services.

Some national film agencies, such as the UK Film Council, are looking into the issue of rights identification and clearance. The French Registre Public de la Cinematographie is accessible online, but there is no single database today in Europe that allows distributors and service providers to easily identify rights-holders for a specific film.

Suggested remedies

Facilitating the location and sourcing of rights has already been identified by the Film Online initiative as an important aspect of encouraging the development of digital movie services. Within this ambit, there is opportunity to co-ordinate greater clarification of rights, a first step towards which could be ensuring the development of a 'rights portal' by local European film agencies – an online business-to-business (B2B) database of rights information.

That is, rights holders would have the opportunity to populate the database with their own information in order to make distributors and platforms aware of the availability of their content, or ensure co-ordination for domestic film agencies to facilitate the undertaking of an industry rights audit (possibly as the first step in setting up this initiative and then on a regular basis).

4.2.3 Piracy

Even if many have learnt to live with it and have more pressing issues to tackle on a day-to-day basis, most stakeholders in all content sectors, from production or distribution, consider piracy is *still* the single biggest obstacle holding back the development of legitimate digital distribution.

According to the International Federation of the Phonographic Industry (IFPI), in 2005, the global music sector sustained €3.8bn in losses from all forms of piracy, which represents more than 15 per cent of worldwide sales of €26.9bn the same year. IFPI believes that the number of illegal music files at the end of 2005 was 885m, down from the €1.1bn peak in 2003

The persistence of copyright infringement, however, is not an obstacle in the sense that it no longer prevents most content owners from *licensing* their content for digital distribution. With DRM systems in place, most content owners indeed are now confident that legal, protected digital distribution cannot increase or facilitate digital or physical piracy, as both feed on physical legal packaged media in the first place.

But piracy is still a major challenge as it simply reduces the potential market, business and revenue expectations, and reduces the perceived *incentives* to license content and invest in legal digital distribution.

Until recently, stake-holders used to be divided upon the issue. Copyright holders would accuse ISPs to be reluctant on tackling piracy and deter peer-to-peer activities infringing copyright. Indeed some ISPs were already advertising 'online music' *before* much legitimate content was available. Arguably, accessing content on peer-to-peer networks was a massive driver for broadband adoption in the earliest stages. However now, most ISPs and broadband operators are addressing mass market mainstream consumers and families, not only young techno-savvy early adopters. Besides, as broadband operators wish to venture into offering content themselves – or facilitating - legitimate online content services, they need to establish good relationships with content providers.

Suggested remedies

The recipe against online piracy is now well known and accepted by all stake-holders, and includes a combination of four ingredients (of course stake-holders would still argue on the relative proportion of each):

- attractive and user-friendly legal offerings,
- copy protection systems,
- legal deterrents and penalties,
- education and awareness campaigns towards young consumers and their parents.

Legal protection of DRM systems has been included in most national laws, as a result of the implementation of the implementation of the Copyright Directive. By this, unlawful circumvention of DRM systems is illegal and can be prosecuted.

Furthermore, the Enforcement Directive[101] (which had to be implemented by 29 April 2006) aims to achieve an adequate level of protection within the European Union through presetting the measures and procedures necessary to ensure the enforcement of intellectual property rights. The Directive envisages provisional measures to preserve evidence and prevent impending infringements. Furthermore, the directive provides for a broad right of information against infringers and persons who are involved in the infringement on a commercial scale.

Some stakeholders (especially distributors and consumer associations) acknowledge that developing attractive legitimate offerings is the most efficient

3. Piracy

Scoring	***
Comment	Affecting market development and hampering revenues from rights-holder. Does not prevent most rights-holder to offer their content through legitimate protected digital distribution, but still a disincentive to investment as it reduces potential revenues.
Assessment	Combination of development of legal offering and tougher, harmonised regulation should alleviate the problem in the mid-term.
Segment affected	Music still, and increasingly movies and TV programmes. Broadband and potentially mobile in the future
Stake-holders affected	Content owners, legitimate content service providers.

Source: Screen Digest

response to piracy, but others (especially content providers and authors) believe that the regulatory environment although generally strengthened over the last few years, is still not adapted to fight and deter piracy efficiently[102]. They believe that sanctions against pirates are not strong enough and that ISPs should bear some responsibility for peer-to-peer distribution. On the other hand putting too much liability on technology enablers (ISPs or even digital devices manufacturers) may increase uncertainty and inhibit technology innovation.

Industry initiatives like the Online Music Charter of September 2004 under the auspices of the French ministry of culture, and the Film Online Charter of May 2006 under the auspices of the European commission, have helped get all stake-holders (especially creators, producers and ISPs) around the table to agree on basic principles. They agreed on the necessity of a combination of more enforcement of Intellectual Property Rights (IPR) protection, and joint education and awareness campaigns.

4.2.4 Legal and regulatory issues

4.2.4.1. Consumer protection, parental control and classification

Companies offering digital B2C content services are confronted with various consumer protection laws in regard to (i) e-commerce (e.g., the requirement to disclose detailed information about the company, products, etc.), (ii) protection of minors, (iii) advertising, (iv) data privacy.

Some national regulations are still quite complex as well as disparate, and require a rather administrative procedure.

For instance, some stakeholders believe the **disparity in age classification systems** needs to be addressed to enable cross border marketing of services. Classification systems and parental control systems have to be continuously adapted to new technologies and new formats. And classification systems need to be made Europe-wide whenever possible, to help cross-border distribution.

Suggested remedies

A pan European classification and rating system has been developed successfully for video games (PEGI) to the satisfaction of game developers and publishers.

Such industry initiatives should be encouraged and more wide-spread. In the mid-term, the online movie market may need to roll-out a similar system.

4.2.4.2 Regulation of new media services

When new technologies bring along new business models, existing regulation must be updated in order to give legal certainty to stake-holders and investors, and ensure a level playing field. Where stake-holders start to diverge is on how exactly regulation should be reformed in the new digital arena

Regulatory schemes are being revised in several countries and at the European level, to regulate new services like online download services and mobile television. For instance, some stakeholders are concerned that certain concepts taken from terrestrial or cable television (e.g. advertising regulations, must-carry rules) will be uncritically applied to the new mobile television market. For mobile television to take-off, they argue, licensing should be updated[103].

Some stake-holders are still unsure of the impacts of the obligations that might be attached to 'non-linear' audiovisual services in the scope of the proposed 'Audiovisual Media Services' (AMS) Directive, or the definition of them. Some European policymakers do share this concern (e.g. the UK DTI). Many regulators, however, believe that a basic set of obligations, including contribution to independent production and cultural diversity, should apply to non-linear services.

4.1 Consumer protection, parental control and classification (disparate regimes)

Scoring	*
Comment	Flexible systems needed to cope with new technologies. Harmonisation needed to allow cross-border market uptake.
Assessment	Legal harmonisation is under way.
Segment affected	Games (but PEGI has been an effective remedy when and where implemented), potentially movies in the mid-term
Stake-holders affected	Games developers, cross-border content service providers

Source: Screen Digest

4.2 Regulation of new media services

Scoring	*
Comment	In some areas, stake-holders are hinting at a lack of legal certainty. In some others, some stake-holders are concerned with the risks of over-regulation that could potentially add legal uncertainty and inhibit innovation.
Assessment	Not an obstacle per se today, but a big challenge in the future.
Segment affected	Audiovisual services, radio and publishing services.
Stake-holders affected	All (mainly non-linear content service providers coming from previously unregulated activities).

Source: Screen Digest

Suggested remedies

New media regulation issues are examined in the legal chapter. Many regulatory reviews are under way and policymakers acknowledge the necessity of a broad, periodical consultation of stake-holders.

4.2.4.3 Legal liability

There is an issue with legal liability of Internet intermediaries.

Platform providers are likely to present a variety of content to the public, including content that they are unable to control. In particular, new interactive services may give end users or other third parties new opportunities to distribute content to the public via a platform. In light of such technological and economic developments in the field of information society services, the Commission is continuously examining the need for amendments of the current liability limitations of internet intermediaries (cf. Article 22 of the E-commerce Directive 2000/31). The next application report of the E-commerce Directive will be published in 2007

Increasing amounts of content generated informally by journalists and user-generated content (UGC) are creating legal uncertainties for newspapers and magazines[104].

There are also complex issues of **liability for defamation** across borders – these are inhibiting to publishers if it is possible for plaintiffs to choose the most favourable country in which to sue.

This issue, and the associated remedies, is analysed in the legal section.

Suggested remedies

Legal liability issues are examined in the legal chapter. Many regulatory reviews are under way and policymakers acknowledge the necessity of a broad, periodical consultation of stake-holders.

4.3 Online legal liability

Scoring	*
Comment	Legal risk and uncertainty increased by user-generated content
Assessment	
Segment affected	Online publishing
Stake-holders affected	ISPs, online publishers

Source: Screen Digest

4.2.5. Competition issues

4.2.5.1 Gate-keeping issues and sharing of revenues

Content providers and broadcasters are concerned about mobile network operators having control over pricing standards and revenue share[105]. The average share of revenues kept by operators in Europe seems to be higher than that usually retained by Japanese operators, for instance. Some argue that this could contribute to making content services more expensive and could be one of the factor explaining Europe delay in terms of 3G adoption and consumption, compared to Asia.

Mobile network operators argue that in every country competition authorities are already here to make sure they are not abusing their positions.

Suggested remedies

Price capping could of course be considered, although several stakeholders made the point that were this to happen, operators could cut costs by scaling back or stopping investment in content services. This could significantly damage the market.

Price pressure through alternative payment mechanisms should begin to reach the market. PayPal, for example, will be launching a mobile payment mechanism. If wholesale data is available (see above), this could improve the market for 'off deck' content and so drive down operator revenue shares of 'on deck' content.

Overall, although regulation such as price capping would undoubtedly be welcomed by many stakeholders, there are just as many who would see this as a threat to the market.

Moreover, as mobile operators acquire and even *commission* original content, some traditional content providers and distributors are worried that they might leverage their vertical position. They obviously would prefer mobile content distribution to remain horizontal, open and competitive.

4.2.5.2 Role played by public service broadcasters

The new media activities of public service broadcasters (PSBs) were mentioned as a concern by some commercial TV operators.

On the one hand PSBs - in some countries only - have the ambition, the technical and financial capacity and the catalogue of rights enabling them to launch new, innovative services, driving consumer adoption of new services[106]. Their very popular brands and ubiquity can drive awareness and consumption from mainstream consumers and drive markets for all content providers.

5.1 Gate-keeping issues and sharing of revenues

Scoring	*
Comment	Not preventing the launch of many new services, but harming the profitability from the point of view of content providers.
Assessment	Market players should agree on terms of trade over time, under competition authorities pressure if need be.
Segment affected	Mobile platform. Mainly games, TV-related services and video content.
Stake-holders affected	Content providers.

Source: Screen Digest

5.2 Role of public service broadcasters in new media

Scoring	
Comment	Arguably not an obstacle to adoption take-up, but a challenge to monetising the new media market, according to commercial operators. Issue limited to very few countries where public service broadcasters have the capacity drive – and according to some commercial stake-holders.
Assessment	Not an obstacle at this stage and possibly a driver.
Segment affected	Television, radio
Stake-holders affected	Commercial TV operators complaining of public service remit breach

Source: Screen Digest

On the other hand, in so doing, PSBs are sometimes accused of distorting new markets with offerings that are extremely attractive and sometimes free-of-charge, thus 'pre-empting' and hampering the development of any other paid-for comparable services in the future. Some stake-holders are even more critical when these new media activities are licence fee-funded.

Some independent VOD operators also complain that certain PSBs are tending not to licence their content to third party distributors. However, there are several examples of PSB-commissioned programmes licensed on a non-exclusive basis to a variety of third party VOD operators.

However, PSBs and governments stress that PSBs are fully within their approved policy objectives and public service remit when carrying their content on new platforms in new forms. This is justified in order to (i) retain younger viewers who are migrating to new media, and (ii) help other audiences to discover new media with familiar content and familiar brands.

Suggested remedies

Only in a few EU countries – typically the UK – do PSBs have the capacity to launch early, ambitious new media services, thus driving adoption and influencing/shaping business models, markets and prices. We believe they can play a very positive role in popularising such services beyond young early adopters, so that even the risk of them 'distorting' nascent markets is an acceptable risk to take regarding the impetus they can bring.

In certain content areas (such as audiovisual archives), bringing content onto new platforms to reach consumer is perfectly justified by their public service, cultural remit even on a non-commercial basis. Offering 'catch-up' programmes on an on-demand basis is a natural extension of broadcast as long as it is negotiated on a fair basis with rights-holders (without undue excessive exclusivity in the windows). Finally, paid-for VOD activities launched so far seem to be in line with what commercial operators are doing too and what PSBs are already doing in the DVD market.

4.2.5.3 Direct distribution of US content

So far, US content providers are generally offering their content online to US-based citizens only, while still (increasingly) licensing European VOD rights to their local broadcasting partners and/or to third party VOD operators.

However some broadcasters and VOD operators are worried that certain US content providers and broadcasters (sometimes vertically integrated) may offer online VOD directly at prices or through windows that would make European VOD distribution of the same content uncompetitive.

Suggested remedies

History suggests Hollywood may continue to segment time/delivery windows as the best way to optimise profit, at least for television programmes. But it is true that new technology opportunities, piracy and the maturing DVD market, have triggered re-thinking of future strategies. Many now see VOD becoming the main profit-engine in the mid-long term and may consider reshaping their global strategy along those lines.

4.2.5.4 Restrictive pricing models

Several European stake-holders point out that pricing pressure from a small number of dominant players is inhibiting profitability of digital retail.

Some music content owners complain about the one-size-fits-all pricing policy (€0.99 per track, €9.99 per album) introduced by iTunes, which has become a standard practice.

Also, some independent online retailers point out they cannot make a profit out of those prices and that the business of **online music distribution could become a loss-**

5.3 Direct distribution of US content

Scoring	(potential challenge)
Comment	Would not harm European market itself but the market share of European-based distributors.
Assessment	Not likely in the short term.
Segment affected	Television.
Stake-holders affected	European broadcasters and VOD operators anxious to retain or get first VOD rights of US content.

Source: Screen Digest

leader for hardware vendors and ISPs, whose core businesses is elsewhere.

This is not necessarily an obstacle to the development of the market, but an obstacle to some categories of operators: independent retailers going online or pure internet retailers. According to them, this trend could ultimately have a detrimental impact on cultural diversity, because non-core music distributors might not focus so much in pushing long tail music repertoires. However, despite restrictive pricing models, some independent third party music aggregation services are playing a new and interesting role in this context.

As for phonographic publishers, some believe that the simplistic 'iTunes' pricing model was very useful to kick-start digital distribution, but is becoming a problem in a maturing market. At some point publishers would like to recover an ability to tier and differentiate their pricing policies on digital distribution.

Suggested remedies

The issue is likely to fade away over time, when the market matures, becomes more competitive and major music publishers renegotiate with online retailers.

No particular initiative is required from policy makers, who, however, might look at the VAT issue (6.1) which makes digital retail economics worse for independent retailers.

4.2.5.5 Digital Rights Management licensing and licensing systems

Efficient Digital Rights Management (DRM) systems, allowing management and protection of content in the digital environment, are not viewed by most stake-holders as an obstacle but on the contrary as a pre-requisite for a secure and sustainable roll-out of digital distribution. Efficient Digital Rights Management (DRM) systems, allowing management and protection of content in the digital environment, are viewed by most stake-holders as a pre-requisite for a secure and sustainable roll-out of digital distribution. Only consumer associations tend to question some aspects of these systems, as they impact the terms of trade and the usability of the products/services.

There is less of a consensus on the question of interoperability of DRM systems.

On the other hand, many stakeholders (consumer electronics manufacturers, consumer associations, online retailers) are concerned that the lack of interoperability, standardisation and cross-platform user friendliness in DRM systems might hinder the development of content services and devices. In the long term, some are concerned with the

5.4 Restrictive pricing models

Scoring	**
Comment	Not an obstacle to the development of the market at this stage, but an obstacle for some categories of operators: independent retailers going online or pure internet retailers. Some alleged risks for cultural diversity.
Assessment	Likely to fade away over time, when market matures, becomes more competitive and major music publishers renegotiate with online retailers.
Segment affected	Online music.
Stake-holders affected	Independent online music retailers (making low or even non-existent margins).

Source: Screen Digest

5.5 Lack of interoperability of DRM systems

Scoring	* (** in the short-term if status quo)
Comment	Lack of interoperability can reduce the value of services and products to consumer and lock-out some service providers .
Assessment	Not a major problem in the current nascent market, but could become one when services reach mass market.
Segment affected	All content and mainly music. Online download/sideload services, mobile OTA distribution (no agreement on OMA2).
Stake-holders affected	Independent digital content retailers, CE manufacturers, consumers.

Source: Screen Digest

risk of the appearance of dominant positions and gatekeeper situations. Some argue that if self-regulation is not possible, regulatory initiatives to mandate standardisation or at least a certain level of interoperability would be needed in order to prevent consumer lock-in and competitor lock-out. The consumer confusion and barriers to trade created by disparate, non interoperable DRM solutions has been – along with piracy – one of the biggest issues raised by all parties consulted, with the exception of course of those with a vested interest in marketing DRM technologies.

Many others however (e.g. content owners, TV operators, major music publishers) believe that it could not be achieved without jeopardizing robustness and innovation in that sector. They argue that the market is not mature yet and suggest a wait-and-see approach before moving towards any regulatory initiative in this field.

DRM systems are also vital in the mobile distribution of content. Currently, almost all mobile phones have the OMA 1 (Open Mobile Alliance) solution integrated. This open standard has been of great benefit in building the mobile content market so far. However, the functionality of OMA is rather limited. This prompted the creation of OMA 2, but this has run into problems, as patent holder and users cannot agree on terms of trade for the licensing of the technology. As a result, content providers are developing proprietary solutions that are not inter-operable. This creates inconvenience for the consumers when they switch telephones or operators (e.g. they are no longer able to listen to music that has been legally downloaded through another DRM).

Suggested remedies

Everyone accepts that a balance must be found between robustness and security, and interoperability requirements, with security remaining the priority for most.

In television, pay TV operators, broadcasters and rights-holders are particularly concerned about security. Pay TV operators (developing or using proprietary conditional access technologies which are converging with DRM) want interoperability to be addressed comprehensively with proprietary solutions.

In music the balance of concern is different because of the significant market position of one player[107] in certain countries.

Apart from some consumer associations, most stake-holders (including most content owners) tend to consider it is in any case too early to envisage *mandating* third-party licensing or interoperability. They observe that vertical integration (retail/software/hardware) has delivered robust copy protection and user-friendliness – though a walled-garden approach – that kick-started the online music market. They believe any regulatory challenges to the current DRM schemes would be disproportionate to the problem and counter-productive at this stage, by inhibiting further innovation in DRM development.

However, the issue has been recently addressed by the new French copyright Law which introduced provision for a committee in charge of assessing interoperability/licensing of DRM. Norwegian Law has also addressed the issue. The legal chapter looks at the issues of regulation of DRM (section 3.1.4.5).

In the mobile area, OMA1 was a self-regulation best practice that could be an inspiration in the online area too (even if the industry cannot agree on terms of trade for OMA2 at this stage).

We believe a certain lack of DRM interoperability is not a major problem in the current nascent market, but could become one when services reach mass market and mainstream consumers.

4.2.5.6 Competition from internet pure players

Some traditional publishers have difficulties entering the digital arena and some of them argue that they face unfair competition from 'pure' internet players, when trying to go digital.

This is not an obstacle to content service market uptake as such, but an obstacle for traditional content providers when entering digital distribution. Yet in the long term, if traditional content providers such as newspaper/book publishers were to be evicted due to purely-online first-mover, this arguably could have detrimental effects on the whole value chain and creative industries, as well as on cultural diversity.

Many book publishers are concerned about initiatives from **search engines digitising books**[108]. Although search engine operators only give online access to metadata and excerpts of books, and do not actually sell them, publishers are worried they might become dominant gatekeepers in the emerging online book market. Some smaller publishers however welcome initiatives that allow wider access to information about books that have difficulty in securing conventional retail distribution.

Newspapers and magazine publishers are also concerned about 'unfair' **competition from internet portals** which extensively quote them and develop competitive information services, commoditising information, leading to losses in term of advertising revenues.

For example, in early September Google lost a case in Belgium brought against it for copyright infringement by Copiepresse, acting for French and German language publishers. Similar cases have been brought in the USA, with courts sometimes ruling for Google and sometimes for the publishers.

Publishers also believe that they lose potential readers as the information on the aggregator's website is sufficient for many people, who never follow the link through to the website.

They are also concerned about the deep linking aspects of such services: the summary takes the reader straight to the story, rather than through the news providers' home page: this, some publishers believe, loses them the opportunity to gain readers as the reader has no incentive to explore the remainder of the content. Other publishers take a different view, and regard deep linking as an inevitable cost of the additional overall traffic they gain from aggregation services.

One news agency raised a further issue: the aggregation services tend to take information from publications, especially newspapers. However, the publication may well have licensed the story and associated images from an agency. Where the newspaper will credit the original source, the news aggregator generally credits the newspaper instead. This can be a particular problem with images; although the text for a story is not reproduced in it's entirely by an aggregator, an image often is.

Remedies suggested

Jurisdictions have to state whether or not internet players are infringing copyright and harming publishers' interests.

A solution to prevent the conflicts between search engines on the one hand and newspaper, periodical and book publishers on the other hand, has been proposed by a group of organisations representing publishers (WAN, the IPA, ENPA and the EPC)[109], who have described it in the following terms:

> *'The new project, ACAP (Automated Content Access Protocol), is an automated enabling system by which the providers of content published on the World Wide Web can systematically grant permissions information (relating to access and use of their content) in a form that can be readily recognised and interpreted by a search engine "crawler", so that the search*

5.6 Competition from internet pure players (eg search engine)

Scoring	**
Comment	Not an obstacle to content service uptake as such, but an alleged obstacle for traditional content providers when entering digital distribution.
Assessment	No specific policy intervention needed. Fair use practices will become clearer, based on jurisdiction as well as rights management tools like ACAP.
Segment affected	Online publishing.
Stake-holders affected	Traditional text publishers.

Source: Screen Digest

engine operator (and ultimately, any other user) is enabled systematically to comply with such a policy or licence. Effectively, ACAP will be a technical solutions framework that will allow publishers worldwide to express use policies in a language that the search engine's robot "spiders" can be taught to understand'.

4.2.5.7 Access to information for new media news

News publishers are concerned by the 'restrictive' behaviour of the holders of some rights[110] who would like to exert full control over their communication or even communicate directly to the public through electronic networks.

Suggested remedies

Publishers insist they should keep a positive news access right for short reports in the new media arena.

With each new media, there are temptations of disintermediation. There have also been instances where sports organisations want to reserve online coverage for their own websites. However this has tended to become less of a problem as sports organisations have come to realise that media companies are better at maximising audiences.

5.7 Access to information for new media news

Scoring	*
Comment	Not an obstacle to content service uptake as such, but an alleged obstacle for traditional news providers when entering digital distribution, a threat to journalist right to access information.
Assessment	No specific policy intervention needed. Access to information in the digital age should be enforced.
Segment affected	Digital publishing.
Stake-holders affected	News publishers (text and audiovisual media).

Source: Screen Digest

4.2.6 Various business obstacles

4.2.6.1. Disparate VAT rates

Several stakeholders (digital retailers, rights-holders) hint at market distortions, due to the fact that some international downloading services (music, movies) are established in Member States where VAT is lower, e.g. Luxembourg. This enables them to compete unfairly with similar national services, on a cross-border basis.

Also, in the publishing sector, publishers are concerned that all member states (except Ireland) require them to charge the full rate of VAT on electronic products and services. None apply the lower rates (in some case 0 per cent) to *electronic* products and services that they do to printed newspapers, magazines and books.

Suggested remedies

In the absence of total removal of VAT on digital sales, there appears to be strong support (from digital music service providers in particular) for a single harmonised low rate of VAT applying to the sale of digital entertainment content. Although there are other sources of pressure on margins (such as high content wholesale pricing and a flat rate pricing model), the reduction of the tax burden on service providers would arguably have a beneficial impact on the digital music sector.

In the interim, it may be advisable to amend existing legislation to also bring consumer electronic services (or at least digital entertainment content) within the ambit of rules requiring VAT to be charged at the point of supply.

The advisable principle of country-of-destination for digital distribution, proposed by the EC, is indeed not yet implemented in the EU.

In terms of digital publishing v. physical publishing, a technology neutral approach could apply to VAT rates in order to encourage the former.

4.2.6.2. Consumer acceptance

The success of innovation is always difficult to predict. Low-tech SMS messages were an unexpected hit, driving many new business models like reality TV votes. MP3 players have been hugely successful, paving the way for a development of legal downloading services and podcasting. By contrast 'e-book' technologies have so far failed to find a market.

In addition, consumer behaviour strongly varies across the EU, making it easier for stake-holders to launch online and interactive services in some countries than others. For example, in the UK and the Netherlands there is more demand for mobile content than in Germany, and in the Netherlands more willingness to pay for news content than elsewhere.

6.1 Disparate VAT rates

Scoring	**
Comment	Inconsistent VAT rates and country-of-origin principles are hampering digital publishing and digital distribution in some EU countries.
Assessment	Needs regulatory intervention (e.g. country-of-destination principle).
Segment affected	All.
Stake-holders affected	Online publisher and online retailer operating in MS with higher VAT rates.

Source: Screen Digest

6.2 Consumer acceptance

Scoring	**
Comment	Consumer likeliness to embrace new forms of content and new business models
Assessment	Very much a demographic issue as young techno-savvy consumers are much easier to convert. A lot of education and user-friendliness is needed for other segments
Segment affected	All
Stake-holders affected	All

Source: Screen Digest

Suggested remedies

There is no golden marketing rule to predict or obtain consumers acceptance of new devices or new services, and no public policy can really help. However, everything that improves consumer information, user-friendliness, interoperability and affordability can help new business models which, if not reaching critical mass, could fail.

4.2.6.3. Skills and management issues

Information technology and 'online' skills are missing in some traditional media companies, holding them back when it comes to digital distribution. This is especially true of traditional publishing companies.

'Traditional' games publishers also have difficulties in finding the specialised skills needed to manage and run large scale MMOGs in Europe (including customer relationship management).

More fundamentally, 'traditional' content providers mentioned conservatism in their organisations. Examples include management not taking new platforms seriously enough, not investing enough, not overcoming employees' inertia and scepticism, or lack of experience.

For instance in some newspapers there is still **no convergence of digital and print newsrooms**, or lack of co-operation with digital newsroom from print journalists, or lack of investment in video content. Beyond the fear of online cannibalisation, there are management obstacles to overcome.

Suggested remedies

Industry-led or policy-support actions are useful to improve industry awareness of digital opportunities and training: information campaigns, support to training programmes.

4.2.6.4. Cost of digitisation

Independent producers now seeking to enter the European VoD space, as well as European film agencies seeking to finance archive digitisation and support an indigenous European film sector, fear that the overall cost of digitising product into the appropriate file formats can be a factor preventing exploitation of content over the Internet.

Some national film libraries are already digitising their films and some are making the national film and television heritage available online (INA in France); others are way behind that due to the considerable investment required.

Suggested remedies

Digitisation is a cultural as well as economic challenge. Cultural diversity is at stake if archive material, especially in country of limited linguistic area, cannot be digitised any time soon.

The EC is involved through the IST programme and pilot subsidies, in defining formats and best practices. It is important for the EC to continue to encourage and support film agencies in individual Members States, so that they can support digitisation programmes for the independent film sector.

6.3 Skills and management issues

Scoring	***
Comment	Traditional content producers and publishers lacking in-house skills to embrace digital distribution. Can affect content supply.
Assessment	Some content industries, like publishing, need to be encouraged in this field.
Segment affected	Traditional value chain in all sectors (esp. publishing, incl. games).
Stake-holders affected	Traditional content providers.

Source: Screen Digest

6.4 Cost of digitisation

Scoring	**
Comment	Can hamper the supply of digitised content.
Assessment	Temporary but sometimes serious dilemma for small independent players.
Segment affected	Mainly movie and TV programme.
Stake-holders affected	Movie and TV programme providers (producers, archives). Niche VOD operators.

Source: Screen Digest

The Commission's i2010 Digital Libraries Initiative[111], which *'aims at making European information resources easier and more interesting to use in an online environment'* identifies digitisation of analogue collections for their wider use in the information society' as one of the three key actions to implement and encourage.

4.2.6.5. Backlash effect on the financing of independent production

When new media distribution is thriving, independent production companies may be obliged to rethink their business and financing models. Because the same content will be available via on-demand platforms, pay TV operators and free-to-air broadcasters will feel the audience and value of their windows will be lower and they will no longer be ready to commission or pre-finance a high proportion of production costs through Minimum Guarantees (MG).

As a result, many independent producers may face a more uncertain business and financing environment during a transition phase, before new production financing patterns emerge. This could particularly affect smaller independent content providers (bigger ones can more easily self-finance their investments) and thus lead to industry consolidation, ultimately affecting cultural diversity.

The view from trade bodies and content owners in both the UK and France has been that some kind of obligation has to be in place to ensure new entrants, such as telcos, ISPs and third party Internet aggregators, do not adversely affect the European film sector through the undervaluation of rights, or a refusal to re-invest in domestic film production.

In France, in particular, there is a move to make VoD operators commit to acquiring rights or co-producing French and European films for an amount that will be proportionate to their sales/revenues: from 5 per cent where revenues are below €3m, to 10 per cent where revenues are in excess of €5m.

Given that the digital movie sector in Europe is still in its earliest stage of development it may be advisable to **leave this obstacle to be resolved by individual or industry negotiations** in the market, and collective negotiation by trade bodies. However, the situation should be monitored and reassessed periodically for signs of adverse trends.

4.2.6.6. Entry barrier: investment capacity, access to funding

Upfront investments and ongoing costs of online and interactive services can be a barrier to entry for many 'traditional' content providers in music, movies, games or publishing.

Many of the book, newspaper and magazine publishers interviewed noted the comparatively high cost of investment in platforms, new or changed processes and expertise required to launch effective online services. They also noted that the continuing

6.5 Backlash effect on the financing of independent production

Scoring	*
Comment	Not an obstacle to market uptake but a challenge to independent producers when managing the transition to new business models, which indirectly fuels reluctance to licence content for digital distribution.
Assessment	Could lead to a temporary surge of industry consolidation.
Segment affected	Movies.
Stake-holders affected	Independent production companies – movies and TV programmes.

Source: Screen Digest

6.6 Entry barrier: investment capacity, access to funding

Scoring	*
Comment	Not an obstacle to market take-up, but hampers digital investments of European independent sector.
Assessment	
Segment affected	All sectors (publishing in particular)
Stake-holders affected	Traditional content providers.

Source: Screen Digest

need to produce high-quality content created a cost-base that had not existed in the past, especially if they now had to either produce or licence content such as video clips, games or podcasts. Even if the content was licensed-in, each development would require modification to the website and content management systems.

These costs are often considerably in excess of what book publishers and smaller magazine publishers in particular are used to spending on the development of print titles. Several newspaper and magazine publishers interviewed indicated that the risk of cannibalising print revenues had deterred some senior managers from investing in online services, and that in general they were operating with very small and under-resourced teams because of management lack of confidence in the online market. A minority of newspaper publishers interviewed also reported under-investment in marketing once an online service had been established.

4.2.6.7. Audience measurement of new media platforms and advertising revenues

In order to create a new market for online television and radio advertising, broadcasters and advertisers have to agree upon standards for usage measurement, as a trustworthy "currency" for online usage is needed.

In particular, usage of time-shift services like podcasts and TV/radio on demand cannot be easily measured within the existing systems. Though counting downloads in this case would be easy, it would not necessarily measure actual usage adequately, as podcasts for instance are often downloaded automatically via RSS feeds or Atom feeds, so not every download is in fact also listened to.

Most European radio stations can be accessed through the internet already. Many European broadcasters are preparing to offer a full online simulcast (e.g. the Channel 4 announcement in the UK), and/or access to all their programmes on an on-demand basis. However, if online audiences cannot be valued in advertising deals, this could harm total audience measurement and thus cannibalise total advertising revenues.

Traditional broadcasters still have to convince the advertising community to take into account new platforms. For instance US broadcasters had to suffer a major blow at this year's 'upfront' sales. Advertisers and media-buying agencies refused to take into account online audience and, probably worse, time-shifted audience of PVR-recorded programmes. This will become a concern for European broadcaster soon enough too.

Suggested remedies

Many new content-based digital business models in music, TV, radio or games will depend upon advertising. Every economy and market need well-defined, widely accepted and trusted currencies to thrive. Online 'display' advertising has now found them, but new emerging business or advertising formats have still to find economical and robust measurement/valuation models if they are to drive revenues and not only audience.

We are confident technology and industry negotiations will allow such currencies to emerge in the mid-term.

4.2.6.8. Pricing of content services in the mobile arena

There is significant customer confusion over mobile operator data tariff structures and pricing. Different operators (and in some cases the same operator) can charge consumers by a flat rate subscription, by the minute or by the kilobyte, or even let them free to browse certain portals (such the operator's own) but charged to browse elsewhere.

This can push the price for content bought from a portal to a much higher level than anticipated by a consumer. For example, a video clip could be advertised by the portal as costing €5, and for a user on a flat rate subscription, that may be all that is paid. For another user on a 'pay as you use' style tariff

6.7 Audience measurement of new media platforms and advertising revenues

Scoring	**
Comment	Advertising will be key to many new business models, thus audience currencies are critical.
Assessment	Content service providers and advertising clients will converge towards new currencies in due time.
Segment affected	All, internet and mobile.
Stake-holders affected	All.

Source: Screen Digest

(possibly on the same network), the content could end up costing a total of €20 by the time the operator data charges are considered. While these costs are not hidden from the user, they may not be explained very clearly either, and the shock of receiving such a large phone bill can put that user off mobile content.

This situation also makes it impossible for portals to communicate the total cost to the user of any content or service purchased. Part of the cost will be determined by the network operators and is out of the control of the portal. This puts portals in a situation where they may be acting illegally, despite having no control over data pricing.

The point was also made that, in the case of the operator's own portal (on deck content), there are rarely data charges. This gives operators an advantage which one stakeholder described as anti-competitive. In effect, operators can not only control the total cost, but can offer the same content for a much lower total price to the consumer.

Suggested remedies

Following our research, we would rate this as the second biggest roadblock (after collective management of rights) affecting the mobile content market. This roadblock is also tied in with the operator revenue shares.

Flat rate data plans are being rolled out by a number of network operators in Europe. However, this does not address the issue unless all users are on such data plans.

Opening up operator networks to allow wholesale data purchasing by portals, billing companies and other interested third parties was a solution suggested by one stakeholder. There is a regulatory precedent for this, namely the regulations around MVNO's access to operator's networks.

Wholesale data agreements would allow content providers to bill network operators (rather than the operators billing end users) for the data, thus giving these companies control over the total price of the content or service provided and improving considerably the clarity to the consumer. Vodafone in the UK has begun to offer wholesale data, and is an example of industry best practice.

4.2.6.9. Mis-selling of subscription services

A number of mobile portal companies have been fined for mis-selling subscription services to consumers. This has created a number of problems in the market, primarily with consumer perception of mobile content generally, portals in particular, but has also caused problems with operators' attempts to set up correctly managed subscription services.

This has held back the potential market for subscription-based content services. For example, in the US, games companies typically see higher revenues from the same game on the same network operator when it is sold via a subscription model compared to pay per download when both are offered.

There has been some attempt at industry self regulation, for example through the

6.8 Pricing of content services in the mobile arena

Scoring	**
Comment	Seriously hampering customer confidence and content provider investments.
Assessment	Second biggest roadblock (after collective management of rights) affecting the mobile content market
Segment affected	All mobile content.
Stake-holders affected	Consumers, content providers.

Source: Screen Digest

6.9 Mis-selling of subscription services

Scoring	*
Comment	Holds back the potential market for subscription-based content services in Europe and hampers consumer confidence.
Assessment	Self regulation works in Europe but some disturbance comes from players not based in Europe.
Segment affected	Mobile platform.
Stake-holders affected	Content provider (mainly games), consumers.

Source: Screen Digest

'STOP' campaign. This self regulation seemed to start in the UK but has since been adopted by most major mobile companies across Europe. Mobile operators have amended contracts with service providers, stating that consumers must be able to exit subscription services when they text the word 'STOP'.

The stock market listing of several portals, or acquisition of portals by listed media companies, has also led to a decrease in unscrupulous actions.

Suggested remedies

Some stakeholders would like to see regulations strengthened – for example, the STOP campaign becoming a European standard through regulation. The point was made, however, that the few companies remaining which were persisting in mis-selling subscriptions were generally operating outside the law anyway, so regulation would have little impact.

Recent regulation in China has meant that subscribers must, in effect, re-subscribe each month to each service. This has been widely regarded as a 'heavy handed' approach. Although it is too early for the effects to be clear, it would be fair to say that stakeholders would not welcome similar regulation in Europe.

4.2.6.10. Cost of payment/Billing systems

Whilst convenient solutions are implemented in the mobile environment, the lack of secure, user-friendly micro-payment solution in some EU countries for online transactions remains a concern, particularly for the development of on-demand gaming.

Debit cards are not widespread everywhere in Europe and even when they are, consumers are sometimes still reluctant to use them online. The alternative local payment systems are considered extremely expensive and harmful to the profitability and attractiveness of services.

Suggested remedies

It is expected that the market will find solutions to billing and payment difficulties. One bright spot for German payment systems has been the introduction of an electronic direct debit system, ELV (Elektronisches Lastschriftverfahren). The electronic basis of this system means that it is far quicker and more cost effective than the paper based systems used in many other country markets. Games on Demand operators and MMOG operators that operate subscription services would like to see this sort of system applied across Europe, and certainly in all the major games markets.

Moving forward we expect the market to develop alternative business models, especially in areas such as digital distribution to games consoles and MMOGs, where in-game advertising and micro transactions are becoming more popular. Although payment and billing solution vendors have a legitimate role to play in the value chain, if prices remain high, games companies may look to establish new business models which lessen the impact that billing costs have on the distribution chain.

6.10 Cost of payment and Billing systems

Scoring	* (** in mobile area)
Comment	Mainly a problem where debit card are not widespread.
Assessment	It is expected that the market will find solutions.
Segment affected	Open internet, esp. in some countries like Germany.
Stake-holders affected	Content service providers, mainly games.

Source: Screen Digest

Figure 125 : Scoring of challenges – detailed assessment (by timing horizon)

		Today (2006)	*Short-term (2008)*	*Mid-term (2010)*
1	**Technology issues - access to enabling technologies**	**XXX**	**XX**	**X**
11	Broadband access penetration	XXX	X	
11	3G penetration	XXX	XX	X
12	Digital devices penetration	X	X	
13	Spectrum allocation	XX	X	X
14	Fragmentation of standards and platforms - porting costs	XX	X	
15	Security of payment/Billing systems	X		
2	**Content issues - Licensing for digital distribution**	**XXX**	**X**	**X**
21	Reluctance to licence content	XX	X	
22	Terms of trade	XXX	X	
23	Exclusive distribution	X	X	
24	Non-exploitation of new media rights	XX	X	
25	Definition of rights/windows	XXX	XX	X
26	Conflicting rights	XX	X	
27	Clearance of underlying rights - Collective management of rights	XXX	XX	X
28	Orphan works	X	X	X
29	Locating rights-holders	X	X	
3	**Piracy**	**XXX**	**XX**	**XX**
4	**Legal and regulatory issues**	**X**	**XX**	**XX**
41	Consumer protection and classification	X	X	X
42	Regulation of new media services	X	XX	XX
43	Legal liability	X	X	
5	**Competition issues**	**X**		
51	Gate-keeping issues	X	X	
52	Public service broadcasters			
53	Direct distribution of US content		X	X
54	Restrictive pricing models	XX	X	
55	DRM interoperability	X	XX	
56	Competition from internet pure players	XX	X	
57	Access to information for new media news	X		
6	**Economic and business obstacles**	**XX**	**XX**	**X**
61	Disparate VAT rates across EU	XX	X	X
62	Consumer acceptance	XX	X	X
63	Skills and management	XXX	XX	X
64	Cost of digitisation	XX	X	
65	Financing of independent production	X	X	XX
66	Investment capacity, access to funding	X	X	X
67	Audience measurement	XX	X	
68	Pricing of mobile content	XX	X	
69	Mis-selling of subscription services	X		
610	Cost of payment/Billing systems	X	X	

Source: Screen Digest

Figure 126 : Scoring of challenges – detailed assessment (by category of content sector)

		TV	*Movie*	*Music*	*Games*	*Radio*	*Publishing*
1	**Technology issues - access to enabling technologies**	**XX**	**XXX**	**X**	**XXX**	**XXX**	**XX**
11	Broadband access penetration	XX	XXX		XXX		
11	3G penetration	XX	XX	X	XXX	X	XX
12	Digital devices penetration	XX	X	X	X	XXX	XX
13	Spectrum allocation	XXX				XXX	
14	Fragmentation of standards and platforms - porting costs	XX			XXX	XXX	XXX
15	Security of payment/Billing systems		XX	X	XX		X
2	**Content issues - Licensing for digital distribution**	**XXX**	**XXX**		**X**	**XX**	**XX**
21	Reluctance to licence content	XX	XX		X		XX
22	Terms of trade	XXX	XXX	XX			X
23	Exclusive distribution	XXX	XX				
24	Non-exploitation of new media rights	XXX	XX				
25	Definition of rights/windows	XXX	XXX		X	X	XX
26	Conflicting rights	XX	X				XX
27	Clearance of underlying rights - Collective management of rights	XXX	XXX	XXX	X	XX	XX
28	Orphan works	X	XX				
29	Locating rights-holders	X	XX				X
3	**Piracy**	**XX**	**XXX**	**XXX**	**XX**		**X**
4	**Legal and regulatory issues**	**XX**	**X**		**XX**		**XX**
41	Consumer protection and classification		XX		X		
42	Regulation of new media services	XX				XX	XX
43	Legal liability	X					X
5	**Competition issues**	**X**	**X**	**X**			**XX**
51	Gate-keeping issues	X	X	XX	X	X	X
52	Public service broadcasters	X				X	X
53	Direct distribution of US content	X	X				
54	Restrictive pricing models		X	XX			
55	DRM interoperability	X	X	XXX			X
56	Competition from internet pure players	X	X				XXX
57	Access to information for new media news	X				X	X
6	**Economic and business obstacles**	**X**	**X**	**X**	**X**	**XX**	**XX**
61	Disparate VAT rates across EU		XX	XXX	XX	X	XXX
62	Consumer acceptance	X	XX	X	X	XX	X
63	Skills and management	XX	X		X	X	XXX
64	Cost of digitisation	X	XX				XX
65	Financing of independent production	X	X				
66	Investment capacity, access to funding	X	XX		X	XX	XX
67	Audience measurement	XX				XX	XX
68	Pricing of mobile content	X		XX	XX	X	X
69	Mis-selling of subscription services	X		X	XX		
610	Cost of payment/Billing systems	X		X	XX		X

Source: Screen Digest

Footnotes

1. Taken as the number of connections with data transfer seeds of 150kbit/s or faster, thus making basic downloading or streaming possible – although higher bitrates are needed for user-friendly advanced services such as online TV and video downloads.

2. This table gives insights of the market value generated by some key digital content services in Europe. The percentage represents the share of total revenue for the corresponding content industry (e.g. total music sales including physical retail). Much more details are to be found in the content-specific sections of the report. Our market forecasts are all taking into account the drivers and obstacles identified in the report.

3. Pre-information notice published in OJ nr: 2005/s 40-037972. Contract notice published in OJ nr: 2005/s 175-173231.

4. Mobile content can either be delivered "over the air" (OTA) direct to a device through GSM 2.5G, 3G or wifi, or "sideloaded". Sideloaded content is downloaded to a PC over a broadband connection and then transferred over a local link (typically a cable or Bluetooth connection) to the device.

5. Definition of broadband access used here: 150 kbits/s or above offered by ISP.

6. Western Europe here includes: Austria, Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK.

7. IFPI music revenues include full track music downloads, master tones (excerpts of songs) and ringback tones. Here we concentrate the analysis on full track music downloads only.

8. See previous note.

9. All EU25 except Germany, plus Norway, Iceland, Lichtenstein, Switzerland. In the United Kingdom if a game contains certain material, BBFC rating is used instead.

10. 32 countries of Western, Central and Eastern Europe, not incl. Russia.

11. Rate in Finland varies according to distribution channel: subscription purchase is 0%; single-copy 22%.

12. EPC: European Publishers Council. IPA: International Publishers Association.

13. http://europa.eu.int/information_society/activities/digital_libraries/background/index_en.htm

14. http://europa.eu.int/information_society/activities/digital_libraries/doc/recommendation/recommendation/en.pdf

15. http://www.jisc.ac.uk/uploaded_documents/TSW0603.pdf

16. Directive 97/36/EC of the European Parliament and of the Council of 30 June 1997.

17. COM(2005) 646 final (Proposal for a directive of the European Parliament and of the Council amending Council Directive 89/552/EEC on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities).

18. For details see the Rightswatch White Paper rat www.rightswatch.com/White_Paper_20030704_v1_FINAL.pdf

19. COM (2004) 0341.

20. Common legal instrument by which defined legal consequences are established by law under certain defined factual circumstances (regardless of, e.g., the intention of contracting parties).

21. Tribunal de grande instance de Strasbourg, February 3rd 1998, Légipresse 149-I, p. 19.

22. Wiener Gruppe, OGH, August 12th 1998, MMR 1999, 275.

23. De Volkskrant, Rechtbank Amsterdam, September 24 1997, Informatierecht 1997, 194.

24. http://europa.eu.int/information_society/activities/digital_libraries/consultation/index_en.htm

25. Article 50 and 51 of the consolidated act on copyright - No. 164 of March 12, 2003.

26. Section 77 of the Canadian Copyright Act.

27. http://europa.eu.int/information_society/activities/digital_libraries/index_en.htm

28. COM(2005) 465 final

29. COMP/C2/38.014 IFPI simulcasting decision.

30. COM (2004) 261 final.

31. Recommendation 2005/737/EC.

32. Recommendation 2005/737/EC, point 18.

33. Commission staff working document SEC (2005) 1254, p.5.

34. Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights.

35. http://ec.europa.eu/comm/avpolicy/other_actions/content_online/index_en.htm

36. http://europa.eu.int/information_society/eeurope/2005/all_about/digital_rights_man/high_level_group/index_en.htm

37. Decision 04-D-54 of 9th November 2004, http://www.conseil-concurrence.fr.

38. http://www.ivir.nl/publications/helberger/INDICARESOAReport-Update01.pdf.

39. DAVSI – Loi relative au Droit d'auteur et aux droits voisins dans la société de l'information.

40. L. 331-5: "Development licenses of technical measures shall be granted on equitable and non-discriminatory conditions to manufacturers of technical systems or to service providers who want to achieve interoperability, where those manufacturers or providers commit themselves to respect, in their field of activity, the conditions guaranteeing the secure functioning of the technical measures they use."

41. Decision n° 2006-540 DC of 27 July 2006.

42. 2006/MARKT/008.

43. COM(2005) 229 final

44. Council Directive 93/83/EEC of 27 September 1993 on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission.

45. COM(96) 586 final.

46. Proposal for a Directive of the European Parliament and of the Council amending Council Directive 89/552/EEC on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities, 13/12/2005, COM(2005) 646 final (http://eur-lex.

europa.eu/LexUriServ/site/en/com/2005/com2005_0646en01.doc).

47. http://ec.europa.eu/comm/avpolicy/reg/tvwf/modernisation/consultation_2005/index_en.htm.

48. Commission Staff Working Document SEC(2005) 1625/2 (http://ec.europa.eu/comm/avpolicy/docs/reg/modernisation/proposal_2005/newtwf-ia.pdf).

49. "i2010 – A European Information Society for Growth and Employment" KOM (2005) 229 final – not published in the Official Journal.

50. Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

51. Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services.

52. Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services.

53. Directive on Privacy and Electronic Communication - Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector.

54. Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities.

55. Decision 676/2002/EC of the European Parliament and the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community.

56. Commission of 4 July 2001 COM (2000) 380 final 2000/184 (COD), p. 2; Amtsblatt No. C 270 E of 25 September 2001, p. 0199 et seq.

57. COM (2005) 646 final.

58. 94/19/EC: Commission Decision of 21 December 1993 relating to a proceeding pursuant to Article 86 of the EC Treaty (IV/34.689 – Sea Containers v. Stena Sealink – Interim measures).

59. 94/922/EC: Commission Decision of 9 November 1994 relating to a proceeding pursuant to Council Regulation EEC) 4064/89 (IV/M.469 – MSG Media Service).

60. 1999/781/EC: Commission Decision of 15 September 1999 relating to a proceeding under Article 81 of the EC Treaty (IV/36.539 – British Interactive Broadcasting/Open) (notified under document number C (1999) 2935).

61. In the UK, "public service broadcasting" refers to broadcasting that is for the public benefit rather than for purely commercial concerns. The categorisation as "public service broadcaster" therefore does not necessarily require public funding. In fact, all stations that broadcast on terrestrial analogue television – such as the regional Channel 3 companies (the ITV Network), GMTV, Channel Four (S4C in Wales) and Five – are regarded as "public service broadcasters". These broadcasters are obliged to provide public service programming because they can be viewed freely almost anywhere nationwide.

62. Protocol (32) on the system of public broadcasting in the Member States, OJ C 340, 10.11.1997, p. 109.

63. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001.

64. Directive 80/723/EEC on the transparency of financial relations between Member States and public undertakings as well as on financial transparency within certain undertakings, as amended by Commission Directive 2005/81/EC of 28.11.2005.

65. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001, p. 7.

66. See Case C 280/00, Altmark Trans and Regierungspräsidium Magdeburg v.

Nahverkehrsgesellschaft Altmark GmbH, ECR 2003, p. I-07747.

67. C 280/00, Altmark Trans and Regierungspräsidium Magdeburg v. Nahverkehrsgesellschaft Altmark GmbH, ECR 2003, p. I-07747 (paragraph 87).

68. C 280/00, Altmark Trans and Regierungspräsidium Magdeburg v. Nahverkehrsgesellschaft Altmark GmbH, ECR 2003, p. I-07747 (paragraph 87 et seq.).

69. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001, p. 8.

70. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001, p. 8.

71. Directive 80/723/EEC on the transparency of financial relations between Member States and public under-takings as well as on financial transparency within certain undertakings.

72. Directive 2005/81/EC amending Directive 80/723/EEC on the transparency of financial relations between Member States and public undertakings as well as on financial transparency within certain undertakings.

73. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001.

74. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001, p. 8.

75. Communication from the Commission on the application of State aid rules to public service broadcasting, OJ C 320, 15.11.2001, paragraph 34, 35.

76. Nationwide German PSBs are "Das Erste" (ARD), a working partnership of German public-service broadcasters, the "ZDF" as well as the "Deutschlandradio" which provides the both radio programmes "Deutschlandradio Kultur" and "Deutschlandfunk". There are also "ARTE", "Phoenix", "3sat", "KI.KA (Der Kinderkanal)" and the digital programme offers "ARD digital" and "ZDFvision", which also contain third parties' programmes.

77. Section 4 (3) ARD-State Treaty; section 4 (3) ZDF-State Treaty.

78. Hartstein/Ring/Kreile/Dörr/Stettner, German Interstate Broadcasting Agreement, Vol. I, Article 11, paragraph 9).

79. Article 35, Cahier des charges de France 2.

80. Article 37, Cahier des charges de France 3.

81. BBC Annual Report and Accounts 2004/2005, p. 40.

82. DMB: Digital Multimedia Broadcasting.

83. MFD: Mobiles Fernsehen Deutschland GmbH.

84. KEF: Kommission zur Ermittlung des Finanzbedarfs der Rundfunkanstalten (Commission for the Assessment of the Financial Requirements of the Public Service Broadcasters).

85. C 280/00, Altmark Trans and Regierungspräsidium Magdeburg v. Nahverkehrsgesellschaft Altmark GmbH, ECR 2003, p. I-07747.

86. Commission Decision of 19 May 2004 on measures implemented by Denmark for TV2/Danmark, (2005/217/EC), OJ L 85, 23.03.2006, p. 1.

87. OJ L 85, 23.03.2006, p. 8.

88. Commission Decision of 10 December 2003 on State aid implemented by France for France 2 and France 3, (2004/838/EC), OJ L 361, 08.12.2004, p. 21.

89. OJ L 361, 08.12.2004, p. 29.

90. See German version of the study available at www.vzbv.de/mediapics/anlage_pm_digitale_medien_06_2006_copy.pdf

91. The INformed DIalogue about Consumer Acceptability of DRM Solutions in Europe, for details see www.indicare.org

92. IFPI music revenues include full track music downloads, master tones (excerpts

of songs) and ringback tones. Here we concentrate the analysis on full track music downloads only.

93. See footnote 1.

94. See footnote 2.

95. http://ec.europa.eu/comm/avpolicy/other_actions/content_online/index_en.htm#charter.

96. For instance, short format series Camera Café and Kaamelot, both commissioned by French broadcaster M6 and successfully exploited on-demand on mobile networks.

97. For instance, independent audiovisual producers (represented by trade bodies such as PACT) have negotiated standard windows for exclusive VOD rights with the BBC and Channel Four, under the auspices of regulator OFCOM. Provisions includes leasing an exclusive 'catch-up' VOD window for the broadcaster, before the producer recover VOD rights (one week for the BBC, four weeks for Channel 4).

98. See more details on the examples/cases in the legal chapter (3.1).

99. For instance, during a French tennis tournament, conflicts between 'mobile' rights granted to a mobile operator, and 'broadcast' rights granted to a broadcaster willing to simulcast on another mobile network. Another example is the recent argument over German football rights on IPTV.

100. For instance MCPS/PRS Alliance, a UK music society has launched a trial podcasting license in 2006, and French SACEM is finalising its own contract.

101. Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights.

102. For instance the recent revision of the French copyright law has been a major disappointment for many rights-holders who fear individual penalties for piracy will become significantly lower, to the point that they may not be a deterrent any more.

103. For instance draft new television law introduced in France on 22/06/2006 to address, amongst other things, mobile television licensing.

104. For instance, a reader took a picture of a sculpture as part of a travel blog for a newspaper, and the artist claimed he should be paid for the use of the image.

105. For instance, there are reports that the share of SMS rates applicable for interactive TV services (e.g. reality shows) and retained by network operators in some countries, is disproportionately high resulting in a disincentive for TV operators and programme producers to create such services.

106. Examples of broadband-based initiatives from PSBs: INA's TV archive online. BBC's on-demand 'player', BBC podcasting.

107. Apple has a large installed base of ipods and is not licensing its DRM solution to third party manufacturers or online retailers to this date.

108. For instance, Google digitization programme.

109. EPC: European Publishers Council. IPA: International Publishers Association.

110. For instance FIFA.

111. http://europa.eu.int/information_society/activities/digital_libraries/background/index_en.htm

Annexes

1 Methodology

1.1. General methodology

1.2.1. Geographical scope

As often as possible we monitor market data for the whole of Europe. In some cases however markets remain too small for measuring.

We use the term **'Europe'** synonymic to EU25 if not mentioned otherwise. While EU15 refers to the 15 member states prior to the accession of ten candidate countries on May 1st 2004 (AT, BE, DE, DK, ES, FI, FR, GR, IE, IT, LU, NL, PT, SE, UK), NMS10 or the term "new member states" refers to those ten countries (CY, CZ, EE, HU, LT, LV, MT, PL, SI, SK).

In some cases, for some indicators, data or forecasts are provided for a smaller sample of countries. In which case we mention it. For instance, for broadband numbers, EU14 refers to Western EU15 minus Luxembourg. EU20 refers to the EU14 plus the following 6 new member States: Poland, Hungary, Czech Republic, Slovenia, Slovakia, Estonia.

1.2.2. Sources

Most of the data in this report is compiled, checked and harmonised by Screen Digest and Goldmedia from company and trade body reports. We also mention some aggregated market data sourced from third-party sources like EITO, IFPI, WAN, etc.. For instance advertising historical data mentioned is coming from media agencies.

1.2.3. Forecasts

Whether based on proprietary or third-party actuals, forecasts in the report are made or endorsed by the authors.

Forecasts on digital content market growth are based on:

- Our broadband data actuals and forecasts
- Our assumptions on drivers and obstacles and their likely evolution. For instance, we do believe that broadband offerings and penetration are going to grow at a high pace between now and 2010 all over Europe, and we believe market players are likely to overcome the difficulties created by the necessary adaptation of copyright to in the new media environment.
- Our forecasts in the report are all based on *medium* scenarios (not worst-case nor maximum cases). For instance, penetration and usage rates are expected to grow at a the current pace in the near future and at a faster pace in the mid-term resulting in typical S-shape curves. The acceleration in usage uptake and market growth in new technologies is typically due to: (i) market players and consumer overcoming initial chicken-and-egg conditions (few offering because of few users) and (ii) network effects and me-too effect driving consumer uptake and market growth once pioneering consumers and opinion leaders have been converted.
- Bottom-up methodology (forecasting country by country) and top-down consistency tests: benchmarking penetrations and market growth across Europe and comparing Europe to the USA or Asia which in some cases have seen services available for more time or are ahead in the product cycle

1.2. Television

The television data and forecasts in this report are based on Screen Digest's Television Intelligence database.

Data has been prepared in-house based on historical and current data gathered first-hand directly from the companies concerned or from trade bodies with which Screen Digest maintains a regular relationship. Models are built company-by-company and technology-by-technology. Totals are then derived from the component parts and are thus wholly granular in a bottom-up approach.

Forecasts do not rely simply on statistical curve fits or other basic modeling techniques which SD find inadequate in forecasting highly volatile, fast-growing new media markets. Forecasts are based on specialised analysts' in-depth understanding of the markets concerned and the players involved and are developed on a ground-up basis taking into account both past and current growth rates and the individual factors that go into contributing to a market size or value. Over the last six months, the numerous meetings with players in the context of this research have been used to validate/refine our assumptions and forecasts.

All inputs required are thus overseen by a senior analyst who will apply his own market knowledge and take into account company guidance and information and feedback obtained from interviews with senior industry executives knowledgeable of the market or market factor being examined.

Assumptions vary model by model but a pay television revenue model, for example, would include future pricing scenarios, total subscriber take-up and subscriber take-up by tier of service. Another example would be on-demand revenue models which require a greater range of inputs including: buy-rates, pricing, content mix (movie, tv, sport, adult etc.), technology mix (nVoD, VoD, VoD+PVR), platform type (cable, DTH, DSL, DTT) and impact of PVR and other devices on buy rate.

Online TV: TV programming distributed over the open Internet - including news, sports, and genre programming (such as children's entertainment, comedy and drama), but excluding music videos and user-generated content.

Online TV revenues: total consumer level revenues from online TV, excluding sales tax or value-added tax.

1.3. Broadband

The broadband data and forecasts in this report are based on Screen Digest's 'Broadband Digital Media Intelligence' database.

Data has been prepared in-house based on historical and current data gathered first-hand directly from the companies concerned or from trade bodies with which Screen Digest maintains a regular relationship. Models are built sector-by-sector, technology-by-technology and in some cases company-by-company. Totals are then derived from the component parts and are thus wholly granular in a bottom-up approach.

Forecasts do not rely simply on statistical curve fits or other basic modelling techniques which SD find inadequate in forecasting highly volatile, fast-growing new media markets. Forecasts are based on specialised analysts' in-depth understanding of the markets concerned and the players involved and are developed on a ground-up basis taking into account both past and current growth rates and the individual factors that go into contributing to a market size or value. Over the last six months, the numerous meetings with players in the context of this research have been used to validate/refine our assumptions and forecasts.

Screen Digest continuously monitors and analyses a number of specific factors in every European territory.

These include:

- PC penetration
- Regulatory issues (such as local loop unbundling and cable market developments)
- Telecommunications/cable market dynamics (that is, the competitive state of the market from competing broadband technologies)
- Broadband strategies and packaging by the market leaders (specifically marketing, speeds and pricing)
- Emerging online content markets (music, movies, TV and games)
- Consumer hardware uptake (PCs, home media hubs, portable devices)

Online penetration is defined as internet access through PC only. Households and individuals with only a *mobile* internet access (via their mobile phone or PDA for instance) are not taken into account for calculating the penetration. Online penetration estimates are based on national statistical institutes. When

national surveys are made in the middle of the year, penetration is extrapolated to get end-year estimates.

Broadband and technology indicators

PC households: total number of households with a PC.

PC penetration: total number of PC-enabled households as a proportion of all households in a territory.

Online households: total number of households with connection to the internet, either dial-up or broadband.

Online penetration: the ratio of total number of online households as a proportion of all households in a territory.

Broadband: any Internet connection above 150kbit/s. Broadband connections are fixed connections to the home or office and do not include mobile phones, or WiFi hotspots. Technologies accounted include, DSL, cable, Fibre-to-the-home (FTTH) and satellite.

Broadband penetration: referred to for the purposes of this report as total number of broadband lines per capita.

Wireless fidelity (Wi-Fi): a generic term for any type of 802.11 network, whether 802.11b, 802.11a or 802.11g. These different speed networks enable users to connect wirelessly to the broadband internet.

Wi-Fi hotspot: a specific geographic location in which an access point provides public wireless broadband network services to users through a WLAN.

1.4 Music and movies

All inputs required are overseen by senior analysts who will apply his own market knowledge and take into account company guidance and information and feedback obtained from primary sources and interviews conducted with senior industry executives knowledgeable of the market or market factor being examined.

SD takes into account company guidance from the major operators and content owners in each specific sector -- such as the incumbent telcos, cable companies, leading altnets/ISPs, major Internet and tech companies, the music Majors and the Hollywood studios. This is done through regular contact with the companies concerned. Over the last six months, some of the stake-holders interviews led in the course of this EC assignment gave valuable inputs to validate/refine the models.

Finally SD conducts mathematical growth analysis, charting the rate of historic net additions, both year-on-year, and quarterly growth rates, projected forward (for example, in the case of broadband connectivity taking into account potential market maturity as set against PC penetration, and the total number of households both online and offline). Assumptions vary model by model, but an online movies revenue model, for example, would include future pricing scenarios and consumer propositions, performance in relation to existing sources of film distribution, and a wide range of inputs including: buy-rates, pricing, content mix and business model type.

Music and movies - definitions of indicators and sub-markets

A la carte: the business model whereby content is sold to the end-consumer in a single transaction. The content can be sold on a single or bundled basis.

Buy-rate: the total number of transactions in a period as a ratio of the total number of users in the addressable market during that period.

Transaction: a single (paid) sales exchange between the end-consumer and the service provider.

Digital Retail: a method of selling digital content that gives the customer ownership over the files they have downloaded, allowing the customer to use the content as many times as they like – the digitally distributed equivalent of conventional retail channels. Digital retail is also known as both 'download-to-own', 'electronic sell-thru' and 'digital sell through'

Digital music: recorded music content that has been encoded for distribution over a digital platform.

Online music: digital recorded music content distributed over the open Internet.

Total music revenues: consumer level revenues generated by recorded music sales on all physical and digital formats, excluding sales tax or value-added tax.

Digital movies: feature film content that has been encoded for distribution over a true on-demand digital platform, whether walled garden or over the open Internet.

Online movies: digital movies distributed over the open Internet.

Box office revenues: consumer level revenues generated from the theatrical release of feature films, excluding sales tax or value-added tax.

Movie revenues from physical format sales: also known as 'home video revenues'. Consumer level revenues generated through the rental or retail of feature films on physical media, such as DVD or VHS, excluding sales tax or value-added tax.

Walled Garden movie VoD revenues: consumer level revenues generated by the rental of digital movies over set-top box-based video-on-demand platforms, excluding sales tax or value-added tax.

Total movie revenues: consumer level revenues generated by all movie distribution windows, but excluding revenues from the sale of pay-TV and free TV rights to pay-TV operators and broadcasters, excluding sales tax or value-added tax.

1.5. Radio

Data and forecasts on radio in this report are provided by **Goldmedia**

Apart from a large ad hoc stakeholder consultation between February and July 2006, Goldmedia used a variety of sources in order to compile the market data for this report: ranging from company reports and trade bodies to national regulatory authorities and national statistical offices as well as specific scientific and market research or consumer surveys amongst others.

When it comes to market data and forecasting Goldmedia's steps generally are:

1. ascertaining historic and actual market data
2. identifying drivers and obstacles
3. building market models and scenarios (worst, realistic, best) using predictive algorithms based on models for typical technology adoption, product life cycles and analogies for instance, taking into account the drivers and obstacles identified
4. constant review of the models based on market player feedback, market developments, consumer adoption and consumer surveys

All these steps are made country by country and totals are added up in the end.

The most important sources for market data are company data, trade bodies, interviews, consumer surveys and regulators.

Other important sources for validating the underlying figures for market models and predictive algorithms are for instance: historic broadband data for example are derived from the EC's Communications Committee (CoCom) and European Competitive Telecommunications Association (ECTA) and from own data.

Other sources are the European Information Technology Observatory (EITO), the European Audiovisual Observatory and the European Conference of Postal and Telecommunications Administrations (CEPT) for instance.

For figures on advertising markets we also use (apart from sources already mentioned) the European Interactive Advertising Association (EIAA), the World Advertising Research Centre (WARC), the Interactive Advertising Bureau (IAB), Mediaedge:cia and Nielsen Media Research.

Especially for underlying figures on installed base of certain technology we also cross-check with numbers from other analysts like Screen Digest, Forrester, Jupiter, Juniper, Arbitron, and Bridge Ratings for instance.

Furthermore Goldmedia has been monitoring the industry for years and has built an own database on many of the issues of this study and can build on various consulting and research projects in this field. Goldmedia constantly presents and discusses its market data and forecasts on conferences and in dialogues with top management and market research departments as well as regulators in this industry thanks to ongoing and well-established contacts.

Radio indicators

Digital Radio: The term digital radio here encompasses broadcast digital radio, online radio, podcasting and mobile radio.

Broadcast Digital Radio: Broadcast digital radio generally encompasses radio services distributed via a variety of platforms: dedicated radio broadcast standards like DAB, DRM(+) and HD-Radio/IBOC as well as radio services broadcast via digital TV platforms (terrestrial, cable or satellite) like DTT/DVB-T, DVB-C or DVB-S. In this study the term 'broadcast digital radio' does not encompass DVB-H- or DMB-services (though both are broadcast standards) as services dedicated to mobile usage are referred to as mobile radio (see below). When we refer to a certain platform we use the name of the technical standard.

Online Radio: Online radio, also referred to as Internet radio, webcasting or streaming, here means transmitting radio programmes, from broadcast radio stations as well as from independent online only providers, via the Internet, i.e. streaming digital radio content via the TCP/IP protocol. Referring to radio content here means that pure music services (so called music flatrates for instance) are not called online radio in this report, even though they are often branded as radio services. Radio here means that it contains editorial content (and most of the time music as well).

Podcasting: Podcasting both means the special way of distribution and the content. The latter mostly consists of spoken word/ editorial content and music to an extent – thus classical radio content. This content is distributed via the Internet, downloaded to a PC and then sometimes transferred to an MP3 player on which it is listened to. Thus podcasting is also referred to as radio on demand.

Mobile Radio: Mobile digital radio or simply mobile radio in this report means radio services that are dedicated to mobile usage on handhelds or mobile telephones for instance. This definition encompasses services which use mobile broadband as well as services using mobile broadcast standards (or both). Thus this section covers radio services using 2.5G/3G networks like EDGE, UMTS, HSDPA as well as radio services using broadcast standards like DMB, which is based on DAB, or DVB-H, based on DVB-T. To be exactly: if not mentioned otherwise, DMB always refers to T-DMB.

Listeners: When describing usage figures in the radio section we use the term weekly listeners and if not mentioned otherwise the term listeners here always means weekly listeners. Thus in these figures we only include people who use/listen to a service at least once a week. In contrast to other surveys we do not include listeners who say they have listened to a service "within the last three or six months", "recently" or "ever".

Penetration: If not mentioned otherwise, the term penetration in the radio section always refers to penetration of population, e.g. listeners per inhabitants.

1.6. Publishing

Publishing data have been collected by **Rightscom**.

Sources for the data have been chosen on the basis of industry credibility and currency, and mainly come from industry associations. Official data does not align well with the industry's own sectoral identities. Neither official nor unofficial data methods accommodate convergent services at all satisfactorily, though US sources are more advanced in doing so.

1.6.1. Newspapers

The principal source is the annual World Association of Newspapers (WAN) report World Press Trends, 2006, supplemented by information from the Newspaper Association of America's surveys, as the NAA provides more detailed information about usage of online newspaper sites and the contribution of online ad revenue than its European counterparts.

Consumer behaviour information comes from specific surveys e.g. by the Pew Internet and American Life Project, the European Interactive Advertising Association, and the Telegraph Media Group.

1.6.2. Magazines

Data comes from the International Federation of the Periodical Press (FIPP), World Magazine Trends, 2006.

Forecasts for the share of magazine adspend come from Zenith Optimedia, based on member agencies' country reports.

1.6.3. Books

Data was supplied by the Federation of European Publishers (FEP) in its annual European Book Publishing Statistics.

1.6.4. Internet advertising and online revenues for publishers

Information was drawn from the regular publications of the **Interactive Advertising Bureau (IAB)**. In the USA, the data is compiled from surveys carried out by Price Waterhouse Coopers, which uses data supplied directly from companies selling advertising online. IAB Europe data is compiled from reports supplied by member countries, not all of which are comparable e.g. some omit search engine advertising. There are discrepancies between IAB data and other sources in some important cases e.g. France, which reports advertising at ratecard value. This makes international comparisons difficult. IAB data is considered the most comprehensive available. The share of search in advertising is an important metric for the publishing industry, but is not uniformly available for each country.

Only the Online Publishers' Association in the USA provides regular time-series on paid content revenues by type. European information is based on ad hoc surveys of interactive publishers.

Yet Goldmedia and Screen Digest have built a specific model to estimate and forecast online revenues made by newspaper and magazine publishers up to 2010. The model is based on anecdotal example of actual online revenues or ratios, current advertising revenues, interviews with online publishers and internet market experts.

1.7. Games

The data and forecasts for games markets are provided by Screen Digest, which is tracking the games industry on a regular basis.

1.7.1. Market sizing

The sizing and forecasting of the different games markets are generally approached using two separate research methods. For market sizing (the historical market size up until the most recent full calendar year) Screen Digest uses a 'bottom-up' approach that identifies and researches all existing companies that offer sales and services within each sector. This approach allows for the analysis of revenue generated from consumer spend on subscriptions or sales (depending on business model), with the result of generating a global and segmented - commonly by geography, business model or platform - view of the size of the different games markets.

Market sizing information comes from three main sources: industry interviews with stakeholders within each games sector, publicly available financial reports, presentations and interviews, and (where applicable) retail sales data from third-party market research companies.

1.7.2. Forecasts

Market forecasts are generated using a combination of market growth and inhibitor assumptions, the examination of historical market data and growth rates, the top line and segmented data of markets that are expected to impact the potential growth of a market, feedback from industry sources and stakeholders, and general analyst expertise in the games industry and its markets. Examples of associated markets that provide a 'top down' view of the potential of a particular games market include broadband penetration rates (for dependent massively multiplayer online games, games on demand services and online console gaming) and digital television penetration (for interactive TV games).

As market forecasting up to five years in advance is not an exact science, Screen Digest continually updates its assumption models through assessment and analysis of industry events that are expected to have an impact on the market. Examples of industry events which may impact a market include the introduction of new services or new business models, acquisitions and mergers between companies, or the introduction of competing technologies and platforms.

Finally, for the accuracy of both market sizing and forecasts, Screen Digest continually tracks the actual size of each games market and updates annual market growth projections on an ongoing basis taking into account quarterly and half-yearly performances of different sectors.

1.7.3. Game indicators - definition of some game sub-markets

Massively multiplayer online game (MMOG): online games that involve gameplay within a persistent, always on and often shared game world, and that are designed to be played by hundreds, thousands and even hundreds of thousands of users.

Application streaming (also Games on Demand): application streaming (commonly marketed as Games on Demand or GoD) is a broadband-only service where games application data is downloaded to a user's PC on a continual basis as and when needed. Often, the game interface is installed on the user's PC, giving the semblance of a full game installation and the actual game application is run on the local PC rather than on the server. The server therefore simply acts as a remote hard drive from which, for example, level information (layout, art, animation, artificial intelligence data, etc.), is drawn at the appropriate time just as the application would have done with a local hard-drive. Games on Demand services are run under a subscription business model.

Games on Demand market: consumer spend excluding VAT on Games on Demand subscription services.

Browser based casual games: casual games that are served and played within, through or downloaded from a PC internet browser. Browser based casual games include content delivered under a number of business models including digital download (download-to-own), subscription and pay per play.

PC games with free online play: multiplayer pc games that offer some form of online gameplay for free.

Interactive television (iTV) games: games that are played through the interactive TV channels of digital TV networks.

Interactive television games market: consumer spend excluding VAT on iTV games from both PPP and subscription business models.

Mobile games: games that are played on mobile phones and devices.

Mobile games market: for the purposes of this report the mobile games market represents the consumer spend on downloadable mobile games.

Online games market: represents consumer spend excluding VAT on online subscription game services, digital download of content, and pay-to-play browser casual games.

Retail games market: represents consumer spend on retail games.

2 Glossary

2.1. Technical terms and acronyms used in the report

A

ACAP
Automated Content Access Protocol.

ARPU
Average Revenue Per User. Equivalent to the average revenue generated by each subscriber in a given period (commonly monthly or yearly).

AOP
Association of Online Publishers (UK)

B

Blu-Ray Disc
Blu-ray, also known as Blu-ray Disc (BD) is the name of a next-generation high definition optical disc format jointly developed by the Blu-ray Disc Association (BDA), a group of the consumer electronics, personal computer and media manufacturers (including Apple, Dell, Hitachi, HP, JVC, LG, Mitsubishi, Panasonic, Pioneer, Philips, Samsung, Sharp, Sony, TDK and Thomson). Competitor to the HD-DVD format.

Buy-rate
The total number of transactions in a period as a ratio of the total number of users in the addressable market during that period.

C

Casual gaming market
Represents consumer spend excluding VAT on browser casual games under a variety of different business models. These business models are pay-per-play, subscription and download.

Chargeback
A way for consumers to challenge a payment on a credit card and have the funds returned to the credit card owner.

D

DAM
Digital Asset Management systems.

DIF
Digital Interoperability Forum (http://www.difgroup.com).

Digital Retail
A method of selling digital content that gives the customer ownership over the files they have downloaded, allowing the customer to use the content as many times as they like – the digitally distributed equivalent of conventional retail channels. Digital retail is also known as both 'download-to-own', 'electronic sell-thru' and 'digital sell through'.

Digital Rental
Also known as digital pay per view (PPV) for movies. Commonly customers choose content on an a la carte basis and pay to watch it for a limited period. Content can be downloaded or streamed.

DREL
Digital Rights Expression Languages.

DRM
Digital Rights Management.

DTT
Digital Terrestrial Television is a platform for television delivery that makes use of over the air transmission in digital format. Digital Terrestrial Television has been launched in the UK, France, Italy, Spain, Netherlands, Finland, Sweden and Germany. DTT may be offered on a free-to-air or pay TV business model.

DTH
Direct-to-home satellite television.

DVB
The Digital Video Broadcasting Project is an industry-led consortium of over 270 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing global standards for the delivery of digital television. Digital television technology 'family' of standards used in Europe and in several other countries (DVB claims 110m receivers worldwide). DVB-T is the terrestrial version, used for DTT. DVB-S is the satellite version.

DVB-H
DVB-H is a variant to DVB-T developed for mobile transmission to hand-held devices (http://www.dvb.org).

DVR
Digital Video Recorder. Also known as PVR (Personal Video Recorder). Recording consumer device using local hard-drive disc. If using remote storage capacity often called a nDVR or Network-based DVR.

E

EADP
European Association of Directory Publishers.

EBU
European Broadcasting Union. Also known as UER (Union Européenne de Radio-Diffusion) (http://www.ebu.ch).

EPD
Electronic Paper Displays. EPDs resemble paper in that they can be read in bright sunlight or dim environments and from any angle, and are also extremely thin. Because they don't require power to maintain an image, EPD devices can work for long periods from batteries.

EICTA
European Information & Communications Technology Industry Association. The trade association for IT and consumer electronics.

EDGE
Enhanced Data rates for GSM Evolution. Often referred to as 2.5G as EDGE enhances GPRS. EDGE allows for 384 kbits/s in areas where there is no UMTS coverage.

EPC
European Publishers Council

F

FTTH
Fibre to the Home. One of the 'last mile' technologies used to connect households to two-way broadband services. Compared to xDSL, FTTH gives greater capacity, for a higher deployment cost.

H

HD DVD
High definition version of the DVD optical disc developed by the DVD Forum - an international association of hardware manufacturers, software firms, content providers and other users of Digital Versatile Discs. Competitor to the Blu-ray* format.

HSDPA
High-Speed Downlink Packet Access. HSDPA extends W-CDMA, the technology behind UMTS 3G. Sometimes referred to as 3.5G. HSDPA (at the moment) allows for up to 3.6 Mbit/s in UMTS-Networks.

I

ICT
Information and Communication Technologies.

IPA
International Publishers Association

IPR
Intellectual Property Rights.

IPTV
Internet Protocol Television (IPTV) is the delivery of television content using Internet protocol within a 'walled garden' network (as opposed to open internet), over a broadband network. IPTV has been widely used by telecoms operators to offer TV over their DSL networks. IPTV can also be used by cable companies both within their own network infrastructure and as a means of expanding their service reach outside their areas of operation over unbundled third-party DSL networks.

M

MDTV
Mobile broadcast Digital TV (as opposed to 3G-based mobile TV).

MHP
Multimedia Home Platform.

Mobile TV
Unless otherwise mentioned, the term encompasses transmission of television feeds and of on demand television/video programmes, over either broadcast network/ technologies (e.g. DAB, DVB-H) or point-to-point technologies (3G).

Mobile retail
Mobile 'over the air' distribution refers to download/streaming of content (e.g. music, games, video) directly to mobile devices through wireless networks, and differs from 'sideloaded' distribution.

MMS
Multimedia Messaging Service is a standard for mobile telephony systems that allow sending messages that includes multimedia content (images, audio, video) and not just text as in short message service (SMS).

MPEG
Moving Picture Experts Group. Working group of IEC* charged with the development of technical standards for video and audio compression and encoding. MPEG-2 was standardised in 1994 and then used by most digital TV operators.

MVNO
Mobile virtual network operator.

O

OMA
Open Mobile Alliance.

On-demand TV
The delivery of TV content on request. Content is usually selected from a menu of available material and viewed one or more times within a period of time. There are a number of related terms and acronyms associated with this form of television as follows:

Online TV
TV programming distributed over the open Internet --- including news, sports, and genre programming (such as children's entertainment, comedy and drama), but excluding music videos and user-generated content.

Online TV revenues
Total consumer level revenues from online TV, excluding sales tax or value-added tax.

OPA
Online Publishers' Association (USA)

OTA
Over the air. OTA mobile distribution refers to dowload/streaming of content to mobile devices through wireless networks, and differs from 'sideloaded' distribution.

P

Pay-per-play (PPP)
A form of business model often used by browser based casual and iTV game operators. Consumers pay each time to play a game.

PEGI
Pan European Game Information is a system for the classification of games content.

PPV
Pay-per-view refers to the business model used for on-demand television, where a charge is made for each piece of content viewed, that can apply to VOD services.

PVR
A Personal Video Recorder (commonly known in the US as a DVR or Digital Video Recorder) is a type of set-top box that contains a hard disc onto which content can be recorded and stored. The PVR gives the end user VOD-like functionality and can also be combined with an nVOD service to give local access to content that is sold on a PPV basis.

PAL
Phase-Alternating Line. Analogue colour broadcasting system used in Europe. PAL displays 625 horizontal lines television system (576 visible lines), 720 pixels per line and a refresh rate of 50 Hz (50 interlaced fields per second or 25 full frames per second). Also refferred to as 576i.

PSB
Public Service Broadcaster.

R

Red button interactive TV
By 'red button' we refer to interactive TV services offered on traditional broadcast digital TV (e.g. satellite TV), with a return-path. Some of classic 'Red Button' functions can even be implemented without a return-path, in which case 'interactivity' is provided by the data pre-pushed to the set-top box (e.g. weather forecasts, EPG). The 'red button' on the remote control was initially invented by BskyB in the UK and became popular across the board as the entry point to interactive TV services such as Electronic Programme Guides, information services, t-commerce, casual games, etc .
The technically limited 'Red Button iTV' differs from the full interactivity offered on two-way broadband networks (online TV or IPTV).

S

Sideloaded
Mobile content can either be delivered "over the air" (OTA) direct to a device through GSM 2.5G, 3G or wifi, or "sideloaded". Sideloaded content is downloaded to a PC over a broadband connection and then transferred over a local link (typically a cable or Bluetooth connection) to the device.

U

User created content
Refers to content generated in-game by consumers, which is often unique to them. User created content is currently most prevalent in massively multiplayer online games. Also known as 'user generated content'.

V

VOD
Stands for Video-on-Demand and sometimes for clarity referred to as true Video-on-Demand. Refers to an on-demand television system in which content is stored on a server and streamed in real-time to the viewer. VOD systems allow the customer to start viewing the content at any time as well as to pause and rewind the content.

nVOD
Stands for near Video-on-Demand and refers to an on-demand television system in which multiple channels are used to show the same piece of content at staggered start times. The gap between each available viewing time is a factor of the number of channels dedicated to the service and the amount of content on offer, but would commonly be 15 minutes or half an hour. nVOD systems are used by satellite pay television operators like BSkyB which lack a broadband back-channel allowing true Video-on-Demand and by cable companies that have yet to fully upgrade their networks.

W

WAP
Wireless Access Protocol.

Walled Garden Networks
Set-top box-based digital TV networks, offering services such as interactive TV and video-on-demand platforms. Differs from 'online TV' offering similar services through open internet.

Web 2.0
Second-generation of internet-based services, using user-generated content, such as social networking sites (eg MySpace.com).

2.2. Definition of the indicators and business models mentioned in the report

Technology

PC households: total number of households with a PC.

PC penetration: total number of PC-enabled households as a proportion of all households in a territory.

Online households: total number of households with connection to the internet, either dial-up or broadband.

Online penetration: the ratio of total number of online households as a proportion of all households in a territory.

Broadband: any Internet connection above 150kbit/s. Broadband connections are fixed connections to the home or office and do not include mobile phones, or WiFi hotspots. Technologies accounted include, DSL, cable, Fibre-to-the-home (FTTH) and satellite.

Broadband penetration: referred to for the purposes of this report as total number of broadband lines per capita.

Wireless fidelity (Wi-Fi): a generic term for any type of 802.11 network, whether 802.11b, 802.11a or 802.11g. These different speed networks enable users to connect wirelessly to the broadband internet.

Wi-Fi hotspot: a specific geographic location in which an access point provides public wireless broadband network services to users through a WLAN.

All content business models

A la carte: the business model whereby content is sold to the end-consumer in a single transaction. The content can be sold on a single or bundled basis.

Transaction: a single (paid) sales exchange between the end-consumer and the service provider.

Subscription: a business model by which a customer is provided access to content or service on an unlimited basis, in return for a periodic fee.

Revenues: unless otherwise indicated, consumer level revenues generated by a particular business line or service excluding sales tax or value-added tax.

Sideloaded: Mobile content can either be delivered "over the air" (OTA) direct to a device through GSM 2.5G, 3G or wifi, or "sideloaded". Sideloaded content is downloaded to a PC over a broadband connection and then transferred over a local link (typically a cable or Bluetooth connection) to the device.

Music

Digital music: recorded music content that has been encoded for distribution over a digital platform.

Online music: digital recorded music content distributed over the open Internet.

Total music revenues: consumer level revenues generated by recorded music sales on all physical and digital formats, excluding sales tax or value-added tax.

Movies

Digital movies: feature film content that has been encoded for distribution over a true on-demand digital platform, whether walled garden or over the open Internet.

Online movies: digital movies distributed over the open Internet.

Box office revenues: consumer level revenues generated from the theatrical release of feature films, excluding sales tax or value-added tax.

Movie revenues from physical format sales: also known as 'home video revenues'. Consumer level revenues generated through the rental or retail of feature films on physical media, such as DVD or VHS, excluding sales tax or value-added tax.

Walled Garden movie VoD revenues: consumer level revenues generated by the rental of digital movies over set-top box-based video-on-demand platforms, excluding sales tax or value-added tax.

Total movie revenues: consumer level revenues generated by all movie distribution windows, but excluding revenues from the sale of pay-TV and free TV rights to pay-TV operators and broadcasters, excluding sales tax or value-added tax.

Games

Digital download: a method of selling digital content that gives the customer ownership over the files they have downloaded, allowing the customer to use the content as many times as they like – the digitally distributed equivalent of conventional retail channels. Digital download is also known as 'download-to-own', 'digital retail', 'electronic sell-thru' and 'digital sell through'.

Digital download market: consumer spend excluding VAT on digital downloads.

Premium content: retail equivalent PC and console games content.

Subscription: a business model by which a customer is provided access to content or service on an unlimited basis, in return for a periodic fee.

Revenues: unless otherwise indicated, consumer level revenues generated by a particular business line or service excluding sales tax or value-added tax.

Massively multiplayer online game (MMOG): online games that involve gameplay within a persistent, always on and often shared game world, and that are designed to be played by hundreds, thousands and even hundreds of thousands of users.

Application streaming (also Games on Demand): application streaming (commonly marketed as Games on Demand or GoD) is a broadband-only service where games application data is downloaded to a user's PC on a continual basis as and when needed. Often, the game interface is installed on the user's PC, giving the semblance of a full game installation and the actual game application is run on the local PC rather than on the server. The server therefore simply acts as a remote hard drive from which, for example, level information (layout, art, animation, artificial intelligence data, etc.), is drawn at the appropriate time just as the application would have done with a local hard-drive. Games on Demand services are run under a subscription business model.

Games on Demand market: consumer spend excluding VAT on Games on Demand subscription services.

Browser based casual games: casual games that are served and played within, through or downloaded from a PC internet browser. Browser based casual games include content delivered under a number of business models including digital download (download-to-own), subscription and pay per play.

PC games with free online play: multiplayer pc games that offer some form of online gameplay for free.

Interactive television (iTV) games: games that are played through the interactive TV channels of digital TV networks.

Interactive television games market: consumer spend excluding VAT on iTV games from both PPP and subscription business models.

Mobile games: games that are played on mobile phones and devices.

Mobile games market: for the purposes of this report the mobile games market represents the consumer spend on downloadable mobile games.

Online games market: represents consumer spend excluding VAT on online subscription game services, digital download of content, and pay-to-play browser casual games.

Retail games market: represents consumer spend on retail games.

3 Stake-holder consultation

Organisations interviewed (individually or in focus groups) and organisations which transmitted written contributions. In all, we received 179 testimonies.

Company	*Category*	*Country*	*Contact names*
7 Digital	Music	UK	Ben Drury
94,3 r.s.2	Radio	DE	Stefan Hampe
ACTE	TV	EU	Ross Bigam
AFDESI	TV	EU	Jean Dacié
Agence France Presse (AFP)	Publishing	FR	Pierre Louette
AIDAA	Authors society	EU	Nathalie Wood
Alcatel	Mobile	FR	Herbert Mittermayr
Allied Newspapers Co	Publishing	MT	Vincent Buhagiar
Antena 3 TV	TV	ES	Francisco Sierra Hernando
Apple Computer Europe	Music	EU	Josiane Morel, Sebastien Evrard
APT (Association of TV producers)	TV	IT	Claudio Cappon
ARD Digital	TV	DE	Michael Albrecht
ARD Sales & Services	TV	DE	Dr. Robert Lackner
ARP	Movies	FR	Michel Gomez
Asociación Española de Radiodifusión Comercial (AERC)	Radio	ES	Alfonso Ruiz de Assin
BBC	TV	UK	Khalid Hadadi
Bertelsmann	All	DE	Irene Braam
Betty TV AG	TV	DE	Cornelius Everding
BEUC	Consumer ass.	EU	Cornelia Kutterer
BigFM	Radio	DE	Kristian Kropp
bmco forum Broadcast Mobile Convergence	TV	DE	Prof. Dr. Claus Sattler
BMW Group	Others	DE	Matthias Unbehaun
Boonty	Games	FR	Mathieu Nouzareth
British Music Rights	Music	UK	Florian Koempel
British Screen Advisory Council	Movies	UK	David Elstein
BSkyB	Mobile	UK	Stephen Nuttall
BT Germany	All	DE	Felix Muller

BT Movio	Mobile telecom	UK	Dominic Strowbridge
Bundesverband Digitale Wirtschaft (BVDW)	Others	DE	Ingo Horak
Burda	Publishing	DE	Marc Mangold
BVDW	All	DE	Ingo Horak
Cable Europe (formerly ECCA)	Cable	EU	Gilone d'Udekem, Caroline van Weede
CACC	Other	CZ	Zdenek Vanicek
Canal Plus Cyfrowy	TV	PO	Dominique Lesage
Canal+	TV	FR	Alastair McNeil
CCP Games	Games	ICE	Hilmar V. Pétursson
CEPI	Movies	EU	Siada El-Ramly
Cinecentrum Deutsche Gesellschaft für Film und Fernsehproduktion mbH	TV	DE	Andreas Knoblauch
Cinecitta - Italian Audiovidual Observatory	Movies	IT	Alessandra Priante
Clicmobile	Mobile	FR	Alex Kummerman
CNC	Regulator	FR	Jean Menu
Constantin Film	Movies	DE	Yara Kes
CricInfo	Publishing	UK	Will England
Cyfrowy Polsat	TV	PO	Dominic Libicki
Cyprus Radio Television Authority (CRTA)	Regulator	CY	Maria Psaras
Danmarks Radio - DR Interactive	TV	DK	Peter Olaf Looms
DDM – Direction du Développement des Médias	Regulator	FR	Frédéric Bokobza
De Telegraaf	Publishing	NL	Marianne Zwagerman
Deutsche Telekom	Telecoms	DE	Dr. Gernot Lang
Deutsche Telekom (T-Online, MusicLoad)	All	DE	Tae-Won Song
Deutsche Welle	Radio	DE	Jochen Spangenberg
DIF – Digital Interoperability Forum	TV	EU	Sheila Cassells
DVB Project	Mobile	EU	Peter MacAvock
EBU - European Broadcasting Union	TV, radio	EU	Jean Reveillon, Michael Wagner, Javier Tola
EICTA	Technology	EU	Leo Bauman
Eidos	Games	UK	Simon Protheroe
Elion	Telecom	EE	Valeri Raag
Elstein David	TV	UK	David Elstein
EMAP	Publishing	UK	Will Currie
Endemol France	TV	FR	Axel de Charentenay
Endemol Italia	TV	IT	Dr. Claudio Cappon
Ericsson	Technology	SE	Per Nordloff
Ericsson	Mobile	SE	Lasse Wieweg
Eurocast	Radio	EU	Beate Appel
Eurocinema	Movies	EU	Yvon Thiec
European Federation of Magazine Publishers	Publishing	EU	David Mahon
European Newspaper Publishers Association (ENPA)	Publishing	EU	Valtteri Niiranen, Hannah MacAusland, Sophie Scrive
European Publishers' Council	Publishing	EU	Angela Mills-Wade
Exent	Games	IS	Yoav Tzurya
Extreme Sports	TV	UK	Alistair Gosling
Fastweb	All	IT	Alessandro Petazzi
Federation of European Publishers (FEP)	Publishing	EU	Anne Bergman-Tahon
film20	Movies	DE	Georgia Tornow
First Hop	Games	FI	Timo Ahomaki, Timo T. Laaksonen

Flash Networks	Games	ICE	Itay Gissin
France Telecom	Telecoms	FR	Stefane France, Jean-Paul Simon, Goradana Grahovac
France Televisions	TV	FR	Jean-Paul Commin
Free/Iliad	ISP	FR	Michael Boukobza
Fremantle Media	TV	UK	Claire Tavernier
FRESH IT	TV	ES	Jose Luis Vazquez
FUB	TV	IT	Sebastiano Trigila
Funcom	Games	NO	Jørgen Tharaldsen
GESAC	Authors society	EU	Victoriano Darias
Glu	Games	UK	Greg Ballard
Google	Movies	UK	Patrick Walker
Granada International	Movies	UK	Martin Blakstadt
Grupo Media Capital SGPS SA	All	PT	Pedro Morais Leitao
Guardian Unlimited	Publishing	UK	Emily Bell
Heinrich Bauer Verlag	All	DE	Michael Medelin
Hessen Digital Radio	Others	DE	Dirk Risse
Hewlett Packard	Technology	EU	Irena Bednarich
Hitradio FFH	Radio	DE	Hans-Dieter Hillmoth
Homechoice (Video Networks)	Movies	UK	Jonathan Sykes
Hungarian Cable Association (HCA)	TV	HU	Ferenc Kéry
IBM Media and Entertainment Division	Games	NL	Marcel Baron
ICPM/CIEM – International Confederation of Music Publishers	Music	EU	Jenny Vacher
IFPI	Music	EU	Francine Cunningham, Olivia Regnier
Infospace	Mobile	UK	Alan Welsman
Initiative Marketing Digital Radio (IMDR)	Radio	DE	Axel Rudolph
Inmobia	Movies	DK	Mads Galsgaard
InteracT!V	Others	DE	Sascha Müller
Interdeco	Publishing	FR	Antoine Clement
Introversion Software	Games	UK	Mark Morris
iTVP	TV	PO	Leszek Bogdanowicz
IVF – International Video Federation	Movies	EU	Charlotte Lund-Thomsen
Jamba! AG	Music	DE	Jakob Kuznicki
Kabel Deutschland	Telecoms	DE	Michael Konig, Annette Schumacher
Karneval	TV	CZ	Robert Gardner
KDG	Cable	DE	Marja Von Oppenkowsky
KRRiT	TV	PO	Karol Jakubowicz
La Banque Audiovisuelle (vodeo.tv)	TV	FR	Frederic Pie
La Stampa	Publishing	IT	Anna Masera
Lambert Erik	Movies	IT	Lambert Erik
Largardere Active Mobile	Games	FR	Nicolas Gaume
Levira	Telecom	EE	Indrek Lepp
Liberty Global	Cable	EU	Chris Hutchins
Ljubljanski Kabel	TV	SO	Damir Cibic
Lovefilm	Movies	UK	Simon Calver
M6 Web	TV	FR	Xavier Marvaldi
MBlox	Mobile	UK	Andrew Bud
MCPS-PRS	Authors society	UK	Jez Bell
Media Capital	All	PT	Fernando Lopes

Metaboli	Games	FR	Thibaut de Robien
Microsoft MSN Video	TV	EU	Joe Michaels
Mobile Interaction	Games	SE	Peter Lindstrom
Momac	Publishing	NL	Laurens Rutten
MotorFM	Radio	DE	Markus Kühn
MTG Radio/RIX FM	Radio	SE	Christer Modig, Rich Marston
MTV	Mobile	UK	Angel Gambino
MTV Networks GmbH	TV	DE	Christoph Urban
Music Choice	Music	EU	Margot Daly
National consumer Council (NCC)	Consumer association	UK	Jill Johnstone
NBC Universal	Movies	EU	Alessandra Silvestro
Nokia	Technology	FI	Lauri Kivinen, Mika Lauhde
Nova Communications/4fun.TV	TV	PO	Ross Newens
NRJ Group	Radio	FR	Christophe Montague
O2	Music	DE	Oliver Thienhaus
O2 Germany	Music	DE	Markus Haas, Dr. Jörg Zumholz
OFCOM	Regulator	UK	Tim Suter
ONO	Telecoms	ES	Amalia Pelegrín
ORF	Radio	AT	Andi Gall
ORTT	Regulator	HU	Jozsef Bartha
PACT	Movies	UK	John Macvay
Pearson Education	Publishing	UK	Lorna Cocking
Phonofile Denmark	Music	DK	Jesper Bang Olson
Player One	Mobile Games	UK	Pete Russell
Polskie Radio	Radio	PO	Tomasz Siemoniak
Polskie Radio	Radio	PO	Przemylav Hensel
Premiere	TV	DE	Sabine Christmann
Private Media	TV	ES	Tim Clausen
ProSiebenSat.1 Media AG	TV	DE	Els Hendrix
Qualcomm	Mobile	UK	Jeffery Brown
Radiozentrale	Radio	DE	Lutz Kuckuck
RAI	TV	IT	Andrea Fabiano, Tonio Di Stefano
RAI New Media	TV	IT	Dr. Roberto Sergio
RDF Media	TV	UK	Alice Robertson
Red Bee Media	All	GB	John Pink
Red Bee Media	Technology	UK	John Pink
Rs2 Berlin-Brandebourg	Radio	DE	Stephan Hampe
RTÉ	TV	IE	Dr. Anne O'Connor
RTK	Regulator	LT	Algimantas Kaziliunas
RTL Radio GmbH	Radio	DE	Christoph Homann
SACD	Authors Society	FR	Pascal Rogard, Janine Lorente
SACEM	Authors Society	FR	Thierry Desurmont, Catherine Kerr-Vignale
SAKT	TV (cable)	SK	Vladimir Izák
Sanoma Uitgevers	Publishing	NL	Patrick Bernhart
SBS Broadcasting	TV	LU	Bart Soepnel
SES Astra	Others	DE	Werner Litza
SF Anytime/Bonnier	Movies	SE	Henrik Nilsson
SFR	Mobile telecom	FR	Robert Clarke, Frederic Dejonckheere
Sky Italia	TV	IT	Luca Di Mauro

Sogecable	TV	ES	Pablo Romero
Sony BMG Music Entertainm	Music	UK	Thomas Hesse
Sony Electronics	Technology	EU	Roger Vercammen
Sony Music	Music	EU	Ekkehard Kuhn
Sveriges Radio	Radio	SE	Kerstin Brunnberg
TDF (Broadcast Mobile Convergence Forum)	TV	FR	Bernard Pauchon
Tele Video Media	TV	PO	Marek Grzegorzewicz
Tele2	Telecoms	SE	Jan Tjernell
Telecom Italia	Telecoms	IT	Domenico di Martino
Telefonica Imagenio	Telecoms	ES	Joaquin Garcia Orbea, Jose Antonio Castillo Colaldo, Rachel Villacana
Telefonica Moviles	Mobile Telecoms	ES	Paloma Castellano Sanz, Luisa Rodriguez, Jose Ignacio Casas Alvarez, Rocio Mohon
Telekom Austria	Telecoms	AT	Michael Seitlinger
Terraplay	Games	SE	Sven Halling
TIGA	Games	UK	Fred Hasson
Tiscali UK	ISP	UK	Richard Ayers
TPEmiTel	Telecoms	PO	Jaroslaw Mroczkowski
TuneTribe	Music	UK	John Strickland
TV2 Norway	TV	NO	Helge Høibraaten
TVN	TV	PO	Tomasz Berezowski
UFA Film TV Produktion	Movies, TV	DE	Dr. Susanne Stürmer, Nadja Wecke
UK Film Council	Movies, TV	UK	John Woodward
Universal Music Group	Music	FR	Pascal Negre
UPC Polska	TV	PO	Marek Sowa
VECAI	Cable	DE	Ad Van Loon
Video Networks (Homechoice)	TV	UK	Jonathan Sykes
Virgin Mega	Music	FR	Laurent Fiscal
Visiware	Games	FR	Laurant Weil
Vivendi Games	Games	EU	Sabrina Munoz
Vivendi Universal	All	EU	Sylvie Forbin
Vodafone D2 GmbH	Telecoms	DE	Johannes Becher, Dr. Isabell Tilly, Dr. Stephan Korehnke
Vodafone Group	Mobile	UK	Graeme Ferguson
Walt Disney TV International	Movies	UK	Will Harrison
Warner Music	Music	UK	Paul Downton
Wegener	Publishing	NL	Henk Janssen
Yahoo	Internet	UK	John Gisby
Zone Vision	TV	UK	Tanya Gugenheim

4 Country profiles

Each country profile includes a databox with some indicators of market uptake and a European benchmark.

Penetration ratios at end-2005, market size values for 2005.

EU14 above refers to Western EU15 minus Luxembourg. EU20 above refers to the EU14 plus the following 6 new Member States: Poland, Hungary, Czech Republic, Slovenia, Slovakia, Estonia.

Some country profiles are more developed than others. This is due to differences in development level of the different digital content markets, and feedbacks from stake-holder consultation, although the consultants gathered testimonies and data from every Member States.

Databox

		Source	*Comments*
PC penetration per household	%	SD	Benchmark: EU20 average (59.9%)
Internet access per household	%	SD	Benchmark: EU20 average (46.2%)
Broadband access per capita	%	EC	Benchmark: EU20 average (12.6%)
Digital TV (free and pay)	%	SD	% of all TV households. Benchmark: EU20 average (30.6%)
Pay TV PVR subscribers	%	SD	Benchmark: EU15 (0.7%)
Games : online-capable video consoles	%	SD	Benchmark EU15: percentage of the total number of games consoles (18%)
Movies : online revenues	€m	SD	Total EU14 indicated as benchmark (€2.8m)
Movies: number of downloads/streams	000s	SD	
Music: a la carte download revenue	€m	SD	Total EU14 indicated as benchmark (108.9)
Music: number of single downloads	000s	SD	
DAB: number of services	units	GM	
DAB: coverage	%	GM	Percentage of population
Mobile: penetration	%	ITU	Can be superior to 100% (multiple subscriptions)
Mobile: 3G penetration	%	SD	Benchmark: average penetration taken on a sample of 6 markets with 52% of total EU population (UK, France, Spain, Italy, Denmark, Belgium) – 11%
Mobile: music revenues	€m	IFPI	IFPI music revenues include full track music downloads, master tones (excerpts of songs) and ringback tones. They do not include midi ringtones. Europe Total ($75.1m, €59.3m) indicated as benchmark.

Source: Screen Digest

1. Austria

Broadband and TV

Main stakeholders in the TV and Broadband marketplace include:

- Free-to-air television channels: ORF 1, ORF 2 (publicly owned)
- Cable pay TV services: Liwest, Telekabel (UPC), Kabelsignal, Telesystem Tirol, BKF, Salzburg AG
- IPTV services: aonDigital TV (operated by Telekom Austria over DSL)
- Incumbent telecommunications provider Telekom Austria
- iNode, alternative broadband provider which supplies DSL over the incumbent and its own unbundled network
- Cable operator UPC which offers cable broadband and telephony in addition to its cable TV service
- Alternative provider Tele2 which provides mobile and fixed telephony, and DSL broadband
- Telecommunications regulatory body: Rundfunk und Telekom Regulierungs (RTR)

The Austrian incumbent is only partially privatised, with the State still holding a 25 per cent share in the company. Broadband penetration remains approximately average for Europe, although the penetration in rural areas still remains low. The Federal Ministry for Transport, Innovation and Technology (BMVIT) has pledged €20m for the rolling out of broadband infrastructure to overcome this poor penetration in affected areas. The various provinces will also match this figure in contributions. The number of broadband lines at the end of 2005 reached approximately 1.15m. In April 2006, the incumbent reported that 90 per cent of households had DSL enabled. The technology held about 61 per cent broadband market share at the end of 2005, and is showing increasing dominance. The cable sector dominated by UPC, together with unbundling of the incumbent's local loops (LLU), has offered competition to Telekom Austria which maintains a relatively low broadband market share in retail and wholesale. There were only around 147,000 unbundled lines at the end of March 2006. The largest of the LLU operators is Tele2 UTA, formed after its merge with UTA Telekom in October 2004.

UPC, cable operator and the second largest broadband provider in the country acquired unbundled DSL provider, iNode, in March 2006. The cableco now has access to its own cable infrastructure in addition to iNode's unbundled DSL network which had an estimated 62,000 customers at the time of acquisition. UPC offers dual and triple play packages of broadband and digital TV over cable and fixed telephony. The company also offers fixed-mobile telephone services and a mobile and broadband dual bundle. It is speculated that the company will also launch

Databox: Austria

2005		*Austria*	*Europe*
PC penetration per household	%	58.0	59.9
Internet access per household	%	50.7	46.2
Broadband access per capita	%	14.0	12.6
Digital TV (free and pay)	%	15.4	30.6
Pay TV PVR subscribers	%	0.0	0.7
Games : online-capable video consoles	%	17.1	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.1	
Music: a la carte download revenue	€m	1.4	108.9
Music: number of single downloads	000s	1,400.0	
DAB: number of services	units	5	27.4
DAB: coverage	%	19.0	32.9
Mobile: penetration	%	99.8	97.2
Mobile: 3G penetration	%	0	11.0
Mobile: music revenues	€m	2.27	59.3

Sources: Screen Digest, Goldmedia, EC, ITU, IFPI

an IPTV service given its unique position with access to cable and DSL networks. AonDigital TV, the first IPTV service in the country, operated by incumbent Telekom Austria, launched initially in Vienna in March 2006.

Mobile content

There are five mobile network operators; 3, A1 Mobilkom (part of the Telekom Austria group), ONE, Tele.ring and T-Mobile. In addition, there are several MVNOs (mobile virtual network operators), mostly budget MVNOs such as Tele2. Schwarzfunk is the MVNO of internet social networking portal uboot.

All of the operators have launched 3G networks. Mobilkom supplies content from the Vodafone Live portal, although it is not part of the Vodafone group. Both Mobilkom and ONE have launched high speed HSDPA (3.5G) networks in 2006, although only laptop cards (and not actual handsets) are available at the time of writing. The transmission services arm ORS of public broadcaster ORF is behind the first pilot of broadcast mobile TV using DVB-H technology in Austria, which will end in May 2007. Operators 3 and Mobilkom are also involved.

Digital radio

In 1993, parliament enacted legislation licensing one private commercial operator in each federal state ("Bundesland", two operators in Vienna). In 1998, further deregulation was enacted alongside the cable and satellite television law. 53 new operators went on air. Until now ORF's radios dominate the market. No private competitor has yet managed to reach the market share of the ORF.

In Vienna there are three T-DAB transmitters and in Tirol there are two transmitters in operation for test purposes. These transmitters cover 19 per cent of the country. The following stations are transmitted: FM 4, Ö1, Ö2, Ö3 and Radio Vorarlberg.

There is currently no interest for a nationwide coverage of T-DAB on the part of the radio operators according to RTR. For this reason no decision on a start date for regular transmissions has been meade.

All public radios (ORF) (excluding Ö1, total 13) and a few private radio station (e.g. Radio Arabella) stream their program live over the net. Additionally Radio Arabella also offers music downloads on the portal www.one4music.de.

2. Belgium

Broadband and TV

Main stakeholders in the Belgian TV and Broadband marketplace include:

- Free-to-air analogue broadcast channels, publicly owned: één, Ketnet/Canvas, BVN (Dutch-speaking); La Une, La Deux (French-speaking)
- Main unencrypted channels available via cable, privately owned: VTM, Kanaltwee (VMMa, Dutch-speaking); VT4, VIJFtv (SBS Broadcasting, Dutch-speaking); Vitaya (Media Ad Infinitum, Dutch-speaking); RTL TVI, Club RTL (RTL Group, French-speaking); Kanaal Z, Canal Z (former Dutch, latter French-speaking); AB3, AB4 (AB Group, French-speaking)
- Cable operator Telenet (Liberty Global Consortium owns 21.5 per cent) offers four services: cable TV (including on-demand content), fixed and mobile telephony (including VoIP), and broadband cable internet
- Cable TV operators Teledis, Interelectra and Brutele (owned by various intermunicipalities), Coditel (owned by Suez Lyonnaise des Eaux). All four also supply broadband and landline telephony services
- Cable TV platform BeTV in which Applications Câble Multimedia SA has the majority stake (68 per cent)
- Cable operator UPC offers broadband cable internet
- DTH television platform TV Vlaanderen
- Incumbent telco Belgacom, which has an IPTV platform Belgacom TV and offers landline telephony, mobile telephony (through Proximus) and DSL broadband internet
- Alternative telcos Scarlet and Tele2 which offer broadband DSL and telephony over the incumbent and their own unbundled networks
- Telecommunications regulator : Institut Belge des Service Posteaux et des Telecommunications (IBPT)
- ISPA Belgium, Internet Service Providers Association, which promotes the interests of Belgian companies providing internet services

Belgium boasts a very high coverage of DSL and cable infrastructure, and had over 2m broadband connections in total at the end of 2005. Belgium still suffers from relatively low penetration of online households however, with 48 per cent of households with internet access at the end of 2005. DSL is the more dominant form of broadband with 64 per cent of total connections at the end of 2005, cable holding 36 per cent. As yet there is no fibre rollout in the country.

Cable operator Telenet is the only cableco capable of offering quad-play (broadband 20Mbps, fixed and mobile telephony, television) following its launch of

Databox: Belgium

2005		*Belgium*	*Europe*
PC penetration per household	%	68.9	59.9
Internet access per household	%	47.9	46.2
Broadband access per capita	%	19.9	12.6
Digital TV (free and pay)	%	7.3	30.6
Games : online-capable video consoles	%	13.8	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.1	
Music: a la carte download revenue	€m	3.6	108.9
Music: number of single downloads	000s	3533.0	
DAB: number of services	Units	15	27.4
DAB: coverage	%	98.0	32.9
Mobile: penetration	%	90.8	97.2
Mobile: 3G penetration	%	0.38	11.0
Mobile: music revenues	€m	0.54	59.3

Sources : Screen Digest, Goldmedia, EC, ITU, IFPI

Mobile Virtual Network Operator (MVNO) Telenet Mobile in July 2006. Another cableco UPC also provides broadband speeds of 20Mbps to consumers. Telenet will begin offering a discounted package price for consumers subscribing to two, three or all four of the services in Flanders from 4th September 2006. Previous to this date, the cableco had offered no discount to customers taking more than one service. Despite this lack, Telenet counted 176,000 triple play customers at the end of 2005. Telenet also launched a VoIP service in July 2004. By the end of 2005, the telephony service had 175,000 customers.

Incumbent telco Belgacom began offering VDSL in November 2004 (17Mbps). In July 2005 it launched its IPTV service 'Belgacom TV' which is available in the Brussels, Ghent and Liege regions and has 55 television channels, VoD capability and a PVR. The service had 42,000 subscribers at the end of March 2006. Alternative DSL providers, such as Scarlet and Tele2 have launched ADSL 2+ products in response to Belgacom's higher bandwidth offering, though have yet to supply IPTV services. Scarlet is the more popular of the two, boosted by the acquisition of Tiscali Belgium broadband subscribers in December 2004. Tele2, the other dominant DSL provider offers residents high-speed DSL internet access up to 4Mbps, and the option of receiving discounts if subscribed to in conjunction with fixed telephony. Versatel, which owns its own unbundled network, announced in August 2006 its intention to buy the Belgian and Dutch operations of Tele2 to complete before end of 2006, a merger on which the two companies have already been working on for a year.

Digital radio

Belgium has one of the strongest markets with a market share of more than 11 per cent in 2005 and more than 500 radio stations. But there are differences between the north and the south of the country. There not only different cultural and linguistic backgrounds but also separate regulations. As a result, different developments in the two regions of the country can be surveyed.

In the south the private radio is more fragmented than in the north (Flanders). The private radio has the highest audience figures and radio's advertising share is obviously over ten per cent.

The radio market has developed much slower in the North. The public radio network VRT still dominates the audience market (over 80 per cent listener share).

DAB was launched in 1997. It covers 98 per cent of the country. The VRT network carries ten audio stations. Four channels are exclusive to DAB Digital. The RTBF network carries five audio stations, all being simulcasts of existing analogue stations. The RTBF multiplex retains several slots for commercial radio, but these have not yet been allocated. Data services are expected to be trialled over the coming year. The VRT-operated DTT platform is also offering nine radio stations (5 public).

VRT radios were streaming over the Internet and podcast. And VRT has started a peer-to-peer streaming project by Studio Brussel (1. June 2006). (Source: www.digitaleradio.be). Also a dozen private stations offer Internet streaming (NJR, Radio Contact, Q-Music, 4 FM) and podcasts (Radio Nostalgie).

Mobile content

There are three mobile network operators; Base (owned by KPN), Mobistar (part of the Orange group) and Proximus (Belgacom Mobile, Vodafone is a 25 per cent shareholder).

Belgium has one of the most vibrant MVNO markets with over 30 MVNOs.

Of the three operators, only Mobistar and Proximus have launched 3G networks. However, Base plans to launch 3G in Q3 2006. Proximus launched an HSDPA network in July 2006. Network operator Bouygues offers i-mode content to users. Proximus supplies content from the Vodafone Live portal, and Mobistar distributes content sourced by Orange group.

3. Cyprus

Broadband content and television

Stakeholders in the Cypriot TV/broadband marketplace include:

- The terrestrial broadcasters CyBC/, Antenna TV, Mega and Sigma.
- The terrestrial pay-TV channels Lumiere (LTV) and Alpha.
- The local TV sector, which encompasses five stations.
- The DTH/IPTV sector, which is served by Nova Cyprus, MiVision and AthenaSAT.
- The incumbent telco CyTA and a growing number of alternative providers.
- The regulatory sector, which includes (amongst others) the Cyprus Radio Television Authority (CRTA, interviewed), the Ministry of Communications and Works (MCW) and the Office of the Commissioner for Electronic Communications and Postal Regulation (OCECPR).

Cyprus has a highly developed TV industry served by not only a three-channel public broadcaster (CyBC) but also three national and five regional/local commercial stations. LTV and its sister service Alpha are long-established pay-TV operations, with the former claiming 62,000 subscribers (as of 2005) and also being behind the DTH platform Nova Cyprus.

There is also a second DTH-delivered service in Cyprus (AthenaSAT), while the incumbent telco CyTA operates an IPTV platform (MiVision) that already includes an EPG and VoD and is soon also expected to offer interactive TV applications and VoIP. MiVision is believed to have already secured around 8,000 subscribers at the end of 2005. Digital terrestrial services have meanwhile yet to be introduced in Cyprus.

Issues

The situation in the Republic of Cyprus is made complicated by the fact that it has several regulatory authorities that need to closely work together to enact legislation. According to one stakeholder, legislative actions are currently being pursued on a number of fronts. Firstly, amendments will be made to the **1998 Radio and Television Stations Law, which does not cover digital broadcasting**.

Secondly, the CRTA and Ministry of Culture are working on legislation that will address digital content services, and thirdly, a number of bodies including the CRTA are attempting to devise a strategy for the introduction of DTT. Further legislative developments are expected by the end of 2006.

The Republic of Cyprus's TV industry has close links to Greece: Antenna TV and Mega TV are local versions of their Greek counterparts, and LTV is a shareholder in the leading Greek subscription TV company Multichoice Hellas.

Databox: Cyprus

2005		*Cyprus*	*Europe*
PC penetration per household	%	Na	59.9
Internet penetration per household	%	32	46.2
Broadband penetration per capita	%	6.2	12.6
Digital TV (free and pay)	%	Na	30.6
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	Units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	86.0	97.2
Mobile: 3G penetration	%	0	11.0
Mobile: music revenues	€m	0	59.3

Sources : EC, Screen Digest, ITU, Goldmedia

Besides being in the vanguard of developments in the new media sector in Cyprus itself, the incumbent telco CyTA is pursuing an active strategy overseas. In March 2006, for instance, **Actel Kft** (a company in which it holds a majority stake) launched an IP-delivered triple-play service in Hungary.

Digital radio

Pluralistic radio and television were introduced in Cyprus in 1990 and 1992 respectively, putting an end to the state monopoly. The state channels have lost the lead in the numbers of viewers and listeners to private channels. No DAB or DTT activates are currently known. The four private stations and more than 15 private stations are streamed.

Mobile content

There are two mobile network operators; Cytamobile (part of the Vodafone group) and Areeba.

4. Czech Republic

Broadband and television

Stakeholders in the Czech marketplace include:

- The terrestrial broadcasters CT, TV Nova and Prima TV.
- The cable industry, dominated by the MSOs UPC and Karneval (interviewed).
- The DTH sector, served by the platforms UPC Direct and Czech Link.
- The incumbent telco Telefónica O2 Czech Republic, formerly known as Czech Telecom.
- The DTT sector, in which the Czech Digital Group (CDG), national transmission company CRa and Czech Telecom are multiplex operators.
- The regulatory Radio and TV Council (RRTV) and Czech Telecom Office (CTO).

Although the public broadcaster CT and national commercial stations TV Nova (owned by the US investment company CME) and Prima TV (backed by Sweden's Modern Times Group - MTG) continue to play the main role in the country's TV industry, there have been significant developments in other sectors of the market since the country acceded to the EU in May 2004.

For instance, following a long period of prevarication, **DTT services were finally introduced in the Czech Republic in Q4 2005**. As of mid-2006 viewers in Prague, Brno and Ostrava were already able to receive up to 12 free-to-air (FTA) digital terrestrial channels. Furthermore, in April 2006 the RRTV granted digital licences to six of 30 companies – Febio TV, Ocko, RTA, TV Pohoda, TV Barrandov and Z1 – that had taken part in a contest.

The incumbent telco Telefónica O2 Czech Republic is meanwhile gearing up for the launch of what will be one of the country's first national IPTV service. Due to make its debut in autumn 2006, it will be based on Telefónica's Imagenio service in Spain and target ADSL subscribers with an offer of around 30 TV channels. Additional services like VoD will be introduced at a later date.

The first IPTV service to make its debut in the Czech Republic was one operated by Mattes AD, an ISP based in Frydek-Mistek. Part of a triple-play offer, it has been available in Northern Bohemia since September 2005.

The Czech Republic's two leading MSOs, though both **triple-play companies since the first half of 2006**, have meanwhile been in no particular hurry to launch digital TV services. Karneval took the first step by starting trials in 2005, introducing a 47-channel service in June 2006.

DTH services are provided principally by UPC Direct, which has been available since Q4 2000 and currently claims around 120,000 subscribers. Czech Link, a service jointly owned by Liberty Global and the CDG, has a limited programme offer and an unknown number of viewers, which is believed to be far lower.

Databox: Czech Republic

2005		*Czech Rep*	*Europe*
PC penetration per household	%	35.7	59.9
Internet access per household	%	21.1	46.2
Broadband access per capita	%	4.9	12.6
Digital TV (free and pay)	%	5.2	30.6
Games : online-capable video consoles	%	na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	115.2	97.2
Mobile: 3G penetration	%	0	11.0
Mobile: music revenues	€m	Na	59.3

Sources : Screen Digest, ITU, Goldmedia

Specific issues

Inadequacies of legislation are considered as the main obstacle to the uptake of digital broadcasting services. Although the country passed an **Electronic Communications Act in February 2005**, it failed to make any mention of digital broadcasting. This is likely to be addressed in amendments to the **Radio and TV Operation Act**, but there is as yet no sign of these being implemented.

While cooperation between the RRTV and CTO have recently been improved , there is still an alleged lack of understanding between the CTO and Anti-Monopoly Office (UOHS). Some stakeholders suggested that these problems could be resolved by creating an industry-wide regulator on the lines of the UK's Ofcom.

It was also suggested that issues such as **content rights for IPTV services** would best be addressed on a European rather than Czech level.

While NGN (New Generation Network) platforms such the IPTV services soon to be launched by Telefónica, O2 Czech Republic and (quite probably) alternative telcos are likely to be relatively unregulated, other, more established services like cable will be 'over-regulated'.

Despite on-going problems with legislation, the biggest obstacle to the exploitation and development of digital content in the Czech Republic is generally accepted to be *economic*. One stakeholder from the cable industry referred to a lack of investment and insisted on the need for "rock-solid funding" and the adoption of "new commercial/business models of a European nature".

Another meanwhile made the point that up until now **dubbing material into the Czech language had been difficult for programmers on cost grounds**. It would be even more so for premium content for VoD services once they are introduced.

The stakeholder also spoke of a "chicken and egg" situation in which it was unclear if the provider of the set-top box or of the content would make the initial investment. At the same time, he praised the activities of the Czech public broadcaster CT, which like its counterparts in other parts of Central and Eastern Europe has begun to launch digital TV channels. These were proof that some programmers are willing to invest in niche services, which can only benefit the market and development of digital content.

On the other hand, a note of caution is struck on the prospects for the holders of the six digital licences awarded in April 2006. Only those prepared to invest in the development of quality channels and offer product for VoD and NVoD that can be monetised are likely to succeed.

It should be noted that of the six licence holders, three are already well established in the marketplace. Febio TV's owner Febio, for instance, is one of the leading independent production companies in the Czech Republic and claims to have produced over 1,000 films and TV programmes to date. It regularly supplies content to the country's three leading broadcasters CT, TV Nova and Prima TV and has just appointed Richard Rybnicek, the director of the Slovak public broadcaster STV, to head up its new digital operation. Barrandov is meanwhile a world-famous production house and Ocko the Czech Republic's first and to date only dedicated music channel.

Digital radio

The Czech radio market has been characterised by an incredible boom in new radio stations in the last ten years. Thus Prague is the most competitive radio market in the Czech Republic and in Europe (number of station per inhabitants). About 30 radio stations broadcasts in Prague, not to mention the other commercial stations outside Prague.

Terrestrial radio and television digital broadcasting in the Czech Republic has been under technical and legislative development for several years. Several coordinated networks of transmitters for terrestrial digital radio broadcasting T-DAB and three networks of terrestrial digital transmitters DVB-T were made available in 2005. (CRo1, CRo2, Radio Prologas, Evropa 2, Expresradio, Classic FM have a DVB-T license.)

Nevertheless, DAB transmissions have not yet been launched. But the infrastructure is in place to provide coverage in Prague (20 per cent of the Czech population). There is a plan to increase coverage to 40 per cent with services in Brno and Ostrava six months after roll-out. One year later coverage should be extended to all regional cities, reaching nearly 95 per cent of the population (outdoor reception).

Public Czech Radio applied for a DAB broadcasting licence. The new digital radio stations CRo 4 - Radio WAVE, Radio Cesko, Radio Leonardo and Radio D-dur are

provided by Czech Radio. These programs are also transmitting via DVB-T and Internet.

The public Czech Radio offers podcasts, mp3-downloads and streams of their program. The private Station Evropa 2 offers also podcasts and more than 25 analogue radio stations stream their program.

Mobile content

There are three mobile network operators; Eurotel, T-Mobile and Vodafone.

5. Denmark

Broadband-based media and TV

Main stakeholders in the TV and Broadband marketplace:

- Free-to-air/free-to-view analogue and digital television channels: Kanal 4 (TV Danmark), Kanal 5, The Voice, TV 3, 3+ (privately owned); TV 2, Zulu, DR 1, DR 2 (publicly owned)
- Pay TV services: Canal Digital (DTH and cable), Canal Plus Premium (DTH and cable) Viasat (DTH and cable), TDC Kabel TV (cable), Telia Stofa (cable)
- IPTV services: TV2 Sputnik (FTTH and DSL), FTH Bredband (FTTH), TDC TV (DSL)
- Incumbent telecommunications operator TDC Tele Denmark which offers cable and DSL broadband in addition to its cable television and IPTV services
- Alternative DSL provider Tele2 on the incumbent and its own network, which also provides mobile, fixed and IP telephony
- Alternative provider Telia, which offers DSL while its subsidiary cable operator Telia Stofa supplies cable broadband access, in addition to cable television services and telephony
- Cable operator A+ which offers ADSL and fixed wireless broadband, and telephony, in addition to cable broadband
- Telecoms regulators: IT-og Telestyrelsen (ITST); government body National IT and Telecoms Agency

Denmark has more bandwidth per inhabitant than any other country according to findings from ITU (approximately 35Mbps per head in 2004). The country boasts a high level of broadband penetration. The broadband market has developed significantly despite the government's low intervention approach – preferring initiatives and public funding rather than a set of guiding regulations. There were an estimated 1.35m broadband connections at the end of 2005. DSL is the dominant broadband technology, accounting for 62 per cent of broadband connections at the end of 2005; cable accounted for 29 per cent.

The second largest broadband provider after the incumbent is Telia, followed by Telenor's Cybercity. Telia has found some success in gaining market share from the incumbent in the cable broadband market. The incumbent stands out in a European perspective, since it also owns a cable infrastructure, making resistance by competitors all the more difficult. Cybercity has proved a competitor in the DSL broadband market, finding success through unbundling of the incumbent's local loop (ULL). Denmark was one of the first countries in Europe to introduce ULL in 1998. Despite its early introduction, there were still only 140,000 unbundled lines at the end of 2005.

Databox: Denmark

2005		*Denmark*	*Europe*
PC penetration per household	%	85.5	59.9
Internet access per household	%	81.3	46.2
Broadband access per capita	%	24.8	12.6
Digital TV (free and pay)	%	18.6	30.6
Games : online-capable video consoles	%	15.9	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	1.2	
Music: a la carte download revenue	€m	1.3	108.9
Music: number of single downloads	000s	953.0	
DAB: number of services	units	17	27.4
DAB: coverage	%	99.0	32.9
Mobile: penetration	%	100.7	97.2
Mobile: 3G penetration	%	2.1	11.0
Mobile: music revenues	€m	0.23	59.3

Sources : Screen Digest, ITU, Goldmedia

The first **IPTV service**, FTH Bredband launched in December 2002, followed by TV2 Sputnik's nationwide offering in March 2005. The incumbent TDC responded in May 2005 with its IPTV service as part of a triple play package, initially available in 19 communities. Operator Dansk Bredband has a IPTV service distributed over fibre expected to launch in September 2006.

Digital radio

Denmarks Radio (DR) is the public broadcaster and in general it still dominates the radio market. On average local radio stations have a combined market share of almost 30 per cent. In some regions the local stations have a combined market share higher than DR. In 2003 radio frequencies were auctioned. Talpa Radio International and Sky Radio bought most of the frequencies. Due to financial problems Sky Radio stopped its involvement in the Danish radio market in 2005.

The coverage of the national and the two regional networks will be increased to reach nearly 100 per cent during 2006 and 2007. 17 programs are transmitted (including a lot of digital only stations). The DAB digital Radio market in Denmark is growing (Sales of DAB radios: 200,000; listeners: 450,000 - April, 2006). The number of listeners is expected to reach nearly one Million by the end of 2006. The commercial target is to sell another 200,000 DAB radios in Denmark during 2006.

DR runs thirteen Digital Audio Broadcast (DAB) stations and eleven additional web radio stations and an extensive website, a version of which is accessible via mobile phone. DR also offers podcasts.

Radio 100 FM offers music downloads and NRJ, Radio 2, The Voice and Radio 100 FM stream their programme.

Mobile content

There are four mobile network operators; 3, Sonofon, TDC and TeliaSonera.

Denmark has over a dozen MVNOs, largely budget operators such as Tele2, easyMobile and debitel.

Of the four network operators, only Sonofon has not deployed a 3G network. 3 is reported to be in the process of upgrading its network to use HDSPA. TDC is involved in a DVB-H trial.

6. Estonia

Broadband content and television

Stakeholders in the Estonian digital marketplace include:

- The terrestrial broadcasters ETV, TV3 and Channel 2.
- The cable industry, in which Starman and STV are the leading players.
- The transmission company Levira (interviewed), operator of a pilot DTT service.
- Viasat, which is owned by Sweden's Modern Times Group (MTG) and operates a satellite-delivered pay-TV platform.
- The incumbent telco Elion (interviewed), operator of the country's first IPTV service.
- The regulatory Estonian Broadcasting Council (RHN).
- There are three mobile network operators; EMT, Elisa and Tele2.

Estonia has a well-earned reputation for early adoption of new technologies, with 60 per cent of people aged 6-74 being Internet users as of mid-2006 and a broadband penetration (13.3 per cent) above the average EU25, being the only new Member State in that case.

Much of the recent progress in Estonia's TV industry has been down to the activities of the leading telco and IT provider Elion, which is owned by the listed company Eesti Telekom. It entered the cable sector in May 2005 by jointly launching analogue and digital TV services, and in doing so became the first triple-play operator in the country. Elion also launched **Estonia's first IPTV platform in April 2006**. Within two months **DigiTV** was already available in 35 towns and larger settlements and had secured 7,000 subscribers. By 2010, the telco expects to be offering triple-play services to up to 160,000 homes.

Elion's move into digital broadcasting has prompted Starman and STV, the country's two leading MSOs, to also launch digital TV services and become triple-play companies. Both are expected to introduce such additional services as VoD and PPV in the near future.

The transmission company Levira, which is backed by Télédiffusion de France (TDF), has meanwhile played a leading role in efforts to introduce digital terrestrial broadcasting into Estonia. Although the development of a trial service it launched in May 2004 was put on hold 18 months later, Levira was awarded frequencies for three national multiplexes at the beginning of 2006. If all goes according to plan, a full DTT service employing MPEG-4 compression will make its debut in November 2006.

DTH services have been available in Estonia for some time but do not attract a large number of subscribers. MTG's pay-TV channel TV1000, for instance, was watched in only around 4,000 homes in Q4 20005.

Databox: Estonia

2005		*Estonia*	*Europe*
PC penetration per household	%	43.1	59.9
Internet access per household	%	36.1	46.2
Broadband access per capita	%	13.3	12.6
Digital TV (free and pay)	%	8.5	30.6
Games : online-capable video consoles	%	0	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	108.7	97.2
Mobile: 3G penetration	%	0	11.0
Mobile: music revenues	€m	0	59.3

Sources: Screen Digest, Goldmedia, EC, ITU

Digital radio

The public service radio station Eesti Raadio (ER) broadcasts on four different channels (general info channel, the commercial wing for young listeners, the classics channel and the Russian channel). There are 18 private radio stations, most of which are situated in the region of Tallinn. Only the four programs of ER are transmitted nationwide. The radio market is dominated by foreign media companies: Sky Media Group (SKY RADIO, SKY+, RUSSKOJE RADIO); Trio Group (US-Metro Media and Estonian businessmen; KUKU, UUNO, ELMAR, EEVA, RAADIO 100, KATJUSCHA); Modern Times Group (Sweden, STAR-FM, POWERHITRADIO). In the 1990s a lot of stations were founded. The advertising market is too small, so more than ten stations closed. Up to now there has been a keen competition on the radio market.

Currently, there is no interest in implementing T-DAB networks or stations in Estonia but there is one experimental T-DAB transmitter which has been working since 2000. Estonia will not submit T-DAB requirements during the RRC06. Nearly all radio stations stream their programmes.

Specific issues

One of the biggest problems mentioned is **content rights**. It is reported that channel providers are confused as to what contract conditions should be applied in the case of IPTV. Some stake-holders are not yet sure of the content rights that would apply to digital terrestrial services, and in particular those that are currently not delivered by cable and/or satellite. Furthermore, they emphasised that there is still insufficient legislation in place to address the licensing of digital channels.

The lack of clarity with rights extends to 3G mobile TV services. It is reported that some content providers have been reluctant to provide mobile rights for their services or are charging excessive fees.

Important developments in the legislative field can be expected in the near future. If enacted, a new law on public service broadcasting will allow ETV to add two thematic channels, offering 24-hour news and cultural/educational programming, to its existing single national channel. This will help provide additional content for Levira's soon-to-be-launched DTT platform.

Amendments to the existing 1994 Broadcast Law, or a new piece of legislation, may meanwhile result in changes to the modus operandi of TV3 and Channel 2. The two commercial stations currently constitute a duopoly, with no competition allowed against them on a national level. As a result of this privileged status they may have no incentive to launch digital TV services.

It is generally believed that ETV, which no longer carries commercials, is insufficiently funded to produce content for digital services. Action will be required by the government to alleviate its financial difficulties.

There is also a **technical challenge involved for stakeholders such as Elion to upgrade their infrastructure to ADSL2+ technology**. Even so, it expects its IPTV service DigiTV to be available nationally by the end of 2006.

7. Finland

Broadband media and TV

Main stakeholders in the Finnish TV and Broadband marketplace include:

- Principal free-to-air/free-to-view analogue and digital channels: YLE-1, YLE-2, YLE-24 (publicly owned); MTV 3, Nelonen, Sub TV, Urheilukanava (sports), The Voice (privately owned)
- DTT free-to-view platform: Digita Oy (owned by international TDF Group)
- Pay TV services: Viasat (DTH and cable), Canal Digital (DTH and cable), Canal Plus Premium (DTH and cable), SW Television / Welho (cable), Sonera Oyj (cable), Tampereen Tietoverkko Oy (TTV) (cable), Oulu TV (cable), Turun Kaapelitelevisio Oy (cable)
- IPTV services: Maxinetti (operated by Maxisat), aland TV (Alands Datakommunication), DNA TV (operated by Finnet)
- Incumbent operators TeliaSonera Finland and ILEC Elisa Communications which provide broadband access via DSL and telephony. TeliaSonera offers cable television services as Sonera Oyj and also Elisa as TTV
- Cableco SW Television / Welho which offers broadband internet access via cable and ADSL in addition to cable television and telephony services
- Finnish Communications Regulation Authority (FICORA)

Finland had just over one million broadband connections at the end of 2005. The take up of broadband DSL has been fragmented, with different regions adopting the technology at different rates. Cable infrastructure is developed in urban areas yet remains less prevalent than DSL which is the dominant form. Approximately one in every eight broadband connections was cable at the end of 2005. Alternative solutions such as powerline broadband, fixed wireless and broadband via satellite have experienced limited growth, with the total 'other' broadband connections at the end of 2005 reaching just below 7,000.

IPTV services have already appeared, with DNA TV service, operated by the Finnet consortium of operators, the latest to launch in February 2006. Its competitors, Maxinetti, and Aland TV operate only in restricted regions, in Helsinki and the Aland Islands respectively. Canal Digital expects to launch an IPTV service during 2006.

Mobile content

There are three mobile network operators; Elisa, Finnet and TeliaSonera.

In addition, there are around 10 MVNOs (mobile virtual network operators), mostly budget MVNOs. Jippii is the MVNO started

Databox: Finland

2005		*Finland*	*Europe*
PC penetration per household	%	65.8	59.9
Internet access per household	%	60.0	46.2
Broadband access	%	22.4	12.6
Digital TV (free and pay)	%	42.9	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	15.9	18.0
Movies : online revenues	€m	0.1	2.8
Movies: number of downloads/streams	000s	29.2	
Music: a la carte download revenue	€m	2.6	108.9
Music: number of single downloads	000s	2,546	
DAB: number of services	units	13	27.4
DAB: coverage	%	40.0	32.9
Mobile: penetration	%	99.6	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	0.33	59.3

Sources: Screen Digest, Goldmedia, ITU, EC, IFPI

by the mobile content company of the same name.

With Nokia based in Finland, a thriving community of mobile companies (including mobile content companies) has grown up around the world's leading handset supplier. Nokia itself has made various forays over the last few years into content, although it has so far failed to replicate its success in the handset arena into equivalent success in the content sector. Recently, Nokia has made a number of acquisitions of content companies and it is apparent the handset giant is moving into mobile content aggressively. Acquisitions include full track mobile music service provider LoudEye and mobile mapping company gate5.

Examples of other Finnish mobile content companies include:

- Mobile content service providers FirstHop and Mobile Avenue.
- Portals WES and Jippii
- Mobile games companies Mr Goodliving (acquired by RealNetworks) and Digital Chocolate's European operations, previously independent mobile games producer Sumea.

The network infrastructure provider Digita won a DVB-H licence, and a commercial service will launch before December 1 2006. The company will build and manage the network, but not provide programming.

All three of the network operators have launched 3G services, and Elisa has launched a commercial HSDPA (3.5G) network.

Digital radio

The Finnish radio sector is characterised by a dual system of both public and commercial broadcasting. Only one nationwide private radio (Radio Nova) exists and has a listening share of 12 per cent. The public radio network (YLE) broadcasts national and regional radio stations and still dominates the market. International ownership has significantly increased. Major international players like NRJ, S.A., Metromedia International and SBS Broadcasting are all active in the Finnish radio market. Ten licenses for special broadcasting services with a regional reach are issued for programming such as for example youth music, classical music, Russian language programmes. (Source: Association of Finnish Broadcasters, YLE, Ministry for Transport and Communications)

DAB-transmissions by YLE were ended in August 2005. Instead of DAB, DVB-H is now the platform of choice. Only a few hundred DAB receivers were sold, while possible DAB-reception still covers 40 per cent of all Finland. The four digital channels by YLE are now being broadcasted on DVB-T and partly via the Internet. Three commercial channels offer radio via digital TV as well. Visual radio was and is tested via DVB-H (see chapter on mobile radio).

8. France

Broadband content and television

The television market is shaped by TF1, Europe's most dominant broadcaster (55 of advertising market share) and the other commercial broadcaster M6. Both have developed or acquired a number of successful digital channels (e.g. LCI and Eurosport are part of TF1 group). France Television group has a variety of channels (France 2, France 3 and France 5, plus France 5 and other niche channels on digital networks). The two pay TV operators, Canal Plus and TPS, are operating mainly on DTH, but they are also distributed on cable, DTT and IPTV. They have announced their intention to merge back in December 2005 and the clearing process by the Ministry of Economy has just come to a positive conclusion early September, with the new entity accepting a list of conditions to prevent dominant position on the market.

France's broadband lines reached just shy of ten million at the end of 2005 and broadband's penetration is relatively high in European terms. Unbundling of the Local Loop (ULL / LLU) is well progressed and offers healthy competition to the incumbent in the country with at least five major operators that fully or partially unbundle France Telecom's exchanges. There were 3.35 million unbundled lines as of June 2006. Free Telecom and Neuf Cegetel are the two network operators with the largest number of ADSL customers on unbundled lines, with an estimated three million unbundled customers between them at the end of March 2006. The principal cable operators, UPC France and NC Numericable also offer resistance to France Telecom's dominance of the market. Both offer discount triple play packs (through ISP Noos and Numericable respectively) for subscribing to cable broadband, television and telephony services.

DSL is the most popular form of broadband technology in the country. France has several next-generation television services delivered over ADSL2+ unbundled networks, with most offering VoD and PVR capability in addition to distribution of digital television. Club Internet television (operated by Club Internet/T-Online France) launched most recently in August 2006, offering a triple play package including broadband and telephony. Neuf TV (operated by Neuf Cegetel) started in November 2004, while Free Box (operated by Iliad-owned Free Telecom) and Orange's television service (originally branded MaLigne TV) both launched late 2003. Neuf Telecom merged with Cegetel in August 2005 to create Neuf Cegetel. Neuf Cegetel also offers a triple play package while Orange now only offers broadband bundled with its television service, with VoIP telephony as an additional extra. As of 1 June 2006 France Télécom's Orange (mobile), Wanadoo (consumer ISP) and TV services integrated under the Orange brand. Alice, owned by Telecom Italia, also offers

Databox: France

2005		*France*	*Europe*
PC penetration per household	%	52.0	59.9
Internet access per household	%	39.0	46.2
Broadband access per capita	%	16.0	12.6
Digital TV (free and pay)	%	34.7	30.6
Pay TV PVR subscribers	%	0.7	0.7
Games : online-capable video consoles	%	18.4	18.0
Movies : online revenues	€m	0.7	2.8
Movies: number of downloads/streams	000s	257.1	
Music: a la carte download revenue	€m	9.4	108.9
Music: number of single downloads	000s	8,600	
DAB: number of services	units	29	27.4
DAB: coverage	%	25.0	32.9
Mobile: penetration	%	79.4	97.2
Mobile: 3G penetration	%	3.4	11.0
Mobile: music revenues	€m	11.7	59.3

Sources : Screen Digest, Goldmedia, ITU, EC, IFPI

triple play with its Alice Box IPTV service that launched in November 2005. The TPS and Canal Plus pay TV services are both also available over DSL.

Digital radio

French radio also consists of a dual system: the public radio network Radio France and the private radio sector. Three public broadcasting companies exist, Radio France, RFO for the distant territories and RFI for French expatriates. Commercial radio is mainly in the hands of groups such as RTL and NRJ.

At present about 25 per cent of France households can already receive T-DAB. However, France has decided to implement T-DAB and DVB-T (7 MHz channel) in Band III. But, the five biggest French radio broadcasters are vehemently opposed to using DAB. According to the French network provider VDL, there are six public services and 23 commercial radio stations are on air in Paris over DAB (most simulcast). DAB networks have also been launched in Lyon, Marseille, Nantes and Toulouse.

CSA authorized a T-DMB trial in Paris (start: October 2005, duration: 6 months, broadcast radio and television programs, all simulcast). Most analogue stations are streaming their programme via the Internet.

Mobile content

There are three mobile network operators; Bouygues, Orange and SFR (a joint venture between Vivendi and Vodafone).

In addition, there are over 20 MVNOs (mobile virtual network operators) including music affiliated Universal Music Mobile, Virgin and NRJ as well as several budget MVNOs, such as Debitel and Tele2.

France is a major market for mobile content in Europe. However, of the three operators, only SFR and Orange have launched 3G networks. Network operator Bouygues offers i-mode content to users. The Orange group of network operators is based in France.

There are French companies involved in producing content for all of the major content categories. Index Multimedia (previously 123 Multimedia) is one of Europe's largest mobile content aggregators. France's Musiwave is Europe's leading mobile music service provider, although the company was acquired by Openwave (US) in January 2006.

Mobile TV services are offered by SFR (in conjunction with broadcaster Canal Sat) and Orange. SFR and Canal Plus have been involved in a DVB-H trial, although spectrum will not be available until 2007. French network infrastructure company Alcatel is to launch a satellite to broadcast S-band DVB mobile TV services.

France occupies a key role in the mobile gaming sector. Many publishers and developers are based in the France:

- Major mobile games publishers Gameloft and In-fusio are based in France. Gameloft is easily the largest mobile games publisher in terms of head count, with over 900 employees worldwide. Console and PC games publisher Ubisoft is a major shareholder in the company.
- developers, including Kaolink, Magic Productions and Infra Worlds.

Issues

The copyright issue is significant when porting content onto mobile platforms. There are reports of conflicting rights for the French Open tennis tournament (Roland-Garros): the 'mobile' rights were acquired by SFR whilst the 'broadcasting' rights are traditionally controlled by France Television. The latter was then unable to carry out a mobile TV experiment in partnership with another mobile operator, Orange.

Before mobile TV, the biggest 'mobile' revenue or even 'interactive' revenue related to television remains 'low-tech' premium-rate voting or chating through mobile phones during quiz shows and reality TV shows. Here some broadcasters consider that the revenue share retained by mobile operators is too high, to the extent that it sometimes jeopardizes the very profitability of an initiative and discourages marketing efforts. They believe such a high share is not justified, reflects a dominant position and a market that is not competitive enough.

On the other hand, unlike in other countries (Germany in particular) there are reports of good co-operation between TV producers and broadcasters when it comes to exploiting programme on online and mobile platform. There are several reports of successful mobile co-exploitation of short programme hits like Kaamelot (CALT production, M6) or Samantha (France Television).

Digital publishing

General

Publishers and ISPs formed a group in mid-2005 to launch a micro-payment service, Kiosque Internet Plus, which aimed to facilitate the sale of online content by offering buyers a way of aggregating payments. In the first six months, the service had a turnover of €6.3m, in 2.7m transactions with an average value of €2.3.

Newspapers

The online site of Le Monde, lemonde.fr, concluded a partnership in 2006 with Sporever for the sharing of content to cover major sporting events. Lemonde.fr also signed a deal with the dating site Parship.fr, which is owned by German publishers, Holtzbrinck. Lemonde.fr has also had a hosted blogging service for subscribers since 2004, making it one of the first newspapers in the world to offer this service. Readers' blogs are listed and ranked on the site next to blogs written by the paper's own staff, without any distinction.

In April 2006, the free press publishing group Spir Communication, which is owned by Ouest France, reported a 111% annual rise in revenues from its Internet activities, which include the property classified site Logic Immo, the general classifieds site Top Annonces, and the leading French automobile site Caradisiac. This compares with a 3.2% overall rise in turnover.

The classified newspaper ParuVendu also reported a 47% increase in revenue from its online operations, compared with a rise of 9.2% overall. Internet revenues amounted to €12.6m, or 3.7% of the total.

Magazines

Hachette Filipacchi Medias (HFM), in partnership with Yahoo, announced the launch in March 2006 of Public TV, a web based video service, based on the content in its weekly celebrity magazine, Public. Public TV content is produced by HFM in its news department studios, and features short daily and weekly shows and free video clips. HFM has also started a digital kiosk service for selling its magazines.

Lagardere, which owns HFM, has stated that it expects magazines overall to gain a 10-15% share of online advertising globally by 2010, and its own magazines to have a 0.5% share in 2010 and 1% in 2015.

Magazines are also deploying content on mobile phones, with men's titles in the forefront. Services have been launched on Orange World, Vodafone Live and i-Mode by HFM (Maximal) and Emap (FHM, Max).

HFM and Sporever announced the creation of a collective company to develop audiovisual services for mobile phones in March 2006. Its projects will be focused on providing practical information, news coverage and interviews, and games on mobile phones..HFM will contribute brand and editorial content and Sporever its expertise in audiovisual production and marketing in mobile services.

Books

In July 2006, a deal was announced between Nouveau Monde and SNCF to make audio extracts from books available from the SNCF website in a downloadable form for listening on MP3 players. For the summer, this will be on a free trial basis, and the selection of titles changes each month.

In June 2006, the publisher La Martiniere, filed suit against Google France and Google, for violation of copyright in connection with the company's scanning and digitisation programme with international libraries.

User-generated content

Blogging is extremely popular in France ; according to Mediametrie, in the first quarter of 2006, 7.3m Internet users read at least one blog in the previous month, and 3.2m Internet users had already created a blog, representing more than 1 in 10 of all users, while 4m had made at least one post on a blog. The majority of bloggers are young (47% are 16-25 years old and 35% aged 11-15), and 54% are female.

Electronic publishing issues

It is reported that labour market regulation can make it difficult to adjust skill requirements to the new services publishers need to deploy.

Specific issues

DRM interoperability

A new French Copyright Act (Loi 'Droit d'auteur et droit voisin' - DAVSI) implementing the EU copyright directive (2001/29/EC), was passed during the summer of 2006. So far, none of the Members States legislations had specifically addressed the question of interoperability.

In regard to the issue at hand, the draft – aiming at opening up the market for digital music - originally arranged for a broad DRM-interoperability provision. DRM technology providers would have been *forced* to interoperate with each other by handing over exclusive copy-protection technologies. Whereas some stakeholders were in favour of such regulation, others criticised that such a bill would not require DRM technology vendors to provide their own interoperability features, but would give anyone with a proprietary playback technology the right to demand that major companies provide "interoperability" with it.

After several modifying proposals, the interoperability provisions have been extensively restricted by the French Senate. The compromise final bill provides for companies to share the technical data essential to interoperability (see more details in the legal section of the main report, 3.1.4.5).

Piracy

Resilient levels of peer-to-peer piracy are still referred to as the main factor holding back legitimate online content business.

ISPs were long accused by content-owners of not fighting illegal peer-to-peer in an effective way. However a Charter on Online Music was signed by most ISPs, telcos and music publishers in 2004, under the auspices of the Ministry of Culture, agreeing to intensify the fight against piracy and the education of consumers.

However the new French copyright passed in the summer of 2006 has raised concerns throughout the right-holders community. An early version of the text included amendments, introduced by some individual MPs, that made peer-to-peer downloading legal, provided a so-called 'global licence', a blanket fee, be paid through the ISP. Only consumer associations, some internet users associations and one collecting society of musicians were backing the idea. The French Government, supported by all other trade bodies of the creative industries, entered a Parliamentary battle to have the article removed. The new law still include penalties for P2P copyright infringement but they are, according to creative industries trade bodies, much less deterrent than what they used to be.

VOD

France is one of the Member States where VOD is already well developed with a number of VOD services launched pay TV operators (Canal+, TPS), free-to-air operators (TF1, France Television), broadband operators (France Telecom, Free), independent VOD operators (Glowria). Those are focusing on feature film but there is also an array of specialist players like state TV Archive INA (www.ina.fr) or TV documentary specialist Vodeo/ La Banque Audiovisuelle (www.vodeo.fr).

Case study: INA

The French National Institute for Audiovisual Archives (INA) put 100,000 audiovisual documents online on 27 April 2006, to be viewed by the mainstream public and not only researchers or TV professionals. The material includes 3,000 hours of televised news from the last 30 years, as well as magazines, sports, talk shows, cult series etc. This represents a third of all the archives of public TV and radio broadcasting in France. 80 per cent of the catalogue can be viewed for free, the most valuable document being available for VOD or download-to-own. VOD tariffs go from €1 to €12 depending on genres and duration. Prepaid schemes are available, as well as 'Internet Plus' allowing customers to pay through their ISP bill. INA chose to protect content with Thomson watermarking and DivX encryption technology. Some content can be downloaded on PCs, MP3 players or even burned on DVDs.

One of the main challenge in exploiting archive material is the clearing of rights, but INA managed to clear underlying rights for online and mobile exploitation with collecting societies (SCAD, SCAM, SACEM) which, globally, will receive 46 per cent of the revenues. Technical costs and taxes are estimated to take 22 per cent of revenues; the rest (32 per cent) will be re-invested in digitisation of the rest of the archives, which should me made available entirely by 2015.

So far the new service has been hugely successful. The INA website was expecting to double its average audience from 350,000 to 700,000 visits per months with the new service but the first *day*, more than six million requests to connect were made. Between 27 April and May 1st, 60m connections were attempted, showing enormous curiosity. One of the most appealing service to mass market visitors is the ability to download the broadcast news of your day of birth (between 1977 and 1996 so far).

Case study: vodeo.tv

La Banque Audiovisuelle (LBA) was created with the aim of gathering, organising, managing, and enhancing the value of television productions that have been aired and in keeping with the contractual obligations binding each program. LBA has created vodeo.tv as an independent VOD service for TV documentary programmes to the French-speaking market.

LBA claims there is a market failure in the documentary economy, that VOD could help to solve. About 2,300 documentary programmes are produced each year for French TV; according to LBA no more than 6 per cent are published on DVD. Despite the growing success of non-film DVDs, only about a hundred are distributed in specialist stores like FNAC. Therefore there is no significant secondary market for most TV documentaries – on a thematic channel, a 52' programme on some years old can be sold for as little as €1,200.

On vodeo.tv 2,500 programmes are available for VOD or download-to-own, or to be burnt on a DVD on demand. A full package service offered to documentary content owners (vodeo.tv manages rights clearing and digitisation for them, against revenue sharing)

The business model involves no minimum guarantee to the content owner, who generally receive 50 per cent of the net revenues. Once distribution is agreed (generally on a non-exclusive basis), Vodeo supports mastering and storage costs, and then keeps 33 per cent of consumer revenue. The average cost of putting a programme online for sale is estimated by Vodeo at €250 (including digitising, clearance etc. but not counting hosting costs).

Agreements with producers and broadcast include some success stories like *Homo Sapiens* or *L'Odyssee de la Vie* (Transparence Productions) with more than 1,600 downloads already. On the latter programme, France Television Distribution was granted seven-days IP exclusivity after first broadcast, and then the programme became available exclusively on Vodeo.tv.

The biggest challenges mentioned by LBA include: access to content rights (some French broadcasters tend to pre-empt exclusive new media rights when commissioning a documentary), clearance of underlying rights (particularly complex with archive material involving numerous copyright-holders, and resulting in many orphan works), and DRM interoperability.

LBA also points out the complexity of collective rights management for an independent player, the necessity to deal separately with a great number of them (SACEM, SCAM, SDRM, ADAGP, CESAM) and the level of royalties asked by them, which, LBA claims, is in many cases too high considering their business model and niche-oriented activity.

Case study: all-industry agreement on 'on demand cinema' or 'VOD'

Signed by BLIC (cinema trade body), BLOC (ditto), ALPA (anti-piracy trade body), ARP (association of independent producers), SACD (collecting society of authors), Canal Plus, France Televisions, AFA (ISP trade body), France Telecom, TF1, etc.

For the main part the agreement mirrors existing provisions applying to other forms of exploitation in France:

- Windows: parties agree that no movie exploited in French theatres should be distributed in VOD before 33 weeks. The window can then be closed by rights-holder if at some point it conflicts with broadcast (payTV) windows.
- Subscription VOD offerings should be limited to catalogue films only (released for more than 36 months) and should not exceed 15 new movies per month.
- There must be a revenue sharing in which rights-holding producers should get a minimum of 50 per cent of revenues for new releases, and 30 per cent for catalogue films.
- VOD operators must dedicate to acquiring rights for or coproducing French and European films, for an amount that will be proportionate to their sales/revenues: from 5 per cent (when the revenues are below €3m) to 10 per cent (when revenues are in excess of €5m).

Two French-specific challenges were mentioned by stake-holders.

First because many French film and programme rights are concentrated in a small number of big catalogues (Canal+, TF1, Gaumont) with exclusive new media rights, independent producers and non-broadcast would-be VOD operators (telcos, indies) fear that those could inhibit or pre-empt VOD. The ongoing merger between Canal+ and TPS is adding to their concern. However this concern does not seem to be as accurate as, for instance, in Germany and is not hindering market take-up so far. Non-broadcast VOD operators are able to access a variety of VOD rights for French films and programmes. Besides the stake-holders in the TPS/Canal+ merger have accepted a long list of obligations, restricting their ability to hold exclusive new media rights.

Second, because of the legacy of French copyright law and the structure of collective management of rights (several specialised collection societies), the clearing of underlying rights for new media exploitation is particularly complex in France, notably for catalogue works and archive material. Big players and institutions like INA manage to overcome this difficulty and struck global deals with collecting societies, but niche independent players report this as one big concern.

Finally, the all-industry agreement on VOD of December 2005 can be considered as a best practice and was mentioned by stake-holders outside France as an interesting precedent.

9. Germany

Broadband content and television

Germany is one of the biggest TV-markets worldwide. It is characterised by a dual system of both public and commercial broadcasting. The public service broadcasters ARD (joint organisation of nine regional broadcasters) and ZDF are financed primarily by licence fees (and to a smaller extend from advertising and sponsoring revenues). Commercial television is dominated by two media groups, ProSiebenSat.1 Media AG and the RTL Group (part of the Bertelsmann AG)

Commercial broadcasting is regulated by the federal states in Germany. The regional regulatory authorities ("Landesmedienanst alten") are responsible for the allocation of broadcasting licences and the supervision of the regulatory terms.

Generally the interviewed stakeholders think that there is rather too much than too less regulation in the media sector in Germany. Media regulation is considered to be far too complex (especially due to the federal structure) and outdated, meaning that regulation has not kept up with digitisation and convergence.

Programmes of the two biggest commercial TV broadcasting groups reached a combined average audience market share of 47.3 per cent in 2005 compared to 43.8 per cent for the public channels. Besides the two big commercial groups and the public broadcasters a growing number of niche channels is emerging.

Some commercial broadcasters criticise that public service broadcasters are able to distort the market by buying premium programmes 'all rights'. They call for a precise delimitation between those areas where public service broadcasters may operate with public funds and those where they have to operate under the same conditions as their private competitors.

German pay TV is dominated by Premiere AG with 3.57m subscribers. Premiere has been the only pay TV company for several years.

Now German cable providers are beginning to persuade a strategy of vertical integration and try to attack the market leader with own pay TV packages. Cable network operator Unity bought the transmission rights for the German soccer league ("Deutsche Bundesliga") for the seasons 2006/07-2008/09, which were previously held by Premiere AG.

Telecommunications incumbent Deutsche Telekom AG holds the German soccer league IPTV rights from season 2006-2007 on and starts rolling out its IPTV service (combined with VDSL). Other players have just started commercial IPTV roll outs.

Cable network providers profit of the fact that more than half (53 per cent) of the German population receives television via cable. Satellite reception is used by 43

Databox: Germany

2005		*Germany*	*Europe*
PC penetration per household	%	73.0	59.9
Internet access per household	%	61.3	46.2
Broadband access per capita	%	12.7	12.6
Digital TV (free and pay)	%	28.9	30.6
Pay TV PVR subscribers	%	na	0.7
Games : online-capable video consoles	%	10.1	18.0
Movies : online revenues	€m	0.9	2.8
Movies: number of downloads/streams	000s	334.6	
Music: a la carte download revenue	€m	29.6	108.9
Music: number of single downloads	000s	21,000	
DAB: number of services	units	90	27.4
DAB: coverage	%	82.0	32.9
Mobile: penetration	%	95.8	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	10.5	59.3

Sources : Screen Digest, Goldmedia, EC, ITU, IFPI

per cent and four per cent watch TV over terrestrial antenna. At present the plan of the satellite provider SES Astra and the German commercial television broadcasters to encrypt all programmes (from 2007 on) is highly disputed.

With less than 20 per cent per cent of TV households being digital, Germany lagged behind most other western European countries in 2004. Most parts of the cable net are still not digital and not equipped for interactive services (no feedback channel). As a consequence digital television in Germany is mainly received via satellite and interactive television has not emerged yet.

Because of the huge free TV market with more than 30 channels a (digital) pay TV market could only be established with effort. A higher digitisation rate in other countries is mainly due to a strong development of digital pay TV platforms and a smaller choice of free TV programmes.

Today there are no digital interactive TV services in Germany although the Multimedia Home Platform (MHP) has strongly been supported by the public service providers for a couple of years.

In Germany mobile TV, television on mobile handsets, first started in November 2004 when Vodafone's UMTS-Service "MobileTV" appeared. T-Mobile's UMTS-based TV-service followed in September 2005. The first commercial mobile-broadcasting-project "Mobiles Fernsehen Deutschland" (MFD) was launched by mobile operator Debitel a few days before the football world cup started at the end of May 2006. It is based on the DMB-standard as well as the mi friends-project which started a friendly user trial in Munich in June 2006. The mobile network operators in Germany, T-Mobile, Vodafone, O2 and E-Plus however support the competing DVB-H-standard. Trials have been started during the world cup as well. The commercial DVB-H roll-out will start in 2007.

German production companies mentioned that unbundling of rights would drive innovation at production companies as buy-outs to TV channels are the prevailing form of contracts at the moment. Therefore the incentives for production companies to invest in the innovation of new digital interactive formats are limited as they cannot generate additional revenue.

Broadband-based media

Broadband penetration in Germany remains around the European average. The country lacks cable penetration following the sale of Deutsche Telekom's cable network to private regional cablecos. Large sections of the existing cable infrastructure have yet to be upgraded to support bi-directional services and interaction between cable companies is made difficult by the different categories of operator. The old incumbent network is operated by a mix of larger Level Three and over 4000 smaller Level Four cablecos. Cable internet broadband lines accounted for about 2 per cent of total broadband connections at the end of 2005.

DSL is by far the most dominant broadband technology in Germany. Unbundling of the Local Loop is well advanced, with Arcor as the largest alternative network provider – the company had one million unbundled customers at the end of 2005. Telecom Italia-owned Hansenet, Net Cologne and Versatel are the other principal telcos which unbundle. According to the regulator, there were over 3 million unbundled local loops at the end of 2005. AOL, United Internet and Freenet are three other third party DSL providers which use the incumbent wholesale product.

Incumbent Deutsche Telekom launched its triple play T-Home package in August 2006. In its complete form, the package includes a PVR set-top box with DSL broadband access, VoIP telephony, movie/TV video-on-demand and broadcast/pay TV digital channels, including premier soccer viewing. The incumbent aims to offer the service to residents in over 50 cities by end 2007. Deutsche Telekom launched its T-Online Vision VoD service in 2003 with movies downloadable to both the TV and PC (now HD movies are available to the PC). The second main IPTV service is Alice homeTV operated by Hansenet, which offers digital television and a VoD library, and began in May 2006 in Hamburg and Lubeck. IPTV services have emerged with new upgraded line technologies such as ADSL 2+ and VDSL. Previous to the rise of IPTV in 2006, only cablecos offered triple play including television, phone and broadband, though mostly without next-generation services such as VoD, owing to the lack of upgraded two-way lines.

Digital radio

The German radio sector is dominated by the 59 public ARD-associated radio stations with 56.8 per cent of listener share. The radio market is strongly regional in nature and has a complex ownership structures. Only less than ten radio networks are receivable nationwide. In 2006 about 340 analogue radio stations can be counted.

Despite the strong standing in terms of audience share, the public service radio stations enjoyed less than one third of advertising revenues. Nevertheless the radio stations in Germany have a low financial strength due to the highly fragmented radio market that mainly consists of regional small or medium-sized operators. This prevents them from investing into new digital interactive services.

The dominant transmission technology is FM (over 90 per cent). AM, Satellite or Digital (DAB) are not relevant at present. Indeed about 85% of German households are located within the service area of T-DAB transmitter networks, but the number of sold DAB receiver is well below one million. Because of the high costs for DAB transmitting a part of the DAB spectrum is still remains unused.

Since 2005 radio programs are transmitted over DVB-T in Berlin (6 public, 28 private). All public radios, a dozen private station and also internet only stations are available over the internet. A lot of radio stations offer podcasts (SWR; RTL; rs2). Visual radio on mobile phones which supports interactive services is offered by roundabout 30 German commercial radio stations.

In 2005 the total net incomes of media companies for advertising in Germany constituted €19.7bn. With a share of 53.3 per cent the press is the most important media for advertisement in Germany. It is followed by TV with 19.9 per cent of the total advertising expenditure. The TV advertising market is stagnating since 2002. Radio on the third place has a market share of 3.3 per cent. Figures for online advertising revenues range from one to four per cent of total advertising investments, depending on different definitions which sometimes do not include ads from search engines. So far the share of online advertisement is still low, but nevertheless it is rapidly increasing.

Mobile content

There are four mobile network operators; E-Plus (owned by KPN), O2 (part of Telefonica group), T-Mobile and Vodafone.

Germany has over 30 MVNOs, largely budget operators such as Tele2, easyMobile and debitel. Schwarzfunk is the MVNO of internet social networking portal uboot.

Germany is one of the largest markets for mobile content in Europe. Reportedly (although figures are extremely hard to come by) the market for off-portal content is strongest in Germany. The most popular portals, Jamba and Zed, are owned by US and Spanish companies respectively. Network operator E-Plus offers i-mode phones and content to subscribers.

Germany has been one of the major centres for the trial and development of mobile TV services, in part because of the availability of appropriate spectrum. Start up company MFD has launched a DMB based service in conjunction with MVNO debitel. There has been a major trial of DVB-H technology timed to coincide with the World Cup in 2006. All four network operators have been working together to develop a DVB-H service, still currently in the trial phase, which covered 4 cities and carried 14 TV channels.

Germany is also an important territory for mobile games. Major publisher THQ bases its mobile operations in Germany, and Handy Games is a leading self-publishing developer.

All of the network operators have launched 3G services. Both Vodafone and T-Mobile now offer a commercial HSDPA (3.5G) service in certain cities.

Digital publishing

General

Germany has tended to be slow in terms of broadband take up compared with other major markets in Europe, though DSL connections grew rapidly in the second half of 2005.

According to a survey by the Forschungsgruppe in the first quarter of 2006, which asked users what they used the Internet for, 36% were reading political news. This accords with the high traffic achieved by sites such as Spiegel Online.

A study carried out by Stern during mid-2005 found that 5.7m 14-64 year olds who use the Internet from home are prepared to pay for online content, up from 4.3m in 2003. There seems to be a relationship between

length of experience online, broadband access and willingness to pay : only 21% of all users were willing to pay for content, against 34% of experienced users with a broadband connection at home.

A survey reported in April 2006, commissioned by The Association of German Magazine Publishers (VDZ), found that Internet users rated the websites of newspapers and magazines as of higher quality than those of broadcasters or online portal operators.

Newspapers

In October 2005, the daily business newspaper Handelsblatt launched a wiki on its site, intended to become an online encyclopedia for business terms to which anyone can contribute. Terms appearing in the paper will be linked to the wiki, which might eventually carry advertising.

A number of leading newspaper sites carry blogs by journalists, including Der Tagesspeigel, Suddeutsche Zeitung and Die Zeit.

The local daily newspaper Saarbrücker Zeitung (owned by Holtzbrinck) has developed a portal where readers can send information via SMS, MMS or email as well as via fax or phone, and is encouraging its readers to become so-called *leser-reporters* (reader-reporters) by sending in stories and photos.

Magazines

The Association of German Magazine Publishers (VDZ) has carried out a study into how publishers are seeking new sources of revenue, including books, events, products and services.

In November 2005, the VDZ published a survey of managers and editors of online sites of print magazines, which showed that 16 out of 20 had hired additional staff in 2005 and plan continued growth in 2006. None had reduced staff. Small publishers had hired the most employees. The growth in staff is taking place in order to increase breadth and depth of coverage and to establish multimedia services. Almost 85% of those surveyed believe editors will be using more multimedia and interactive content and also that user-generated content is becoming more important.

Books

The German book publishers' association, the Börsenvereins des Deutschen Buchhandels announced in May 2006 that it has commissioned a version of MPS Technologies' BookStore platform, which will be offered to publishers across Germany. The Börsenvereins aims to enable all German publishers to have access to a standard digital content delivery platform, preparing the way for a future in which all content will be available and saleable in electronic form.

Other

Newspaper publisher Hotzbrinck is one of the partners in a project to create a Franco-German search engine, Quaero, along with Siemens, SAP, Thomson Deutschland, Lycos Europa and the software subsidiary of Bertelsmann, Empolis.

10. Greece

Digital radio

There is no proper legal framework in place for radio broadcasting. While only 35 radio stations are licensed, estimates range between 800 and 1,200 local or regional stations all over Greece, as there is no data available.

DAB is not used today though there are plans to eventually use DAB.

Only few stations stream via the Internet.

Mobile content

There are four mobile network operators; Cosmote, Q-Telecom, TIM (Telecom Italia) and Vodafone. No MVNOs have launched in Greece.

Main issues

Broadband access: The sine-qua-non condition to envisage the development of a digital content market in Greece is currently not met, as broadband penetration lies far below the European average: about 1.5 per cent v. 12.6 per cent at end-2005.

Databox: Greece

2005		*Greece*	*Europe*
PC penetration per household	%	35.0	59.9
Internet access per household	%	22.7	46.2
Broadband access per capita	%	1.5	12.6
Digital TV (free and pay)	%	10.8	30.6
Pay TV PVR subscribers	%	0	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.0	
Music: a la carte download revenue	€m	0.2	108.9
Music: number of single downloads	000s	221.0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0.0	32.9
Mobile: penetration	%	90.3	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	Na	59.3

Sources : Screen Digest, Goldmedia, ITU, EC

11. Hungary

Broadband content and television

Stakeholders in the Hungarian TV marketplace include:

- The terrestrial broadcasters Magyar Televizió (MTV), RTL Klub and TV2.
- The cable industry, dominated by the MSOs UPC Hungary, T-Kábel and FiberNet.
- The DTH sector, served by the platforms UPC Direct and DigiTV.
- The national transmission company Antenna Hungária.
- The incumbent telco T-Com.
- The regulatory bodies ORTT (National Radio and Television Commission) (interviewed) and NHH (National Telecommunications Authority).

Hungarian television industry is well developed by regional standards, being served by almost 40 local language TV channels, many of them thematic; large cable and DTH industries; and an embryonic DTT sector.

IPTV services will make their debut in the country in the second half of 2006.

Hungary has been relatively slow to introduce digital cable TV, with the first services being offered by smaller operators rather than the main MSOs. However, T-Kábel launched a product in late 2005 that will eventually include such additional features as VoD. VoIP is meanwhile now offered by several operators including UPC Hungary, T-Kábel and PR Telecom, with UPC's service being available to over 900,000 homes in Q1 2006.

Digital DTH, on the other hand, is well established in Hungary. UPC Direct, which made its debut at the end of 2000, had almost 180,000 subscribers as of March 31, 2006. DigiTV, a Romanian-backed new entrant to the marketplace, made its debut in Q1 2006 and acquired 30,000 subscribers in only the first three months of operation.

T-Com, the Deutsche Telekom-backed incumbent telco, is trialling an IPTV service in three cities including the capital, Budapest. It plans to launch a commercial platform in September 2006 that will offer 50 TV channels and up to 500 VoD movies. Its subscriber target is 10,000 at the end of 2006 and between 50,000-100,000 a year later. Several alternative telcos are also planning to launch IPTV services in the near future.

The national transmission company Antenna Hungária operates Antenna Digital, an MMDS operation with around 60,000 subscribers in Budapest and environs. It is also overseeing an experimental DTT service launched in late 2004 that covers the capital and Kabhegy near Lake Balaton. A full DTT commercial operation is unlikely to make its debut before 2007.

Databox: Hungary

2005		*Hungary*	*Europe*
PC penetration per household	%	32.4	59.9
Internet access per household	%	27.8	46.2
Broadband access	%	6.1	12.6
Digital TV (free and pay)	%	8.4	30.6
Pay TV PVR subscribers	%	0	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	92.3	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, ITU, EC

Digital radio

Commercial radio existed even before the legal opening of the market in 1996, due to a liberal policy already in the late 1980s. International investors have bought the companies behind the two national commercial stations. While the public stations are allowed to send commercials too, private stations are obliged to fulfil certain quotas concerning the programming.

DAB-test transmissions are taking place. Most radio stations stream their programmes via the Internet.

Issues

The main issues in Hungary are :

- The regulatory framework
- The relatively low broadband penetration

Hungary was much slower to enact media legislation than other countries in Central and Eastern Europe. A fierce debate on how a future broadcasting landscape should look took place during the early 1990s, during which time a frequency moratorium prevented the launch of national commercial TV. This state of affairs helped the cable and DTH industries flourish at the time.

The eventual enactment of the **1996 Media Law** paved the way for the creation of the ORTT and launch of the national commercial stations RTL Klub and TV2. However, a decade later the legislation is seen as inadequate, holding back the introduction of digital terrestrial broadcasting and placing severe restrictions on the cable industry.

One stakeholder representing the latter identified a particular problem as being a **limit on the number of households which operators can provide services to**. Although this was raised from a sixth to a third of the total in 2004, it is still regarded as unnecessary and an impediment to consolidation.

Although IPTV is about to be launched in Hungary, it will operate under some level of legal uncertainty. Stakeholders planning to offer services are unsure how this will affect the new sector.

There is a "chicken and egg" situation in which there is insufficient distribution due to lack of proper content and vice versa. Essentially, those operators that have already introduced digital cable TV services have found there is little demand for them due to the already comprehensive nature of EBS packages. Clearly they need to identify "killer applications" for their new digital offerings, and these may ultimately be such additional services as VoD or even HD providing they are affordable to subscribers.

A similar challenge is likely to face the future IPTV and DTT sectors. However, **T-Com has already stated that it plans to include a VoD package in its soon-to-be-launch IPTV platform**, with the cost of receiving movies comparable to that of DVD rental.

12. Ireland

Broadband content and TV

Main stakeholders in the Irish TV and broadband market include:

- The free-to-air analogue broadcast channels RTE 1, RTE 2, TG 4 and TV 3
- Pay-TV company BSkyB which distributes via DTH and cable
- NTL Ireland and Chorus (both owned by Liberty Global) which provide cable television, broadband and telephony services
- Incumbent telco Eircom
- Alternative telco Smart Telecom which provides broadband and telephony over fibre and its unbundled DSL network
- Alternative telco Magnet Networks which provides IPTV, high-speed internet and telephony services over its fibre and unbundled DSL networks
- Alternative telco BT Ireland which provides internet and telephony services over local loops rented and unbundled from eircom
- Digiweb, an alternative telco which provides broadband internet via DSL, satellite and fixed wireless
- ComReg: the statutory body responsible for the regulation of the electronic communications sector (telecommunications, radiocommunications and broadcasting transmission) and the postal sector.

Broadband penetration remained low in Ireland at the end of 2005. Advanced IP services based on DSL technology such as IPTV are only offered by a small number of operators. Magnet Networks started offering IPTV to Dublin residents as part of its triple play packages in 2005, via both its unbundled ADSL2+ and its FTTH infrastructure. In January 2006, Magnet became the first operator in Ireland to offer VoD as part of the package. The company agreed with national electricity utility ESB to employ its fibre-network to expand coverage to a potential 700,000 homes. Smart Telecom is the only other operator to offer DSL-based IPTV in the country, with its service Smart Vision which it started rolling out in May 2005 over fibre in Dublin. Both companies have agreements with Sky Ireland to provide its premium sports and movie channels and intend to unbundled the incumbent's exchanges to offer services over ADSL 2+.

The slow take off of innovative DSL-based packages, lack of price competition and lagging of broadband speeds in comparison with European counterparts has been due to the difficulties encountered between ComReg, Eircom and other operators to agree on a fair and effective system for unbundling the incumbent's local loops. In April 2006, BT withdrew from talks with the incumbent owing to frustration over the lack of progress regarding LLU. In July 2006 ComReg reported

Databox: Ireland

2005		*Ireland*	*Europe*
PC penetration per household	%	54.9	59.9
Internet access per household	%	47.5	46.2
Broadband access per capita	%	6.6	12.6
Digital TV (free and pay)	%	54.8	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	47.5	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.4	
Music: a la carte download revenue	€m	1.0	108.9
Music: number of single downloads	000s	969	
DAB: number of services	units	0	27.4
DAB: coverage	%	0.0	32.9
Mobile: penetration	%	101.5	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, ITU, IFPI

that more recent talks had been more successful, confronting delays in provisioning and compatibility between wholesale products. At year end 2005, there were only around 3,000 unbundled customers.

Cable operators Chorus and NTL Ireland announced in June 2006 that they would begin offering triple play (VoIP, television and broadband over cable) - the first sign of growing competition between cable and DSL technologies in the Irish market. UGC purchased both cablecos in 2004 and May 2005 respectively, and plans to merge both companies under a single brand.

Initially the package will be made available to residents of Adamstown in Lucan, Co Dublin, and then will be rolled-out to Galway and Waterford in the fourth quarter of 2006.

This slow take up of broadband in the country has meant that content download services (such as online music and movies) have also been slow to emerge.

Digital radio

Radio Telefis Eireann, the public service broadcaster, had a monopoly status till 1988. Already in the 1960s, pirate stations sprung up as an alternative to RTE. As they grew larger and larger in number, the government decided to allow competition.

Some of the formerly pirate stations became licensed ones, and some others just continued. Today there are still about 50-60 pirate radios (estimated).

While the policy on DAB is being developed, RTÉ announced plans to apply for a license for transmissions along the east coast. Trial broadcasts in the same region, including Dublin, have been successful. Further plans include a nationwide service.

Mobile content

There are four mobile network operators; 3, Meteor, O2 (part of the Telefonica group) and Vodafone. Meteor was acquired by in 2005 by Eircom from US-based Western Wireless.

Although a number of companies have announced plans to enter the Irish market as MVNOs, as far as Screen Digest is aware there have been no commercial launches.

Of the four mobile network operators, only Meteor has not launched a 3G network.

13. Italy

Broadband content and television

Main stakeholders in the Italian TV and broadband marketplace include:

- Free-to-air terrestrial broadcasters: RAI, Mediaset (channels Canale 5, Italia 1, Rete 4), La7 and MTV Italia
- Pay-TV operator Sky Italia, which provides digital television via DTH
- Incumbent telco Telecom Italia and its ISP Alice
- Largest alternative telco, Fastweb, which provides IPTV, broadband and telephony services over fibre and unbundled xDSL network.
- Alternative telco Tiscali, which provides IPTV and broadband over both the incumbent and its unbundled network
- Alternative telco Wind, which provides broadband, mobile and telephony

Italian IPTV started very early with its provision of triple play services to provide competition against Sky Italia's Pay-TV platform which currently includes 160 channels, PPV and interactive content and enjoys 3.7m customers as of March 2006. Ebiscom-owned Fastweb launched its Fastweb TV triple play service back in August 2003, one of the world's first IPTV services. The package included IPTV (digital streaming and VoD), broadband and voice distributed over Fastweb's fibre and unbundled DSL network. The alternative telco's network is the second largest in Italy and the company hopes to cover 10m households and 45 per cent of the population by mid-2006. Fastweb TV is Europe's most popular TV service and includes in-built PVR, video communication via the TV set and on-demand access to over 5000 titles in the library, including those from Pay-TV operator Sky Italia. Tiscali began a trial of its IPTV service in March 2006 in Cagliari, after launching its VoIP service in May 2005. Tiscali claims speeds of up to 24Mbps download on its unbundled DSL network, while Fastweb claims 10Mbps symmetric speed on its fibre and 20Mbps download on its DSL networks.

The incumbent Telecom Italia launched its DSL-based on-demand IPTV service Alice Home TV in December 2005 in 4 cities: Rome, Milan, Bologna and Palermo. The incumbent announced its plans to extend the service to a further 17 cities from January 2006, reaching around 8m households by the end of 2006. The service began with a meagre selection of four sports channels, three news channels and the music channel MTV. At launch subscribers could also access about 200 on-demand movies, though the incumbent promised that more television channels would be added from 2006, and that the number of on-demand titles would subsequently increase to 600.

In its three-year business plan announcement in April 2005, the incumbent

Databox: Italy

2005		*Italy*	*Europe*
PC penetration per household	%	52.8	59.9
Internet access per household	%	39.7	46.2
Broadband access per capita	%	11.8	12.6
Digital TV (free and pay)	%	38.7	30.6
Pay TV PVR subscribers	%	na	0.7
Games : online-capable video consoles	%	13.8	18.0
Movies : online revenues	€m	0.3	2.8
Movies: number of downloads/streams	000s	165.1	
Music: a la carte download revenue	€m	5.2	108.9
Music: number of single downloads	000s	3,251	
DAB: number of services	units	33	27.4
DAB: coverage	%	65.0	32.9
Mobile: penetration	%	124.3	97.2
Mobile: 3G penetration	%	18.5	11.0
Mobile: music revenues	€m	8.6	59.3

Sources : Screen Digest, Goldmedia, ITU, IFPI, EC

reported it would invest €2.1bn on broadband in Italy, including some €350 million for IPTV development. Telecom Italia launched ADSL 2+ access technology in 60 towns in May 2006, with downstream speeds of up to 20 Megabits per second, optimizing TV, voice and broadband speeds. All Alice Home TV customers will gradually be upgraded to the 20 Megabit per second service.

The other main alternative DSL provider in the country is Wind through its ISP Libero, which had about 240,000 unbundled customers on its network at the end 2005. The more advanced and effective unbundling process in Italy in comparison with its European partners has had a catalytic effect on the innovative services, high broadband speeds and competitive consumer prices now available in the country.

Broadband content services

In terms of **online music**, **music downloaded to the mobile phone** has been the major propulsion of sales in Italy. According to IFPI, 69% of digital music bought in 2005 was delivered to the mobile phone, in comparison to 31% to the PC. The largest player in the digital music space is Apple's iTunes Music Store, followed by the Rosso Alice Music Box store, owned by Telecom Italia. Both online music stores operate on a retail model. Similarly, in the online movie space, the Rosso Alice movie store offers premium and local content for download on a rental model, as well as on a subscription model, overtaking its rival Cinemanow as the principal provider of digital films.

Digital radio

Besides the three stations offered by RAI, the public broadcasting service, many alternatives fight for market share. 14 private national radios and six networks. Popular music dominates the programming, with few talk and news stations. Many local radios serve the community, replacing non-existent newspapers.

DAB-trials by public and commercial broadcasters are taking place all over Italy, but the final frequency planning is still being prepared.

Mobile content

There are four mobile network operators; 3, TIM (Telecom Italia), Vodafone and Wind.

No MVNOs have launched in Italy, and there are no regulatory requirements on network operators to open up networks. However, a number of companies have announced plans to launch MVNOs.

Italy has seen the most activity around broadcast mobile TV services. Both 3 and TIM launched commercial DVB-H services in June 2006. 3 Italia acquired broadcaster Canale 7, giving the network operator both a transmission network and a catalogue of programming. In addition, the offering carried programming from RAI, Mediaset and SKY. TIM has deployed its own DVB-H network and carries programming from Canale 5, Italia Uno, MTV Italia as well as Serie A and Champions League matches.

All of the network operators have launched commercial 3G services. Both TIM and 3 have launched commercial HSDPA (3.5G) services, with Vodafone likely to follow this year following trials. Wind offers i-mode phones and content to consumers.

Specific issues

The main specific difficulties encountered by Italian service providers are:

- Access to content for new media distribution (definition of rights, availability of rights)
- Copy protection provisions (Implementation of DRM - Contradictions between rights-holder demands and national legislation)
- The lack of standards or all-industry agreement on exploitation windows

Would-be VOD operators point out the reluctance of some film rights-holders (studios and national producers alike) to licence their films for VOD digital distribution. Even when they do, it is reported that rights-holders have some demands that distributor find difficult to accommodate: minimum guarantees, DRM, and anti-piracy measures that, distributors say, would simply contradict Italian law. For instance, according to national legislation, network operators are not authorise to control the traffic flows, therefore any request from rights-holder to suspend or interrupt service cannot be met.

For Italian content, even when there is no specific reluctance from rights-holders, VOD operators have to deal with hold-back clauses or exclusive licenses, despite the rights duration limitations imposed on pay TV operator Sky.

Even operators supposedly entitled with 'all-rights' contracts, like RAI, have often to renegotiate past contracts to include new media rights. Broadcasters are now pushing producers to accept techno-neutral contracts, not mentioning any delivery platform.

But despite the reluctance of some rights-holders and other obstacles, players like Fastweb have been able to offer a significant catalogue of film for VOD.

Underlying rights can also cause problem. There was reports of programmes being removed from RAI's IPTV feed because rights-holders refused IP simulcast.

Finally several stake-holders believe the Italian market so far lacks standard practices or all-industry agreements on exploitation windows. For instance mobile operator 'Tre' caused industry turmoil when it planned to offer download from the film 'The Interpreter' before theatrical release. The French VOD industry agreement of December 2005 was mentioned as a possible past practice but there were no such ongoing discussion by June 2006.

14. Latvia

Broadband content and television

Stakeholders in the Latvian digital marketplace include:

- The terrestrial broadcasters LTV, LNT and TV3 Latvia, along with several regional and local stations including TV5 Riga.
- The satellite-delivered channels TV3+ Baltics and First Baltic Channel.
- The cable industry, which is dominated by the MSOs Baltkom and Izzi (formerly known as Telia Multicom).
- Viasat, which is owned by Sweden's Modern Times Group (MTG) and operates a satellite-delivered pay-TV platform.
- The incumbent telco Lattelekom.
- The Latvian Digital Radio and TV Centre (DLRTC).
- The National Broadcasting Council of Latvia (NRTP), which is responsible for overseeing all aspects of the TV industry in the country.

31 per cent of all households have Internet access and 14 per cent a broadband connection. At the same time, 49 per cent of homes received cable TV and 11 per cent DTH services.

Although there are around 30 cable operators in Latvia, two MSOs – Baltkom and Izzi – account for almost 80 per cent of connections. Both are long-established companies and provide digital TV as part of a triple-play offering.

MTG-owned Viasat meanwhile provides DTH services in Latvia. While the company does not provide subscriber details for individual countries, it says that the total number receiving its premium services in the three Baltic Republics stood at 44,000 at the end of Q1 2006.

The incumbent telco Lattelekom, which is majority (51 per cent) state owned and lists Tilts Communications, a consortium backed by TeliaSonera, as its other shareholder, emerged as an important player in the broadcast industry at the beginning of 2006 when it launched an IPTV platform. A trial service, Lattelekom TV was watched by around 30,000 people in the first three months of operation and is shortly due to be transformed into a fully commercial venture.

The DLRTC was planning to introduce DTT services in Latvia, but there has not been any significant progress on the DTT front in the last three years and it remains to be seen if and when a platform will be launched.

In the absence of a DTT platform and with DTH reception relatively low, the cable industry continues to call most of the shots. Baltkom already had 15,000 digital TV subscribers in Q1 2006 and is believed to be preparing to launch pay-per-view services. Along with Izzi, it will be the frontrunner to also introduce VoD and (eventually) HDTV.

Databox: Latvia

2005		*Latvia*	*Europe*
PC penetration per household	%	na	59.9
Internet access per household	%	31.0	46.2
Broadband access per capita	%	5.6	12.6
Digital TV (free and pay)	%	na	30.6
Pay TV PVR subscribers	%	na	0.7
Games : online-capable video consoles	%	na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	na	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	81.1	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, ITU, EC

Digital radio

The public broadcaster Latvijas Radio still has the largest audience, even with commercial stations being on the market since 1993. Beginning in 1998, two commercial radio stations started to broadcast on national level. Regional stations are focused on the region around Riga, with a large part of the programming consisting of music.

Only plans for DAB have been laid down, but without fixed dates. Most radio stations stream over the Internet

Mobile content

There are three mobile network operators: Bite, LMT, and Tele2. No 3G service has been launched so far.

Specific issues

Latvia began to devise a completely new legislative framework following independence in 1991. In the field of broadcasting, its efforts culminated in the **1995 Law on Radio and Television**. While the legislation is still in place, the country's Saeima (parliament) has been working on a draft law that addresses (amongst others) such issues as new technologies. It has also been working on a draft law on public broadcasting, one of whose elements would result in commercials being withdrawn from the public broadcaster LTV in 2008.

The copyright framework in Latvia was established in 2000 following the enactment of a new law. Under it, the Ministry of Culture is responsible for all aspects of copyright and neighbouring rights including any future legislation in the area and overseeing collecting societies. Latvia also enacted a **new Electronic Communications Law in 2004**.

The regulator NRTP has produced a wide-ranging strategy for the electronic communications sector between 2006-8. Although the country has made significant progress in some areas, others, including the introduction of DTT, effectively remain on hold.

15. Lithuania

Digital media background

Stakeholders in the Lithuanian TV marketplace include:

- The terrestrial broadcasters LRT, LNK and TV3 Lithuania, along with the youth-oriented thematic channel Tango TV.
- The cable industry, which is dominated by a handful of operators including Balticum, Init and Vinita and also includes the MMDS companies Litevita, Mikrovisatos TV, Pajurio Televizija and Viginta.
- Viasat, which is owned by Sweden's Modern Times Group (MTG) and operates a satellite-delivered pay-TV platform.
- The incumbent telco Teo LT and alternative provider UAB Penkiu Kontinentu Komunikaciju Centras (PKKC).
- The regulators RTK and RRT, responsible for TV/radio content licensing and the telecom sector respectively.

Although Lithuania's TV industry was at first much slower to develop than Latvia and Estonia, it has seen considerable change since the country acceded to the EU in 2004. In March 2006, for instance, the RTK granted licences for 11 free-to-air (FTA) DTT channels. The companies Batijos TV, Laisvas, Tele-3, TV1 each received two and Spaudos Televizija one, with two more reserved for the public broadcaster LRT. Re-broadcasting licences were also issued to Mikrovisata (24 channels) and Tele-3 (five channels).

DTT transmissions of 40 channels are likely to get under way in 2006 and five other towns and cities a year later. They will employ MPEG-4 compression, allowing for the eventual introduction of HD and such additional services as VoD.

The RTK has also granted IPTV licences to Teo LT and PKKC. The former is expected to launch a service, initially targeting its 120,000 ADSL subscribers, in September 2006. It will eventually include such features as video telephony, VoD and PVR.

There are at present over 50 cable operators in Lithuania, and cable penetration stands at around 30 per cent. Satellite penetration is a much lower 2.3 per cent, with estimated levels of piracy reaching 50 per cent. Although digital TV is available in Lithuania, such additional services as VoD have yet to be introduced.

Digital radio

On the Lithuanian radio market, concentration is increasing. Four commercial stations are controlled by one owner. Public Radio (LRI) has the biggest market share with about 25 per cent. It is financed by taxes, fees and commercials and offers three stations. Along with the concentration, a diversification of programming goes along. Most notably is

Databox: Lithuania

2005		*Lithuania*	*Europe*
PC penetration per household	%	na	59.9
Internet access per household	%	16	46.2
Broadband access per capita	%	6.8	12.6
Digital TV (free and pay)	%	na	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	na	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	127.1	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, EC, ITU

Radio Pukas, broadcasting for an audience of 30-49 year olds.

DAB reaches about 20 per cent of the population and is situated in Vilinius. Five channels are broadcasted, two public and three commercial ones.

An additional multiplex is planned. Fifteen radio stations are streaming via the web as well.

Mobile content

There are three mobile network operators; Bite, Omnitel and Tele2.

Specific issues

Lithuania passed a Law on Electronic Communications in the month before EU accession in May 2004, thereby fully liberalising the telecom marketplace. Digital TV services, however, are not addressed by any specific legislation, being instead covered by the existing broadcast law.

The IPTV services due to be launched by Teo LT and PKKC will not be covered by any specific existing law. Moreover, the licences awarded to the two telcos are only for re-broadcasting existing channels and do not address such additional services as VoD and interactive content.

The stakeholder RTK identified economic factors as perhaps the biggest obstacle to the development of digital content in Lithuania. Despite high cable penetration, the price of the services offered is beyond the reach of many inhabitants.

The IPTV service due to be launched by Teo LT will cost subscribers €5.50 a month to receive. This is considered to be slightly above the average amount charged by cable operators and it remains to be seen how many subscribers the telco secures. Aside from 120,000 already paying for DSL Internet access, it currently has 600,000 fixed line customers.

16. Luxembourg

Mobile content

There are three mobile network operators; P&T, Tango and Vox Mobile. Transatel is the only MVNO in Luxembourg.

All of the operators have launched 3G networks. A fourth 3G licence was awarded to LuX Communications, although the network has not yet launched.

Digital radio

RTL had a de facto monopoly in Luxembourg till 1991, when the market was liberalised. Only since 1993 there is a public service station, RSC, but with a market share of only about one per cent. Still, RTL provides public-service like broadcasting with two national frequencies. None of the radio stations make profit.

Luxembourg currently has no interest in implementing DAB. About nine stations are streaming over the Internet.

Databox: Luxembourg

2005		*Luxembourg*	*Europe*
PC penetration per household	%	na	59.9
Internet access per household	%	65	46.2
Broadband access per capita	%	15.5	12.6
Digital TV (free and pay)	%	6.7	30.6
Pay TV PVR subscribers	%	na	0.7
Games : online-capable video consoles	%	13.8	18.0
Movies : online revenues	€m	na	2.8
Movies: number of downloads/streams	000s	na	
Music: a la carte download revenue	€m	na	108.9
Music: number of single downloads	000s	na	
DAB: number of services	units	0	27.4
DAB: coverage	%	0.0	32.9
Mobile: penetration	%	154.8	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	na	59.3

Sources : Screen Digest, Goldmedia, EC, ITU

17. Malta

Broadband content and TV

Stakeholders in the Maltese TV marketplace include:

- The terrestrial public broadcaster TVM and national commercial stations Channel 24, Info Channel, Movie Channel, Net TV, Smash TV, Sports Channel and Super One, all of which are distributed by cable.
- The cable industry, which is served by the MSO Melita Cable Television.
- The incumbent telco Maltacom.
- The Malta Broadcasting Authority (MBA), responsible for supervising all aspects of broadcasting in the country, Malta Communications Authority (MCA), which is responsible for regulating telecom services.
- There are two mobile network operators; Go Mobile and Vodafone.

Digital TV is growing in popularity in Malta, with 27,480 homes receiving services as of May 2006. The number of cable subscriptions meanwhile stood at 108,819, and 42,808 households had broadband Internet access.

A four-package DTT service was introduced in Malta in July 2005 by Multiplus, a locally owned electronic communications company. However, the incumbent, soon-to-be-privatised telco Maltacom also has a digital terrestrial licence and is expected to launch a platform shortly. Furthermore, it is understood to be undertaking IPTV trials.

Both Multiplus and Maltacom face competition from Melita Cable, an MSO jointly owned by Melita Cable Holdings and UGC Europe. Melita Cable launched a digital TV service (Melita Digital) targeting its (approximately) 100,000 subscribers in Q1 2005 and has since also set up Hello, a VoIP service offering cut-price local and international telephone calls.

DTH reception is discouraged in Malta, with it being illegal to view channels not aimed at the local market. However, there are around 30,000 installed dishes and piracy is common.

Digital radio

Commercial stations are allowed since 1991. In addition to 12 national stations, 21 so called community radios exist. Overall, the number of radio stations per person is very high. A license with four DAB frequencies has been issued recently. It is planned to build an infrastructure to cover 95 per cent of the population.

Specific issues

Malta has several pieces of legislation either directly or indirectly addressing its TV industry. The Broadcasting Act, passed in 1991, has already been amended on five occasions and is reinforced by ancillary legislation related to advertising and copyright.

Databox: Malta

2005		*Malta*	*Europe*
PC penetration per household	%	na	59.9
Internet access per household	%	na	46.2
Broadband access per capita	%	12.8	12.6
Digital TV (free and pay)	%	Na	30.6
Pay TV PVR subscribers	%	0	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	80.8	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, EC, ITU

An Electronic Communications Act passed in 2004 was amended the following year.

The country's broadcast industry has gone through rapid change since 2005, with DTT now a reality and IPTV soon likely to follow. With competition between Maltacom, Melita Cable and Multiplus set to intensify, the latter has signalled its intention to introduce more channels and a range of interactive services. The provision of sports content, and in particular football, is seen as an important to the success of digital services.

18. The Netherlands

Broadband content and television

Main stakeholders in the Dutch marketplace include:

- Free-to-air/free-to-view analogue and digital channels: Nederland 1, Nederland 2, Nederland 3 (publicly owned); RTL 4, RTL 5, RTL 7 (owned by RTL Group); SBS 6, Net 5, Veronica (owned by SBS Broadcasting); Talpa; The Music Factory (owned by MTV Networks)
- Free-to-view digital terrestrial television (DTT) platform Digitenne
- Liberty Global Europe which owns cable television channels Film1 and Sport 1 (rebranded from Canal Plus) and cable platform UPC Nederland. UPC Nederland provides pay TV services (including pay-per-view), mobile and landline telephony, in addition to broadband cable internet.
- Main cable operators Essent Kabelcom, Casema and Multikabel which distribute pay television, telephony and broadband internet over cable. Multikabel also provides mobile telephony services.
- Mediakabel, which owns pay TV platform Film Time, offering pay-per-view content, distributed via cable.
- DTH television platform Canal Digitaal
- Incumbent telco KPN which supplies DSL broadband internet access via its residential ISPs Planet Internet, XS4ALL, Hetnet and Direct ADSL. The incumbent provides digital television through its IPTV platform, Mine TV and also provisions landline and mobile telephony services
- Alternative telco Tele2 which provides DSL broadband internet via its own unbundled and the incumbent's network, in addition to landline and mobile telephony. Tele 2 also offers an IPTV service.
- Third party telco France Telecom which provides cable broadband and DSL broadband over the incumbent and its own unbundled network under the Orange brand. France Telecom also offers mobile and fixed line telephony under the same brand
- Alternative telco Tiscali which provides ADSL broadband via its unbundled network.
- BBNed, which offers wholesale DSL access to its unbundled network
- OPTA, which supervises compliance with legislation and regulations in the areas of post and electronic communications

The Netherlands is a fiercely competitive pay TV and broadband internet market. The four main cable operators, UPC, Essent Kabelcom, Casema and Multikabel all offer digital cable television, cable broadband and landline telephony. UPC and Multikabel also provide mobile telephony. Multikabel is the only cable

Databox: The Netherlands

2005		*Netherlands*	*Europe*
PC penetration per household	%	83.0	59.9
Internet access per household	%	79.5	46.2
Broadband access per capita	%	25.7	12.6
Digital TV (free and pay)	%	11.4	30.6
Pay TV PVR subscribers	%	na	0.7
Games : online-capable video consoles	%	13.8	18.0
Movies : online revenues	€m	0.1	2.8
Movies: number of downloads/streams	000s	42.0	
Music: a la carte download revenue	€m	4.9	108.9
Music: number of single downloads	000s	4,369	
DAB: number of services	units	12	27.4
DAB: coverage	%	70.0	32.9
Mobile: penetration	%	97.1	97.2
Mobile: 3G penetration	%		11.0
Mobile: music revenues	€m	0.69	59.3

Sources : Screen Digest, Goldmedia, ITU, IFPI, EC

operator to offer a triple and quad play bundle, providing a discount to triple play customers who also choose to subscribe to its mobile services. Both UPC and Casema only bundle broadband and fixed telephone, while Essent Kabelcom offers no consumer multi-play. No set-top box VoD services have appeared from cable operators; pay-per-view services to the TV have been available since 2000 from UPC ('Arrivo' service) and Mediakabel ('Film Time' service).

The Dutch market had just over 900,000 customers receiving unbundled services at the end of June 2006. The regulator OPTA has encouraged progress in unbundling by maintaining low prices for third-party providers looking to install their equipment in KPN phone exchanges. The high number of unbundled lines has encouraged next-generation multi-play services over DSL to emerge to compete with cable operators' services. Tele2 launched the first commercial IPTV service in April 2005, offering live broadcast television - with exclusive Eredivisie first division soccer rights - in addition to VoD. The TV service offers 10-day catch-up viewing from the three national publicly owned TV stations and is marketed as a value add-on to 20Mbps ADSL 2+ broadband and fixed telephony. Tele2's service had 84,600 ASDL 2+ triple play customers as of June 2006, suggesting a successful opening period. In May 2006, the incumbent KPN responded by offering its Mine TV IPTV service which offers the same capacity for catch-up viewing, live broadcast channels, the 'Film Direct' VoD service with a 300-strong catalogue, and the 160GB PVR set-top box costing €150. The incumbent has not yet packaged the IPTV as a bundle to add onto its high-speed internet or telephony services. France Telecom is expected to launch a similar IPTV service next year. Given both Orange's and Tele2's mobile operations in the country, it is likely that both companies will also supply quad-play packages to consumers. Orange is expected to launch such a service in 2007. Tiscali, the other main DSL provider with its own unbundled network, offers both ADSL and voice-over-IP services.

KPN strengthened its position in the Dutch market by acquiring ISP Demon in June 2006 and independent network service provider Speedling in May 2006. These two deals followed the incumbent's purchase of ISPs Cistron, Freeler and a portion of Tiscali's subscriber base in 2005.

Netherlands will become the first country in Europe to switch of analogue terrestrial television when transmissions of public television cease on 29 October 2006. The three public TV channels are the only ones broadcast on analogue frequencies in the Netherlands. Private TV channels are distributed on cable. According to Nozema Services, the national transmission company, 92 per cent of households are cabled, with 220,000 households receiving analogue TV over the air. Nozema says 74,000 households receive only analogue terrestrial TV. Public TV frequencies will be used for digital TV transmissions.

Mobile content

There are five mobile network operators; KPN, Orange, T-Mobile, Telfort (actually owned by KPN) and Vodafone. The Netherlands is a vibrant MVNO market, with over 20 MVNOs launched. As is often the case, most are focussed on competing on price rather than content.

Only KPN, T-Mobile and Vodafone have launched 3G networks. In addition, T-Mobile launched an HSDPA (3.5G) network in Q2 2006. Regarding broadcast mobile TV, KPN has trialled a DVB-H service. In addition, both KPN and Vodafone offer mobile TV delivered via the 3G network. KPN offers i-mode phones and content to consumers, and the KPN group is based in the Netherlands.

There are a number of mobile content companies based in the Netherlands, including mobile content service provider Mowave, aggregator Tutch and games developer/ publisher Overloaded.

Digital radio

Commercials have been allowed since 1967, commercial radio since 1992, with the listening share of public radio dropping to about 50 per cent. With the reallocation of the frequencies, more regulations for stations have been set up: Five of the frequencies are for fixed formats such as Dutch music.

Dutch public radio regularly transmitted nine public channels since 2004, with a coverage of 70 per cent of the population. While it was intended to hand out licenses to commercial broadcasters after the RCC 06, further DAB rollout was postponed in March 2005 after criticism from all political parties.

Digital publishing

Newspapers

De Telegraaf announced in February 2006 that it was partnering with KPN to launch an IPTV news service.

De Telegraaf has also launched its own independent mobile content platform in collaboration with other companies, Recently the company has acquired a number of Internet operations including 70% of two dating sites, Relatieplanet and Iwannadate. It has also acquired a youth site called Without Style, with a reach of 1.2m. Its internet advertising revenues have risen by 50% in the last year.

In February 2006, Wegener acquired 49% of online search and directory site, ilocal. It also runs classified portals, JobTrack.nl, AutoTrack.nl and Funda.nl. AutoTrack.nl has the leading position in the market. It is piloting a local community portal with user-generated content called Dorpspleinen.nl.

Magazines

Sanoma owns some of the most popular sites in the Netherlands, notably the news portal Nu.nl and the search engine, Ilse. Ilse Media is also moving very much towards user-generated content. Sanoma's women's portal Vrouwonline has had a very good response to inviting readers to contribute blogs. One of Sanoma's titles has launched a podcast, and the company also has web radio and one of its men's titles has a web TV service built around motoring. More are planned.

Sanoma estimates that its core print businesses will grow by only 2-3% in future, while revenues from online, mobile and other brand extensions, including e-commerce, will grow by up to 50% per annum.

Country-specific issues

Newspapers would to like co-operate with local television stations to develop local television programming supported by advertising. However, the local TV stations are subsidised and cannot co-operate on commercial models. They can do a lot creatively, but cannot work with commercial companies.

Though not specific to the Netherlands, some skill shortages were reported e.g. in digital publishing.

19. Poland

Broadband content and television

Stakeholders in the Polish TV marketplace include:

- The terrestrial broadcasters TVP, Polsat and TVN.
- The cable industry, which is dominated by the MSOs UPC, Vectra, Multimedia Polska and the Aster Group
- The DTH platforms Cyfra Plus and Cyfrowy Polsat
- The incumbent telco TPSA and its principal competitor Telefonia Dialog.
- The regulators KRRiT and UKE.

Poland's television industry is one of the most developed in Central and Eastern Europe, being served by one public and two private national broadcasters, several regional stations, numerous thematic channels, cable and DTH markets with 4.5m and 1.5m subscribers respectively and a new IPTV sector.

Although all four leading MSOs are triple-play operators, only one to date (the Aster Group) has introduced digital TV services. However, Multimedia Polska became the first electronic communications company in Poland to offer IPTV when it launched a 48-channel service in four southern cities in June 2006.

Also in the same month, TPSA launched its long-awaited IPTV platform videostrada. The first in Central and Eastern Europe to employ MPEG-4 compression, its offer, which is available in Warsaw and environs, includes a special DSL package provided by Cyfra Plus. A third IPTV platform, operated by Tele Video Media (a joint venture between the alternative telco Telefonia Dialog and Poland's leading independent production company ATM Grupa), is due to launch in the second half of 2006. Its offer will include around 60 TV channels and both PPV and VoD.

Despite there being limited DTT services operated by TVP in the south of the country, a full platform is unlikely to appear before 2007 at the earliest. TVN, which is part of a consortium hoping to offer commercial DTT services, has in the meantime announced plans to launch a new generation digital platform distributing content via DTH and over the Internet. TVP, which like its commercial rivals also has a growing portfolio of thematic channels, is also expected to launch its own DTH platform shortly.

Digital radio

Licenses for commercial stations have been issued after 1989.

Investments from foreign countries also started, while the National Council for Radio and Television was established. Since 2001, licenses are reissued along with new standards for programming and quotas such as for spoken word content. Besides the public broadcaster Polskie Radio S.A. there are three other national commercial stations.

Databox: Poland

2005		*Poland*	*Europe*
PC penetration per household	%	43.6	59.9
Internet access per household	%	31.4	46.2
Broadband access per capita	%	2.7	12.6
Digital TV (free and pay)	%	19.2	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	Na	2.8
Movies: number of downloads/streams	000s	Na	
Music: a la carte download revenue	€m	Na	108.9
Music: number of single downloads	000s	Na	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	75.7	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, ITU, EC

The market for local radio is more or less split between independent stations and those belonging to networks or groups such as Agora S.A. and ZPR S.A.

DAB has a coverage of eight per cent around the capital of Warsaw. One transmitter broadcasts five programmes from Polskie Radio permanently. Most stations offer streaming over the Internet.

Mobile content

There are three mobile network operators; Era, Orange and Plus.

Specific issues

Legal/regulatory issues

There was general agreement among interviewees that the greatest problems faced in Poland are of a legislative/regulatory nature. Having acceded to the EU in May 2004, the country has yet to enact necessary legislation in a number of sectors including copyright. Without doing so, it cannot move ahead in the transition from analogue to digital broadcasting and risks introducing such services as IPTV and mobile TV in a legal vacuum.

The situation has been exacerbated by developments on the political front, with a new government that came to power in late 2005 having made changes to the structure of the National Broadcasting Council (KRRiT) and replaced the Office for Telecommunications and Post Regulation (URTiP) with a new body named the Office of Electronic Communications (UKE). Both the KRRiT and UKE were without a president for several months, leading to a feeling of paralysis within the industry as a whole.

With neither body fully functioning, a strategy for the transition from analogue to digital broadcasting approved in May 2005 has been to all intents and purposes suspended.

Poland's broadcast law was passed in 1992 and has since been amended on several occasions, most recently at the end of 2005. However, it has not been modernised and does not address such issues as digital broadcasting, according to several stakeholders. This creates problems for DTT, for instance, which has effectively been put on hold. The incumbent telco TPSA and MSO Multimedia Polska both launched IPTV services in June 2006. As things stand, these are largely unregulated.

This problem also extends to the mobile sector. Once mobile TV services are introduced – at present broadcasters only provide operators with news clips – these, too, will be unregulated.

Copyright

The copyright situation in Poland is problematic, as several interviewees pointed out. At present, collecting societies are pressing for a fee of around €1.30 for every subscriber that accesses streamed content from the Internet, though the proposal is being vigorously opposed by the telecom operators.

Cinematography Law

A recently enacted Cinematography Law has proved highly controversial for effectively handing film-financing decisions to a new body named the Polish Institute of Film Arts (PISF). While cable operators are entirely opposed to the idea of paying 1.5 per cent of their revenues to the PISF as they see their businesses as being unrelated to the film industry, Canal Plus Cyfrowy has adopted a different approach. Already the leading investor in the Polish film industry, it would like to make its own decisions on new productions rather than pass them to the hands of another party.

Under the terms of the Cinematography Law, telecom operators are also required to contribute 1.5 per cent of their total revenues to the PISF. However, this is deemed to be contrary to EU regulations according to the cable industry and may ultimately lead to a change in the legislation.

Archive content

The public broadcaster TVP operates without a clear and precise definition of its mission and is subject to much greater political pressures than its commercial counterparts. It is hoped by the industry that legislation specifically addressing TVP's remit will soon be passed.

One stakeholder identified a specific problem related to archives, with all films, documentaries and other content produced in Poland before 1990 being currently archived by TVP. To access it, commercial broadcasters are required to pay fees that they estimate disproportionate, and as content moves into new distribution areas such as the Internet and DTT, and TVP launches more thematic channels, the problem is likely to worsen. TVP regards its thematic channels as pay rather than basic services and may become more

protective of archive content, perhaps even unwilling to access it to third parties.

Must-carry

Poland's two DTH platforms, as one stakeholder pointed out, have since their launch found themselves operating in what amounts to a legal vacuum. This has led to conflicts and misunderstandings, the most recent of which is with TVP, which is demanding carriage fees for its channels, regarded until now as must-carry services.

A similar demand made to the cable industry was dropped following strong protests. At this stage it seems highly likely that the public broadcaster will also demand carriage fees from the telcos TPSA and Telefonia Dialog once they launch IPTV services. It may also ask for payment for distribution of its channels on Multimedia Polska's IPTV service, launched in June 2006.

Rights issues

One stakeholder referred to the confusion that exists amongst rights owners about new technologies, and in particular the difference between IPTV and TV via ADSL.

Demands by right holders that TV via ADSL (IPTV) should employ content protection simply because it is a digital method of distribution were regarded as unwarranted by this stakeholder. He pointed out that they have often already been granted for non-encrypted distribution over analogue and digital terrestrial, cable and satellite platforms.

This raises two fundamental questions that should be asked in Poland ahead of the launch of IPTV services. Firstly, should rights already granted to broadcasters also apply for IPTV distribution, and secondly, should IPTV transmissions be encrypted?

Another stakeholder meanwhile spoke of the lack of a DRM (Digital Rights Management) system in Poland. This makes it difficult for companies offering content via TV, mobile and the Internet to monetise their services. Put simply, independent producers can be treated as though they have no rights to the content that they deliver to other parties for distribution.

Interactive TV

Standards was identified as a problem by TVN, which besides operating a national commercial station has a portfolio of thematic channels and is part of the Polski Operator Telewizyjny (POT) consortium planning to launch a DTT platform. The stakeholder was critical of the fact that the EC has recommended such standards as MHP without having first negotiated prices with their (invariably US, as opposed to European) owners or secured guarantees that they would remain free. TVN also pointed out that there are currently no commonly accepted standards for IPTV and TV via ADSL services.

Economic issues

The relatively high cost of the technology associated with digital DTH services was identified as one of the factors holding back development of the sector. However, the two DTH platforms currently serving Poland still have a combined total of around 1.5 million subscribers, or around double all the other DTH platforms in Central and Eastern Europe put together.

It was also felt that low GDP and the still relatively high cost of Internet access were factors holding back growth in the TV market, and in particular the take-up of new services. Even so, technologies such as PVR, HDTV and VoD are soon likely to become established in Poland.

20. Portugal

TV and Broadband-based media

Main stakeholders in the Portuguese TV and Broadband marketplace include:

- Incumbent telco Portugal Telecom
- Free-to-air terrestrial broadcasters: RTP (channels RTP 1, RTP 2), SIC, TVI
- TV Cabo, a subsidiary of Portugal Telecom, which provides Pay TV services via DTH and cable. TV Cabo also operates a movie VoD service, Video On Demand over cable, in addition to providing broadband internet access.
- Cable operators Cabovisao, Bragatel and Pluricanal, the largest of which is Cabovisao, which all offer television, broadband cable internet and landline telephony
- Alternative telco Oni Telecom which provides ADSL consumer internet services and owns a fibre network
- Alternative telco Sonaecom, owner of ISP Clix, which offers telephony and broadband via its unbundled network and owns a fibre network in Lisbon and Porto
- Alternative telco AR Telecom (previously branded Jazztel until September 2005) which provides triple-play service of voice, television and broadband services via its own 28GHz fixed wireless infrastructure (LMDS spectrum)
- Telecommunications regulatory body: Autoridade Nacional de Comunicações (ANACOM).

The incumbent, Portugal Telecom, still dominates in the provision of broadband internet access, via DSL through ISP Sapo, and via cable (Netcabo) through its subsidiary TV Cabo. Portugal Telecom's share of the broadband market is gradually waning, falling to 73.5 per cent in 1Q 2006 from 81.6 a year before as alternative cable providers offer increasing competitive triple play packages and DSL providers.

Broadband ADSL is more popular in Portugal than cable broadband, with DSL holding 58.6 per cent of broadband access market at end 1Q 2006. The three main alternative cable operators have offered some resistance to the incumbent's cableco TV Cabo offering triple play consumer packages. Alternative telco Sonaecom offers dual play telephony and broadband internet up to 20Mbps (since July 2006) over its unbundled ADSL2+ network. Oni Telecom currently offers residents speeds of up to 5Mbps also using ADSL2+ technology. AR Telecom is the only alternative operator to offer triple play other than the cable operators, providing digital television, telephony and broadband internet over its own 28Ghz fixed wireless network.

The DSL market is currently increasingly competitive, with a rapid increase in the

Databox: Portugal

2005		*Portugal*	*Europe*
PC penetration per household	%	49.0	59.9
Internet access per household	%	34.1	46.2
Broadband access per capita	%	11.5	12.6
Digital TV (free and pay)	%	20.2	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	24.5	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.1	
Music: a la carte download revenue	€m	0.9	108.9
Music: number of single downloads	000s	733	
DAB: number of services	units	3	27.4
DAB: coverage	%	75.0	32.9
Mobile: penetration	%	109.0	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	Na	59.3

Sources : Screen Digest, Goldmedia, ITU, EC

number of unbundled loops – the number of unbundled loops tripled in the period 1Q 2005 – 1Q 2006 from around 16,000 to 109,000. The previous slow progress had been due to delays by the regulator Anacom to force the incumbent to lower its price for unbundling, imposing the first decrease in April 2005. In April 2006, the regulator enforced a ceiling on the price of LLU which had come into effect on 1st January 2006.

As a result, the broadband market can expect to see continued rise of unbundled loops, and a subsequent increase in broadband speeds and fiercer competition with regards multi play packages.

Mobile content

There are three mobile network operators; Optimus, TMN and Vodafone. Talk Talk is the only independent MVNO.

All of the operators have launched 3G networks. Both Vodafone and Optimus launched HSDPA (3.5G) networks in 2006. Fixed-line operator SGC Telecom has been involved in a broadcast mobile TV trial, testing the DVB-H technology. All three mobile network operators offer mobile TV services delivered over the 3G network.

Digital radio

Radiodifusao Portugesa, the public broadcaster, is financed with fees and commercials. RDP has a huge deficit and only ten per cent market share with its five stations. The national commercial broadcasters are dominating, with Rádio Renascença leading. Owned by the catholic church, it has about 42 per cent market share with three stations. By the end of the 1980s, hundreds of small private stations sprung up, forcing the government to relocate the frequencies, giving out licenses to local stations. Another national license was issued to Radio Commercial in 1993, which by now has 12 per cent market share with two stations.

DAB trials began in 1998. By now, coverage is 75 per cent with one national multiplex operated by RDP, offering three channels. Two channels will be given to commercial services. The big networks offer streaming over the Internet as well.

21. Slovakia

Broadband content and television

Stakeholders in the Slovak TV marketplace include:

- The terrestrial broadcasters STV, TV Markiza, Joj TV and cable and satellite-delivered news channel TA3.
- The cable industry, in which UPC is by far the largest player.
- The DTH sector, served by the platform UPC Direct.
- The incumbent telco T-Com, formerly known as Slovak Telecom.
- The Council for Broadcasting and Retransmission, a regulatory body that is responsible for overseeing all aspects of broadcasting in the country, along with the Slovak Telecom Office (TOSR).

The incumbent telco T-Com, which is backed by Deutsche Telekom, is rapidly emerging as a key player in the country's TV industry. Its subsidiary Rádiokomunikácie, which is currently on the market, has been undertaking DTT trials in the capital, Bratislava, and Banská Bystrica-Zvolen and may be ready to launch a full service in the second half of 2006. The company Telecom Corp. has meanwhile been undertaking trials in Kosice-Presov and is also expected to launch a full DTT operation in due course.

T-Com has in addition announced plans to launch what will be Slovakia's first IPTV service. Due to make its debut in Q3 2006, it will employ Microsoft TV IPTV Edition technology and offer such additional features as VoD.

Although the DTH platform UPC Direct has been present in Slovakia since Q4 2000, its subscriber total – an estimated 19-20,000 as of mid-2006 – remains disappointing compared to those in other UPC DTH markets such as Hungary and the Czech Republic.

The country's cable industry has meanwhile been slow to introduce digital TV services. However, the leading MSO is expected to finally become a triple-play company in late 2006 when it starts to offer its subscribers VoIP.

Digital radio

93.5 per cent of the Slovak population listen to the radio. Rádio Slovensko, a news channel, is the leading public station, head on with Rádio Expres. Out of the top five stations in Slovakia, two are private. The public stations are set up to serve different interests. Recently, attempts have been made to create networks by some smaller private stations as they were facing economic problems starting in 2002, but authorities did not support this move.

With the legal framework for T-DAB being in place since 2002, it is planned to start regular transmission of DAB in western Slovakia in 2006. When the implementation of DVB-T in the eastern part of the Slovak Republic has cleared up some space, regular

Databox: Slovakia

2005		*Slovakia*	*Europe*
PC penetration per household	%	63.4	59.9
Internet access per household	%	25.8	46.2
Broadband access per capita	%	2.4	12.6
Digital TV (free and pay)	%	12.7	30.6
Pay TV PVR subscribers	%	0	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	na	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	84.0	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, EC, ITU

T-DAB transmissions are expected to start there as well.

Almost all of the Slovak radio stations are streaming their programmes over the Internet too, some offer podcasts as well (Rádio FM for example).

Specific issues

The Government is currently preparing amendments to the 2000 Act on Broadcasting and Retransmission. These are likely to include references to digital broadcasting.

Stakeholders considered that broadcasting is not high on the list of priorities set by the new Government that took office after the General Election held in June 2006. Therefore changes on the legislative front are not foreseen to take place until at least 2007.

Copyright

Slovakia passed a new Copyright Act in 2003 incorporating almost all EU directives. However, there are a growing number of collection societies in the country, making copyright an increasingly contentious issue in the eyes of some stakeholders, especially in the cable sector.

The SAKT (Slovak Association for Cable Telecommunications), which represents the country's smaller operators, until recently had to deal with mostly the Slovak Performing and Mechanical Rights Society (SOZA). Established in 1960 but tracing it roots back to 1919, the latter is now no longer the sole collection society, vying for fees with – amongst others – LITA, OZIS and Slovgram.

Content

Although Slovakia has experienced problems in securing localised programming on the grounds that it is often uneconomic for programmers to produce, one stakeholder felt that there was already a sufficient number of Slovak language channels available to viewers. Their assessment may change once digital cable TV, IPTV and DTT services become available.

Technical issues

While UPC has upgraded around 50 per cent of its homes passed to two-way interactivity and is expected to introduce VoIP in the second half of 2006, only a few other operators – including some 3-4 belonging to the SAKT – are capable of offering digital TV services and cable telephony. This state of affairs contrasts sharply with that found in most other new EU member states in Central and Eastern Europe.

22. Slovenia

Television and broadband content

Stakeholders in the Slovenian digital market place include:

- The terrestrial broadcasters RTV Slo, Pop TV and Kanal A
- The cable industry, in which UPC Telemach and the Telius group are the leading players.
- The incumbent telco Telekom Slovenije (interviewed) and its competitor T-2, both of which offer IPTV services.

Although Slovenia is one of the smallest of the new EU members, its cable industry is long established and reaches between 60-70 per cent of TV households, while **IPTV services provided by Telekom Slovenije (SioL TV) and T-2 target the remaining 30-40 per cent.**

Slovenia does not at present have its own DTH platform. However, it is expected to be eventually be served by one operated by UPC targeting the countries that once made up the Yugoslav Federation.

While there is no official start-up date for the launch of DTT services, the public broadcaster RTV Slo has been allocated one national multiplex and is likely to start simulcasting its four channels at the end of 2006. The national commercial stations Pop TV and Kanal A, both of which are owned by the US investment company CME, will probably be allocated a second national multiplex.

Both UPC Telemach and the Telius group are expected to become triple-play operations in the second half of 2006 or in 2007 by launching VoIP. Telius launched a digital TV service in 2003 that is currently received by around 4,000 of its own and third party customers. It is also planning to introduce HD in 2007. No cable operators in Slovenia currently offer VoD.

Slovenia's cable industry is one of the oldest in Central and Eastern Europe, with the first networks having been built in the town of Maribor in the 1980s. Historically much less open to foreign investment than those in other new EU member states, the only significant outside involvement is in the market leader UPC Telemach, owned by Liberty Global.

Consolidation has yet to be achieved on any meaningful level as the cable industry is defined as a free market activity and there is no legal basis for licensing procedures. Most Slovenian operators are now economically unviable, with financial difficulties preventing them from interconnecting their networks.

Despite liberalisation, Telekom Slovenije still calls most of the shots in the electronic communications marketplace. Besides claiming nearly 100 per cent of the broadband ADSL and national voice markets, it accounts for 70 per cent of the 2G and all the 3G mobile sectors. **Its IPTV service SioL TV was one of the first in Europe** and though not a

Databox: Slovenia

2005		*Slovenia*	*Europe*
PC penetration per household	%	60.6	59.9
Internet access per household	%	49.1	46.2
Broadband access per capita	%	9.8	12.6
Digital TV (free and pay)	%	6.9	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	Na	18.0
Movies : online revenues	€m	0	2.8
Movies: number of downloads/streams	000s	0	
Music: a la carte download revenue	€m	0	108.9
Music: number of single downloads	000s	0	
DAB: number of services	units	0	27.4
DAB: coverage	%	0	32.9
Mobile: penetration	%	89.4	97.2
Mobile: 3G penetration	%	na	11.0
Mobile: music revenues	€m	0	59.3

Sources : Screen Digest, Goldmedia, EC, ITU

runaway success is seeing its subscriber total rising steadily. It stood at around 3,000 in mid-2006 and is eventually expected to reach between 20,000-25,000.

To date, only the alternative telco T-2 has been provided access to Telekom Slovenije's infrastructure. IPTV services are available in around 70 per cent of Slovenia, and the two companies between them are securing around 500 new subscribers a week.

Specific issues

Providers of digital TV services in Slovenia are handicapped by international channel operators preferring to offer their channels for carriage in only basic analogue tiers rather than also digital ones or on an a la carte basis. This approach, which results in many highly rated foreign channels being found in analogue packages, is regarded as hindering competition as it defines the conditions of sale.

Stakeholders such as cable operators believe the only way they can interconnect, and thereby become economically viable, is by securing access to Telekom Slovenije's ducts under cost-based and non-discriminatory terms. They are concerned with regards to the practices of the state owned incumbent, and are expecting the EC to follow closely the process of liberalisation in Slovenia.

23. Spain

Television

Spain is a dynamic digital TV market which has seen the emergence of numerous new means of digital distribution in recent years.

Initially the digital and multichannnel TV market was led by two competing satellite TV platforms, Via Digital (launched 1998), backed by the incumbent telco Telefonica; and Canal Satelite (launched in digital in 1997), backed by Spanish content group Sogecable. These services have now merged to form a single satellite pay TV operator, Digital Plus. **Sogecable** remains the largest shareholder and managing company, but Telefonica has retained an interest through a stake in Sogecable.

Spain was a late-starter with cable TV. The first companies began to build out networks in the late 1990s. After a period of consolidation a single cable company, **Ono**, now controls 70 per cent of the market. Three smaller operators control the remainder of the market. Ono has been relatively active in exploiting new media opportunities, rolling out a VOD service late last year (2005) and making use of unbundled DSL networks to expand its reach in areas where it does not own infrastructure.

Spain also has an active IPTV market, led by Telefonica and its Imagenio service. Growth of IPTV has been relatively strong and a number of other new entrants, including several ISPs, are now set to enter the IPTV space. There has also been a recent push behind Digital Terrestrial Television (DTT) after a period of hibernation following the collapse of a short-lived pay DTT service in the early part of this decade.

Spain also took the relatively unusual step of licensing two new national analogue TV channels last year, despite having an ambitious analogue-switch off date of 2010. The first was launched after Sogecable asked to switch the analogue terrestrial pay TV license it held for Canal Plus to a free-to-air model. The result was new channel Cuatro. Later in the year, Globo Media was allowed to launch another new analogue service, La Sexta, a channel with near-national reach. The other channels in the national free-to-air market are state-backed RTVE services La Primera and La 2, and wholly commercial operations Antena 3 and TeleCinco.

Broadband content

Broadband lines in Spain fell just shy of five million at the end of 2005. The country had 678,000 shared or fully unbundled lines at the end of H1 2006. Incumbent telco Telefonica had 3.22m DSL customers at the end of June 2006. The principal alternative telcos who unbundle incumbent Telefonica's lines include Jazztel (with estimated 190,000 at end March 2006), Wanadoo (France Telecom) and Ya.com (Deutsche Telekom). All three alternative

Databox: Spain

2005		*Spain*	*Europe*
PC penetration per household	%	51.0	59.9
Internet access per household	%	37.0	46.2
Broadband access per capita	%	11.5	12.6
Digital TV (free and pay)	%	27.8	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	24.5	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	0.3	
Music: a la carte download revenue	€m	3.4	108.9
Music: number of single downloads	000s	3,044	
DAB: number of services	units	18	27.4
DAB: coverage	%	52.0	32.9
Mobile: penetration	%	96.8	97.2
Mobile: 3G penetration	%	6.6	11.0
Mobile: music revenues	€m	2.5	59.3

Sources : Screen Digest, Goldmedia, EC, ITU, IFPI

providers have launched ADSL 2+ broadband products.

Jazztel offers a dual package of telephony and DSL broadband; the company launched its IPTV service Jazztelia (with VoD and digital TV) in January 2006, initially in Zaragoza and now available to all customers with an ADSL 2+ connection above 6Mbps. Wanadoo offers a similar dual play package and launched its IPTV service Wanadoo in May 2006 (with VoD and digital TV) as part of a triple play offering. Ya.com offers the dual package but is yet to launch a television service over IP.

Other IPTV services in the country include incumbent Telefonica's Imagenio service which is available nationwide and includes premium digital content and on-demand titles. The service can be taken alone or in conjunction with other services. Imagenio registered 250,000 subscribers at end of March 2006, and by far the most popular IPTV service. Alternative network operator Grupalia has also run a service dubbed Superbanda through its ISP, as part of a triple play package, but the television service lacks on-demand and premium television channels.

The largest cableco in the country is Ono which can provide services to over 5.8m homes and boasts around 1m cable internet customers as of end June 2006. The company and a consortium of private equity partners agreed to pay €2.5bn for the Auna group, completed in November 2005. The merger reduced the number of cable companies in Spain to just four, leaving only Northern operators R in Galicia, Euskaltel in the Basque region and Telecable in Asturias outside the Ono family. The integration made Ono the second-largest dedicated fixed-line and broadband services company in Spain after Telefónica. Ono offers triple play packages of digital television, broadband and telephony over cable.

Digital radio

The public radio network Radio Nacional de España (RNE) runs about 459 radio stations. The important private networks are SER, Onda Cero Radio and COPE. SER is almost always the leading network in audience shares and broadcasts in AM and FM. Apart from these national networks coverage, there are some private regional networks on FM. There are some private stations on AM and FM with local coverage that are not syndicated to networks. So called Radios generalistas or Cadena generalistas are very successful programmes and reach the highest listener share with a focus on spoken word programming (call-in shows, talk shows, news). Notably, AM is also a dominant transmission technology along with FM in Spain in contrast to other European countries.

In 1998 DAB started with pilot stations. The coverage is to rise to 80 per cent by 2006. DAB encompasses a mix of public and commercial broadcasting (total 27 stations in 2006). Most are analogue stations. Exclusive stations for DAB are all run by commercial operators (El Mundo, ABC and Recoletos, all are owned by newspaper groups). Other digital-only stations are Cope Digital, Ser Digital and Quiero Radio.

The four public networks and a lot of private stations stream their programmes. The networks SER and Onda Cero also offer podcasts.

According to Visualradio.com the radio station "Los 40 Principales" (highest listener share, three million listeners daily and more than 80 radio stations) offers visual radio. "Los 40 Principales" also offers call-in shows.

Mobile content

There are three mobile network operators; Amena, Telefonica and Vodafone. Screen Digest's research shows there are no MVNOs in Spain. However, following pressure from the regulator, the mobile network operators have agreed to open up the networks and a number of MVNO launches have been announced.

All of the operators have launched 3G networks. A fourth 3G licence was awarded to Xfera, although no network has launched. Xfera is now majority owned by TeliaSonera, and the company announced plans to begin deployment of a network to launch at the end of 2006. Vodafone has announced plans to launch an HSDPA (3.5G) network in 2006. All three network operators have conducted separate trials of the mobile TV broadcast technology, DVB-H. All three also offer mobile TV services delivered over the 3G network.

The HQ of operator group Telefonica is in Spain. Major mobile content aggregator and portal company, LaNetro Zed, was to list on the Spanish stock market in 2006 but withdrew its offering.

Digital publishing

A multi-national study carried out by market researchers Vanson Bourne for Motorola which was published in June 2006, found that Spanish internet users were most interested in using their broadband connections to download movies and music, and were the most prepared to pay extra for broadband services which included access to TV, music and movies. An earlier study in 2005 by Parks Associates showed that 80% of Spanish people were interested in advanced TV services allowing personalisation and interactivity. As publishers are increasingly moving into provision of IPTV services, this shows that Spain is likely to be fertile territory.

Newspapers and magazines

At a meeting of the Asociacion de la Prensa de Madrid, in May 2006, the heads of Spain's top four papers discussed threats from free papers and the Internet. Some points raised were that:

- only large quality newspapers with strong brand names will survive, however with very different business and labor models
- relationships with producers of video and new forms of distribution will emerge
- in a world where most people only see images, the written press is becoming devalued

One editor believed that the Internet is beneficial for newspapers because it allows them to publish things that don't fit in the paper.

Two of the leading Spanish media companies that include newspapers in their media assets, Prisa and Vocento, are pursuing very active digital strategies.

Prisa, which owns El Pais and Cinco Dias (and 18% of Le Monde), as well as radio, TV and educational publishing, has centralised all the group's mobile and online activities within Prisacom, which is responsible for adapting all content produced for different media platforms. Though digital revenues amounted to 5% of the total in the nine months to September 2005, they rose by 22.5% compared with an overall rise in turnover of 9.7%. In the mobile area, the company is developing WAP sites for its content, and is also present on major operators' portals.

In terms of business models, El Pais online has experimented with wholly free, wholly paid-for and now a mixture of free and paid-for content. Subscribers to El Pais can also get access to the premium content on lemonde.fr. Since opening up part of the site to free access again, online advertising revenues have risen. At the moment, they see this dual revenue stream as the most effective model. This year it has launched a constantly updated Internet supplement, called 24 Horas, that can be downloaded in PDF format and printed by the reader.

In June 2006 it launched an edition of El Pais for Sony's Playstation Portable. The PSP version will add to PDA and cellular phone editions and is part of the paper's attempts to attract younger readers.

Vocento, which owns 12 regional newspapers as well as ABC, has organised its regional newspapers to serve as a nexus and brand for regional multimedia offerings comprising TV, radio, newspaper, Internet portal and free newspaper. All advertising sales are channelled through one regional company. As well as the regional internet portals, there is a national portal, Ozu, in which the company holds a majority stake. Alongside this are vertical channels, including film, auto, personal finance, weather, women's interests, football, cycling etc, and business to business services, including content syndication. La Trastienda Digital is an e-commerce initiative, which has become mainly B2B. Local advertising online rose by 32% in 2005.

The Spanish daily El Correo has opened up its pages to readers through its *EnlaCe* initiative. It solicits contributions, from riddles to photos, and uses the best in a two-page section in between the national and international sections of the paper's print edition. Readers can submit via post, email, telephone, SMS or through the paper's website.

El Mundo has added Google Maps to its site, while allowing Google to integrate reviews of restaurants and other material from its databases.

Specific issues

The issues raised by Spanish stake holders reflected those that emerged in a number of other major European markets where new media platforms has altered the status quo.

Issues regarding access to content were raised, as was the widely held belief that **rights agreements based on technical platform were now redundant**.

Some specific competition issues emerge between 'old-world' distribution platforms like cable and satellite and new

world IPTV operators, particularly with regard to regulation and the impact of certain rules on each platform's relationship with channel operators. Beside it was felt that interactive television services are being held back by the fact that all gambling (key to any viable iTV offering) is state-controlled.

Operators in both the traditional cable and IPTV space are concerned about **must-carry regulations applicable to IPTV** and the status of new digital channels operated by national broadcasters. The general consensus among infrastructure owners is that national channels subject to must-carry status should also make their new digital services available to platforms for free, otherwise the competing DTT platform would be provided an unfair advantage (in having all the free digital services for free). Not surprisingly, the channels point of view differ, in that they feel they should be compensated for investment in new programming and feel it is unreasonable that they do not receive carriage fees for DTT.

The channels themselves have problems with **access to new media rights**. In particular for US films and series broadband and mobile rights is noted as very difficult to get hold of. By contrast, contracts for content commissioned from independent producers include rights to new media distribution as standard. However, **the problems with getting rights to acquired international content is preventing channels from simulcasting on broadband or developing services for mobile**.

In addition low broadband penetration in Spain is so far holding back developments with broadband TV and investment by major broadcasters in broadband TV services. Some stake-holders suggest that some sort of state subsidy or incentive plan may be required to encourage the broadband market in Spain.

24. Sweden

TV and Broadband content

Main stakeholders in the Swedish TV and Broadband marketplace include:

- Main free-to-air/free-to-view analogue and digital channels: SVT1, SVT2, SVT 24 (publicly owned); TV3, TV4, TV8, ZTV, Kanal 5 (privately owned)
- Pay TV services: Canal Digital (DTH, cable), Viasat (DTH, cable), Canal Plus Premium (DTH, cable), Com Hem (cable), Tele2 (cable), UPC, Sweden Online (cable), Seth's Kabel TV (cable)
- IPTV services: Viasat (FTTH, DSL), Canal Digital (FTTH), Sollentuna (FTTH), FastTVnet (FTTH), Telia Digital TV (FTTH, DSL), Varberg Digital TV (FTTH)
- DTT pay TV platform: Boxer TV
- Incumbent telco TeliaSonera which provides DSL broadband, mobile and fixed telephony in addition to its IPTV service
- Cable network operators Com Hem and UPC which provide broadband internet access and fixed telephony in addition to their cable television services
- Alternative network operator Bredbandsbolaget (B2) - owned by Norwegian incumbent Telenor - which provides broadband over DSL and fibre, VoIP telephony and digital television over IP
- Alternative telco Tele2, which offers broadband over cable and DSL, mobile and fixed telephony in addition to its cable television service
- Third party ISP which offers DSL broadband access, Glocalnet, in which Telenor owns a 96 per cent share
- Post-och telestyrelsen, PTS, the Swedish National Post and Telecom Agency, is the governmental authority that monitors the electronic communications and postal sectors.

The Swedish Government was the first in Europe to develop a broadband policy. In 1999 recommended that a fibre network be constructed, collecting SEKr 5.8billion for this purpose, resulting in 200 metro networks across 100 towns. The country has one of the highest broadband penetrations in Europe, with just under 1.9m broadband connections at the end of 2005. Sweden also boasts an extensive broadband wireless network.

Three main forms of broadband technology compete in Sweden: fibre, DSL and cable, with DSL being the most widespread form of access. Fibre is typically employed through a 100Mbps link to a building which is shared via an Ethernet LAN to offer speeds of 10Mbps in both directions. These speeds are not as fast as those offered by ADSL2+ and VDSL providers, but it is likely that as fibre to the premise links are rolled out, offering 100Mbps, the technology

Databox: Sweden

2005		*Sweden*	*Europe*
PC penetration per household	%	82.0	59.9
Internet access per household	%	75.7	46.2
Broadband access per capita	%	21.1	12.6
Digital TV (free and pay)	%	44.3	30.6
Pay TV PVR subscribers	%	Na	0.7
Games : online-capable video consoles	%	15.9	18.0
Movies : online revenues	€m	0.5	2.8
Movies: number of downloads/streams	000s	216.1	
Music: a la carte download revenue	€m	4.2	108.9
Music: number of single downloads	000s	4016.0	
Number of DAB services	units	7	27.4
DAB coverage	%	37.0	32.9
Mobile: penetration	%	93.3	97.2
Mobile: 3G penetration	%	Na	11.0
Mobile: music revenues	€m	1.2	59.3

Sources : Screen Digest, Goldmedia, ITU, IFPI, EC

will increase its market share in relation to DSL.

There are six IPTV services in the country, the most popular of which is Telia Digital TV operated by incumbent telco TeliaSonera. The first IPTV service, Sollentuna, launched in August 2002. All offer VoD (except Varberg Digital TV which will introduce it) and use fibre to transmit data (except TeliaSonera's operation which runs over DSL). Local Loop Unbundling has also seen impressive growth in the country, which has one of the highest LLU shares of the DSL market in Europe: there were around 370,000 unbundled lines at the end of 2005. B2 Bredband and TDC Song as the main providers offering DSL access via the process. The main cable television operators are Com Hem, Tele2 and UPC. In June 2006, Liberty Global completed the sale of UPC Sweden to Carlyle Group and Providence Equity Partners, the same investment companies which agreed to acquire the other main cableco, Com Hem, in December 2005. Both Com Hem and UPC provision telephony, broadband and digital television. Tele2 and Bredbandsbolaget provide VoIP in addition to broadband access and television. Tele2 also provides mobile telephony, making it capable of selling quad play services to citizens.

The high level of broadband penetration in the country has meant that broadband content services, such as SF Anytime and Film2Home for movies, have experienced stronger growth than other European countries.

Mobile content

There are four nationwide mobile network operators; 3, Tele2, Telenor and Telia (part of the TeliaSonera group of operators). Vodafone sold its Swedish operations to Telenor in 2006.

Screen Digest's research shows that there are no independent MVNOs in Sweden. MTV had previously operated an MVNO in Sweden, Hello MTV, but pulled out of the market in 2005.

All of the nationwide mobile operators have launched 3G networks, and 3 has announced plans to deploy an HSDPA network this year. In addition to the nationwide operators, Spring Mobil provides a 'local' GSM service, deployed on demand and designed for use by companies as an alternative internal phone system. Content is not distributed through this system.

Two mobile TV trials using the DVB-H standard are planned for 2006. Operator Telia is involved in one, and the other involves Telenor in conjunction with the Swedish Broadcasting Corporation.

Sweden has a very large number of mobile companies. Mobile technology giant Ericsson is based in Sweden, and the pan-European network operator groups Tele2 and TeliaSonera both have their headquarters here. Mobile content distributor Aspiro is listed on the Stockholm stock exchange, and Terraplay is regarded as one of the world leaders in multiplayer mobile gaming. There are also numerous smaller mobile content companies.

25. United Kingdom

Broadband and television

The main players in the digital marketplace include:

- The free-to-air terrestrial broadcasters BBC, ITV, Channel 4 and Five
- Free-to-view digital terrestrial television (DTT) platform Freeview (jointly owned by BBC, ITV, Channel 4, BSkyB and National Grid Wireless)
- NTL Telewest, a digital cable operator that provides TV and internet services, fixed and mobile telephony – via Virgin Mobile, its mobile virtual network operator (MVNO).
- BSkyB, a digital satellite television provider that also produces television content, owns television channels and, from July 2006, provides broadband internet services
- Homechoice, which provides broadband internet, digital television and video-on-demand via a set-top box connected to a British Telecom fixed telephone line. Homechoice also offers landline telephony services
- The incumbent telco British Telecom, and principal third party residential DSL internet service providers (ISPs) AOL UK (owned by AOL Time Warner), Orange (owned by France Telecom), Tiscali UK, Pipex and Carphone Warehouse.
- Non-incumbent telco, Bulldog, which provides wholesale internet services
- Ofcom, the independent regulator and competition authority for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.
- OTA, Office of the Telecommunications Adjudicator, responsible for encouraging competition between telcos and overseeing the unbundling process of the incumbent's local loops.
- There are five mobile network operators; 3, O2, Orange, T-Mobile and Vodafone.
- In addition, there are around a dozen MVNOs (mobile virtual network operators), the most successful being Virgin Mobile (reportedly 3m subscribers) and Tesco Mobile (reportedly 1m subscribers).

The UK broadband access market is fiercely competitive at present, dominated by DSL which penetrated about 73% of broadband connections at the end of 2005, at which time there were 9.8m broadband connections. Alternative DSL ISPs are rapidly unbundling incumbent BT's exchanges and offering more and more valuable services and data transmission speeds for consumers. As of end June 2006, 580,000 lines had been unbundled by third party DSL competitors, up from approximately 200,000 at the beginning of

Databox: UK

2005		*UK*	*Europe*
PC penetration per household	%	67.8	59.9
Internet access per household	%	57.0	46.2
Broadband access per capita	%	16.3	12.6
Digital TV (free and pay)	%	68.7	30.6
Pay TV PVR subscribers	%	4.8	0.7
Games : online-capable video consoles	%	38.8	18.0
Movies : online revenues	€m	0.0	2.8
Movies: number of downloads/streams	000s	8.5	
Music: a la carte download revenue	€m	37.1	108.9
Music: number of single downloads	000s	23,760	
DAB: number of services	units	400	27.4
DAB: coverage	%	85.0	32.9
Mobile: penetration	%	102.1	97.2
Mobile: 3G penetration	%	8.7	11.0
Mobile: music revenues	€m	20.7	59.3

Sources: Screen Digest, Goldmedia, EC, ITU, IFPI

the year. OTA expects this number to rise to 1m by year end 2006. This rapid process of unbundling has been aided by Ofcom's rulings in its Strategic Review of Telecommunications in September 2005. These measures have allowed all communications providers to gain real equality of access to critical BT infrastructure on fair and equal terms by lowering BT's price for unbundling its exchanges; they have led to investment in alternative infrastructure, enabling innovations in multiple services (such as triple play TV-voice-internet) and have created more competitive prices for consumers and businesses; lastly they have also ensured the UK's position as a competitor in a wider European context.

In April 2006, Carphone Warehouse, traditionally a fixed telephone line provider, launched DSL broadband up to 8Mbps as a value added service to its Talk Talk landline phone customers. The company is rapidly unbundling BT's exchanges as it hopes to connect the customers (340,000 in the first eight weeks) who signed up to the deal which started in April 2006. On 1 June 2006, Orange began bundling DSL broadband and VoIP, along with a wireless router, as a free value add-on for mobile customers who pay a premium monthly tariff. The following month, in July 2006, BSkyB, the owner of business ISP Easynet since October 2005, also started supplying up to 2Mbps broadband and a wireless router to its Pay TV subscribers for no extra cost. Carphone Warehouse, Orange and Pipex are at present rapidly migrating retail DSL customers onto their unbundled lines. Telefonica-owned mobile telco O2, after acquiring ISP Be in June 2006, will begin moving customers over to Be's unbundled ADSL 2+ network.

The UK market is thus experiencing an explosion of packages which bundle so-called 'free' DSL broadband onto fixed line, mobile or pay-TV subscriptions: a tactic not seen to the same scale in other European countries. This explosion follows non-traditional fixed phone (Carphone Warehouse) and pay-TV (BSkyB) communications companies recently competing to acquire unbundled DSL networks capable of converging high-speed internet with multiple play packages. The triple play strategy began with the UK's only cableco, NTL Telewest, which markets a traditional triple play bundle of digital TV, landline phone and cable broadband over coaxial. Originally two cablecos, NTL and Telewest merged in March 2006, and then acquired Virgin Mobile in the following month to create the country's first quad play company. In July 2006, NTL Telewest announced their plans to market a quad play product, as well as a free digital TV service with VoD capability from 1 September, aimed at stemming the growth of Freeview. The quad play product will carry the Virgin brand. Homechoice was the first company to offer IPTV, landline phone and DSL broadband internet as a package, though its geographical scale is restricted to the London area. On 1 June, Orange announced its intention to follow suit and add IPTV services (digitally streamed TV and VoD) over its unbundled network, in addition to its three-arm VoIP, DSL broadband and mobile deal - a quad play product already successfully employed in France.

Incumbent telco BT has also announced the launch date of its DSL platform IPTV set-top box BT Vision for autumn 2006. The service will offer VoD, a PVR and access to Freeview's 30 digital channels. The incumbent will not however be able to package the TV service with fixed line phone service for regulatory reasons. The other unbundling third party telcos are expected to follow the IPTV path in due course, adding video services over their networks to complement their broadband data, fixed or mobile phone services. BT and others' IPTV services will nevertheless face stiff competition for premium sport and movie content from BSkyB and from cable firm NTL Telewest. BT has already secured one content sharing deal with BSkyB for the rights to live FA football matches, worth £84.3m. All platforms, DTH, IPTV and cable also face opposition from a growing UK base of Freeview platforms and digital-ready TVs, which have both seen recent increased sales – 1.2m combined sales in first quarter 2006. This increase has most likely caused the diminishing subscriber net additions in the first quarter 2006 for Sky Digital, its lowest quarterly additions since 1999. Free-to-air digital reception continued to grow strongly against pay TV in the first quarter 2006: there were 683,000 net free-to-air digital additions compared to just 105,000 net digital pay TV additions. Forty-two per cent of digital homes are now free-to-air, compared to 40 per cent at end 2005. BSkyB's new Sky HD television service via its HD set-top box, which began in May 2006, and its recent tactic of bundling broadband for its Pay-TV customers, may

well revive subscriber additions. In response to the multichannel options available with Freeview, all UK terrestrial channels have now launched their own digital channels. In June 2006 Channel Five became the last terrestrial channel to launch two new channels for digital transmission.

In the UK, Pay-TV operator BSkyB and linear broadcasters Channel 4 and BBC have started making their TV content available on the open internet for consumption. Subscribers to Sky Digital packages can watch premium movie and sports content via the www.skybybroadband.com portal, free of charge. Content is offered for a rental period up to 30 days, within the Pay-TV window but without the right to burn or transfer to other devices. Channel 4, after negotiating a rights deal with Buena Vista International Television, has started offering episodes of TV shows such as Lost for 99p an episode for unlimited viewing in a 24-hr rental period, on a digital rental basis. Channel 4 follows in the footsteps of Apple, which led the way in the online TV digital rental space in the US, via its iTunes store, followed later by Google Video. Both these companies are expected to employ a similar "a la carte" model for TV and, eventually, movies, in the UK. As far as online movies, Lovefilm offers films on either a digital rental (content from Warner Bros and independents) and, from April 2006, on a digital retail basis (content from Universal Studios). Customers buying a film on a retail basis will receive three copies: one to the PC or laptop, one for a compatible portable device, and one physical copy through the mail, without extras. Cinemanow, another online movie service, offers low-budget digital rental content for a period of 24-48hrs as well as supplying on a digital retail basis. Currently online TV and movie subscription models have yet to arrive in the country, though are expected soon from the likes of Apple and rightsholders such as BSkyB.

Online music

Online music in the UK began with the launch of iTunes Music Store in June 2004, which sells tracks and albums on a digital retail basis. The service continues to demand around an 80% market share. However, the UK has produced a surprisingly dynamic indie sector, from the likes of O2 Loudeye, 7Digital and Tunetribe through their retail stores. Stiff competition in the UK sector has increasingly forced these companies to seek opportunities overseas and turn to other forms of content (such as Wippit's July 2006 digital retail movie deal with Universal Pictures) to increase profit margins.

Digital radio

15 groups control the UK's commercial radio market. Out of these, the largest eight dominate. The BBC has about 50 per cent market share with five national and 40 local stations as well as regional programmes for Scotland, Wales and Northern Ireland. An average listener can choose between about 15 stations. But with the market being almost entirely devoted to music, pirate stations exist in urban areas to offer more diversity.

2.7m DAB receivers were sold. About 90 per cent of the population can receive DAB from two national multiplexes. One is maintained by the BBC, offering its five stations plus five digital-only ones. Another multiplex, operated by Digital One, also simulcasts eight audio stations plus five digital only. Altogether, 422 services are offered on DAB of which 171 are digital only.

Some programmes are transmitted via DTT, satellite and cable, and most stations stream over the Internet as well. The BBC for instance, also offers podcasts from several shows.

Mobile content

The UK is one of the largest markets for mobile content in Europe. All five of the network operators have deployed 3G networks. All have trialled 3.5G (HSDPA) networks, and O2 has launched a commercial 3.5G service, although only in a very limited geographical area (the Isle of Man). Network operator O2 offers i-mode mobile phones to users. Content for Vodafone owned operators around the world is sourced in the UK.

The UK occupies a key role in the mobile gaming sector. Many publishers and developers are based in the UK:

- Publishers Glu, I-Play, Eidos, Superscape, Finesse Mobile, Player One and Player X are all based in the UK.
- Electronic Arts, the Western market leader for mobile games, runs its European operations from the UK, as does Infospace.
- There are dozens of mobile games developers, including some of the most highly regarded in the Western world. These include Distinctive Developments, Morpheme, Ideaworks 3D and

Rockpool Games, all of whom have won internationally recognised awards for their product.

All of the network operators except T-Mobile are already involved in mobile TV. Vodafone (in conjunction with broadcaster BSkyB), O2, Orange and 3 are using the 3G network to deliver mobile TV services. O2 has also been involved in trials of DVB-H services, but frequency for such a service will not be available before 2008 at the earliest (frequency appropriate for DVB-H will be made available after the analogue TV switch off, which will happen in a phased fashion between 2008 and 2012). MVNO Virgin Mobile and fixed-line incumbent BT have trialled a DAB-IP mobile service delivered over the existing DAB transmitter network. Virgin Mobile expects to offer the service commercially in the second half of 2006.

3 UK has won plaudits throughout the industry for its innovative user generated video service, called See Me TV. Users submit video clips for others to download, and receive money off their phone bill for each download. The service is generating over 1m downloads per month (Q1 2006 figure) from a total subscriber base of 3.5m.

Digital publishing

General

A survey of UK publishers, carried out by Deloitte for the Association of Online Publishers (AOP) and launched in July 2006, found that digital revenue is on average 17% of overall revenues, and that the growth of online advertising is the main factor. Online revenue is not cannibalising existing print revenues, the survey found. 70% of publishers do not feel threatened by blogs or other user-generated content and many are looking for ways to integrate it into their consumer sites. Newspaper and consumer magazine publishers' main strategy is to build audiences to drive online advertising revenue, with only a few trying to charge consumers for content, in contrast with business publishers. Most publishers are trying to create coherence by having a single team per brand or title, with responsibility for all content whether for print, online or mobile. The focus is on the brand rather than the specific medium.

Social networking

Social networking sites such as Bebo and MySpace, used primarily by teenagers, are particularly important in the UK, as are sites allowing users to trace their family histories, with 1.5m users doing so. One such site is Genes Reunited, an offshoot of networking site Friends Reunited, which was acquired by commercial broadcaster ITV in 2005.

Newspapers

Most newspapers are engaged in continuous additions to their online sites, such as blogs and podcasts (e.g. The Telegraph, The Guardian), and some have launched music download services (e.g. This is London, the site of the Evening Standard) . The Scotsman has recently (February 2006) introduced the first video podcast. The Guardian has a particularly wide range of digital initiatives, see Case Study. The Times has introduced a 'Smart Search' service with search engine Blinkx, which updates topic folders customised by the user, and provides a contextual news service related to content being browsed by a user. The Times has also introduced a feature allowing users to 'turn the pages' of the digital version of its magazine supplement.

A wide range of newspapers provide content for mobile phones, including a package for the O2 service from the FT, The Economist, The Independent, The Times, the Daily Telegraph and some regional papers.

Another feature of recent years has been the acquisition by newspapers of various classified advertising sites, for example the purchase in December 2005 by DMGT, publisher of the Daily Mail, of Fastcrop, owner of property website primelocation.com.

In terms of production, Johnston Press, the second largest regional press group, recently announced (June 2006) that it is creating 70 multimedia newsrooms with reporters filing both written and video stories.

Magazines

A survey by Abacus e-media for the AOP of 40 magazine publishers found that of their 451 titles, 72% had a web presence, but only 25% had all editorial online. 49% had changed their business model as a result of increased Internet usage, and 91% expected online revenue to increase in the next two years, but only 17% had a system in place to automatically repurpose content from print to online. The AOP Census 2006 showed that

for the first time in four years, the percentage of publishers charging for content online has dropped from 63% in 2005 to 37% in 2006. Turnover has risen by 53% on the year, driven by the big increase in online advertising.

In June 2006, the National Magazine Company (publisher of Cosmopolitan, Good Housekeeping and other titles) announced that it is opening a web division that will allow it to create new websites not necessarily derived from existing titles, and revamp existing sites based on the titles but including original content. The aim is to build online communities. It will also operate the company 's pure-play consumer health site NetDoctor.co.uk and any future pure-play acquisitions.

In August 2005, Hello magazine launched a new WAP portal which delivers celebrity news and photos to mobile phones ; headlines are free but full stories require a €4.35 monthly subscription.

Books

Some of the most interesting digital innovations have come from travel guide publishers. For example, Rough Guides now offers :

- Podcasts – free downloadable files with city information, updatable on a monthly basis with a subscription
- Podscrolls – content on ten major cities, with pictures, downloadable for colour-screen iPods.
- Phrasebooks available as downloadable audio files
- All the Directions series of guidebooks are available in e-book format
- Interactive digital maps for PDA or Smartphone.

Downloadable audio book sales have also taken off, with audiobook wholesaler for the Apple's iTunes store, Audible.co.uk, reporting in July 2006 that it has sold 300,000 downloads over the past year, with unabridged readings and comedy among the most popular genres. Peter Bowron, group managing director at Random House, believes there will come a point when books are commissioned on the basis of their audio rather than bookstand potential.

Country-specific issues

The role of the BBC in the online market generally and also in the online educational publishing area is seen as a disincentive by some of the commercial providers investing.

Government policy in relation to the educational ICT curriculum is seen as too narrowly focused on providing hardware and doesn't place the proper priority on embedding ICT into all aspects of the curriculum.

As already noted, most publishers mentioned market-facing issues e.g. business models and consumer acceptance, and internal challenges e.g. repurposing print content, as being the most important roadblocks. However, a few themes emerged in relation to actions that could potentially be taken by regulatory authorities to remove the obstacles they face in relation to deploying content on new platforms.

- Overall regulatory regime: publishers wish to avoid as far as possible moving away from self-regulation of either content or advertising, and specifically many would not wish to see regulation designed for audiovisual media extended non-linear services or for their own activities to be classified as linear
- No further extension of copyright exemptions or exceptions
- VAT: many publishers would like to see their electronic services and hybrid print/online services benefit from the same discretionary VAT concessions that apply to print in several Member States

European Commission

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