

Information Society and **Media & Communications:** Linking European Policies



European Commission
Information Society and Media



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European Commission
Information Society and Media



Linking European Policies

This brochure has been produced by Information Society Policy Link (ISPL), an initiative of DG Information Society and Media that aims to link information society projects with European policy-makers across a wide range of policy domains.

More than 3000 projects from information society programmes are being analysed, identifying a wealth of concrete results that support EU policies across all of the principal policy areas. By exchanging information and experiences, the Information Society Policy Link initiative helps to leverage the benefits of these activities for European policies. We are here to make the link.

For Project Consortia, we can help you to:

- ❖ Organise policy workshops and events targeted at the European policy community.
- ❖ Make introductions to policy-makers in European institutions and national administrations.
- ❖ Make contact with relevant and complementary projects and initiatives funded under other European programmes.
- ❖ Identify means to further exploit policy aspects of your results, including through further research, deployment and regulation.

For Policy-makers in the EU institutions and Member States, we can help you to:

- ❖ Maintain awareness of information society activities relevant to your policy domain.
- ❖ Identify promising projects and results within DG Information Society and Media's portfolio.
- ❖ Explore ways in which Information Society developments can support the implementation and monitoring of European and national policies.
- ❖ Build a dialogue with DG Information Society and Media on future needs and research requirements.

This brochure is one of a series describing projects' policy contributions and achievements covering around 20 policy areas. A separate series focuses on policy initiatives under i2010, the European Information Society for Growth and Employment. In addition, the initiative organises workshops to stimulate dialogue between researchers and policy-makers on key policy issues.

All publications plus information on policy workshops and other news are available via the ISPL website at:

http://ec.europa.eu/information_society/activities/policy_link/

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu>).

Cataloguing data can be found at the end of this publication.

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> Foreword

Europe's audiovisual industry is undergoing profound and rapid change, as communication networks, and media content, services and devices all converge. The market for audiovisual content and services is growing rapidly with the sector employing over one million people in the EU directly.

Although traditional television still dominates, innovative services such as video-on-demand (VOD) and peer-to-peer exchanges of audiovisual content are increasingly popular. Broadband, digital TV and 3G mobile networks are expanding rapidly, opening the way for traditional and on-demand services to be blended. Lifestyles and viewing habits are also changing, with more and more people turning to the internet and mobile devices for information and services.

Such changes call for a consistent set of information society and media rules. Updating the EU's regulatory framework for digital services is a key aim of i2010 – a European Information Society for Growth and Jobs, the digital economy component of the renewed Lisbon strategy for growth and jobs. As one of its goals, i2010 aims to create a Single European Information Space based on an open and competitive single market for information society and media services.

The initiative includes modernisation of the legal framework for audiovisual services by updating the *Television Without Frontiers Directive*. This will extend the Directive's remit to other television-like services in recognition of how markets and technologies have evolved. It aims to strengthen Europe's content industry by providing a flexible set of rules that create a level playing field for service providers and increase choice, diversity and investment in the industry. In a separate exercise, developments in standardisation and interoperability with regard to mobile TV are also being assessed.

There will also be support for the creation and circulation of European content through initiatives such as Film Online and Content Online, and to promote media literacy. In addition, the MEDIA 2007 programme now includes access to finance for the all-important creative SMEs and digitisation for content and delivery.

I welcome this brochure as an illustration of how research and innovation in ICT is contributing to a European policy for a competitive and dynamic market for audiovisual services.



Viviane Reding

European Commissioner for
Information Society and Media



> Challenges for Digital Media

The information society offers benefits to European business, society and culture partly because it can deliver useful content and services. Digital content and services are therefore crucial to the information society, as well as potentially being a major source of new jobs themselves. Europe has assets in the sector, but faces unique challenges in fully exploiting their economic and societal benefits.

Audiovisual and media industries are already significant economic players. Europe's content sector alone – media, publishing, marketing and advertising – contributes around 5% to Europe's GDP (some €433 billion), putting it ahead of Europe's telecommunications industry (€254 billion). Online content is still relatively immature, representing less than 10% of total revenues from music, video and games content, but is experiencing double-digit growth.

In addition to their economic importance, media industries also play a key social and cultural role.

Television is still the most important source of information and entertainment in European societies, with 98% of homes having a television, and the average European watching more than 3 hours TV per day. But the influence of other media channels, such as games, internet streaming, DVDs and mobile services, on culture and society is increasing rapidly.



Convergence – the coming together of computing, communications and content – is transforming the landscape for digital content and services, creating many opportunities for European service providers and creatives. At present, EU markets are dominated by US companies and content. For instance, only 20% of the DVDs sold in Europe have European content and over 70% of the films shown in Europe are American or are co-produced with the US. Europe has strengths in key media-related technologies, however, and is the global leader in mobile and wireless communications.

The innovations required often cut across boundaries, bringing together players as diverse as network operators, freelance artists, publishers, independent film-makers, distributors and advertising agencies. National boundaries must also be crossed if Europe's digital content industry is to benefit from single market economies of scale. This means tackling issues such as

copyright and privacy protection at the European level, and stimulating players in different countries to pool their resources in research and development.

Achieving critical mass, however, does not mean cultural homogenisation: Europe's rich cultural and linguistic diversity must be developed as a valued asset of the information society.

Given the pressures of globalisation and technological convergence, standards occupy a particularly important role in media markets: relevant developments are described in the *Information Society Policy Link* brochure on Standardisation. In addition, the brochures on Education and on Culture cover developments in two areas which are major users of digital media.

> Audiovisual, Media and Communications Policy

The Community has a long history of involvement in media and audiovisual policy, going back at least to the early 1980s. The current policy framework dates from the 1992 Treaty on the European Union, which makes a specific reference to the audiovisual sector. A Protocol to the Treaty of Amsterdam contains further provisions in relation to public broadcasting.

Current developments in audiovisual and media policy are framed by i2010 – The European Information Society for Growth and Employment, which forms the digital economy component of the renewed Lisbon strategy. i2010 identifies digital convergence as the main driver of change and aims at ensuring that the EU will fully benefit from the opportunities and prospects for strengthening the single market. To this end, i2010 sets out four challenges for convergence: speed, rich and diverse multilingual content, interoperability and security. It calls for a consistent framework for information society and media services – a Single European Information Space – to promote investment and competition, while preserving public interest objectives and ensuring the protection of consumer interests.

In practical terms, recent actions have focused on three main areas:

1. A regulatory framework allowing the realisation of an effective single market for broadcasting, whilst also safeguarding cultural diversity and protecting minors from harmful content;
2. Support mechanisms and other actions at a European level relating to audiovisual content on electronic networks (Film Online, Content Online, media literacy);
3. External measures, in particular co-operation with third countries and the defence of European cultural interests in the context of the World Trade Organisation.

In the context of i2010, the Commission has set up the Media Task Force as a sounding board for all policy affecting the media sector.

In the regulatory sphere, one of the main measures is the “Television Without Frontiers Directive” which aims to create the conditions necessary for the free movement of television broadcasts throughout the EU.

This is being revised under i2010 to reflect the specific requirements of new audiovisual services and create a level playing field for all companies offering TV-like services, irrespective of the technology used.

Actions aimed at strengthening the competitiveness of the European audiovisual industry were supported under the MEDIA Plus Programme (2001-2006). Activities supported through co-financing included: training initiatives for audiovisual industry professionals; the development of production projects (feature films, television drama, documentaries, animation and new media),

as well as the distribution and promotion of European audiovisual works. These activities will be continued and expanded under its successor programme, MEDIA 2007, together with a new emphasis on media literacy and image education initiatives, such as film festivals for young people.

Many other aspects of the EU's policy framework for the information society are relevant here, including:

- ❖ The EU's regulatory regime for electronic communications which aims to promote competition, reinforce the single market and safeguard consumer interests;
- ❖ Measures on copyright and digital rights management;
- ❖ Decision on Radio Spectrum and related policy measures;
- ❖ Recommendation on Protection of Minors and Human Dignity;
- ❖ Access to and use of public information, as specified under the Public Sector Information Directive;
- ❖ eInclusion, ensuring that all Europeans can access the new generation of digital content and services.



> Where the Information Society meets Media and Communications

In the digital age, information and communication technologies (ICT) and media are intimately related. If ICT are the engine of the knowledge economy, then digital content and services are its fuel.

Put simply, the information society opens new horizons for media industries, enabling them to reach new audiences and deliver content in new ways. These digital content and services are:

- ❖ *delivered over a wide variety of devices*, allowing users to access them by the most convenient means, whether it be PCs, mobile phones, televisions or other devices;
- ❖ *personalised*, according to the user's individual situation;
- ❖ *localised*, according to the user's physical location – a key added value for content and services delivered over mobile networks;
- ❖ *secured*, so as to protect the user's privacy and identity and respect the rights of the content's rightsholders.

In this multi-platform approach, mobile internet devices and interactive digital television (iDTV) could play critical roles. Based on a familiar medium, iDTV has the potential to provide a ramp for users who are reluctant to embrace other routes to the information society. It also brings a variety of additional benefits for consumers, such as more channels and higher quality pictures. The rise of DVD, high-end games and home cinema are important drivers for this trend, while consumers' enthusiastic uptake of flat-panel displays provides further momentum. New online models for accessing audiovisual content are also emerging, including on-demand services and services based on peer-to-peer exchange.



Information Society Activities

Research and Development

Europe has a long-standing involvement in research for the media and communications industries. Many of the technologies behind today's digital TV systems for instance, such as the MPEG2 and MPEG4 standards used in DVD and the GSM standards in mobile communications, were largely developed through EU-funded research in the 1990s. This work continues, underpinning European competitiveness in this field.

Under the Sixth Framework Programme, research activities focused on the much-heralded 'convergence' between the computing, telecommunications and content industries. Activities covered a wide spectrum, from enabling technologies to system integration,

end-user applications and service deployment. Relevant examples are found across the IST programme. They include:

- ❖ Major efforts in communication technologies and networks, including the next generation of mobile and wireless systems, and generalised and affordable broadband access;
- ❖ Development of digital television and other audiovisual systems from various aspects, including network infrastructure, the user interface, service provision and content delivery;
- ❖ The shift to all-digital broadcasting, including the introduction of digital techniques in editing and post-production processing;
- ❖ Content creation and management, in particular the problems of adapting digital content to different media and technology platforms (known as 'cross-media publishing');
- ❖ Use of metadata for indexing and searching multimedia/multilingual digital content;
- ❖ Mobile information and entertainment services for a wide range of mobile users, accessible through devices such as PDAs, mobile phones and laptops;



- ❖ Promoting the take-up of new technologies within the media industry by connecting creative artists and media industry practitioners with academic and technology partners;
- ❖ Socio-economic potential of digital content and services, including impacts on Europe's regions.

There was a high emphasis on standards, with clusters providing a means to coordinate projects' contributions to standardisation bodies. Coordination across Europe on issues as diverse as spectrum use, copyright and audiovisual policy also played, and continues to play, a key role in stimulating growth.

These activities will be broadly continued under FP7, in particular under *Challenge 1: Pervasive and Trusted Network and Service Infrastructures* (objectives on Network of the Future and Networked Media); and *Challenge 4: Digital Libraries and Content* (objectives on Digital Libraries, Usage and Learning, and Intelligent Content Creation and Management).

Other Activities

The **eTEN** (2002 – 2006) programme was concerned with the large-scale roll-out of public interest services, primarily in support of the i2010 Action Plan. In this context, eTEN projects addressed the deployment of digital content as a basis for online public services in areas such as culture, education, tourism, transport and mobility, and elnclusion.

With funding of €163 million, the **eContentplus** (2005-2008) programme supports the development of multilingual content for innovative, online services across the EU. Target areas are public sector information, spatial data, and learning and cultural content.

For the future, and with particular reference to the i2010 strategy, the main initiative will be the **ICT Policy Support Programme**, which is part of the Competitiveness and Innovation Framework Programme (CIP). With a budget of €728 million, it will stimulate converging markets for electronic networks, media content and digital technologies, test new solutions to speed up the deployment of electronic services, and support modernisation of the European public sector.

> Media Literacy for the Digital World

New technologies can help citizens make sense of the vast sea of information available in a multimedia, multi-channel environment.

Policy Context

As new information and communication technologies (ICT) make it ever easier for anyone to publish, broadcast or communicate, so the ability to judge the true merit of media content and make conscious choices – or ‘media literacy’ – becomes ever more essential for active citizenship and democracy.

Media literacy relates to all media, including television and film, radio and recorded music, print media, the internet and other new digital communication technologies. In the digital age we are now being confronted with images, sounds and messages on a daily basis; they are an important part of our contemporary culture. Having the ability and skills to access and analyse these various media messages, and extract meaning from them, has become critical to how we communicate.

Media literacy thus helps citizens to recognise how the media filters perceptions and beliefs, shapes popular culture and influences personal choices.

It empowers citizens with the critical thinking and creative problem-solving skills to make them judicious consumers and producers of content. Media literacy also supports freedom of expression and the right to information, helping to build and sustain democracy. In addition, there is a link between media literacy and better regulation, because a media-literate society is one that is empowered to make its own judgments and choices, and hence is in less need of detailed protective rules.

At the initiative of Commissioner Reding, the Commission has set up a Media Literacy Expert Group to probe these issues. This Group analyses and defines media literacy objectives and trends, highlights and promotes good practices at European level, and

proposes actions in the field. In particular, it highlights the importance of promoting the protection of children, young people and human dignity in the media, and of supporting the creation of a media environment appropriate for citizens’ social, educational and cultural needs. The Group is also working on the development of reliable means of evaluation.

Building on the Expert Group’s initial advice, in 2006 the Commission launched a public consultation on how to cultivate and improve media literacy in the digital age. The Commission will set out its findings and proposals in this area in a Communication in 2007.

Making Sense of Multimedia Information

A variety of ICT research projects are looking at ways to help users access, filter and critically analyse information within a multi-channel, multimedia environment.

One focus is advertising. For decades, the media industry has been seeking a way to accurately track advertising and marketing and estimate how it helps to sell brands. This priceless information would allow agencies and companies to determine which campaigns work best.

DIRECT-INFO, a project under IST-FP6, developed a world-class tracking system. DIRECT-INFO works by monitoring the media and analysing user decisions via a semi-automatic extraction of information from content that is being

listened to or watched. This gives executive managers and policy makers a solid basis on which to make their strategic decisions, by significantly improving the way information is filtered and analysed in designing an advertising campaign.

The results are being partly used in a follow-on project, **MediaCampaign**. A media campaign is a collection of inter-linked advertisements across different countries and different media. The project’s main goal is to automate to a large degree the detection and tracking of media campaigns on television, internet and in the press. The project works across each of these media and is targeted primarily at media information firms in the advertising, news and music information markets. Its results are expected to lead to new business cases in media monitoring and analysis.

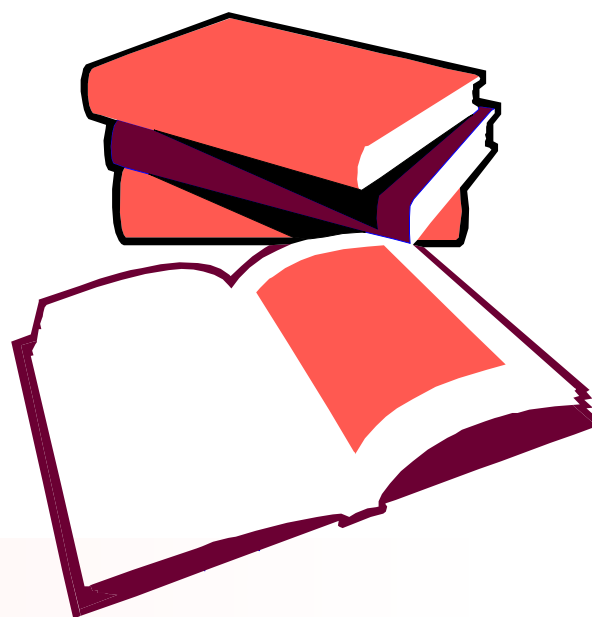


Another IST-FP6 project, **NEWS**, addressed the need of news content producers for fast and precise search techniques for multi-lingual news item content. It developed a set of interoperable web services that can be integrated into news agencies' workflows. Furthermore, NEWS supports services for news content consumers like personalised news feeds, automated news content trend analysis, or semantic query and retrieval services in news archives. With initial coverage in English, Italian, and Spanish, the tools allow journalists to define stories on-the-fly, with a precision greater than a library's card catalogue. As well as news agencies, the NEWS platform will be of use to governments, large enterprises and other users needing detailed analysis of raw text.

Personalised News Gathering

Bombarded by information from numerous sources, many people today turn to electronic news-aggregation services to find what they want. Researchers under **PENG**, an IST-FP6 project, claim to have developed a flexible and innovative tool that enables journalists and other users to fine-tune the process of news-gathering and delivery. Current news-aggregation systems work very much like internet search engines, pushing out information based on certain user criteria. The PENG system, by contrast, relies on both information filtering (push) and information retrieval (pull).

This approach enables users to go much further. By personalising filters, they can pick up targeted information from agencies and combine this with data retrieved from the web or specialised archives. They can also place constraints on the content they seek – such as the media category or trustworthiness of sources – to generate highly specific information. The system then calls on various modules to edit and summarise all this information automatically, before presenting it as the user wishes.



> PROJECT DETAILS

DIRECT-INFO – Media Monitoring

✉ herwig.rehatschek@joanneum.at • 🌐 www.direct-info.net

MediaCampaign – Discovering, Inter-Relating and Navigating Cross-Media Campaign Knowledge

✉ herwig.rehatschek@joanneum.at • 🌐 www.media-campaign.eu

NEWS – News Engine Web Services

✉ bernardi@dfki.uni-kl.de • 🌐 www.dfki.uni-kl.de/~bernardi/News/

PENG – Personalised News Content Programming

✉ gabriella.pasi@itc.cnr.it • 🌐 www.peng-project.org

> Exploiting New Services

Research and deployment actions closely support EU efforts to create a level playing field for new audiovisual services.

Policy Context

The single European market is one of the biggest achievements of European integration, and applies to television broadcasts as much as anything else. Just as we are free to buy a car in any EU Member State, so we can also watch TV channels from all over Europe. The regulatory framework here is provided by the EU's Television Without Frontiers (TVWF) directive, which was launched originally in 1989 and revised in 1997.

The broadcasting world is changing rapidly however, and a modernisation of the directive is long overdue. Hence, the Commission has proposed a revision of the TVWF directive in the form of a new directive on Audiovisual Media Services (AVMS). In particular, the directive addresses new requirements arising from digital convergence and the growth of new service platforms such as interactive digital TV, audiovisual services delivered over the internet, and digital broadcasting to mobile devices.

The AVMS directive would extend the benefits of the 'country of origin' principle – which has helped Europe's broadcasting industry to flourish since 1989 – to new 'non-linear' (on-demand) audiovisual services (in particular video-on-demand), so as to improve their prospects for commercial success. Service providers would be able to offer audiovisual content complying with the laws of their own country for reception in other Member States, without having to vary this content to comply with local laws. The directive also introduces more flexibility into advertising rules to reflect technological progress and changes in the market and users' behaviour.

Policy focuses on ensuring the development of open and competitive markets for new digital content and services which are accessible to all. Over recent years the Commission has issued a series of Communications presenting its views on the barriers to access to information society services through open delivery platforms for mobile communications and digital television. In its most recent Communication (COM(2006) 37), the Commission undertook to: work with Member States to ensure the successful switchover to digital TV; promote open standards and interoperability; and support cooperation between Member States and between stakeholders.

Research for Audiovisual Services

A huge portfolio of research projects is concerned with the provision and market evolution of audiovisual content and services. All aspects of the value chain are covered, from content creation, through storage, searching and retrieval, to distribution. Projects emphasize, in particular, digital content and services that are personalised, interactive and accessible in open and/or cross-platform contexts.



NM2 will create new tools for the easy production of non-linear broadband media which can be personalised to suit the preferences of the individual user. Viewers will be able to interact directly with the media and influence what they see and hear according to their personal tastes and wishes. NM2 expects future flexible media productions to be developed from smaller atomic pieces of media that are assembled, based on some knowledge of a user's preference, to create personalised content.

LIVE will create innovative production methods and TV formats, allowing interactive digital broadcasters to stage live mass media events, such as the 2008 Olympic Games. The project covers the whole high-end broadcast chain for live events, from media archives via live stream handling, up to the play-out and content reception at the TV viewer's side. LIVE promotes a new market segment for digital interactive television that does not exist today: intelligent television programming and services based on on-demand, multi-stream and real-time content. These will bring new business opportunities to the broadcasters and more interesting live content to the TV viewers.

Sports programming is a lucrative market and one that is well suited to the opportunities brought by the new media. **LEMATCH** developed a sports production platform, called CSP, for producing and delivering interactive cross-media content, with a focus on live events. These technologies will create new revenue streams from advertising, user interaction and transaction and will help to reduce the costs of live, cross-media sports productions. The initial application areas were basketball and soccer.

If these innovations still aren't realistic enough, researchers are also working on three-dimensional television. **3DTV** is an FP6 network of excellence for European researchers working on all aspects of 3D video, including capture, representation, transmission and display. Bringing together about 200 researchers from 19 institutions, the network has already gained visibility worldwide.

Gaming Gets Serious

The computer games market is growing rapidly and has already surpassed the movie industry in terms of revenue. It is therefore tremendously important for Europe to ensure it maintains state-of-the-art expertise in this area so as to compete effectively with the USA and Japan.

One development is pervasive games, a radically new game form that extends gaming experiences out into the physical world. **IperG**, an FP6 integrated project, has set out to produce entirely new game experiences which are tightly interwoven with our everyday lives through the items, devices and people that surround us and the places we inhabit. It does so through a series of showcases, each exploring a different genre of pervasive gaming. The experiences are generalised through research themes focusing on business and organisational models, design and evaluation methods, infrastructure, and development tools for pervasive games.

Another project, **GameTools**, is working on problems of central importance to the production of high quality 3D graphics, one of the central aspects of modern computer games. A special interest group has been created so that European game companies will have preliminary access to the technology developed by the project.

Games@Large, a new FP6 integrated project, will design a platform for high-end interactive video games. It plans to develop a radically new system architecture to enhance existing consumer devices such as set-top boxes and games consoles.

> PROJECT DETAILS

3DTV – Integrated Three-Dimensional Television – Capture, Transmission and Display

✉ onural@bilkent.edu.tr • 🌐 www.3dtv-research.org

Game Tool – Advanced Tools for Developing Highly Realistic Computer Games

✉ mateu@ima.udg.es • 🌐 www.gametools.org

Games@large – Games at Large

✉ ashani@exent.com • 🌐 www.gamesatlarge.eu

IperG – Integrated Project on Pervasive Gaming

✉ info@sics.se • 🌐 http://iperg.sics.se/index.html

LEMATCH – Cross-media Programming of Sports

✉ look@sportartgmbh.de • 🌐 www.lematch.org

LIVE – Live Staging of Media Events

✉ marion.borowski@iais.fraunhofer.de • 🌐 www.ist-live.org

NM2 – New Media for a New Millennium

✉ gupta@eurescom.de • 🌐 www.ist-nm2.org



> A Single Market for Online Content

Success for Europe's information society depends on creating an open and competitive single market for digital content and services.

Policy Context

Online content is at the heart of the rapid convergence of audiovisual media, broadband networks and electronic devices. The availability and take-up of high-speed broadband connections is making it easier for consumers not only to access a wider range of creative digital content than would have been imaginable ten years ago, but also to create content themselves. At the same time, broadband's ability to handle vast quantities of data enables European companies to offer new content and services and to create additional markets.

The creation of an open and competitive single market for online content, such as films, music and games, is one of the key aims of the EU's i2010 strategy. i2010 gives priority to the promotion of media content markets through effective rights protection, licensing arrangements and encouraging legitimate use of content, as part of a package of measures to create a 'single European information space' for the digital economy.

The Commission intends to encourage the development of innovative business models and to promote the cross-border delivery of diverse online content services. It is also keen to ascertain how European technologies and devices can be successful in the creative online content markets. This will help pave the way for a true European single market for online content delivery. To gather views on these issues, a public consultation was launched in 2006 and is expected to be followed by a Commission Communication on Content Online in early 2007.



A first concrete example of how challenges for Europe's online content industry can be tackled is the European Charter for the Development and the Take-up of Film Online (i.e. films delivered 'on-demand' over the internet), which was endorsed by film makers and business leaders in May 2006.

Film Online services offer tremendous economic and cultural opportunities for European films and the European film sector, and will become a powerful driver for broadband in Europe. To realise this, the Charter identifies four key elements which are urgently needed for Film Online to take off: a wide online supply of attractive films; consumer-friendly online services; adequate protection of copyrighted works; and close cooperation to fight piracy. In addition, the Charter identifies commendable practices for bringing film content online via legitimate services and in a consumer-friendly way.

Europe at the Forefront of the Digital Cinema Revolution

The shift from traditional analogue techniques to all-digital production will have profound effects on the European film and cinema industry.

Two early successes here were G-FORS and **NUGGETS**, both FP5 projects, which played a major role in developing a file format known as MXF. This culminated in a formal submission of MXF to the

Society of Motion Picture and Television Engineers (SMPTE), the main standardisation body for the broadcasting industry.

IP-RACINE, an integrated project under IST-FP6, is developing advanced technologies that will help secure the industry's future competitiveness. It targets a fully digital cinema workflow, from 'scene to screen'. Its innovations are expected to lead to improved functionalities in cameras, better and lower cost projectors and servers, virtual cinema studio products, cinema post-production hardware and software, and better processing of images, graphics and audio. Testbeds play a significant role as they have proven to be a good way of demonstrating the interoperability of results. The project also undertakes training and is disseminating its results widely among the European film and cinema industry.

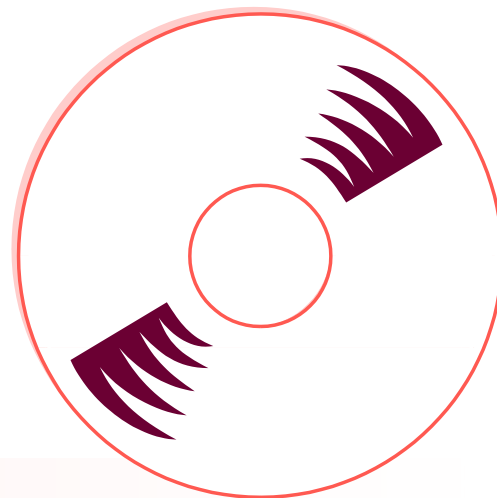
The creation of digital movie content requires many processing steps because of the large number of potential formats for end-use: digital cinema, TV, DVD, internet streaming, IP-TV and so on. New workflows open up solutions for efficient access and processing of movie data based on highly efficient ways of compressing an image file with various resolutions and qualities. The **WorldScreen** project is investigating the use of novel compression algorithms, in particular an image standard known as JPEG 2000, so as to improve digital cinema workflows and cross-media conversion. It is collecting user requirements and defining models for digital cinema, electronic cinema and rich media archives. Meanwhile, **EDCine** is ensuring the JPEG 2000 standard meets European requirements, focusing on optimisation, enhancement and interoperability issues.

New Ways of Creating and Interacting with Content

Citizens and consumers face real challenges in being able to keep up with the explosion of digital content scattered over different platforms, like radio, TV, and the internet, and different media. In the European context, language is also an important consideration. **REVEAL THIS** is developing content programming technology able to capture, semantically index, categorise and cross-link multimedia and multilingual digital content coming from different sources. Users of the system will be able to undertake personalised semantic searches and receive summaries of content translated into their desired language. Applications are wide-ranging, including the media and travel industries.

Owners of digital cameras often end up with folders with non-descript file names. This is because the process of identifying the subject of an image in an album is tedious and not well supported by existing tools.

ACEMEDIA is developing tools to recognise objects in images and tag them accordingly for future retrieval and use. This is done by means of sets of concepts known as ontologies which support various forms of reasoning. For example, a user could ask for pictures of winter sports and be returned images tagged as being about skiers or skaters. **ACEMEDIA** uses this form of reasoning also to determine how to best display an image (for example how to crop it) given the bandwidth and display constraints of the device on which it is required (e.g. a mobile phone).



> PROJECT DETAILS

ACEMEDIA – Integrating Knowledge, Semantics and Content for User-Centered Intelligent Media Services

✉ coordinator@acemedia.org • 🌐 www.acemedia.org

EDCine – Enhanced Digital Cinema

🌐 www.edcine.org

IP-RACINE – Integrated Project Research Area Cinema

✉ webmaster@ipracine.org • 🌐 www.ipracine.org

NUGGETS – Networks Used in Globally Generic Television Systems

✉ lacottej@thmulti.com • 🌐 <http://mx.f.info/>

REVEAL THIS – Retrieval of Video and Language for the Home User in an Information Society

✉ spip@ilsp.gr • 🌐 www.reveal-this.org

WorldScreen – Layered Compression Technologies for Digital Cinematography and Cross-media Conversion

✉ info@worldscreen.org • 🌐 www.worldscreen.org

> Keeping Pace with Convergence

Close articulation of policy, regulation and research is required to ensure Europe makes the most of digital convergence.

Policy Context

Electronic communications networks and services form a large part of the ICT landscape, so creating the conditions for a flourishing e-communications sector is a key aim of EU regulatory policy. Building on the liberalisation of the telecommunications sector begun in the 1990s, in 2003 a new legal framework regulating electronic communications services and networks in the EU came into force. The EU regulatory framework aims to promote competition, to reinforce the single market and to safeguard consumer interests in the electronic communications sector.

Liberalisation of the European telecommunications market was brought to introduce competition, in the belief that market forces would bring down prices. This creates a level playing field for new market entrants and brings benefits to citizens and businesses, thus feeding economic growth and prosperity. In addition, the new regulatory system recognises a universal service obligation to ensure equal access to basic and advanced services for all European citizens and businesses in cases where the market alone does not provide.

To ensure EU regulations keep pace with digital convergence, in 2005 the Commission launched a further review of the regulatory framework for electronic communications under the i2010 strategy. A Communication¹ adopted in June 2006 explains how the current framework has delivered on its objectives, and identifies areas for change. A public consultation on the changes was also launched.

Also under the i2010 strategy, the Commission is preparing a regulation that aims to cut the high cost of international roaming in mobile networks and enhance the single market. In addition, it will present proposals for a reform of spectrum management to facilitate access to radio frequencies. A coherent approach here at European level will have a direct impact on European growth and jobs, e.g. through the release of spectrum from the analogue TV switch off. This in turn could stimulate wireless broadband and the development of new pan-European services. The Commission is also assessing standardisation and interoperability developments with regard to mobile TV.

Maintaining Europe's Leadership in Mobile Communications

Over the past decade, European industry has established a clear global industrial and technology leadership in the field of mobile communications. This success in global markets was developed from the results of EU-funded collaborative research on second and third generation mobile technologies, which formed the basis of successful global standards. In fact, the scale of this success is such that the economic impact of the mobile and wireless sector is now greater than that of the internet. The economic potential

of mobile and wireless communications is far from being exhausted, however, and Europe has to keep moving quickly to stay ahead.

The eMobility European Technology Platform has defined a strategic research agenda covering future developments in this field. It sets out a strategy to reinforce Europe's leadership in mobile and wireless communications and services and to master new technology, so as to best serve Europe's citizens and the European economy. Preparatory activities were supported under the **eMobility** project and the technical work will be progressed under FP7 and other means.



¹ Communication on the Review of the EU Regulatory Framework for Electronic Communications Networks and Services (COM(2006) 334)

Technologies for Better Mobile Services

Future growth of mobile and wireless communications is expected mainly from data-oriented services and applications. Market requirements here are increasingly demanding, with users expecting ubiquitous access to ever-higher levels of performance and at ever-lower cost. Many future services will require higher data rates and, therefore, higher bandwidth in order to satisfy users' expectations.

To these ends, **WINNER**, an IST-FP6 project, is working to enhance the performance of mobile communication systems. The improvements of radio transmission being explored in the project are crucial for enabling new mobile services and applications anytime and anywhere. Its challenge is to make mobile communication systems more adaptable to user needs. As well as key technologies and components, the project is developing methods for efficient and flexible spectrum use and spectrum sharing. These have been used as an input to the World Radio Communication (WRC) Conference 2007.

WINNER is one of a series of IST projects that contribute to the World Wireless Initiative, an industry-led consortium for mobile communications research.

Broadband for All

Another FP6 project, **CoCombine**, evaluated the social and economic impact of widespread broadband use across Europe. It developed knowledge and tools that allow network operators and others to understand the related markets for long distance transit, public peering, and broadband access. The project also focused on the interplay between infrastructure and contents, which defines broadband diffusion modalities across Europe. Its results are presented in a series of reports analysing the latest developments and future trends.

BREAD was an IST-FP6 coordination action that enabled European regions to share their experiences of 'broadband for all'. It brought together researchers from societal, economic, regulatory and technological disciplines to share views and knowledge, develop new strategies and set out good practice recommendations. One of its main results was a series of regional "success stories" of actual broadband deployment. These findings are reinforced by **A-BARD**, an IST-FP6 coordination action that studied the impact of digital services on rural economies.

> PROJECT DETAILS

A-BARD – Analysing Broadband Access for Rural Development

✉ j.offaherty@mac.ie • 🌐 www.abard.org

BREAD – Broadband in Europe for All: A Multi-Disciplinary Approach

🌐 www.ist-bread.org

CoCombine – Competition Contents and Broadband for the Internet in Europe

✉ e.giovannetti@econ.cam.ac.uk • 🌐 www.cocombine.org

eMobility – eMobility Specific Support Action

✉ fiona.williams@ericsson.com • 🌐 www.emobility.eu.org

WINNER – Wireless World Initiative New Radio

✉ info@ist-winner.org • 🌐 www.ist-winner.org



> Europe and the Global Media

The EU's audiovisual and media policies, and related ICT research policies, help Europe's media industries compete on the global stage.

Policy Context

Globalisation is having a profound impact on the audiovisual and media industries, requiring a strong international dimension in the EU's audiovisual and media policies.

International cooperation in the audiovisual field helps promote European cultures and values outside of Europe. It also seeks to foster a better mutual understanding between the EU and its international partners on issues affecting the evolution of the media sector worldwide, as well as encouraging exchange of good practices, expertise and know-how with professionals and authorities in third countries. Additionally, international cooperation in this field can help further trade-related instruments, such as GATS in WTO, in a way that respects cultural diversity.

The main link between audiovisual policy and the enlargement process is through alignment with the Community acquis (mainly the Television Without Frontiers Directive) as well as through participation in Community programmes. Relations between the Union and the candidate countries have developed in accordance with various instruments established within the framework of the pre-accession strategies. For each candidate country, the EU identifies priorities in the Accession Partnerships and monitors progress through the regular reports. The Commission is proposing to review the acquis for information society and media services under the i2010 strategy.



Most international agreements between the EU and partners in other world regions contemplate cooperation in the audiovisual field. One mature area is the Mediterranean region, where the EU develops and finances programmes in the audiovisual and cultural field through the EuroMed Partnership, as part of the European Neighbourhood Policy. The EU also works closely with Latin America, in the context of the 1995 Interregional Framework Cooperation Agreement between the EU and MERCOSUR, helping countries in the region to benefit from the expertise gathered during the development of the EU's audiovisual policy and mechanisms.

The EU also works in trade and other multilateral fora, such as the WTO, WIPO, ITU, OECD, CoE and UNESCO¹. For instance, it actively contributed to the success of the Tunis phase of the World Summit on Information Society (November 2005), which agreed important steps towards better internet governance and promoting cultural diversity online. It also works towards a safer internet through the Safer Internet Action Plan, which as well as coordination between Member States involves cooperation with partners worldwide.

Contribution of ICT

The emergence of new international markets for the television and broadcasting industries represents an important opportunity for Europe. Two regions in particular, Latin America and Asia, offer attractive market opportunities for European digital broadcasting products and services.

Hence, digital broadcasting was identified as a priority topic for research cooperation in the latter part of FP6. The objective is to open opportunities for the joint development of digital broadcasting technologies and their convergence with mobile communications. Through research cooperation, the EU aims to ensure added value converged technologies emerge and are quickly deployed in these markets and are interoperable with EU-developed solutions. EU organisations benefit through contributing to the emergence of worldwide standards, taking advantage of developments, and acquiring familiarity with these emerging markets.

¹ These abbreviations are respectively: the World Trade Organisation, World Intellectual Property Organisation, International Telecommunications Union, Organisation for Economic Cooperation and Development, Council of Europe, and the United Nations Economic, Social and Cultural Organisation.

Digital Broadcasting Cooperation with Brazil

SAMBA is looking at the provision of advanced interactive digital television (iDTV) and mobile services in Brazil. Its platform will allow local communities and citizens (including the low income population) to access community-oriented content and services by means of iDTV channels. From the point of view of content and services production, SAMBA will enable the development of iDTV applications that are compatible with both terrestrial TV platforms (DVB-T MHP) and new mobile devices (DVB-H). The project will also address compatibility and integration issues between different mobile and fixed iDTV standards so as to assess opportunities for future development.

SAMBA is one of a number of research projects focusing on digital broadcasting cooperation with Latin America. Others are **BEACON**, which aims to enable Brazilian operators to benefit from European expertise in digital terrestrial TV services, and **BRASIL**, which will deliver broadband to rural regions over satellite integrated links.

Euro-Chinese Research Collaboration

China is another EU research partner in the digital broadcasting field. Here, **PARTAKE** instigated long-term research collaboration between leading European and Chinese organisations in relation to converging systems. These utilise broadcasting and telecommunications networks to deliver services that would be impossible to provide using either network alone. The project helped to engage leading Chinese organisations in standardisation and regulation initiatives that are of strategic importance to Europe's ICT industry. Activities included a series of workshops and training sessions.

Another project, **PHENIX**, studied the deployment of innovative multimedia, audiovisual interactive services for mobile devices in China. The services will be based on international standards and are to be launched at the Beijing Olympic Games in 2008. The project provided European organisations with information about the Chinese market and future prospects for the targeted services, as well as access to the Chinese market.

Also in this area, the **BIP** and **BIP2** projects promoted cooperation between the EU and China on home networks and platforms.

These early actions have been complemented with further projects that promote and support research cooperation between the EU and China on digital broadcasting technologies, especially the convergence with mobile communications (See *Information Society Policy Link* brochure on External Relations).



> PROJECT DETAILS

BIP2 – Boosting the International Profile of IST Projects In the Networked Audiovisual Systems & Home Platform Field

✉ info@ist-bip.org • 🌐 www.ist-bip.org

BRASIL – Broadband to Rural America over Satellite Integrated Links

✉ harald@ansur.no • 🌐 www.dvb-brasil.eu

PARTAKE – Assisting Chinese participation in Converging Systems

✉ thomas.owens@brunel.ac.uk • 🌐 www.ist-partake.org

PHENIX – Delivery of Innovative Multimedia, Audio-Visual Interactive Services Towards Mobile Devices

✉ francois.ziserman@francetelecom.com • 🌐 www.ist-phenix.org

SAMBA – System for Advanced Interactive Digital Television and Mobile Services in Brazil

✉ cristina.costa@create-net.org • 🌐 www.create-net.it/samba

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