



## **REGULATORY SCORECARD**

**Report on the relative effectiveness**

**of the regulatory frameworks for electronic communications in**

**Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece,  
Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain,  
Sweden and the United Kingdom**

**November 2007**



**SPC Network**

## EXECUTIVE SUMMARY

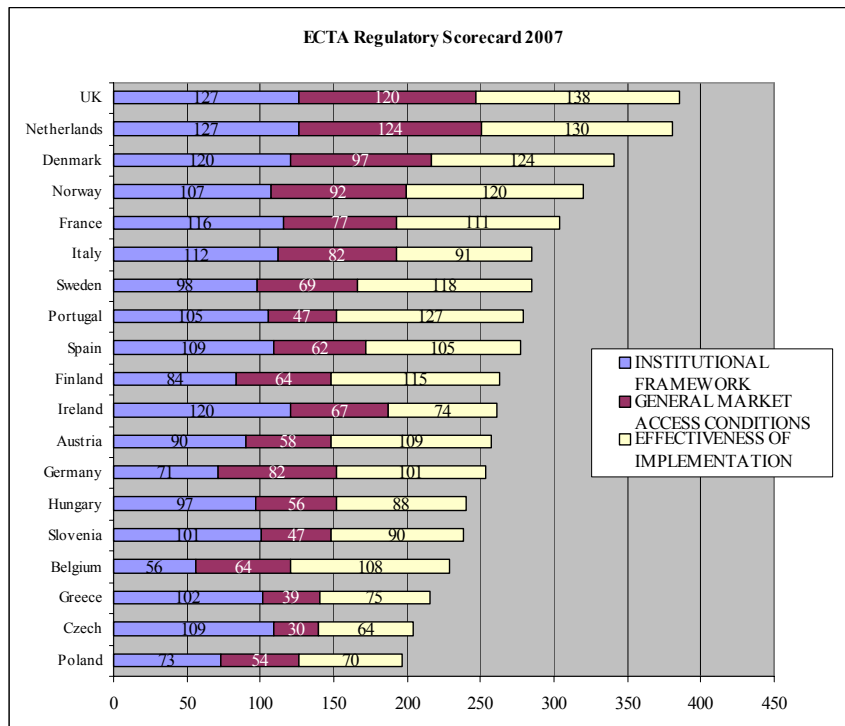
1. This report compares the regulatory environment in 18 EU Member States and Norway in the electronic communications sector and its effectiveness in promoting the objectives of the EU regulatory framework. On the basis of this study, a comparative analysis has been conducted to identify areas of best practice and weakness in the application of the current legislative framework and to assess the implications of variations in regulatory approach on consumer welfare, competition and investment. Finally, the authors have drawn conclusions and made recommendations on actions that could be taken through national implementation measures and through the revision of the EU-wide regulatory framework to improve outcomes for Europe’s citizens and businesses.

2. The Member States surveyed in this report are Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden and the UK.

3. The Scorecard is based on responses submitted by National Regulatory Authorities (“NRAs”) and ECTA members to a detailed questionnaire consisting of 118 questions covering (A) the institutional framework; (B) general market access conditions; and (C) the specific competitive and regulatory conditions relating to the markets for fixed and mobile telephony, high speed business connections and broadband. The questionnaire was compiled following consultation with NRAs and ECTA members and taking account of the requirements and recommendations contained in the EU regulatory framework, the World Trade Organisation (WTO) reference paper on telecommunications and European Commission and European Regulators Group (ERG) Guidelines.

4. On the basis of the responses received for each country, a comparative quantitative analysis was carried out, resulting in an overall score for the effectiveness of the regulatory environment in each country. The overall results of the Scorecard are shown in Figure 1.

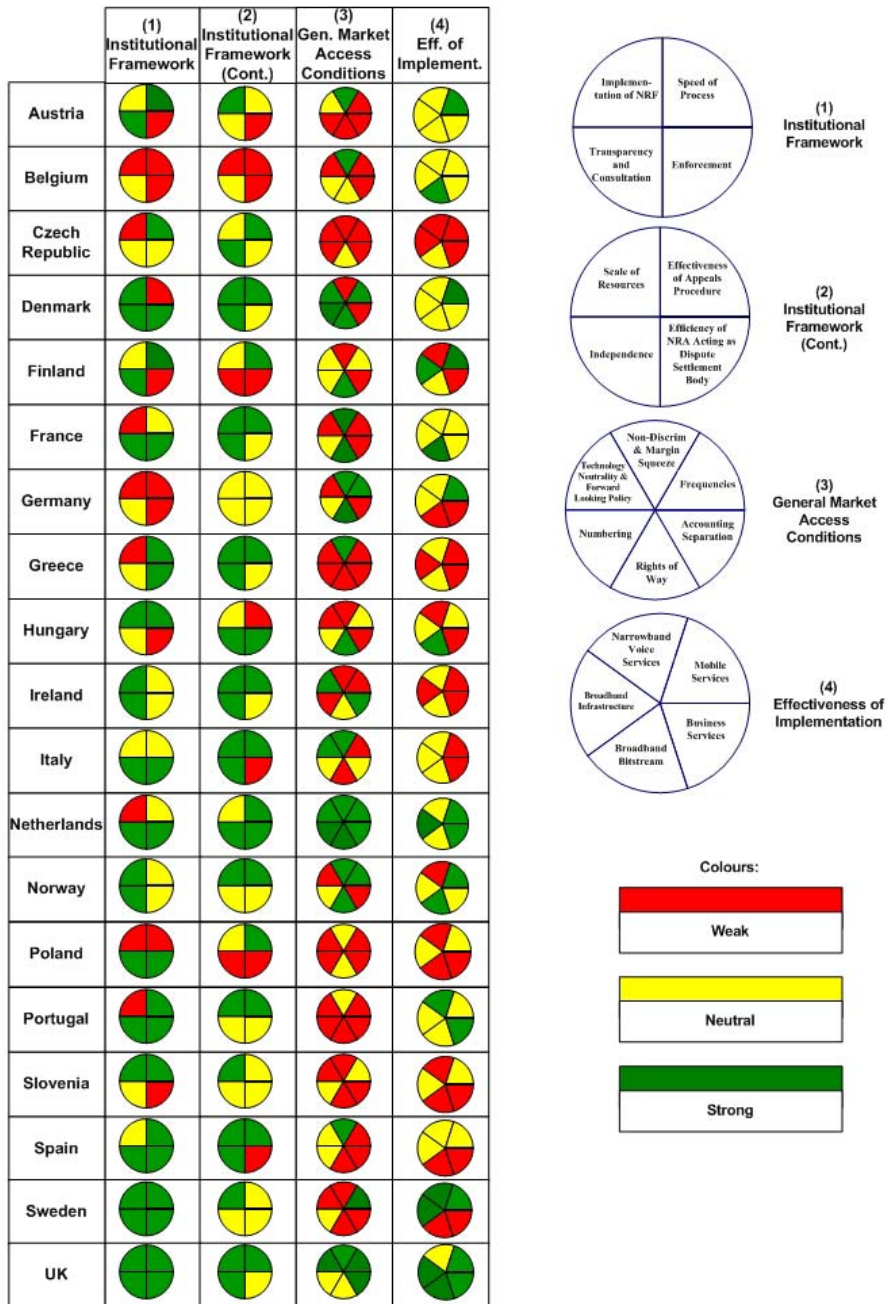
**Figure 1: Overall Results of Scorecard**



5. The United Kingdom remains the highest scoring country overall for effective regulation of the telecoms sector. The Netherlands has improved its position from 4<sup>th</sup> place in 2006 to 2<sup>nd</sup> place this year just four points behind the UK. Norway, a new country in this Scorecard performs well coming in 4<sup>th</sup>, between Denmark (2<sup>nd</sup> in 2006) and France (3<sup>rd</sup> in 2006).
6. The next group of countries consist of Italy and Sweden, which tie, followed by Portugal, Spain, Finland and Ireland.
7. Germany has improved its position from 15<sup>th</sup> in 2006 to 13<sup>th</sup> this year (compared to the 17 countries included in the previous report, Germany ranks 12<sup>th</sup>). Amongst the EU15 Greece continues to exhibit the weakest performance, although with an improvement since last year.
8. Amongst the new Member States, which liberalised and implemented the EU Framework later than other countries in the assessment, Hungary continues to be the best performer, followed by Slovenia (assessed for the first time this year), the Czech Republic and Poland.
9. It is possible to examine in more detail the strengths and weakness of particular countries on each of the three categories of aspects examined within the Scorecard. Figure 2 presents this graphically. The three sections have been divided into pie charts with each slice representing a sub-section. Please note that Section A is presented as two pies due to the relatively large number of sub-sections. A green slice is a relative strength and indicates that a country has scored 70% or more of the available points for that subsection (rounded to the nearest whole number). A yellow slice indicates some problems and reflects a score between 45% and 70% of the available marks. A red slice indicates a particular weakness, *i.e.* a score of less than 45%.

**Figure 2: Overview of Strengths and Weaknesses of the Surveyed Countries**

**Report on the effectiveness of national regulatory frameworks 2007**



## Horizontal findings

10. In addition to identifying strengths and weaknesses for particular countries, some more horizontal conclusions can be drawn from the Scorecard as follows.

11. There is a variation in the extent to which regulators have been successful in applying the regulatory framework to address bottlenecks that are recognised as inhibiting competition in the telecoms sector (*e.g.*, the local loop, terminating segments of high speed leased lines). Whilst there is evidence of good practice in some countries, in many cases remedies have been formally adopted, but have failed to translate to competitive outcomes. In such cases, discrimination in the price and/or service levels offered by dominant firms has often been a barrier to effective implementation.

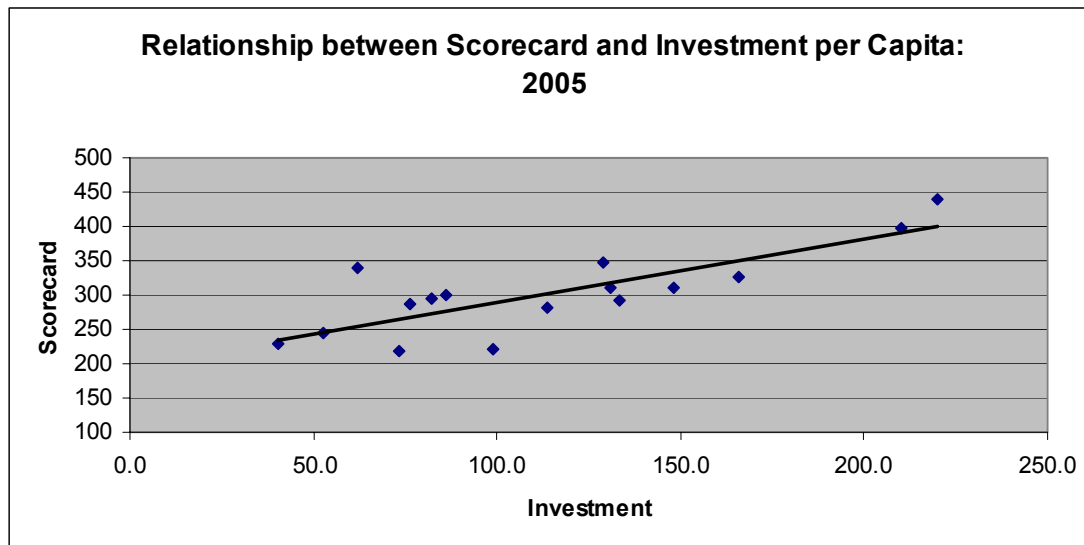
12. There is a substantial lag between market developments such as the shift to voice over IP, IP-based core networks and the upgrade of access network and application in a consistent manner of sectoral rules to address resulting challenges, such as the threat that competition will be foreclosed. Such delays create serious risks that there will be periodic set-backs or even reversals of the competitive process each time technologies and networks are updated.

13. The powers and independence of regulators have in many cases been restricted such that their ability to enforce rules under the regulatory framework is likely to be compromised.

14. At the same time, quantitative analysis of the Scorecard shows that:

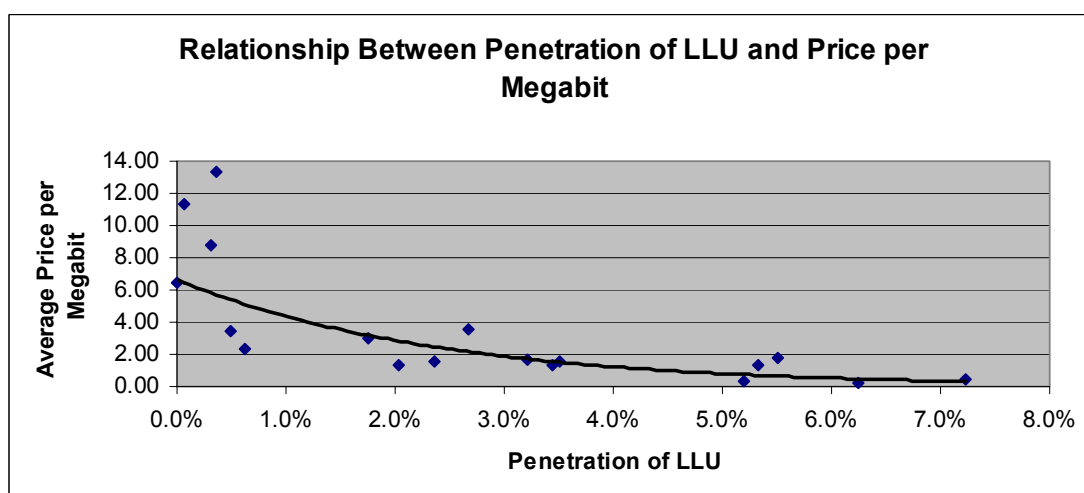
- Regulatory effectiveness as measured by the ECTA Regulatory Scorecard index has been a consistently strong indicator of investment levels in telecoms (SPC Network *“Regulation and Investment in European Telecoms Markets”* November 2007). Figure 3 below shows the relationship between the Scorecard result for 2005 and Investment per Capita in the same year.

Figure 3



- The independence of the regulatory system from Government appears to affect the overall ‘regulatory effectiveness’ of countries as measured under the Scorecard. The conditions for the removal of the Head of the NRA, restrictions on NRAs powers and State ownership in telecoms companies seem to be particularly influential in determining overall effectiveness of the regime.
- Local Loop Unbundling (“LLU”) appears to deliver tangible benefits to consumers. Both the market share and the penetration (lines per hundred population) of LLU are found to have strong correlations with the overall price of broadband access (-0.69) and with the highest advertised broadband speeds (0.71). By contrast there appears to be no significant correlation between the incumbent market share or share of cable infrastructure and the broadband price or speeds.

Figure 4



- The penetration of LLU is also found to be positively, though only moderately, correlated with the penetration of cable. We also find that those countries with some degree of fibre infrastructure or those with well publicised plans for next generation access also have higher levels of LLU penetration. This would appear to cast doubt

on the argument that has been put forward by some parties that LLU is damaging to investment in alternative access technologies.

15. Our conclusion is that proposals made by the European Commission to strengthen the powers of national regulators to support their ability to enforce the regulatory framework are likely to be warranted. In particular the apparent difficulties in some countries to enforce commonly accepted rules to open markets and the wider issue of the persistent lag between market developments and the adequate resolution of obstacles to competition may support a more horizontal, forward-looking and technologically neutral approach to regulation. Functional separation - whereby assets which are unlikely to be economically efficient to duplicate over the longer term are organised in and managed from a separate unit to facilitate transparency and equivalence of treatment for all operators - is a tool that could be used to support such a strategy.

16. In addition, the degree of divergence both in effectiveness of remedies and in administration of pan-European services such as VoIP or business services and frequency regulation suggest that better co-ordination amongst national regulators to deliver best practice could help to improve consistency and spread best practice across Europe. The formalisation of the European Regulators Group, whether through a European Agency or some other means, could be one way to achieve this. Such an institutional development should however harness the practical experience of national regulators and not aim to replace such experience through unnecessary centralisation. Adequate guarantees should also be in place to guarantee the independence of the regulatory process and prevent increased bureaucracy.

17. Further detailed findings and recommendations from the report are shown below.

## Recommendations

	<b>Finding</b>	<b>Recommendation</b>	<b>Owner</b>
1	Many NRAs lack the powers needed for proper <b>enforcement</b> of the Framework for example with effective penalty powers. In certain countries the maximum fines only represent a small fraction of the turnover of dominant companies. In Austria, for example, a maximum fine of EUR 58.000 can be imposed. Restrictions are also particularly limiting in the new Member States assessed and in Germany, Belgium, and Greece. Effective enforcement of pro-competitive rules has been shown to enable competition and drive investment.	Set maximum penalty levels with deterrent effect ( <i>cf.</i> , fines for competition law infringements) and provide for periodic penalty payments and the ability to suspend services pending compliance assessment.	Council and Parliament.
2	Lengthy <b>appeals</b> processes (which can sometimes to more than three or four years) and suspension of NRA decisions continue to delay the effective application of <i>ex ante</i> regulation.	Ensure that suspension is possible only on the basis of ‘irreparable harm’ and manifest illegality. Consider expert tribunals with clearly identified deadlines and transparency measures. Consider improved coordination between tribunals to share expertise and harmonized outcomes.	Council and Parliament. Member States.
3	<b>Independence</b> of NRAs from political guidance is lacking in many countries and this is a particular issue in Poland and Finland. 11 of the 19 countries surveyed maintain State shareholdings in incumbents Evidence shows investment is substantially lowest in countries where NRAs’ independence is compromised.	Prohibit political directions or appointments for NRAs Divest shareholdings in incumbents.	Council and Parliament. Member States.
4	<b>Timeframes for market analyses</b> have in several countries exceeded 20 months on average. Eleven of the 19 countries surveyed did not meet requirements to resolve <b>disputes</b> within 4 months.	Set reasonable deadlines for the completion of market reviews. Review internal processes.	Council and Parliament. NRAs with Commission action if necessary.
5	In very few cases have clear cross-market measures been established to ensure a fair and <b>level playing field</b> for all operators. For example, the approach to addressing issues of margin squeeze and non-price discrimination is not clearly and transparently identified except in a few cases – with the most visible being the UK, which has implemented functional separation of the incumbent. Furthermore accounting separation,	Establish and apply best practice consistent rules to address issue of margin squeeze and non-price discrimination. Ensure that separated accounts are published in a timely manner following best practice identified by ERG and Commission.	ERG, NRAs and Commission.  EP, Member States



	a vital measure to ensure consistent pricing to promote competition and investment – has been mandated in all countries but has yet to be fully implemented except in the UK, Netherlands and Ireland.	Concepts of equivalence and functional separation may support enforcement of such horizontal rules in cases where this has otherwise proved difficult.	and NRAs.
6	There is a widespread lack of transparency over ‘ <b>next generation</b> ’ upgrade plans by incumbents that may affect competition. The approach to addressing competitive issues raised by NGNs and NGAs is also fragmented. The evidence shows that competitive environments in which bottlenecks are addressed enjoy higher investment, increased service speeds and variety and lowest prices.	Apply the ERG guidelines relating to next generation access. Develop a consistent Framework for the transition to IP core networks. Ensure national plans for network upgrades are transparent to and discussed with those affected. Clarify the need for such transparency in the Framework.	ERG, NRAs and Commission.  Council and Parliament.
7	Procedural aspects of <b>Voice over IP</b> regulation including requirements relating to numbering and number portability have been approached in a very divergent manner. In many countries competitive conditions to enable VoIP to replace the PSTN have not been assured. Availability of naked bitstream and consistent pricing between broadband and ‘narrowband’ access and retail products is particularly important in this regard.	Establish and apply common guidelines on administrative aspects of VoIP regulation. Ensure availability of naked bitstream and conduct a margin squeeze analysis to ensure consistent pricing of WLR and retail line rental against LLU and naked bitstream.	ERG, NRAs and Commission.
8	Effective implementation of measures to open <b>broadband</b> markets such as LLU is lacking in many countries. The Nordic countries, UK, Netherlands and France perform best on this measure whilst Ireland, Greece, Czech Republic and Poland have faced particular problems. Evidence shows that successful unbundling contributes to lowest prices and greater take-up of broadband and is linked with higher investment levels overall and may create the conditions for further investment in fibre access lines. There is no evidence that such measures undermine cable roll-out or investment in upgrades to fibre. Bitstream access is important in ensuring competition in VoIP broadband and triple play bundles to remote and rural consumers and SMEs and in the competitive provision of high speed services to branch offices and home workers.	Establish and apply best practice for broadband regulation ( <i>e.g.</i> , in relation to price regulation, non-price discrimination). Ensure that bitstream regulation permits competitive delivery of IPTV to enable rural choice in triple-play. Where appropriate, measures such as functional separation may support effective enforcement of access to enduring bottlenecks as evidenced by the UK experience.	ERG and NRAs.  Council and Parliament, Member States and NRAs.
9	Little focus has been given on ensuring competition in <b>business services</b> despite the role of communications in driving business productivity. In particular, very few regulators have taken measures to ensure high and consistent standards in wholesale service quality and delivery; wholesale Ethernet access is unavailable in the majority of countries and bitstream suitable to serve business customers has not been effectively implemented in	Establish and apply best practice for business access including wholesale Ethernet services and bitstream. Apply and publish KPIs that allow industry to compare whether services provided by dominant operators to competitors match expressed demand and the standard of services supplied internally.	ERG, NRAs and Commission.

	<p>all cases.  Furthermore no consistent information was available concerning the level of infrastructure competition in high speed business access lines.</p>	<p>Collect and publish comprehensive data concerning infrastructure competition in high speed access lines.</p>	
10	<p>There is evidence that in some countries <b>mobile</b> markets may not be effectively competitive evidenced by relatively high prices and high concentration levels. Such markets also often lack MVNO access. Nordic countries generally perform well on mobile measures, whilst markets in Ireland, Italy, the Czech Rep and Greece appear to present more problems. Not all countries have ensured that wholesale mobile termination rates are charged on a non-discriminatory basis such that the rates charged internally are the same as those to external operators. This results in high charges for calls to mobiles and offnet mobile calls and, when practiced by mobile players with a large customer base can cause competitive distortions preventing the development of later mobile entrants and fixed operators.</p>	<p>Monitor mobile markets closely and ensure that barriers to entry are removed through flexible spectrum policies and, where necessary, mandated MVNO access.  Ensure that non-discrimination obligations on mobile termination are applied internally and externally and are complied with.</p>	<p>NRAs, ERG and Commission</p>

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## **I. Introduction**

18. The purpose of this report is to assess whether the regulatory framework on electronic communications networks and services in selected European countries is effectively applied and enforced towards securing certain fundamental objectives. In particular, the report examines whether the regulatory regime in place on 31 August 2007<sup>1</sup>: (i) facilitates the establishment of public electronic communications networks and the provision of public electronic communications services, (ii) encourages investment in telecommunications infrastructure, and (iii) ensures a level playing field for all players to stimulate investment, innovation, and sustainable competitive development. Proper application of this regime should also enhance employment and international competitiveness in these countries and the EU as a whole.

19. This is the fifth ECTA Regulatory Scorecard Report. Since the first report was published in November 2002, both the scope and methodology have been reviewed in light of the experience gained from the first study, the valuable feedback received from regulators and industry, implementation of the EU regulatory framework and technological evolutions. The report will, however, continue to require revision as individual regimes, markets and technology evolve. The authors therefore welcome further comments and suggestions from NRAs, telecoms operators, and others.

20. This report covers leading economies in the EEA, including the main EU economies and certain new accession countries. The countries surveyed are: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden and the United Kingdom.

21. The questionnaires are based on inputs and responses received from NRAs and ECTA members. The authors are particularly grateful for the detailed input received from the various stakeholders, which has been very valuable for their analysis. Where diverging opinions have been expressed on particular issues, we have tried to formulate the responses to adequately reflect the respective views<sup>2</sup>.

22. The report also relies on some comparative statistical and pricing data are based on the Commission's 12<sup>th</sup> Implementation Report and other sources, as these provide consistent comparative data. However, whenever possible, we have in the country reports also referenced recent available trends or updated data.

23. The authors also recognize that some data contained in this report is based on assumptions or estimates of market players that have been used in the absence of precise statistical data (*e.g.*, the various questions pertaining to appeal procedures).

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<sup>1</sup> The report is based on the situation as it existed on 31 August 2007. However, in various instances, certain subsequent developments have also been mentioned to the extent that these provided indications of the evolutionary trend followed by the regulatory framework.

<sup>2</sup> The country annexes are therefore a consolidated version of the inputs received from the various stakeholders and the authors have limited their review and editorial control of these responses to ensure a certain degree of consistency for the qualitative and quantitative comparative analysis. For certain questions ECTA has also had to rely on other data than the inputs received in the survey in order to have a consistent basis for comparison and sufficiently granular information.

The authors hope that this situation will constitute an incentive for the various stakeholders to collect or publish more reliable data where this appears to be lacking today.

24. The assessment is based on selected key criteria, including: the overall institutional environment (which covers the legislator, the NRA, the dispute settlement body and the judicial courts) (Section A), general market access conditions (Section B) and the regulatory effectiveness and competitiveness of key access markets and services (Section C). It should therefore be emphasized that this report does not assess the effectiveness of the regulators, but constitutes a much broader assessment of the effectiveness of regulatory and competitive environment as a whole. Although the NRAs play a key role, other important factors include the legislative and constitutional framework, the effectiveness of the judicial courts, the conduct of market players and, in particular, SMP operators.

25. For each of the assessed areas, the authors have aimed as far as possible to identify objective parameters, which are used to evaluate national legislation and authorities and the competitiveness of the prevailing market conditions. Whilst the authors of the report consider that the selected criteria provide strong insights into what is necessary to achieve the EU's objectives for electronic communications markets, they also recognize that a number of criteria may not be included in this report. Further criteria can, of course, be included in the future versions depending on the feedback received from the various stakeholders.

26. The scoring assessment has been made by the authors in accordance with the methodology set out below and the country annexes. Jones Day has been in charge of the legal issues pertaining to this exercise, and SPC Network has been in charge of the quantification of such assessment.

27. This report is structured as follows:

- Section II presents the qualitative and quantitative assessment made on the basis of the country questionnaire and the general conclusions on the in-country assessment;
- Section III explains in detail the various areas subject to the assessment, the reasons why they were chosen, and their content and the methodology used for the assessment.
- Section IV explains the weighting applied for the quantitative analysis.
- Section V contains the outcome of the quantitative assessment with the individual scores per question and per country.
- the Annexes contains country questionnaires with the replies received from local specialists, national regulators, and other stakeholders.

## **II. Qualitative and quantitative findings**

### **A. Qualitative findings**

28. The overall results of the report show that, five years after the adoption of the regulatory framework and nine years since the liberalization of the sector in 1998,

substantial progress has been made by NRAs in applying many of the basic market opening measures such as number portability and carrier pre-selection, whilst some countries have been particularly successful in opening broadband markets to competition through creating a 'ladder of investment'. Standards of transparency and consultation have also increased. However:

- Many NRAs lack the powers and independence needed to effectively enforce the EU Framework.
- Rules to ensure fair treatment for all operators including in particular the terms and conditions for accessing regulated bottleneck services, have not been applied except in limited cases.
- Accounting separation – a vital tool in protecting against price squeeze – remains ineffective across much of Europe, with the UK, Netherlands and Ireland as notable exceptions.
- Regulation has failed to keep pace with market developments, resulting in widespread divergence on whether and how issues over access network upgrades (NGAs) and VoIP have been addressed.
- Comparatively little attention has been paid to competition in business services – a critical component in promoting productivity and economic growth.
- Spectrum has received very different treatment ranging from liberal approaches in the Nordic region and the UK, to restrictive treatment in many other cases.

29. In addition, due to the high degree of granularity of the report, it is possible to identify key issues and specific strengths and weaknesses for the countries examined.

1. Qualitative assessment of Section A (Institutional framework)

30. Section A examines the institutional framework. Overall, the strongest institutional frameworks are found in the Netherlands, UK, Ireland and Denmark, whilst the weakest performing countries of this section are Belgium, Germany and Poland. Austria, Finland, Hungary and Sweden also show significant weaknesses for certain key institutional aspects. A poor score on the institutional section can also impact the ability of the regulator to deliver positive results in the other two sections of the report because it is more difficult to ensure effective regulation and competitive markets in circumstances where the institutional environment (for example the appeals process or enforcement mechanism) remains weak. It should be noted that the weaknesses in this section are often the responsibility of players other than the NRA, such as the legislator, the judiciary, etc.

31. The strengths and weaknesses that can be noted on the basis of an analysis of this section are the following.

- Transposition of the framework. Timely and correct transposition of the framework constitutes the first fundamental requirement for an effective regulatory framework. This is generally a task for the Governments and national legislators (and does not fall within the NRA's sphere of

competences). As indicated in the previous report, many Member States were late in transposing the framework. Only eight of the nineteen countries surveyed had transposed the EU framework in time. It is particularly interesting to note that the countries that received a comparatively low score overall in this report (for example Belgium, Czech Republic, Germany, Greece and Poland) are also countries that were late in transposing the framework. This suggests that the early and effective transposition of the EU framework has contributed to enabling regulators to further define and apply the regulatory regime. The comparative analysis of the transposition of the framework also shows that infringement proceedings have been initiated against nearly all surveyed Member States for incorrect transposition, but in most cases the issues have been addressed and infringement proceedings closed. However, certain Member States appear to have been particularly weak in terms of transposition, including Belgium, Finland, Germany, Poland and Portugal.

- Market analyses. The effective application of the EU regulatory framework is also dependent on the conduct of market analyses by the NRAs. NRAs are required under the Framework to assess markets in which competition is not expected to become effective and which should therefore be subject to *ex ante* regulation. Until these market analyses were adopted, the transitory provisions of the former framework continued to apply, leaving certain key bottlenecks inadequately addressed. The timely completion of the market analyses and the speed of process for conducting market analyses depends on various factors, including the timely adoption of the legislative framework, the NRA's powers and resources and the efficiency of NRA's internal processes. It is particularly notable that NRAs in Belgium, Denmark, Italy, Netherlands, and Norway have taken on average over 20 months to perform a market analysis. Countries that have been able to conduct the analysis in a timely manner include Austria, Czech Republic, Finland and Slovenia. These findings suggest that the review of the framework should seek to enhance the efficiency of the market analyses process.
- Transparency. As indicated in the previous report, NRAs generally appear to follow best practice principles to ensure administrative transparency. Market consultations appear to be followed in almost all Member States, and decisions are generally published. One common concern that has been raised in a significant number of Member States concerns, however, restrictions on access to information that are imposed (whether under the legal system or through its application by the NRA) as a result of confidentiality requirements. NRA decisions are often based on confidential information which third party (beneficiaries) are rightly prohibited from accessing.

However, excessive redactions of information considered confidential by the providers of such information restrict the ability of third parties to understand (and potentially challenge) the NRA's decisions, and therefore restricts the rights of defence of such parties. Concerns were raised in particular over the extent of redactions in Belgium, Czech Republic, Germany, Greece, Hungary, Slovenia and Sweden. Given the importance of transparency in the decision-making process, it may be worth considering adopting a harmonized approach on the treatment of confidential data across the EU. The proceedings before the independent Hearing Officer that have been foreseen for competition law

enforcement cases before the European Commission could perhaps provide a useful precedent for this purpose. It is also considered that the publication of an action plan and a prior consultation on such an action plan generally contributes to ensuring transparent and relevant regulatory policy and should therefore be considered as a best practice across the EEA. Austria, Germany, Ireland, Netherlands and the UK are considered as representing best practice in this respect, whilst some countries such as Norway, Poland, Spain, and Slovenia could benefit from adopting a comprehensive action plan in the years to come.

- Enforcement and sanctioning powers. The ability of NRAs to impose various types of sanctions, and the existence of a sufficiently deterrent sanctioning regime in practice is a key requirement for ensuring effective enforcement and compliance with the regulatory framework. Some countries still have certain caps on fines, which restrict the NRA's ability to impose sufficiently deterrent fines on large operators (generally incumbents). This is for example the case in Austria, Belgium, Czech Republic, Germany, Greece, Hungary, Norway, Portugal and Slovenia. Best practice countries in this respect can be found in France, Italy, the UK or the Netherlands. Here again, it is interesting to note that many of the countries with relatively weak sanctioning powers also perform less well overall. ECTA considers that the fines that may be imposed for competition law infringements can generally serve as a benchmark for assessing the effectiveness of the fines. As indicated in the previous report, it also appears that the power to suspend the launch of commercial offers appears to be lacking in a significant number of Member States including Belgium, Czech Republic, Denmark, Finland, Germany and Slovenia. Such a power is, however, considered of critical importance given the first mover advantages that can be generated on electronic communications markets. These findings would tend to support proposals by the European Commission to amend the Framework to strengthen regulators' enforcement powers.
- Appeal procedure. Lengthy and restrictive appeals procedures (with some appeals taking up to three years) continue to delay the effective application of the framework in many countries. There are also a large number of countries in which SMP operators are challenging a significant number of market analyses, which creates significant legal uncertainty and increased risk for new entrants (which often depend on the availability of regulated access products to offer competitive services). A strict application of suspension criteria (by requiring "irreparable harm") also constitutes a critical element to ensure that these proceedings do not undermine effective application of the regulation. Sweden's problems have, for example, been well-documented in this context. Other countries that have suffered excessive delays in applying the Framework, due to lengthy appeals processes, include Germany, Greece, Hungary, Italy, Poland, Portugal, Slovenia and Spain. Proposals in the European Commission's review of the Framework aim at addressing these issues by setting a single standard for suspension and by collecting comparative information concerning the length of appeals proceedings. Another concern relates to restrictions on third parties' rights to appeal decisions affecting their interests – which has been raised in relation to Austria, Belgium, Czech Republic, Germany, Slovenia and Sweden. Best practices in relation to the appeal process can be found in Ireland, Norway,



and the UK which suggests that specialized courts are generally to be favoured.

- Independence. Independence, not only from industry, but also from political influence remains a critical issue in ensuring predictability and stability in the regulatory environment. Last year's Scorecard report confirmed that significant progress had been made in various countries where adequate institutional guarantees have been set up to ensure the NRA's independence from the Government. Various countries have, however, still imposed certain restrictions on the NRA's powers which appear to be incompatible with the EU regulatory framework (this is for example the case for Belgium, Germany, Finland, Poland and Spain). Other countries have also maintained powers for the Ministry to issue general policy guidelines, which are a source of potential political interference and uncertainty for the industry. Finally, there are still a number of countries in which the Government retains substantial shareholdings in their incumbents, including Austria, Belgium, Germany, Greece, Norway, Poland, Slovenia and Sweden. Such shareholdings remain a potential conflict of interest and distort the regulatory level playing field. It is notable that countries that have an overall low total score are often also countries which retain substantial shareholdings in the incumbent.
- Dispute settlement body. Assessment of the dispute settlement body shows that in most Member States (*i.e.*, in eleven countries), such procedure generally exceeds the four month timeframe required under the Framework. Moreover, in most of these Member States, the dispute settlement body does not have clear and effective power to impose interim measures, which further increases the detrimental effect of such delays for new entrants (which will typically be the requesting party in such proceedings). Given that the decisions of dispute settlement proceedings will also generally have an impact on other market players, ECTA also considers that adequate transparency measures should be foreseen in relation to third-party market players. Overall, it appears that the national proceedings and practices for handling dispute settlement are very divergent and lack specificity. Their effectiveness would certainly be increased if a certain degree of harmonization could be achieved on common procedural principles. Best practices can be found in the Netherlands, which have a well developed procedure.

## 2. Qualitative assessment of Section B (general market conditions for access)

32. This section examines the general regulatory environment, including the degree to which regulators have specified clear methodologies for addressing key cross-market issues and the effectiveness of measures that are designed to lowest entry barriers, such as number portability, rights of way and spectrum allocation. It shows that certain countries such as the Czech Republic, Greece, Poland, Portugal and Slovenia remain weak on establishing clear rules for market access. Conversely, countries such as the Netherlands, the UK, Denmark and Norway perform well. These countries have generally adopted detailed and forward-looking policies that are aimed at ensuring the competitive development of the sector. However, even in countries which have in other respects performed well in setting market-opening conditions, market players have voiced strong concerns in relation to the inadequacy of the existing regulatory tools in ensuring a level playing field through addressing issues of margin squeeze and non-price discrimination. This shows the limit of existing

remedies and could, in some circumstances, justify the introduction of mechanisms such as functional separation to facilitate creation of a level playing field.

33. The respective strengths and weaknesses of the issues reviewed in this section can be summarized as follows.

- NGNs and NGAs. Periodic renewal of the equipment and lines used to drive telecoms services are a persistent feature of the sector. It can cause considerable uncertainty to both dominant firms and those relying on access to bottleneck infrastructure, if the competitive impact of such upgrades is not understood or the regulatory approach is not clearly defined. It is therefore considered best practice for dominant players to openly discuss technological developments that affect access seekers and for the regulator to ensure that the regulatory rules are established. The countries where these technological developments are being addressed in the most transparent manner include, in particular, the UK, the Netherlands, Italy, Ireland and Denmark. However, in most countries, there is a lack of transparency despite indications that network development plans are well-advanced in some cases.
- Accounting separation. Although accounting separation is generally recognized as an essential component for ensuring a proper enforcement of cost orientation and non-discrimination remedies, successive Scorecard Reports have found that only a very limited number of Member States have effectively implemented this. A comparative assessment with the previous years shows that progress is being made in various countries. Whilst implementation in the UK still remains best practice, other Member States such as Ireland, Italy and the Netherlands have established clear principles and transparency measures. Still, NRAs should more adequately address the transparency concerns expressed by various market players. In the weaker countries, effective enforcement seems to be lacking, even if the remedy has been theoretically imposed. This is probably due to complexity of applying this remedy. A harmonized approach on best practice for accounting separation would probably be appropriate in this field, and measures such as functional separation could also facilitate the effective implementation of accounting separation through improving internal transactional transparency.
- Non-discrimination and price squeeze. The wholesale obligation of ‘non-discrimination’ (treating the downstream arm of a vertically integrated dominant player in an equivalent manner to that of its competitors) is applied by NRAs in association with most access remedies under the present Framework and is considered of particular importance in ensuring a level playing field. Enforcing this concept effectively in an *ex ante* context involves more precisely defining what is meant by discriminatory behaviour, and ensuring that there is a clear policy and appropriate monitoring tools to enable the NRA to address behaviours such as margin squeeze, anti-competitive bundling and non-price discrimination. For example, monitoring non-price discrimination could involve the publication of internal and external KPIs associated with service delivery. In a significant number of countries, such rules and guidelines still appear to be lacking (*e.g.*, Czech Republic, Finland, Hungary, Ireland, Slovenia and Sweden). It is also notable that even in countries with a high score in this section (such as Austria or the Netherlands), market

players have maintained strong reservations regarding the effectiveness of the tools put in place. The absence of any tools or their apparent ineffectiveness – particularly when combined with poor competitive outcomes – could be an indicator as to whether a functional separation remedy may be helpful in achieving equal access conditions.

- Rights of way and duct access. Effective rights of way have long been identified as critical in infrastructure investments to the extent this is viable. With the roll-out of NGNs and NGAs, particular attention is being placed on rights of way to minimize barriers to investment by alternative players. As indicated in the previous Scorecard Report, Germany, the Netherlands, Denmark and Finland appear to have clear, efficient and non-discriminatory rules in place for obtaining rights of way. In countries such as Spain, Greece or Austria, this remains problematic. This year’s report has also inquired as to whether duct access is available on the incumbent’s ducts. This is an issue that is becoming increasingly important for new entrants that wish to invest in the roll-out of their own fibre network to the street cabinet or to home. However, there are only a handful of countries in which duct access is effectively available at a national level (namely, Portugal, the Netherlands and Poland). In certain other countries, it is not available at all or only on an ad hoc basis which is not satisfactory. It is, however, under active consideration in a number of countries such as France and Germany.
- Numbering. Numbering is another important resource for the provision of electronic communication services. Number portability also constitutes a key-enabler for the development of competition and reduces the artificial barriers to switching. Concerns over timing for obtaining numbers and the absence of number portability for fixed or mobile services have now been largely addressed. However, concerns have shifted towards the conditions (price and timing) placed on number portings and the absence of synchronization between number porting and wholesale access services such as LLU and naked bitstream. In addition, the ERG has undertaken a project to better harmonize the terms under which VoIP numbers are assigned and what rights and obligations apply to them. The results of this Scorecard clearly highlight that there are diverging approaches to VoIP, which may be hampering its roll-out and use across the EU.<sup>3</sup> Best practice countries include The Netherlands, Denmark, Belgium, Sweden and the UK.
- Frequencies. Convergence and technological innovations have led to renewed attention to frequency issues. Various type of services can now be offered to provide electronic communications services, including mobile and broadband services. Frequency allocation and access restrictions should therefore not be used to restrict such developments, which are beneficial for competition and the consumer. However, this area of regulation appears to be very patchy across the EEA. Most Member States have also adopted conservative policies (such as Austria, Belgium, Czech Republic, France, Finland, Greece, Ireland, Italy, Poland, Portugal and Spain). The markets with the most liberal frequency policies are countries that generally have the most competitive

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<sup>3</sup> It should be noted that the report has relied on the information that was contained in the ERG Report on “VoIP and Consumer Issues” which provided more granular information than the inputs received on the basis of the market survey.

markets overall such as Denmark, the Netherlands, Norway, Sweden and the UK.

3. Qualitative assessment of Section C (effectiveness of implementation in key markets)

34. Section C examines the competitiveness of certain key markets. It is divided in five sub-sections (narrowband voice services, mobile services, business services, bitstream access and infrastructure-based broadband competition).

35. Narrowband voice services. The new Member States surveyed in the report (Czech Republic, Hungary, Poland and Slovenia) are the countries with the weakest score in this section. In addition, there are also a number of Member States of the EU 15 that show certain specific weaknesses. Finland comes out very weak, but consideration should be given to the fact that Finland has a very specific and fragmented market. For historic reasons, there are a multitude of small fixed incumbent operators operating in specific regional areas. This fragmentation renders it much more difficult to adopt a uniform regulation and also constitutes a barrier to entry for new entrants. It appears that in most countries, carrier pre-selection is available and has now also achieved strong penetration. However, a number of Member States have still failed to adopt adequate WLR regulation (this is the case for Austria, Belgium, Czech Republic, Germany, Greece, Hungary, Italy, Slovenia and Spain), even though for many voice-only customers, WLR presents the only realistic alternative to purchasing a subscriber line from the incumbent. In view of the increasing role of broadband competition in stimulating the voice market through VoIP and VoB, this Scorecard asks for the first time whether regulators have ensured consistent pricing between broadband and 'voice only' access products such as LLU and WLR, in addition to examining whether VoB services are available on a stand-alone basis for customers not also wishing to purchase broadband services. The results indicate that consistent pricing has not been ensured in many countries, potentially stifling the possibility for the development of competition in VoB as a replacement for PSTN-based services.

36. Mobile services. Nordic countries perform particularly well on the regulatory conditions and competitiveness of their mobile markets. The countries that come out with the weakest score in this section are the Czech Republic, Greece, Ireland and Italy. Belgium, France and Spain also show a relative lack of effective competition, as indicated by high market concentrations and retail prices. In all these countries, whether as a cause or effect of competitiveness issues, it is notable that MVNOs are not yet well-established in the market. Mobile termination services have now been regulated in all surveyed Member States. However, the tariff regulation imposed in a number of Member States still fails to ensure an adequate level playing field. First, the non-discrimination remedy should also be applicable to termination services, which vertically integrated mobile operators supply for their own downstream operations (in particular, for on-net traffic). Differentiating retail on-net prices from off-net has, in particular, been used by many incumbent mobile operators with inherited customer bases to create artificial barriers to entry. The anti-competitive effects of such a pricing strategy have generally failed to be adequately addressed. Second, in most countries, NRAs have recognized the need to allow smaller network operators to apply asymmetrical tariffs compared to those applied by incumbents. The weakness of the third or fourth entrants and the historic advantages of incumbents

should lead NRAs to elaborate cost models that adequately take these differences into account if they want to strengthen competition on the retail market.

37. Business services. Partial private circuits and wholesale ethernet services are considered key access products to provide business services on the market. The survey shows, however, that partial private circuits are still not being offered in a number of Member States (including Germany, Greece, Poland and Sweden). This not only distorts competition at national level, but also constitutes a serious obstacle for alternative providers to offer pan-European solutions. Wholesale Ethernet services are also becoming an increasingly important access product for providing high capacity connections to business users. However, except for Denmark and the UK, an effective wholesale Ethernet offer still fails to be offered in most surveyed countries. Another obstacle for the development of effective competition in these markets concerns non-price discrimination practices. Quality of services is a key concern for business customers, and alternative operators should be in a position to offer identical quality of services for access products supplied on the basis of the SMP-products. However, the measures in place in most Member States do not allow an effective verification of key performance indicators for internal and external service provisioning. In general, it also appears that NRAs have given less attention to the review of business services markets on the basis of the assumption that the higher revenues that can be generated on these market segments would suffice to foster competition.

38. Bitstream access. Bitstream access is an important stepping stone to achieving competition in consumer broadband markets and allowing new entrants to develop a customer base that can subsequently be migrated to infrastructure-based access solutions such as ULL. Bitstream access also constitutes a key longer term access product to allow competition in remote areas where infrastructure investments are unlikely to be economically viable and for the provision of geographically dispersed business services, such as services to branch offices and home-workers. The analysis shows that bitstream access is now offered in all nineteen countries, although certain Member States (such as Germany, Poland and Sweden) are still behind in take-up, due to the very late implementation of this measure. Nonetheless, whilst bitstream is now widely available, the results show that there remains a need to review and improve the offers in many countries so as to enable the provision of IPTV services (typically only offered by competitors in urban areas via unbundling) and to allow stand-alone bitstream provision without the need for the customer to maintain a PSTN telephone line from the incumbent (naked bitstream). The latter is particularly important in enabling the competitive development of VoB as a substitute for PSTN-based services. Naked bitstream is available in Austria, Belgium, Denmark, Finland, France, Hungary, Italy, Norway and Sweden – but not elsewhere.

39. Broadband infrastructure-based competition. Infrastructure based competition for broadband services depends on the effectiveness of ULL access regulation and the existence of alternative networks. Full and shared ULL is offered in all surveyed countries. However, the take-up of the services is still patchy, with particularly low take-up in Belgium, Czech Republic, Greece, Hungary, Ireland and Poland. In countries where broadband markets are already well-developed, sub-loop unbundling – which allows the competitive upgrade of access networks with technologies such as vDSL to allow higher speeds – will become increasingly important. Whilst it is

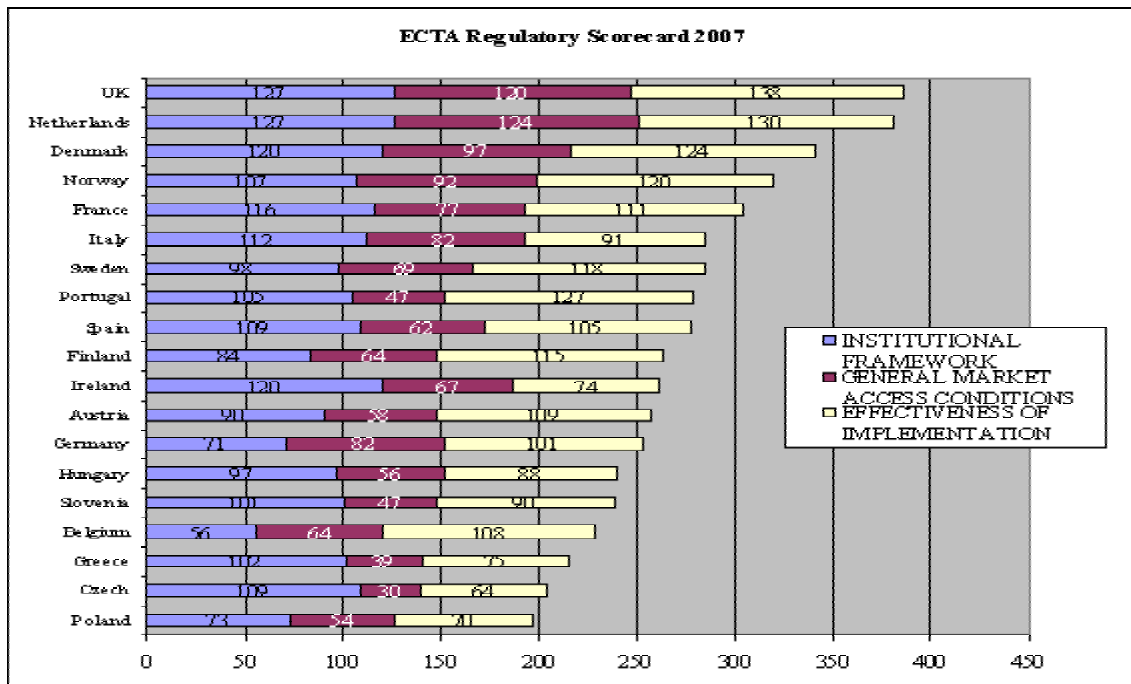
theoretically offered in all surveyed Member States, the only countries in which detailed conditions for the effective implementation have been determined for the implementation of sub-loop unbundling are Denmark, Finland, the Netherlands Norway and Slovenia. Alternative end-to-end infrastructures (not relying on the incumbent copper network), such as cable networks in particular, also play an important role in the development of competition on the broadband market. Whilst the presence of cable networks often depends on historic factors that can vary between Member States, certain Member States (such as Belgium and the Netherlands) have been able to leverage this potential for competition better than others (such as Germany, for instance). The analysis also shows that apart from cable, other access networks still remain very limited. Countries with limited cable networks such as France and Italy therefore have limited competition based on alternative networks.

## **B. Quantitative findings**

40. In this section of the report we present some quantitative analysis of the Scorecard examining internal relationships and the effect on market outcomes. We divide this into five areas: Overall results, Institutional Framework, General Market Access Conditions, Effectiveness of Implementation and Investment.

41. Overall Results. In calculating the overall scores for regulatory effectiveness, the same weighting has been given for each individual question. This is consistent with the approach taken in 2006 and reflects the finding in the 2006 report that different weighting mechanisms did not significantly affect the outcome. The only exceptions to application of standard weightings are where, to capture data in a more granular fashion, several questions are asked on the same subject. This is the case for example for questions 10 and 11, for some questions in Sections C1 (Narrowband Voice) and some questions in C5 (Broadband Infrastructure). This adapted weighting prevents certain topics from carrying a disproportionate weight in the Scorecard. On this basis, the overall results are presented in the graph below.

Figure 5



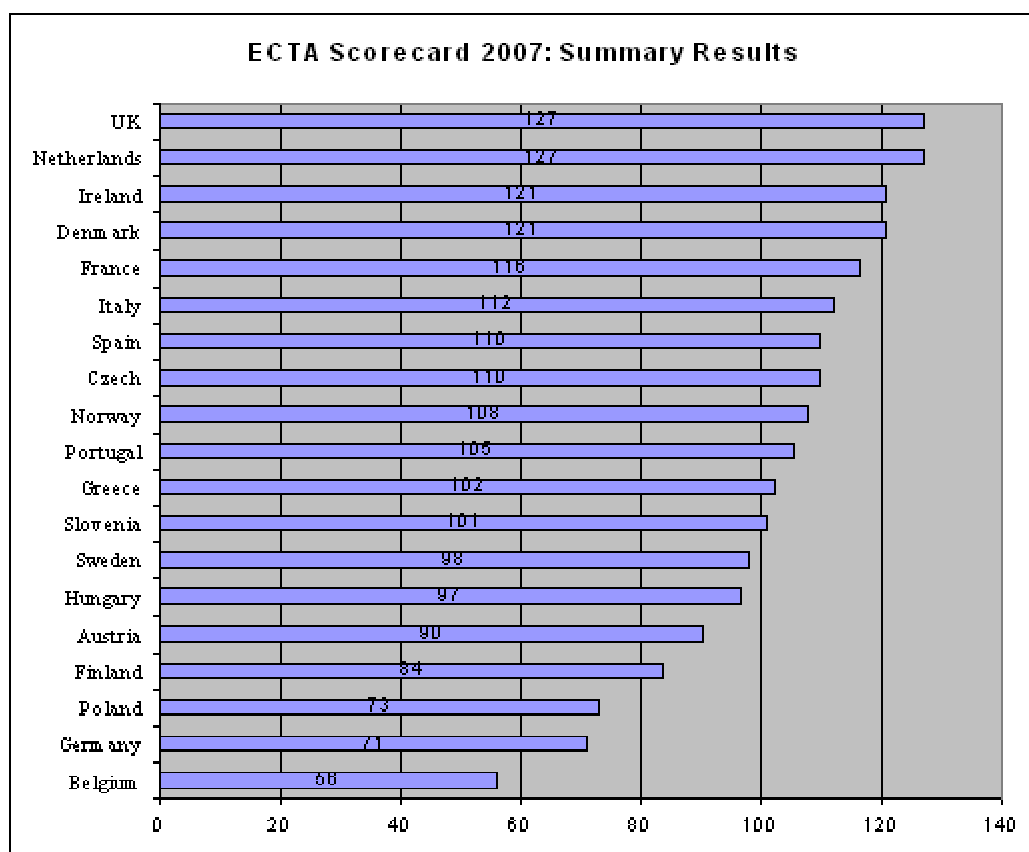
42. The United Kingdom remains the highest scoring country – and has maintained this position over successive scorecard analyses. However, other countries are closing the gap. The Netherlands has improved its position from 4<sup>th</sup> place in 2006 to 2<sup>nd</sup> place this year just four points behind the UK. Norway, a new country in this report performs well coming in 4<sup>th</sup>, between Denmark and France.

43. The next group of countries consist of Sweden, Italy, which tie followed by Portugal, Spain, Finland and Ireland.

44. Germany has improved its position from 15<sup>th</sup> in 2006 to 13<sup>th</sup> this year and 12<sup>th</sup> amongst the equivalent countries, although its overall position is – like Finland and Belgium – undermined by a relatively poor institutional Framework. It should also be noted that other countries with an overall low score have specific strengths or have improved weaknesses identified in the previous reports. The Czech Republic has for example generally been rather efficient for transposing the EU framework and conducting market analyses. Belgium has seen a further improvement in its access conditions and Greece has an NRA which benefits from institutional guarantees to ensure its independence.

45. Institutional Framework Figure 6 presents the results graphically for Section A (Institutional Framework). Again the UK and Netherlands achieve the highest scores. Ireland and three of the relatively new Member States (Czech Republic, Slovenia and Poland) are ranked higher in this section than for the Scorecard overall. Apart from Denmark, the Nordic countries are weak compared to their position overall.

**Figure 6**



46. Where countries have a high institutional score but lowest scores for other sections – for example in the case of new Member States – it is possible that this may result from later application of the Framework that has not yet translated to effective implementation in the market. Meanwhile, a relatively low institutional score for otherwise strongly performing countries – such as Sweden – could indicate that even greater performance could be achieved if institutional problems – such as those concerning enforcement powers or delays resulting from the appeals process, are overcome.

47. We have also conducted a more detailed analysis of the relationship between NRA's Independence (Sub-Section A7) and the overall results. The 19 countries in the Scorecard have been divided into two groups: those which score intermediate or zero for Section A.7 and those that receive full marks. We have calculated the mean Grand Total for each of the two samples for each question. The results are shown in the table below.



	Are powers of NRA restricted through national law?	Does Ministry have power to give policy directions to NRA?	Are there NRA decisions which cannot be enacted without Ministerial approval?	Grounds for removal of head of NRA	Duration of NRA's management office	Percentage of incumbent owned by government
Average of Grand Total Without	246	271	285	237	290	260
Average of Grand Total With	286	281	274	286	270	297
Difference	40	10	-11	49	-20	37

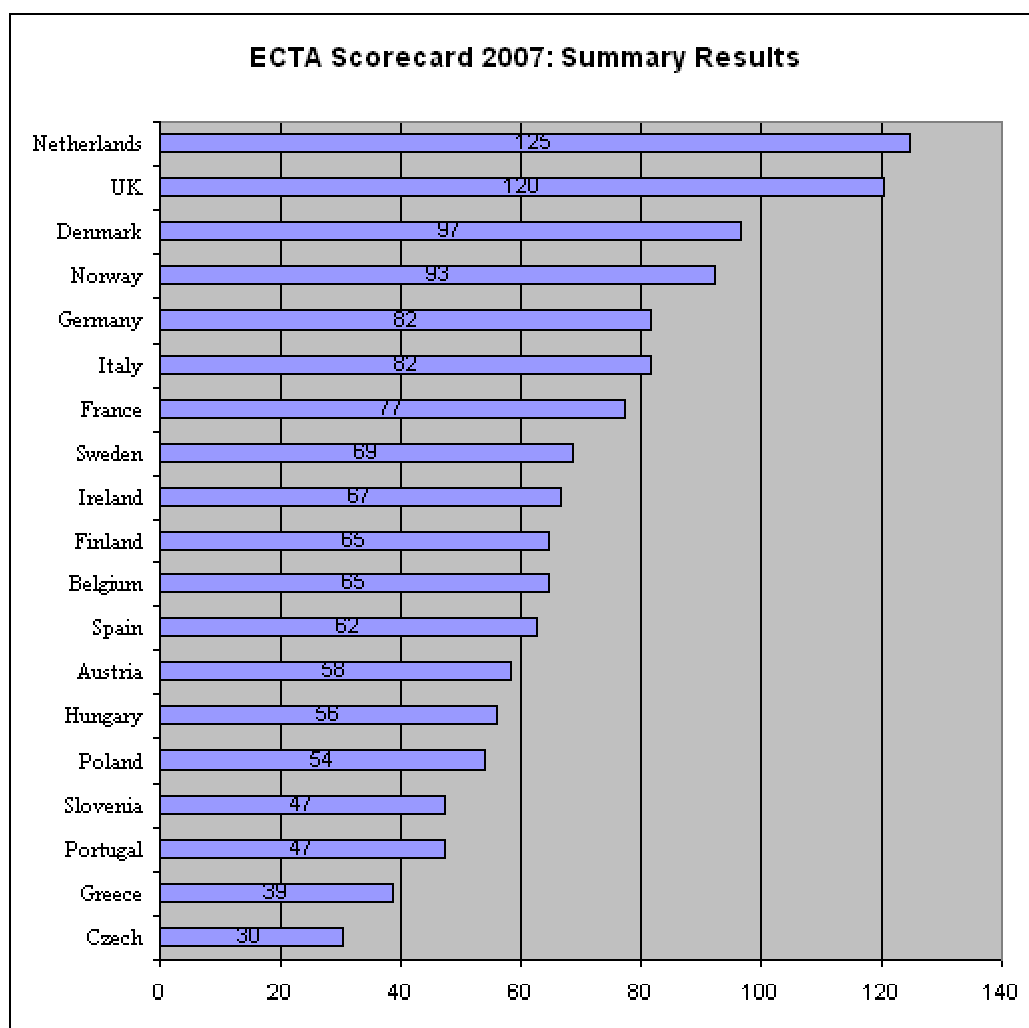
48. The table shows that countries where the NRA's powers are not restricted by national law perform substantially better on average than those where powers are limited. It also shows that countries where the NRA's senior management cannot be removed easily perform better as do countries where the state has no holding in the incumbent operator. The mean Grand Total for the six countries that satisfy all three criteria (299) is higher than for any individual criterion.

49. The table appears to show that countries where decisions need Ministerial approval perform better than where they do not. However, as only two countries require such approval such a conclusion cannot be drawn. The table also shows that countries where the NRA's management tenure does not meet the Scorecard's criteria for full marks also perform better. This may indicate that the period of office of the NRA's management does not have the effect on overall regulatory effectiveness that we expect.

50. General Market Access Conditions Figure 7 shows the results for Section B. Once again, the UK, Netherlands, Denmark and Norway all perform strongly. Germany performs substantially better for this section than it does for the Scorecard overall.

51. Section B has the strongest relationship with the overall score, with a correlation coefficient of 0.9.

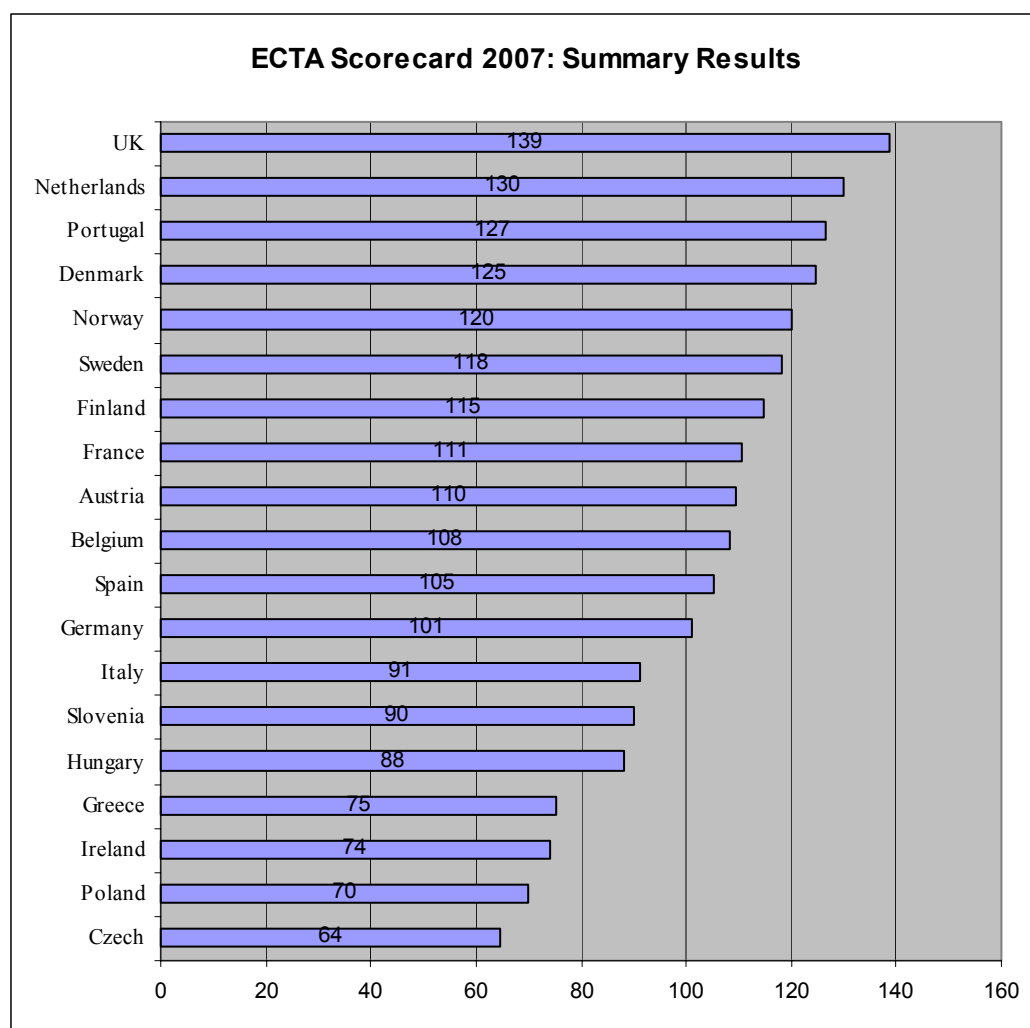
Figure 7



52. Within the Section, the sub-sections on Technological Neutrality and Forward Looking Policy, Frequencies, Numbering and Accounting Separation all correlate strongly with the overall results, with coefficients of 0.85, 0.71, 0.68 and 0.59 respectively.

53. Key Access Products. Figure 8 shows the results for Section C. Four of the top five countries overall again feature in the top five for this Section. Ireland performs somewhat less well in the Section compared to its overall place, in large part due to its poor scores in the Broadband sub-sections. Portugal, Sweden and Belgium by contrast have a score that is comparatively higher than other sections.

**Figure 8**



54. We have also undertaken some more detailed analysis of the results of this section examining the relationship with key market outcomes for consumers with regard to mobile, broadband and next generation access.

55. Mobile Our first area of interest is to establish whether there is any relationship between the presence of real MVNOs, and the structure of the mobile market and consumer benefits, notably lowest prices. We can divide the nineteen countries in the Scorecard into two groups : countries where MVNOs are present (nine countries) and those where MVNOs are not present (ten). The table below shows the mean combined market share of the two largest mobile operators and basket prices for low, medium and high users, as defined by the OECD.

Averages	Mean				sample
	Market Share	Low	Medium	High	
No MVNO	80.7	13.89	29.64	46.35	10
MVNO	72.8	13.77	25.36	42.48	9

56. Where MVNOs are present, the market appears to have a lowest concentration ratio. The two largest operators have an average combined share of 72.8% where

MVNOs exist and 80.7% where they do not. The UK somewhat skews this result however as the two largest operators there only have 55% market share. Excluding the UK, the average market share for the largest two operators is 74.98% in countries with MVNOs.

57. Basket prices for low users appear to be unaffected by the presence or otherwise of MVNOs with a difference of less than 10%. Medium and high users in MVNO countries are however somewhat better off, paying only EUR 25.36 for a medium basket of calls compared with EUR 29.64 in non-MVNO countries. For high users the difference is between EUR 42.68 and EUR 46.35 per month.

58. Broadband Broadband is central to the economic development and competitiveness of Member States and the EU as a whole. We therefore wish to examine what, if any, is the relationship between effective regulation of broadband inputs from SMP operators, the development of alternative parallel infrastructures such as cable, investment in network upgrades (for example from copper to vDSL or fibre) and consumer outcomes including price and take-up.

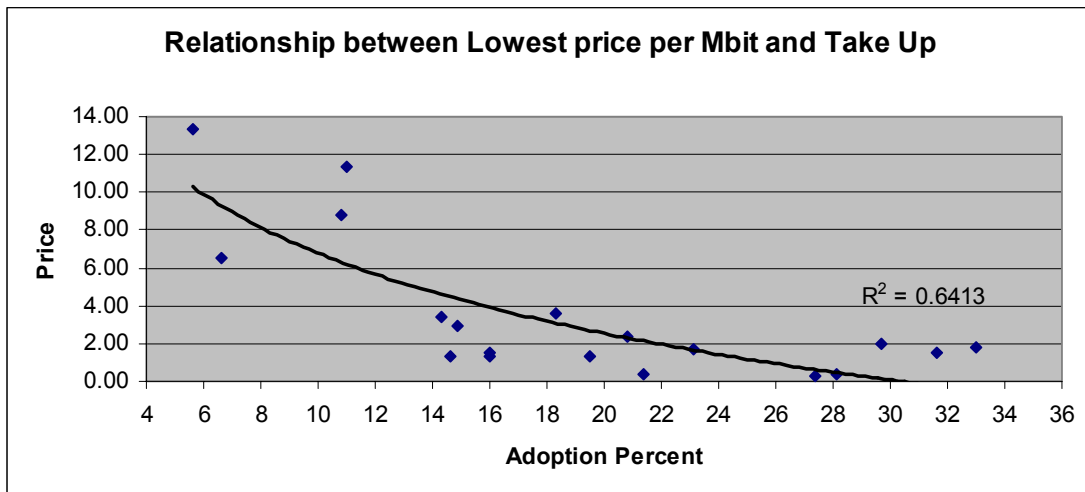
59. The Scorecard separates questions concerning bitstream access from questions which relate to broadband infrastructure competition (through parallel infrastructure and LLU).

60. Looking across the sample of countries in the Scorecard, we have collated data on broadband penetration rates (take-up), the highest advertised speeds available and the lowest price per megabit (see table).

Country	Highest Advertised Download Speeds	Take up (per 100 population)	Lowest Price per megabit (€ per month)
Austria	4,921	18.3	3.61
Belgium	6,350	20.8	2.38
Czech	6,030	10.8	8.80
Denmark	5,988	31.6	1.52
Finland	12,969	28.1	0.35
France	44,157	21.4	0.39
Germany	9,188	19.5	1.31
Greece	6,575	5.6	13.30
Hungary	6,382	11.0	11.34
Ireland	3,011	14.3	3.43
Italy	13,056	16.0	1.32
Netherlands	5,312	33.0	1.78
Poland	4,181	6.6	6.49
Portugal	12,955	14.6	1.32
Spain	6,901	16.0	1.53
Sweden	21,423	27.4	0.24
UK	10,624	23.1	1.66
Average	10,590	18.7	3.57

61. The first and most obvious relationship to examine is that between the penetration rate and prices. As expected we find a negative correlation between the variables with a value of -0.72: countries with lowest prices tend to have higher penetration rates. The relationship is shown graphically below. In fact the relationship appears to be non-linear suggesting that as prices fall, penetration increases disproportionately.

**Figure 9**



62. We would expect price to be most affected by underlying market conditions. Economic theory suggests that a less concentrated market, which is likely to be more competitive, leads to lowest prices as suppliers compete for business. Market concentration is normally measured using the Herfindahl-Hirschmann Index (HHI) which simply sums the squares of the market share of each player in the market. A monopoly market would have one provider with a 100% market share leading to an HHI of 10,000 ( $100^2 = 10,000$ ). The lowest the HHI the less concentrated the market.

63. In broadband, we find a correlation coefficient of 0.29 between HHI and price, which is rather weaker than one might expect, though in the expected direction. Normally, the HHI is calculated using the market shares of each firm in the market. For this analysis, however, we have calculated the HHI for each country based on the share of each access technology: incumbent’s own ISP, bitstream, LLU, cable and other (fibre, wireless and satellite). The positive correlation shows that price and HHI tend to move in the same direction, *i.e.* as market concentration decreases so do prices. However, it is interesting to note that market shares of different access mechanisms have differing effects on price, as shown in the table below.

	Share Incumbent	Share Bitstream	Share LLU	Share Cable
Price	0.11	0.23	<b>-0.69</b>	0.08

64. The strongest relationship is between the market share of LLU and price, with a correlation coefficient of -0.69. Correlation does not measure cause and effect, so we cannot conclude that LLU drives prices lowest. However, we can say that countries which have a high share of LLU also tend to have lowest prices.

65. We might also expect the highest advertised download speed to be associated with market conditions. We would expect suppliers to compete for business more aggressively in a less concentrated market and download speed to be one product feature on which they compete. However, we find a very weak correlation between speed and concentration, though in the expected direction, of just -0.16, which also suggests that market concentration has very little effect on download speeds. Again however we find that competition from LLU has a stronger effect on download speeds. The correlation coefficient between LLU share and average download speed

is 0.71 compared with a weak and negative coefficient of -0.11 between incumbent share and speed. Similarly the correlation between penetration of LLU and speed is strong at 0.67, whilst that between incumbent share and speed is weak at 0.22.

66. This brief analysis suggests that LLU has positive effects on consumer outcomes measured as both price and access speed.

67. An assertion is sometimes made that regulation such as that to unbundle the local loop, undermines end-to-end infrastructure competition and investment in the access network – for example to replace copper lines with more modern fibre. We have sought to determine whether this is the case from the data in the Scorecard. If it were the case that ULL undermines investment in infrastructure then we would expect to find a negative correlation between the penetration of ULL and that of cable and other infrastructure. We might also expect to see that countries with fibre deployments have less LLU, or rather that countries with high LLU do not have fibre deployment.

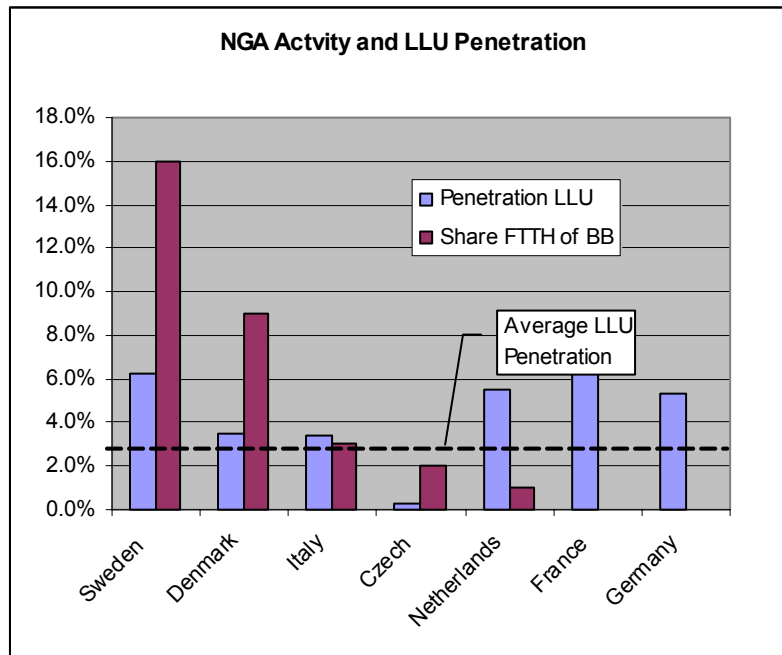
68. The table below shows the correlation coefficients for the penetration rates of each of the main forms of broadband access. If it were the case that the penetration of LLU negatively affected cable then we would expect a negative correlation in the highlighted cell. In fact we see a positive, though, weak correlation.

	<i>Penetration Incumbent</i>	<i>Penetration Bitstream</i>	<i>Penetration LLU</i>	<i>Penetration Cable</i>	<i>Penetration Other</i>
<i>Penetration Incumbent</i>	1.00				
<i>Penetration Bitstream</i>	0.15	1.00			
<i>Penetration LLU</i>	0.57	0.28	1.00		
<i>Penetration Cable</i>	0.34	0.03	0.27	1.00	
<i>Penetration Other</i>	-0.13	-0.39	-0.12	-0.05	1.00

69. Looking at the countries where fibre is currently being used, or where deployments of next generation access are well advanced, we see that most of these have above average penetration of local loop unbundling. The OECD reports five countries with FTTN having at least 1% share of the broadband market: Czech Republic, Denmark, Italy, Netherlands and Sweden. In addition, France and Germany have well known plans for NGA development. In all these countries both the share and the penetration of LLU is above average for the sample, except Czech Republic for both penetration and share and Denmark for share which is 0.2% below average. Figure 10 below shows the share of FTTH and the penetration of LLU for these seven countries.

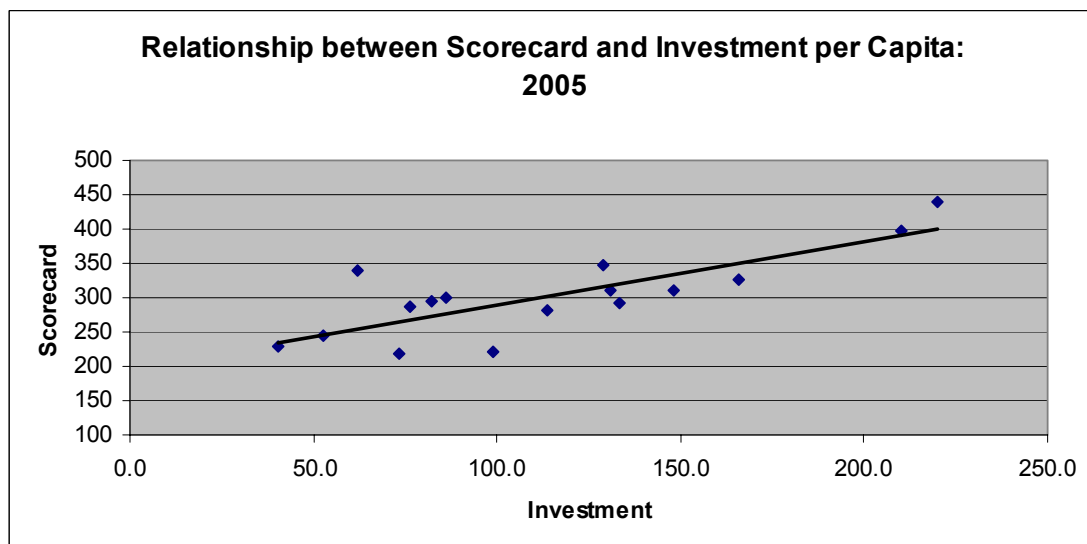
70. We cannot conclude from this that the penetration of cable increases with LLU, but neither can the opposite conclusion - that LLU damages consumer adoption of cable and other infrastructures – be drawn. Indeed we would hypothesise that there is a virtuous circle linking the penetration of LLU with higher advertised download speed which in turn stimulates consumer demand for yet higher download speeds which can only be satisfied through investment in next generation access infrastructure. If this hypothesis is correct then LLU, far from dampening investment in alternative infrastructures will in fact encourage such investment.

**Figure 10**



71. Investment Finally, we look at the relationship between the Scorecard and investment. A recently published detailed study<sup>4</sup> of earlier Scorecard and investment levels demonstrated that there is a strong and positive relationship between effective regulation, as measured by the Scorecard, and investment, as recorded by the OECD with a correlation co-efficient of (0.79). This study also showed a link between the OECD's own regulatory effectiveness index and investment.

**Figure 11**



72. Further, we find that, prima facie, increased investment is associated with better outcomes for consumers. Correlating the investment per capita data for 2005 against

<sup>4</sup> SPC Network "Regulation and Investment in European Telecoms Markets" November 2007

the level of broadband take up at Quarter 1 2007 and broadband prices we find a moderate correlation coefficient of 0.54 and -0.54 respectively. This suggests that where investment is higher, there tend to be benefits to consumers later on<sup>5</sup>. However, this simple correlation is only an early indication and further more detailed modelling would be required to confirm this.

73. Conclusion The indicators in the Scorecard tend to show a positive relationship between effective regulation and beneficial outcomes for consumers and the economy. We can say that:

- Countries with a better regulatory environment tend also to have a higher level of investment per capita. Based on analysis in a paper prepared for ECTA in November 2007, “Regulation and Investment in European Telecoms Markets”, a strong relationship is found between the regulatory environment in one year and investment in the same and subsequent years.
- Where investment is higher per capita, we also tend to find lowest prices.
- At the product specific level, a higher score for regulation of LLU is positively correlated with both a higher market share of LLU and LLU penetration in the broadband access market.
- In turn a higher penetration of LLU is strongly and negatively correlated with price per megabit.
- Lowest prices are strongly correlated with greater take-up of broadband.
- Higher penetration of LLU is weakly though positively associated with higher penetrations of other infrastructures (including cable) and with penetration rates for fibre access.

74. All the conclusions above can only be said to be tentative at present and we hope to explore these in more detail in future work. However, we believe that the results as they stand demonstrate that active involvement by independent regulators to promote competition through effective regulation of SMP operators promotes both investment and positive consumer outcomes, specifically greater take up of broadband, higher advertised access speeds and lowest prices.

75. By contrast, there is no evidence from the Scorecard that forbearance or failure to apply regulation effectively promotes any useful consumer benefits. Indeed there is no correlation between the combined share of the incumbent’s own ISP and bitstream access with speed and a strong *negative* correlation with the market share of cable and other forms alternative access.

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<sup>5</sup> We have used investment data from a period earlier than the outcomes as it would seem logical that there is some time lag between an investment being made and beneficial outcomes for consumers especially where such investment is in physical assets.



### III. Areas of assessment

76. The chosen areas of assessment reflect the main principles set out in the 2003 EU Communications Framework and associated guidelines and recommendations of the European Commission and European Regulators Group. They are also consistent with the 1996 WTO Reference Paper on Telecommunications<sup>6</sup>, to which the EC is a signatory and which underpins the regulatory regimes in place in the EC, the US, and the majority of developed countries. The first area of assessment in this survey pertains to the institutional framework. The second area deals with the Framework established by the regulator for applying access rules and regulations. The third relates to the application in practice of regulations and the degree of competition in key markets. Each of the three sections is scored as follows:

- Institutional Framework 155;
- General Market Access Conditions 142;
- Effectiveness of Implementation 189.

#### A. **Institutional environment**

77. The first section examines the effectiveness of the institutional framework and environment. This section concerns not only the NRA, but also seeks to cover other relevant institutional players such as the legislator (responsible for transposing the framework), the dispute settlement body (if different from the NRA) and the appeal system. The criteria for assessing the effectiveness of each institutional player have been reviewed in the present report in order to reflect the changes brought about by the 2003 regulatory framework, market developments and relevant factual data reflecting the effectiveness of each institutional player. Given the institutional complexity, this section is composed of eight different areas of assessment.

78. **Section A.1** examines the timely and proper transposition of the EU regulatory framework. Failures in transposition of the framework are a cause of legal uncertainty, and can hamper or delay the application of regulation to reduce barriers to market entry and address economic bottlenecks. The issues covered in this section are summarized in the table below.

79. **Question 1.** Question 1 assesses the timely transposition of the EU regulatory framework. As regards the original EU 15 countries, a maximum score is given to countries that implemented the framework in their national legislation on 25 July 2003, the legal deadline. An intermediate score is given to countries with implementing legislation in force between 25 July 2003 and 31 December 2003. A score of zero is given to countries whose implementing legislation came into force on 1 January 2004 or after. As regards the new accession countries, these received a maximum score when implementing legislation came into force on or before 1 May 2004, an intermediate score when implementing legislation was adopted before 1

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<sup>6</sup> For a copy of the reference paper, see [www.wto.org](http://www.wto.org). Principles include the prevention of anti-competitive practices in the telecommunications sector by providing that interconnection with a major supplier be ensured at any feasible point of the network, on non-discriminatory terms, on an unbundled basis, and on cost-based tariffs. It also mandates an effective dispute settlement procedure overseen by an independent regulator.

January 2005 and a score of zero when implementing legislation was adopted after that date.

80. **Question 2.** Question 2 examines whether the Member States have correctly transposed the regulatory framework. Infringement proceedings by the Commission have been used as a measurable proxy for the adequacy of such transposition. Full marks are given to countries with no infringement proceedings initiated by the Commission. An intermediate score is given to countries with one (open or closed) proceeding initiated by the Commission, and a score of zero is given to countries with more than one infringement proceedings that remained open on 31 August 2007. The number of infringement proceedings initiated by the Commission is determined on the basis of information publicly available on the Commission’s website .

81. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
1	Timely transposition of the EU regulatory framework.	Maximum, intermediate or zero.	Maximum if framework transposed on 25 July 2003 (EU 15) or 1 May 2004 (accession countries).  Intermediate for countries with implementing legislation in force between 25 July 2003 and 31 December 2003 (EU 15) and 31 December 2004 (accession countries).  Zero for transposition after 31 December 2003 (EU 15) or 31 December 2004 (accession countries).
2	Proper transposition of the EU regulatory framework.	Maximum, intermediate or zero.	Maximum for countries with no infringement proceedings for improper transposition initiated by the Commission.  Intermediate for countries with one (open/closed) infringement proceedings for improper transposition on 31 August 2007.  Zero for countries with more than one open infringement proceedings on 31 August 2007.

82. **Section A.2** examines the efficiency of regulators’ processes for the analysis of markets and application of remedies. Efficiency of these processes is particularly important in a sector such as electronic communications, which is characterised by rapid technological innovation, short investment cycles and significant first mover advantages. In this report, the NRA’s speed of process has been assessed on the basis of the time required for conducting the SMP market analyses and on whether analyses have been comprehensive. The weighting given to the assessment criteria of this section is set out in the table below.

83. **Question 3.** Question 3 examines the number of markets reviewed by the NRA on 31 August 2007 (the cut-off date for this assessment). Countries that finished their review (market definition, SMP analysis and remedies) of all markets with the exception of market 17 – wholesale international roaming – received maximum scoring. An intermediate score is given if markets 1-16 were reviewed, and otherwise; a score of zero is given.

84. **Question 4.** Question 4 examines the time required for conducting the market analysis (only complete market reviews, *i.e.*, reviews including the remedy assessment have been included). Countries where the average duration of the market analysis lasts 12 months or less are given maximum scores. An intermediate score is given where the market analysis lasted between 13 and 18 months, and zero scores were given where this lasted 19 months or more. In the case of countries that split the assessment of market definition, SMP and remedies, this criterion is applied so as to take account of the time needed to adopt a decision on all three points. The timeframe should be calculated as of the date on which the NRA launched the first request for information for a specific market investigation.

85. **Question 5.** Question 5 examines whether the market analysis and the proposed remedies are examined and notified at the same time. The two-step process is considered to have hampered the effectiveness of the regulation by creating delays and adding uncertainty to the process. Even if this was not explicitly required under the framework, regulators should exercise their discretionary power so as to ensure efficient and coherent application of the framework. Remedies are intended to address bottlenecks found under the SMP analysis, and thus a simultaneous notification is most appropriate and has been advocated by the Commission in its Communication on the Article 7 process of July 2007. A maximum score is given where the process is not divided, and a score of zero is given where the analysis is divided in separate decisions.

86. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
3	Number of markets for which the NRA has adopted a final decision.	Maximum, intermediate or zero.	Maximum if 17 markets of Commission Recommendation (excluding market 17) reviewed on 31 August 2007.  Intermediate score if markets 1-16 have been reviewed.  Zero otherwise.
4	Average (median) duration of a market analysis procedure by the NRA.	Maximum, intermediate or zero.	Maximum of 12 months or less.  Intermediate if between 13 and 18 months.  Zero if 19 months or more.
5	Separation of market analysis from remedy analysis	Maximum or zero.	Maximum if no separation.  Zero otherwise.

87. **Section A.3** examines the transparency of the NRA's decision-making process and the ability for all stakeholders to actively contribute to the decision-making. NRAs play a critical role in shaping the market environment in the new regulatory framework. A transparent decision-making process has therefore become increasingly important. Moreover, lack of transparent decision-making undermines legal certainty and increases the potential for political interference. The criteria for assessing the NRA's transparency are the existence of a consultation process, the timescale given for commenting, the obligation for publishing decisions, the

publication of an action plan, and the public availability of the NRA's costs of operation.

88. **Question 6.** Question 6 examines whether the NRA is legally obliged to hold public consultations involving all market players prior to deciding on issues of general interests or whether, in the absence of such an obligation, the NRA generally holds such consultations in practice. A maximum score is given to countries with a legal obligation or a general practice of consulting on issues of general interest. An intermediate score is given where such consultations take place on an ad hoc basis in the absence of any formal legal obligation to do so, and a score of zero in the absence of such an obligation or practice.

89. **Question 7.** Question 7 examines the average timescale for market players to participate in public consultations. A maximum score is given where four to eight weeks are given to third parties to comment and zero in instances where the consultation lasts less than four weeks or extends to more than eight weeks. An intermediate score is given where market players have expressed concerns about the timing for the consultation process. For example, in certain cases, the positive outcome of timely processes is hampered by excessively long delays in the publication of the results of the consultation or by the NRA's discretionary power to modify the effective consultation deadlines.

90. **Question 8** Question 8 examines how NRA decisions are made available to interested parties. A maximum score is given to countries with a legal obligation or a general practice of publishing decisions. An intermediate score is given where such publication takes place on an ad hoc basis in the absence of any formal legal obligation to do so or where all third parties are always informed of the NRA's decision in some other way, and a score of zero in the absence of such an obligation or practice.

91. **Question 9.** Question 9 examines whether the NRA decisions which are published are excessively redacted and restrict the ability for third parties to understand the justification substantiating a decision. A maximum score is given where requirements on confidentiality require a justification for each redacted information, the NRA verifies that the redacted information is effectively confidential and interested parties can challenge such review<sup>7</sup>. Zero is given where the redacted information is considered as excessive and prevents third parties from understanding the justification for decisions made.

92. **Question 10.** Question 10 examines the existence of a public, forward-looking, action plan which details the planned activities of the regulator. A maximum score is given if an action plan is published that sets out specific forward-looking action points and targets. An intermediate score is given if an action plan is published, but is considered too generic and does not specify action items and targets. Zero is given were no such action plan is published.

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<sup>7</sup> The benchmark against which this should be assessed is the European Commission's practice in competition law enforcement cases. The Commission only redacts information that is strictly confidential. There is a strict verification process that confidentiality claims are adequately justified.

93. **Question 11.** Question 11 examines the ability for market players to participate in the elaboration of any action plan through a prior consultation procedure. A maximum score is given to countries where the NRA conducts a prior market consultation. Zero is given if there is no such consultation.

94. **Question 12.** Question 12 examines the existence of detailed publicly accessible accounts showing the NRAs costs of operation. A maximum score is given if accounts are published in sufficient detail. An intermediate score is given if accounts are published, but with insufficient details or in an untimely manner, and zero if there is no publication of accounts.

95. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
6	Requirement for or practice of the NRA to hold public consultations prior to deciding on issues of general interest	Maximum, intermediate or zero.	Maximum if legal obligation or general consultation practice.  Intermediate if occasional consultation on ad-hoc basis.  Zero if no practice of consultation.
7	Timescale usually given to interested parties to respond to consultation	Maximum, intermediate or zero.	Maximum if four to eight weeks.  Intermediate if procedural difficulties or short timing are reported.  Zero if less than four weeks and more than 8 weeks.
8	Requirement for or common practice of the NRA to publish all its decisions upon adoption	Maximum, intermediate or zero.	Maximum if legal obligation or general publication practice.  Intermediate if publication practice on ad hoc basis and third parties are always informed of decisions in some other way.  Zero if no practice of publication.
9	Confidentiality of the data	Maximum or zero.	Maximum if redaction is limited and adequately verified and does not prevent proper understanding of the decision-making process.  Zero if redaction is not adequately verified and prevents the understanding of the decision-making process.
10	Publication of action plan which sets out specific forward-looking targets and deliverables	Maximum, intermediate or zero.	Maximum if action plan is published with specific forward looking targets.  Intermediate score if action plan is published but without specific forward looking targets.  Zero if no action plan is published or no such plan exists.
11	Consultation by the NRA on its action plan	Maximum or zero.	Maximum if prior consultation.  Zero if no consultation.

12	Transparent costs of operating the NRA.	Maximum, intermediate or zero.	<p>Maximum if publication of accounts with sufficient detail.</p> <p>Intermediate if publication of accounts with insufficient detail.</p> <p>Zero if no publication at all.</p>
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96. **Section A.4** examines the enforcement powers entrusted to the NRA. The NRA bears the primary responsibility of ensuring compliance with the SMP-obligations, where required after a market review. To that effect, the NRA should have specific investigatory and sanctioning powers. In order to ensure effective compliance with SMP-obligations, the NRA's sanctioning powers should in particular allow it to impose fines with a sufficient deterrent effect, to order the suspension of non-compliant offers and to impose fines as from the date at which an offence occurred. Anti-competitive practices can have structural effects on the electronic communications market and often allow operators to reap long term benefits from illegal practices. SMP operators have, for example, engaged in anti-competitive practices in developing markets (such as broadband) in order to exploit first mover advantages and create artificial barriers to entry on these markets. Sanctions should therefore be sufficiently high, taking into account the substantial commercial benefits that can be achieved by the illegal practice. Moreover, the threat of sanctions should also be sufficiently real to deter SMP operators from not conforming with their regulatory obligations.

97. **Question 13.** Question 13 examines whether the NRA is empowered to impose fines and whether the level of the fines it can impose has a sufficient deterrent effect. A maximum score is given if the NRA is itself in a position to impose fines with deterrent effect (*i.e.*, 5% or more of turnover of activity concerned), intermediate score if the NRA does not have the power to impose fines or sanctions but another authority is competent for imposing fines. A score of zero is given if fines can be imposed but without sufficient deterrent effect (this is assessed on the basis of the amount of the potential fine compared to offender's turnover).

98. **Question 14.** Question 14 examines whether the NRA is empowered to impose periodic penalty payments, on the basis that these are considered to constitute a particularly effective mechanism to encourage compliance. A maximum score is given if the NRA has the power to impose a penalty payment, and a zero score is given if the NRA does not have such power.

99. **Question 15.** Question 15 examines the NRA's power to order the suspension of commercial offers pending the assessment of the compliance of such offer with *ex ante* regulation. A maximum score is given if the NRA has the power to suspend the launch of a commercial service pending such compliance assessment. Zero is given if the NRA does not have such power.

100. **Question 16.** Question 16 examines the NRA's practice in imposing fines and assesses whether market players consider that the NRA has effectively used its sanctioning powers to sanction practices by SMP operators violating their *ex ante* obligations and distorting competition on the market. A maximum score is given if the NRA has a tendency to impose sanctions in the event of illegal practices. An

intermediate score is given if the NRA exhibits some reluctance to use its powers in practice. Zero is given if the NRA does not impose fines in practice.

101. The weighting given to the assessment criteria of this section is set out in the table below:

	Criteria	Weight	Comments
13	Power of the NRA to impose fines. Level and a sufficient deterrent effect (if applicable).	Maximum, intermediate or zero.	Maximum if the NRA has the power to impose deterrent fines.  Intermediate if NRA does not have the power to impose fines but fines can be imposed by another authority.  Zero if fines can be imposed but without sufficient deterrent effect.
14	Power of the NRA to impose periodic penalty payments.	Maximum or zero.	Maximum score if the NRA has the power to impose a penalty payment.  Zero if the NRA does not have such power.
15	Power of the NRA to suspend the commercial launch of services pending compliance.	Maximum or zero.	Maximum score if the NRA has the power to suspend a commercial service.  Zero if the NRA does not have such power.
16	Recourse to these powers by the NRA and tendency to use them, in particular in relation to illegal practices of the SMP operator (if applicable).	Maximum, intermediate or zero.	Maximum score if the NRA has a tendency to impose sanctions in the event of illegal practices.  Intermediate if the NRA has the power to impose fines, but has a certain reluctance to use such powers in practice.  Zero if the NRA does not impose fines in practice.

102. **Section A.5** examines the NRA's competences and its scale of resources. The NRA's legal powers, its financial and operational means play an important role in ensuring a good and efficient regulatory environment. The scope of the NRA's powers, the number of employees and its ability to attract qualified employees are particularly important parameters for assessing the NRA's ability to operate effectively.

103. **Question 17.** Question 17 examines whether the same NRA has the power to effectively regulate the market by examining whether it has the power to (i) enforce competition law in the communications sector, (ii) assign frequencies and regulate issues in relation to spectrum and (iii) regulate media issues. In view of the convergence of telecoms services, it is considered positive for the NRA to have powers that extend across the scope of the sector, including issues relating to radiospectrum and broadcasting. Additionally, having concurrent powers under competition law enables a regulator to use such powers in a complementary fashion

with the *ex ante* framework and with the advantage of sectoral expertise. A maximum score is given when at least two out of three of these powers are granted to the NRA. An intermediate score is given when only one of these powers have been granted and zero is given where the NRA has none of these powers.

104. **Question 18.** Question 18 examines the number of qualified employees employed by the NRA. A maximum score is given if the NRA has at least 30 employees, which is considered to the minimum number of employees for an effective NRA. Zero if the NRA has less than 30 employees.

105. **Question 19.** Question 19 examines whether the NRA has the legal and financial ability to set the level of remuneration of its employees in order to attract and retain qualified staff. A maximum score is given if the NRA has the ability to set the level of remuneration of its staff. Intermediate score is given when salary is tied to civil service rates but NRA has financial incentive schemes. Zero if the NRA has no such power or does not have sufficient financial resources.

106. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
17	Powers for the NRA to: - apply competition law in addition to the NCA - assign frequencies and regulate spectrum; - regulate media issues.	Maximum, intermediate or zero.	Maximum score if same NRA has at least two or three powers.  Intermediate powers if NRA has only one of these powers.  Zero if NRA has none of these powers.
18	Total number of qualified employees employed by the NRA for general regulatory issues in the e-communications sector	Maximum or zero.	Maximum score if the NRA has at least 30 employees.  Zero if the NRA has less than 30 employees.
19	Financial capability of your NRA to attract and retain suitably qualified key staff	Maximum, intermediate or zero.	Maximum score if the NRA has the ability to set the level of remuneration of its staff.  Intermediate when salary tied to civil service rates but NRA has financial incentive schemes.  Zero if the NRA has no such power or has insufficient financial resources.

107. **Section A.6** examines the effectiveness of the appeals procedure. The possibility of appealing decisions of the regulator and the way in which such appeals are implemented in practice can significantly impact the effectiveness of a regulatory regime. Particularly, appeals of decisions of market analyses create significant legal uncertainty on the market which is detrimental to all market players (and new entrants in particular which depend on regulated access products for developing their activities). The suspensive effect of such appeals, or the possibility of suspending the decisions of the regulator by means of a Court injunction, has proven to present a potential hurdle for new entrants seeking to ensure that SMP operators effectively



comply with the decisions of the regulator. In addition, the timeframe for obtaining a decision on appeal and the likelihood that decisions are overturned is important given the inherent legal uncertainty caused by such appeal processes and their potential retroactive effects. To the extent that this information was not available in detail, the answers are based on the contributors' general estimates of the SMP operator's general tendency to challenge NRA decisions.

108. **Question 20.** Question 20 examines whether the appeal of the NRA decision automatically suspends the application of such decision. A maximum score is given if there is no automatic suspensive effect. Zero is given if there is an automatic suspension because of a statutory provision or applicable case law.

109. **Question 21.** Question 21 examines the standard applied by the competent court to suspend an NRA decision under appeal. A maximum score is given if the conditions are applied restrictively, and a zero score is given if not.

110. **Question 22.** Question 22 examines the average timing required for the conduct of a procedure on appeal. A maximum score is given for appeal processes shorter than 12 months. An intermediate score is given for appeal processes ranging between 12 and 24 months. Zero is given for appeal processes exceeding 24 months.

111. **Question 23.** Question 23 examines the markets of the Recommendation in relation to which the NRA's decisions are being challenged on appeal. A maximum score is given if the appeals concern less than 25% of the 17 relevant markets of the Recommendation. An intermediate score is given if the appeals concern more than 25% of the 17 relevant markets of the Recommendation. Zero is given if the appeals concern more than 75 % of the 17 relevant markets of the Recommendation.

112. **Question 24.** Question 24 examines the proportion of NRA decisions adopted since 25 July 2003 that have been annulled or overturned on appeal. A maximum score is given for countries where a limited number of decisions were annulled (less than 25%). An intermediate score has been given with a significant number of annulments (between 25 and 75%). Zero is given for countries where almost all decisions were annulled on appeal (more than 75%).

113. **Question 25.** Question 25 examines the *locus standi* requirements which third parties must fulfil in order to be allowed to challenge said decisions. Restrictive *locus standi* requirements are considered detrimental insofar as this limits the ability for new entrants to challenge decisions involving SMP operators, although they are affected by those SMP obligations. A maximum score is given when the *locus standi* requirements allow interested parties to challenge NRA decisions in appeal proceedings. An intermediate score is given when there are doubts on the possibility for interested parties to challenge and zero is given for countries where *locus standi* requirements have restricted the ability for interested parties to challenge the NRA decisions.

114. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
20	Automatic suspension of the NRA's decisions upon appeal	Maximum or zero.	Maximum score if there is no automatic suspensive effect.  Zero if there is an automatic suspension because of a statutory provision or case law.
21	Applicable standard to obtain such suspension and application in practice (if applicable)	Maximum or zero.	Maximum score if there is a strict standard.  Zero if there is a lax standard ( <i>i.e.</i> no requirement if "irreparable harm" (or similar legal standard requirement) or lax application in practice.
22	Average (median) timeframe between the filing of an appeal and the final decision	Maximum, intermediate or zero.	Maximum score for process less than 12 months.  Intermediate score for appeal process ranging between 12 and 24 months.  Zero if appeal process exceeds 24 months.
23	Market analyses being appealed	Maximum, intermediate or zero.	Maximum if less than 25% of relevant markets.  Intermediate if more than 25% of relevant markets.  Zero if more than 75% of relevant markets.
24	Proportion of decisions rendered on appeal, reached since 25 July 2003, that resulted in the NRA determination being annulled or overturned	Maximum, intermediate or zero.	Maximum score for countries where a limited number of decisions were annulled (less than 25%).  Intermediate score if a significant number of annulments (between 25 and 75%).  Zero if more than 75% of annulments.
25	<i>Locus standi</i> requirements for third parties to be allowed to challenge NRA decisions	Maximum, intermediate or zero.	Maximum score for <i>locus standi</i> requirements which allow interested parties to appeal.  Intermediate score if there are doubts regarding the possibility for third party to appeal.  Zero where <i>locus standi</i> requirements restrict the ability for interested parties to appeal.

115. **Section A.7** examines the NRA's independence. This can be assessed, *inter alia*, on the basis of: the extent to which the NRA's discretion has been limited by law, the potential and actual extent of political intervention, the duration of office of the NRA's management, the grounds for removal, and eligibility requirements for appointments. Political influence is the most direct means of influencing the

regulator. The mere possibility of political intervention may put the regulator under pressure. Such pressure is likely to increase when the Government wholly or partially owns or controls the incumbent operator.

116. **Question 26.** Question 26 examines whether the legislator has imposed any restrictions on the NRA's discretion to exercise the functions granted to it under the EU Regulatory Framework (such as the power to collect relevant information, conduct market analysis and select appropriate remedies). A maximum score has been given where this is not the case. Zero is given where the legislator has restricted this discretion in the law.

117. **Question 27.** Question 27 examines whether the Minister or the Government has the power to give policy directions to the NRA and whether such powers have ever been exercised. A maximum score is given if no directions can be given. Zero is given if binding directions can be or are given in practice.

118. **Question 28.** Question 28 examines whether certain NRA decisions need to be preceded or followed by a decision of the Minister or the Government in order to be adopted or enter into force. In other words, where there is an explicit procedural requirement in the adoption process that allows the Government to intervene. A maximum score is given if the NRA can adopt all its decisions without any prior or subsequent Governmental intervention. Zero is given where certain NRA decision are dependent on a prior or subsequent governmental intervention.

119. **Question 29.** Question 29 examines the grounds for removal of the NRA's head. A maximum score is given if the grounds for removal are limited and restrictive (limiting the risk for politically motivated decisions)<sup>8</sup>. Intermediate is given if the grounds for removal are very broad. Zero is given if there have been cases of removals on political grounds.

120. **Question 30.** Question 30 examines the duration of the NRA's management. Appointments for very short periods are seen as increasing the potential for political intervention whilst unlimited contracts can mean that insufficient scrutiny is given to past performance. A maximum score is given if the minimal term of appointment is sufficiently long to ensure independence (set between three years to six years). Zero is given if the term is shorter than three years, exceeds six years or is unlimited in time.

121. **Question 31.** Question 31 examines the percentage of the incumbent's share capital that is held by the Government. A maximum score is given if the incumbent is entirely privatized. An intermediate score is given where there is State ownership without control and below 30%. Zero is given for State ownership conferring control or exceeding 30%.

122. The weighting given to the assessment criteria of this section is set out in the table below:

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<sup>8</sup> For example, members of the Executive Board can only be dismissed for serious misconduct by the Court of Justice upon application of the Governing Council or Executive Board.

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
26	Restrictions on the NRA's discretion for the market analysis and imposition of remedies	Maximum or zero.	Maximum score if no restrictions. Zero if restrictions.
27	Power to give directions to the NRA	Maximum or zero.	Maximum score if no directions can be given; Zero if binding directions can be or are given in practice
28	Governmental intervention required for adopting decisions	Maximum or zero.	Maximum score if no Governmental intervention is required. Zero if Governmental intervention is required.
29	Grounds for removal of the head of your NRA.	Maximum, intermediate or zero.	Maximum score if the grounds for removal are restrictive (serious misconduct). Intermediate if grounds for removal are very broad. Zero if there have been cases of removal on political grounds.
30	Duration of office of your NRA's management.	Maximum or zero.	Maximum score if the minimal term of appointment between three to six years. Zero if the term is shorter than three years, longer than six years or unlimited in time.
31	Percentage of the incumbent's share capital held by the Government.	Maximum, intermediate or zero.	Maximum score if full private ownership. Intermediate score for State ownership without control and below 30%. 0 for State ownership conferring control or exceeding 30% or below 30% but with substantial veto rights.

123. **Section A.8** examines the powers and efficiency of the NRA acting as dispute settlement body for settling disputes under Article 20 of the Framework Directive, an important function established under the Directives. The selected criteria for assessing the effectiveness of the activities of the dispute settlement body are its ability to impose intermediate measures and the average timeframe for obtaining intermediate and final decisions, the transparency of its proceedings for third parties and the absence of mandatory negotiation timeframes.

124. **Question 32.** Question 32 examines whether the dispute settlement body is entitled to impose interim measures. A maximum score is given if the dispute settlement body can order interim measures. Zero is given if the dispute settlement body does not have such power.

125. **Question 33.** Question 33 examines the average timeframe required for obtaining an interim decision from the dispute settlement body. A maximum score is given if interim measures can be ordered within a short timeframe (estimated between zero to ten days). An interim score is given if interim measures can be obtained

within a reasonable timeframe (estimated at 11 days to one month). Zero is given if interim measures cannot be obtained within a sufficiently rapid timeframe (exceeding one month) or cannot be obtained for lack of power.

126. **Question 34.** Question 34 examines the timeframe required for obtaining a final decision from the dispute settlement body over the past two years. A maximum score is given if decisions are adopted within the legally required timeframe of four months. An intermediate score is given if decisions are adopted within a timeframe ranging between four to eight months. Zero is given if the decision is adopted within a timeframe exceeding eight months.

127. **Question 35.** Question 35 examines whether the NRA (acting in its capacity of dispute settlement body) publishes pending disputes. A maximum score is given if they are published and zero if not.

128. **Question 36.** Question 36 examines whether the dispute settlement body allows third parties to contribute to the process in the context of a market consultation procedure. A maximum score is given if this is possible and common practice. An intermediate score is given when this is possible but uncommon. Zero is given if no consultation can be held.

129. **Question 37.** Question 37 examines whether there is a mandatory timeframe for negotiations (if any) before a dispute can be submitted to the dispute settlement body. A maximum score is given if there are no mandatory timeframes. Zero is given if there is a mandatory timeframe.

130. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
32	Power of the dispute settlement body to adopt interim measures	Maximum or zero.	Maximum score if the dispute settlement body can order interim measures.  Zero if the dispute settlement does not have such power.
33	Average (median) timeframe for obtaining an interim decision from the dispute settlement body over the past two years (if applicable)	Maximum, intermediate or zero.	Maximum score if interim measures can be ordered within a short timeframe (estimated between zero to ten days).  Intermediate score if interim measures can be obtained within a reasonable timeframe (estimated at 11 days to one month).  Zero if interim measures cannot be obtained within a sufficiently rapid timeframe (exceeding one month) or cannot be obtained for lack of power.

34	Average (median) timeframe for obtaining a final decision from the dispute settlement body, over the past two years	Maximum, intermediate or zero.	Maximum score if a decision is adopted within the legally required timeframe of four months.  Intermediate score if a decision is adopted within a timeframe ranging between four to eight months.  Zero if a decision is adopted within a timeframe exceeding eight months.
35	Publication of disputes by the NRA	Maximum or zero.	Maximum score if pending disputes are published.  Zero otherwise.
36	Consultation of third parties	Maximum, intermediate or zero.	Maximum if common practice.  Intermediate if possible but not common.  Zero if not possible.
37	Mandatory timeframe for initiating a dispute settlement procedure	Maximum or zero.	Maximum score if there is no mandatory timeframe.  Zero otherwise.

## B. General market access conditions

131. This section assesses the extent to which the national regulatory framework as elaborated by the NRA and/or the Government facilitates market entry by effectively managing essential resources (such as numbering and frequencies), minimizing entry barriers (through effective rights of way), establishing clear and consistent rules for the application of *ex ante* regulation of SMP operators and providing certainty over future regulatory developments. The section is composed of six sections covering the approach taken to next generation networks and access, key remedies such as non-discrimination and accounting separation, and rules applied to rights of way, frequencies and numbering.

132. **Section B.1** examines whether the regulatory environment and market conditions favour the principle of technological neutrality, whether there is a certain degree of transparency and understanding for market players on the future regulatory environment and whether the NRA will address the regulatory issues resulting from the evolution to next generation networks and access (NGNs and NGAs).

133. **Question 38.** Question 38 inquires whether the fixed incumbent has made clear its plans for the transition of its network from PSTN to IP technology and whether such plans are transparent to market players. A transition to more modern and efficient IP technology in core networks is expected in environments where the incumbent is subject to competitive pressure. A maximum score is given where the incumbent has published such a plan that is sufficiently detailed and adequate. An intermediate score is given if the plan is not considered to be sufficiently precise or has not been revealed to affected parties. Zero has been given if there is no transparency of the incumbent's plans or plans do not exist.

134. **Question 39.** Question 39 inquires whether the NRA has foreseen a process to address questions related to the migration to Next Generation Networks and transition to IP interconnection. A maximum score is given where the NRA has foreseen a specific process on migration issues and IP interconnection involving consultation with market players. Zero has been given if the NRA has not given any consideration to these issues.

135. **Question 40.** Question 40 examines whether the incumbent's plans for upgrades in relation to access networks (for the use of vDSL and/or fibre to the home) are transparent. A maximum score is given where the incumbent has published such a plan which is sufficiently detailed and adequate or where it has made clear that no plans are envisaged and committed to advance notification and consultation should it develop such plans. An intermediate score is given if the plan is not considered to be sufficiently precise or has not been made available to affected operators. Zero has been given if there is no transparency over plans.

136. **Question 41.** Question 41 inquires whether the NRA has conducted or foreseen a consultation process for questions related to Next Generation Access. A maximum score is given where the NRA has set up a specific consultation process involving market players. An intermediate score is given if the NRA has given some consideration to these issues. Zero has been given if the NRA has not given any consideration at all to these issues.

137. **Question 42.** Question 42 examines whether the NRA's market analyses have included the following considerations regarding network and technological upgrades: (i) Ethernet in relation to leased lines markets, (ii) fibre and vDSL in relation to markets for local loop unbundling and wholesale broadband access, (iii) Voice over Broadband in relation to retail and other voice markets. A maximum score is given where these issues have systematically been considered. An intermediate score is given where these issues have been considered in certain market analyses or where there are plans to re-open market analyses to consider them within the next twelve months. Zero is given where these issues were not considered at all.

138. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
38	Transparent and detailed plans for IP network upgrade	Maximum, intermediate or zero.	Maximum if transparent and detailed plan.  Intermediate if plan is not sufficiently detailed.  Zero if not transparent or no plan at all.
39	Migration process for ANOs to IP network upgrade	Maximum or zero.	Maximum if foreseen involving consultation  Zero if not.

40	Transparent plans for upgrade of access network	Maximum, intermediate or zero.	Maximum if transparent and detailed plan or no plans but commitment to pre-notify and consult.  Intermediate if plan is not sufficiently detailed or has not been subject to prior consultation.  Zero if not transparent or no plans.
41	Consultation process for issues of NG access (beyond market analyses)	Maximum, intermediate or zero.	Maximum if review process has been initiated.  Intermediate if review is foreseen.  Zero if no review process is foreseen.
42	Consideration to NGN related issues in market analyses	Maximum, intermediate or zero.	Maximum score if systematically addressed.  Intermediate score if addressed for certain specific markets or if a review is foreseen within the next 12 months.  Zero if not addressed and no review is announced.

139. **Section B.2** examines whether there is an effective accounting separation regime. Accounting separation is another important condition that enables NRAs to closely monitor compliance with access obligations and prevent cross-subsidization practices between regulated and non-regulated services. In order to assess the effectiveness of such remedies, it is necessary to determine whether the NRA has provided for such a remedy when imposing a non-discrimination or price control obligation on an SMP operator. The methodology for accounting separation should also be clearly specified and determined on the basis of a public consultation process. Finally, the accounts should clearly reflect the charging arrangements between regulated products and downstream markets in order to prevent cross-subsidization practices.

140. **Question 43.** Question 43 examines whether the NRA has imposed an accounting separation remedy as an accompanying measure where remedies of non-discrimination or cost orientation have been applied across multiple markets. A maximum score is given if an accounting separation remedy has been imposed in conjunction with a cost orientation and/or non-discrimination remedy. An intermediate score is given if accounting separation has been imposed on an *ad hoc* basis. Zero is given if no such obligation has been imposed in conjunction with a cost orientation and/or a non-discrimination remedy.

141. **Question 44.** Question 44 examines whether a methodology exists for accounting separation and whether such methodology has been determined following a market consultation. A maximum score is given if a clear methodology exists for



accounting separation following a public consultation. An intermediate score is given whenever certain methodological principles are publicised, but are considered insufficient. Zero is given if no methodology exists, or if it is not publicly available.

142. **Question 45.** Question 45 examines whether the accounts of an SMP operator under an accounting separation obligation remedy are published. A maximum score is given if the accounts are published in a timely fashion. An intermediate score is given if accounts are out of date or not complete (but more recent than five years). Zero is given if the accounts are not published or if there is a significant delay before publication.

143. **Question 46.** Question 46 examines whether the separated accounts clearly show the transfer charges between SMP products and relevant downstream products. A maximum score is given if the accounts show internal transfer charging. An intermediate score is given if data are missing from accounts. Zero is given if the accounts are not published or do not show internal transfer charging.

144. **Question 47.** Question 47 examines whether the published regulated accounts (or other sources) of the fixed incumbent demonstrate the consistency of the costing for products which utilize the same or common assets (*e.g.*, for PPC, LLU, WLR). A maximum score is given if consistent. An intermediate score is given if data are missing from accounts. Zero is given if inconsistent or absence of sufficient data to verify coherency.

145. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
43	Cost accounting separation imposed by the NRA as accompanying measure to non-discrimination and/or cost-orientation remedy	Maximum, intermediate or zero.	<p>Maximum score if an accounting separation remedy has been imposed in conjunction with a cost orientation and/or non-discrimination remedy.</p> <p>Intermediate score if accounting separation has been imposed on an <i>ad hoc</i> basis.</p> <p>Zero if no such obligations have been imposed.</p>
44	Methodology for accounting separation clearly specified and subject to consultation	Maximum, intermediate or zero.	<p>Maximum score if a clear methodology exists and is published.</p> <p>Intermediate score if certain principles are publicized but are considered insufficient.</p> <p>Zero if no publicly available methodology exists.</p>

45	Publication of accounts drawn in accordance with cost accounting separation.	Maximum, intermediate or zero.	Maximum score if the accounts are published in a timely fashion.  Intermediate score if accounts are out of date (but more recent than five years) or not complete.  Zero if the accounts are not published or not published in time.
46	Clear distinction in separated accounts of transfer charging arrangements between SMP products and all relevant downstream markets.	Maximum, intermediate or zero.	Maximum score if the accounts show internal transfer charging.  Intermediate score if data missing from accounts.  Zero if the accounts are not published or do not show internal transfer charging.
47	Coherent costing data for same assets	Maximum, intermediate or zero.	Maximum score if consistent.  Intermediate score if data missing from accounts.  Zero if inconsistent or absence of sufficient data to verify coherency.

146. **Section B.3** examines whether the NRA has adequate guidelines and processes in place for preventing discrimination and margin squeeze practices. The non-discrimination obligation remains one of the most important access remedies, since it determines whether or not competitors who rely on the access conditions of another network have the ability to compete on a level playing field. A price squeeze practice also constitutes a pricing practice of typical concern for markets where downstream competition relies on wholesale inputs provided on bottleneck networks. This section therefore reviews the existence of clear rules for applying the non-discrimination obligation and preventing price squeeze practices, whether such rules have been adequately published and whether non-price discrimination practices can also be sufficiently prevented.

147. **Question 48.** Question 48 examines whether there is a clear understanding on the definition of the non-discrimination obligation in an *ex ante* context. A maximum score is given if there are clear guidelines on the definition of the non-discrimination remedy in an *ex ante* context for all markets for which a non-discrimination remedy has been imposed (whether in the form of general guidelines or for all relevant markets). An intermediate score is given if general indications exist or the scope of the non-discrimination remedy has only been set out on an *ad hoc* basis in the scope of the remedy decision. Zero is given if the NRA has not given any further indications on the definition of the non-discrimination remedy in an *ex ante* context.

148. **Question 49.** Question 49 examines whether there is a clear methodology for a price squeeze analysis and whether it has been published. A maximum score is given if the price squeeze rules exist and have been published. An intermediate score is given if price squeeze rules have only been published in relation to specific markets or products or where such rules exist but have not been published. Zero has been given if no rules are published.

149. **Question 50.** Question 50 examines whether the NRA has foreseen specific provisions to prevent non-price discrimination by imposing transparency obligations for internal contracts and service provisioning, publication of internal SLAs, use of KPIs, etc. In particular, it examines whether the NRA has imposed functional separation or the obligation to publish KPIs measuring internal and external service provisioning performance for at least one regulated wholesale access product. A maximum score is given if the NRA has specific provisions for preventing discrimination on non-price terms (e.g., publication of internal SLAs, KPIs, the ordering process, etc.). An intermediate score is given if rules are in place against non-price discrimination, but these are not considered as sufficiently effective or limited to specific SMP access products. Zero is given if no such provisions exist.

150. **Question 51.** Question 51 examines whether the NRA has elaborated on the interpretation of anti-competitive bundling and established measures to address such activities, for example through a replicability test. A maximum score is given where the NRA has published detailed rules and applied them where bundling issues have arisen. An intermediate score is given if there are no general rules, but the NRA has examined anti-competitive bundling. Zero is given if no such provisions exist.

151. **Question 52.** Question 52 examines whether there are explicit rules which restrict the information exchanges between wholesale and retail divisions of dominant players in order to prevent anti-competitive use of such information, for example through Win-Back initiatives. A maximum score is given if such restrictions exist. Intermediate score is given if in some markets but not all. Zero is given if no restrictions exist.

152. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
48	Existence of clear rules and methodology on the non-discrimination obligation in an <i>ex ante</i> context	Maximum, intermediate or zero.	Maximum if there are clear guidelines.  Intermediate score if general indications or the scope of the non-discrimination remedy has only been set out on an <i>ad hoc</i> basis in the scope of the remedy decisions.  Zero otherwise.
49	Methodology on the interpretation and application of the price squeeze test in an <i>ex ante</i> context	Maximum, intermediate or zero.	Maximum if clear rules for price squeeze have been published.  Intermediate score if the existing rules are not sufficiently clear or the NRA is still in the process of adopting specific rules.  Zero otherwise.

50	Specific provisions for the NRA to enforce non-discrimination on non-price terms.	Maximum, intermediate or zero.	Maximum if the NRA imposed functional separation.  Intermediate if rules in place but are not sufficiently effective or limited to specific SMP access products.  Zero otherwise.
51	Specific provisions aimed at defining and addressing anti-competitive bundling	Maximum, intermediate or zero.	Maximum if published and applied coherently.  Intermediate if there are no general rules but the NRA has examined anti-competitive bundling.  Zero otherwise.
52	Specific rules to restrict transfer of information	Maximum, intermediate or zero.	Maximum if restrictions.  Intermediate if in some markets but not all.  Zero otherwise.

153. **Section B.4** examines the regime pertaining to the rights of way. The roll out of new networks necessitates the possibility for new entrant operators to benefit from entitlements to rights of way at reasonable and non-discriminatory conditions. Such rights of way reduce costs for the roll-out of this network and therefore constitute an important enabler to promote infrastructure competition. For the purpose of assessing the regime pertaining to rights of way, the report assesses whether there are clear and non-discriminatory procedures in place enabling operators to apply for rights of way. It should also be assessed whether these rights can be exercised at reasonable cost and within a reasonable timescale. Finally, the report also considers whether measures have been put in place to mandate duct access, considered an important enabler of network replication, in circumstances where this would be efficient.

154. **Question 53.** Question 53 examines whether there are clear and non-discriminatory procedures in place enabling operators to apply for rights of way. A maximum score is given if there are clear rules in place. Zero is given if no such rules exist.

155. **Question 54.** Question 54 examines whether the rights of way can be exercised at a reasonable cost, taking account of all associated costs involved in the transaction. A maximum score is given if rights of way are free or are charged at reasonable rates. Zero is given where authorities charge rights of way that are considered excessive.

156. **Question 55.** Question 55 examines whether operators can obtain rights of way within a reasonable timescale on the basis of the operator's assessment. A maximum score is given if rights of way are obtained within a reasonable timescale. Intermediate scores are given if timescales for obtaining rights of way vary. Zero is given where authorities impose excessive timescales.

157. **Question 56.** Question 56 examines whether there is an effective appeals mechanism for exercising rights of way. A maximum score is given if an effective

appeals process is in place. Intermediate score is given if this right exists on commercial terms. Zero is given if the appeals process is not considered effective.

158. **Question 57.** Question 57 examines whether duct access is available at reasonable conditions on the incumbent's network and, if not, whether it has been mandated in accordance with Article 12 of the Access Directive, Article 12 Framework Directive or another legal basis (whether it was imposed by the NRA or another competent authority). A maximum score is given where a commercial offer is available and is useable in practice. An intermediate score is given where it is being considered and a review process has been initiated or if it is only available on a case by case basis on the basis of bilateral commercial negotiations. Zero is given where duct access is not available and no review process has been initiated.

159. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
53	Clear and non-discriminatory procedures in place enabling operators to apply for rights of way	Maximum or zero.	Maximum score if there are clear rules in place.  Zero if no such rules exist.
54	Clear and non-discriminatory procedures in place enabling operators to apply for rights of way	Maximum or zero.	Maximum score if rights of way are free or are charged at reasonable rates.  Zero if authorities charge rights of way which are considered excessive.
55	Possible to exercise these rights of way in a reasonable timescale	Maximum, intermediate or zero.	Maximum score if rights of way are obtained within a reasonable timescale.  Intermediate scores if timescales for obtaining rights of way vary.  Zero if authorities impose excessive timescales.
56	Effective mechanism to appeal decisions on rights of way	Maximum, intermediate or zero.	Maximum score if an effective appeals process is in place.  Intermediate if on commercial terms.  Zero if the appeals process is not considered effective.

57	Is duct access available on reasonable terms from the fixed incumbent or is it being reviewed	Maximum, intermediate or zero.	<p>Maximum score if a commercial offer is available and is usable in practice.</p> <p>Intermediate score if NRA/or another authority has initiated a process for determining whether it should be imposed or if it is only available on a case by case basis on the basis of bilateral commercial negotiations.</p> <p>Zero if it is not available at reasonable terms and no review has been initiated.</p>
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160. **Section B.5** examines the effectiveness of the regime pertaining to numbering. Numbering raises not only issues of number availability, but also number portability, a requirement under EC Directives. The availability of number ranges and number portability for VoIP is also considered to be a key market enabler favouring the development of competition on the market.

161. **Question 58.** Question 58 examines the average timeframe for obtaining the reservation of numbers. A maximum score is given if the reservation takes less than 10 working days. An intermediate score is given where the timeframe ranges between 10 to 20 working days. Zero is given if the timeframe exceeds 20 working days.

162. **Question 59.** Question 59 examines whether there are restrictions preventing number portability for VoIP services – for example if such services are allocated a special number range which cannot be ported or if the rights to portability are restricted to services meeting certain criteria (such as PATS). Assessment has been made on the basis of the ERG report on “VoIP and Consumer Issues” of 2006 ([http://www.erg.eu.int/doc/publications/erg\\_06\\_39\\_report\\_voip\\_cons\\_aspects.pdf](http://www.erg.eu.int/doc/publications/erg_06_39_report_voip_cons_aspects.pdf)). A maximum score is given if it is not restricted. An intermediate score is given if there are some restrictions, and zero is given if there are restrictions which effectively prevent the porting of numbers used for VoIP services.

163. **Questions 60 and 61.** Questions 60 and 61 examine the level of the wholesale charges for number porting. Scores are given on the basis of a comparison of the price for number portability. The highest score is given to countries whose prices fall into the lowest third of the range between the most expensive and the lowest costs. An intermediate score is given for those in the middle third, and zero is given where the price falls into the highest.

164. **Questions 62 and 63.** Questions 62 and 63 examine the proportion of numbers ported in 2006 for fixed numbers and mobile numbers. The score is given on the basis of a comparison of the proportion of ported numbers. The highest score is given to countries where the proportion of ported numbers falls into the highest third of the spread between the fewest and most ported numbers. An intermediate score to those in the middle, and zero is given to countries in the lowest third.

165. **Question 64.** Question 64 examines whether there are specific restrictions or conditions for the use of geographic number ranges for VoIP services – for example

preventing the nomadic use of such number ranges. A maximum score is given if no restrictions are imposed. An intermediate score is given for some restrictions. Zero is given if nomadic VoIP services are limited to special non-geographic number ranges.

166. **Question 65.** Question 65 examines whether number portability is available in synchronization with (i) ULL, (ii) bitstream access and (iii) WLR, where available. A maximum score is given for countries where number portability is synchronized with all available wholesale products. Intermediate is given where it is available for some. Zero is given if number portability is not available with any relevant wholesale products or where no relevant wholesale product exists.

167. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
58	Average timeframe for reservation of numbers	Maximum, intermediate or zero.	Maximum if less than 10 working days.  Intermediate if between 10 and 20 working days.  Zero if more than 20 working days.
59	Restrictions on NP for VoIP	Maximum, intermediate or zero.	Maximum if no restrictions.  Intermediate score if there are some restrictions.  Zero if there are restrictions.
60	Average wholesale price for porting fixed numbers	Maximum, intermediate or zero.	Maximum if in lowest-third.  Intermediate if in middle-third.  Zero if in upper-third.
61	Average wholesale price for porting mobile numbers	Maximum, intermediate or zero.	Maximum if in lowest-third.  Intermediate if in middle-third.  Zero if in upper-third.
62	Proportion of fixed numbers ported in 2006	Maximum, intermediate or zero.	Maximum if in upper-third.  Intermediate if in middle-third.  Zero if in lowest-third.

63	Proportion of mobile numbers ported in 2006	Maximum, intermediate or zero.	Maximum if in upper-third.  Intermediate if in middle-third.  Zero if in lowest-third.
64	Restrictions on the number ranges available for VoIP	Maximum, intermediate or zero.	Maximum if no restrictions are imposed.  Intermediate if some restrictions.  Zero if nomadic VoIP is limited to special non-geographic number ranges.
65	Availability of number portability with LLU, bitstream, WLR	Maximum, intermediate or zero.	Maximum if synchronized number portability available with all.  Intermediate if available with some.  Zero if number portability is not synchronized.

168. **Section B.6** examines the effectiveness of the regime pertaining to frequencies. The convergence of fixed and mobile services and the development of new mobile technologies and services have made frequency allocation conditions an important factor for promoting competition and investments in alternative networks and services.

169. **Question 66.** Question 66 examines whether rules for spectrum trading are envisaged or in place. A maximum score is attributed in countries where spectrum trading is available and rules are in place. An intermediate score is given in countries where spectrum trading is envisaged and a score of zero in countries where spectrum trading is not contemplated.

170. **Question 67.** Question 67 examines whether there are any service or technology restrictions associated to the 3.5 GHz frequency bands, in particular where these prevent the provision of “mobile” services. A maximum score is given if no such restrictions are imposed. Intermediate if restrictions in place, but a process has been initiated to review conditions. Zero is given if restrictions are imposed.

171. **Questions 68.** Question 68 examines whether the NRA has or is planning to impose any service or technology restrictions associated to the 2.6 GHz frequency bands. A maximum score is given if no such restrictions are imposed or foreseen. Intermediate if restrictions in place, but a process has been initiated to review conditions. Zero is given if restrictions are imposed or foreseen.

172. **Question 69.** Question 69 examines whether the NRA has started a consultation process on the “digital dividend” issue (*i.e.*, the allocation of the frequencies that were



freed-up as a result of the migration to digital television). A maximum score is given where such a consultation has been launched and zero where not.

173. **Question 70.** Question 70 examines whether spectrum for mobile TV has been allocated (excluding UMTS). A maximum score is given where this has been done and zero if not.

174. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
66	Rules on spectrum trading envisaged or in place.	Maximum, intermediate or zero.	Maximum if spectrum trading available.  Intermediate if spectrum trading envisaged.  Zero if spectrum trading not regulated.
67	No service/technological restrictions on the use of 3.5 GHz frequencies	Maximum, intermediate or zero.	Maximum if no restrictions.  Intermediate if restrictions in place but a process has been initiated to review conditions.  Zero if restrictions.
68	No service/technological restrictions on 2.6 GHz frequencies	Maximum, intermediate or zero.	Maximum if no restrictions imposed/foreseen.  Intermediate if restrictions in place but a process has been initiated to review conditions.  Zero if restrictions.
69	Consultation on the digital dividend	Maximum or zero.	Maximum if consultation conducted.  Zero otherwise.
70	Allocation of frequencies for mobile TV (excluding UMTS)	Maximum or zero.	Maximum if spectrum allocated.  Zero otherwise.

### **C. Effectiveness of regulation and competitiveness in key access markets and services**

175. This section examines the effectiveness of competition in key access markets and services and the application and implementation of relevant access regulation seen as contributing to competitiveness. A wide range of indicators are used, including the extent of end-to-end infrastructure competition, the application of pro-competitive

wholesale remedies, retail prices and the market share of competitors at retail level. This section also aims to assess the extent to which the ‘ladder of investment’<sup>9</sup> principle, as described by ERG, has been applied to enable competitors to invest to the maximum extent that is economically efficient. In view of recent market developments, questions concerning the impact of VoB on competition in voice markets and the availability and regulation of sub-loop unbundling have been included for the first time. Equally, over time, technological and market developments may render less relevant some of the existing access products such as WLR and CPS, and providers are expected to migrate towards other access mechanisms. However, for many customers, these still constitute the only means by which they can access competitive services. They are thus still relevant and considered important in forming the basis upon which competition can develop using other means.

176. The services covered by this section include: (i) narrow band voice services, (ii) mobile services, (iii) access services relevant to business customers, (iv) broadband services based on bitstream and (v) broadband services based on LLU and other infrastructure. Each type of access service or market constitutes a separate section:

177. **Section C.1** examines the competitive conditions prevailing for the provision of narrowband voice telephony services, and the effectiveness of regulation relevant to the competitive development of this market. Retail competitiveness indicators include a comparison of retail tariffs, market shares of competitors for both calls and voice line access (including access provided via cable networks and LLU), and the existence of services using VoB as a ‘replacement’ for traditional switched voice services.

178. Regulatory indicators include tariffs for interconnection, and the availability of ‘voice’ remedies for markets 1 and 2 (retail line rental) and 8 (call origination) as identified in the Relevant Market Recommendation. The provision of carrier pre-selection services is an obligation which must be imposed pursuant to the Universal Service Directive. Wholesale line rental is a remedy that may be imposed on the basis of a market analysis, but it is notable that for the relevant market in question (access for narrowband telephony), all regulators have reported market shares around or above 80%, a level which clearly constitutes dominance, and that the European Commission has advocated WLR as relevant in promoting competition for customers which do not receive broadband services.

179. As the migration to VoB from the traditional PSTN is an important competitive development, the report also examines whether there is a consistent ladder of investment enabling an operator to migrate from WLR to services enabling VoB such as LLU and naked bitstream.

180. **Question 71.** Question 71 examines the level of the fixed incumbent’s termination charges at local level, single tandem level and double tandem level. The score is given on the basis of a comparison of the tariffs. Prices have been calculated for one minute of a three minute call as a simple average of peak and off peak charges per minute. Where a call set up charge is included, this has been divided by three and

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<sup>9</sup> ERG, "Common position on the approach to appropriate remedies in the new regulatory framework", ERG (03) 30 rev 1.

added to the per minute cost. The highest score is given to countries whose price falls into the lowest-third of the range between the most expensive lowest costs. An intermediate score is given for those in the middle-third, and zero is given where the price falls into the upper-third.

181. **Question 72.** Question 72 examines whether there is an offer for capacity based interconnection for (i) all calls (voice and Internet) or (ii) Internet-only. Capacity-based and other non-time based charging mechanisms are expected to become increasingly relevant as consumers move towards bundled services priced at a flat rate. A maximum score is given where such an offer exists for all calls. An intermediate score is given if it is provided for Internet only. Zero is given where such an offer does not exist.

182. **Question 73.** Question 73 examines whether any different termination costs are taken into account for determining termination charges for different operators in the market (*e.g.*, if the price regulation imposed for fixed call termination services takes account of higher costs typically incurred by competitors when entering a mature market in competition with an established operator with a large, inherited customer base). Maximum score is given if the objective differences are taken into account. Zero is given if such differences are not taken into account, and symmetrical prices are imposed without justification.

183. **Question 74.** Question 74 examines the proportion of customers which use an alternative fixed network operator for their fixed line whether via cable, own copper network or alternative technologies such as wireless. The score is given on the basis of a comparison of the percentage of the alternative operators' market share. The highest score is given to countries where the market share of alternative fixed operators falls into the upper-third of the range of market shares. An intermediate score is given to those in the middle-third, and zero is given to countries in the lowest-third.

184. **Question 75.** Question 75 examines the proportion of customers which use an alternative fixed network operator for their fixed telephone line via ULL. The score is given on the basis of a comparison of the percentage of the alternative operator's market share. The highest score is given to countries where the market share of alternative fixed operators falls into the highest third of the range of market shares. An intermediate score is given to those in the middle third, and zero is given to countries in the lowest third.

185. **Question 76.** Question 76 examines the proportion of end users which use an alternative fixed network operator for their fixed line via WLR. The score is given on the basis of a comparison of the percentage of the alternative operator's market share of incumbent fixed lines. The highest score is given to countries where the market share of alternative fixed operators falls into the upper-third of the range of market shares. An intermediate score is given to those in the middle-third, and zero is given to countries in the lowest-third.

186. **Question 77.** Question 77 examines the proportion of active CPS lines (compared to the total incumbent lines). The score is given on the basis of a comparison of the percentage of the CPS lines. The highest score is given to countries where the percentage active CPS lines falls into the upper-third of the range

of market shares. An intermediate score is given to those in the middle-third, and zero is given to countries in the lowest-third.

187. **Question 78.** Question 78 examines alternative operators' total market share for the provision of voice telephony services. The score is given on the basis of a comparison of the percentage of the alternative operator's market share. The highest score is given to countries where the market share of alternative fixed operators falls into the upper-third of the spread of market shares. An intermediate score is attributed to those in the middle-third, and zero is given to countries in the lowest-third.

188. **Question 79.** Question 79 examines whether VoB services are offered as a primary voice line (and if so, whether it is only available as part of a bundle or also on a stand-alone basis). A maximum score is given if such an offer is available and does not require a customer to purchase a bundle. An intermediate score is given to VoB services which are available only as part of a double or triple play bundle. Zero is given if it is not available.

189. **Question 80.** Question 80 examines whether a price squeeze test is applied in relation to LLU, naked bitstream (where available), WLR and retail line rental. A maximum score is given where such an analysis is conducted. An intermediate score is given if margin squeeze have been identified by market players. Zero is given if there is no price squeeze analysis.

190. **Questions 81 and 82.** Questions 81 and 82 examine the value of the retail price basket (*i.e.*, the monthly average expenditure) for residential and business customers. The score is given on the basis of a comparison of the value of the retail price basket. The data source for these questions are Figures 85 and 86 on page 85 of Annex 2 of the 12<sup>th</sup> Implementation Report. The highest score is given to countries whose basket prices fall into the lowest-third of the range between the most expensive and cheapest costs. An intermediate score is given to those in the middle-third, and zero is given where the price falls into the upper-third.

191. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
71	Level of the incumbent's interconnection tariffs for call termination with interconnection at: - the local switch level; - the single tandem switch level; - the double tandem switch level	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
72	Existence of capacity based interconnection offer for: - all calls; - internet-only	Maximum, intermediate or zero.	Maximum if offer exists for all calls.  Intermediate score if for Internet only.  Zero if no such offers exist.

73	Different termination costs taken into account for determining termination charges	Maximum or zero.	Maximum if cost differences are taken into consideration.  Zero if cost differences are not taken into consideration.
74	Proportion of customers using an alternative provider to the incumbent for direct access to telephone services on the basis of an alternative network	Maximum, intermediate or zero.	Maximum if in upper-third of market share for Alnets.  Intermediate if in middle-third.  Zero if in lowest-third.
75	Proportion of customers using an alternative provider to the incumbent for direct access to telephone services on the basis of ULL	Maximum, intermediate or zero.	Maximum if in upper-third of market share for Alnets.  Intermediate if in middle-third.  Zero if in lowest-third.
76	Proportion of customers using an alternative provider to the incumbent for direct access to telephone services on the basis of WLR	Maximum, intermediate or zero.	Maximum if in upper-third of market share for Alnets.  Intermediate if in middle-third.  Zero if in lowest-third.
77	What proportion of lines are active CPS lines compared to the total number of incumbent lines ?	Maximum, intermediate or zero.	Maximum if in upper-third of % of active CPS lines.  Intermediate if in middle-third.  Zero if in lowest-third.
78	Market share (revenue) of alternative operators in the fixed voice market	Maximum, intermediate or zero.	Maximum if in upper-third of market share held by alternative operators.  Intermediate if in middle-third.  Zero if in lowest-third.

79	Existence of VoB as primary voice line	Maximum, intermediate or zero.	Maximum if available alone or in bundle.  Intermediate if only available in bundle.  Zero if not available.
80	Price squeeze analysis between ULL, naked bitstream, WLR and retail line rental	Maximum, intermediate or zero.	Maximum if analysis is conducted.  Intermediate score is given if margin squeeze has been identified by market players.  Zero if no price squeeze analysis.
81	Value of the retail price basket for residential customers	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
82	Value of the retail price basket for business customers	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.

192. **Section C.2** examines the degree of competition and application of economic regulation in mobile markets. The first criterion included in this section pertains to call termination services. The traditionally high cost of calling mobile networks in a calling party pays environment has generally been perceived as detrimental to consumers and distorts competition and investment. It has, in particular, allowed incumbent mobile network operators to create artificially high barriers to entry and subsidize their retail operations. Moreover, termination services on mobile networks are considered to constitute a bottleneck facility which is not subject to sufficient competitive constraints from the retail markets. The report has therefore compared the level of the tariffs applied for the provision of voice call termination services (at wholesale level) and the effective regulation of such services in accordance with the ERG and Commission's recommendations. In addition to the issue of mobile termination, the overall level of prices at the retail level for mobile services and the presence of MVNOs on the market provide a good indicator of the effectiveness of competition in the mobile sector as a whole. Finally, it is also critical to encompass the possible restrictions to competition that can arise from a mobile operator's ability to provide integrated fixed to mobile services to consumers or businesses and to

determine to what extent regulations are in place to limit the possibility of discriminatory treatment, such as via on-net tariffs that cannot be replicated in light of the termination rates publicly offered.

193. **Question 83.** Question 83 examines the level of the termination charges of the largest mobile network operator . The score is given on the basis of a comparison of the tariffs . The highest score is given to countries whose price falls into the lowest-third of the range between the most expensive and cheapest cost. An intermediate score is given for those in the middle-third, and zero is given where the price falls into the upper-third.

194. **Question 84.** Question 84 examines whether fixed to mobile termination services are subject to *ex ante* regulation. It examines in particular whether the largest mobile operator is subject to a non-discrimination obligation which applies to external and internal non-discrimination. A maximum score is given if external and internal non-discrimination are imposed. Zero is given if only external non-discrimination or no non-discrimination remedy has been imposed.

195. **Question 85.** Question 85 examines whether the charges for fixed to mobile and mobile to mobile must be the same. A maximum score is given were such charges are required to be identical and zero if not.

196. **Question 86.** Question 86 examines whether any different termination costs are taken into account for determining termination charges for different operators in the market (*e.g.*, if the price regulation imposed for mobile call termination services takes account of higher costs typically incurred by late entrant competitors when entering a mature market in competition with established operators some of which may have benefited from a monopoly or limited competition). Maximum score is given if the objective differences are taken into account. Zero is given if such differences are not taken into account and symmetrical prices are imposed without justification.

197. **Question 87.** Question 87 examines the market shares of the two largest mobile network operators. The score is given on the basis of a comparison of the percentage of the operator's market shares. Maximum marks are awarded to countries where the market share of the two largest operators falls in the lowest-third of such market shares. Intermediate marks are awarded for countries in the middle-third, and zero to countries where the market shares of the two largest operators are in the upper-third.

198. **Questions 88 and 89.** Questions 88 and 89 examine the value of the retail mobile price basket (*i.e.*, the monthly average expenditure) for low users and medium users as defined by the OECD. The data source for these questions are Figures 43 and 44 respectively on pages 47 and 48 of Annex 2 of the 12<sup>th</sup> Implementation Report. The cheaper of the two operators shown in each country has always been chosen. The highest score is given to countries whose basket prices fall into the lowest-third of the spread between the most expensive and lowest costs. An intermediate score is given for those in the middle-third, and zero is given where the price falls into the upper-third.

199. **Question 90.** Question 90 examines whether at least one real MVNO is operational. It is considered that a "real MVNO" has at least some of the following characteristics: can (i) obtain its own number ranges from the NRA; (ii) set its own

wholesale call termination charges, (iii) own its customer base (which can be transferred to another host operator), (iv) set its own retail prices (for all voice and data services including roaming) and wholesale charges (for all voice and data services including roaming), (v) receive revenues from its host operator for inbound traffic and for roaming, (vi) use its own HLR, IMSI, and SIM cards. A maximum score is given if at least one full MVNO is active and zero if not.

200. **Question 91.** Question 91 examines whether mobile service providers (“SP”) or resellers are operational. A maximum score is given if service providers are active and zero if not.

201. **Question 92.** Question 92 examines the market share of MVNOs and SPs. A maximum score is given to the countries with the highest market share. An intermediate score to the middle-third and zero to the others.

202. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
83	Rate fixed to mobile termination charge applied by the largest (in revenue) mobile operator in your country	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
84	Non-discrimination remedy for mobile termination	Maximum or zero.	Maximum if external and internal non-discrimination imposed.  Zero if only external non-discrimination or no non-discrimination has been imposed.
85	Identical charges for fixed to mobile and mobile to mobile	Maximum or zero.	Maximum if identical charges.  Zero if not.
86	Different termination costs taken into account for determining termination charges	Maximum or zero.	Maximum if cost differences are taken into consideration.  Zero if cost differences are not taken into consideration.
87	Market shares (by revenues) on the retail market of the 2 largest mobile operators	Maximum, intermediate or zero.	Maximum if in lowest-third of combined market shares.  Intermediate if in middle-third.  Zero if in upper-third.



88	Price of the basket for low users of mobile retail services	Maximum, intermediate or zero.	Maximum if in lowest-third of prices  Intermediate if in middle-third  Zero if in upper-third
89	Price of the basket for average users of mobile retail services	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
90	Operation of one or more “real” MVNOs	Maximum or zero.	Maximum if MVNOs exist.  Zero if not.
91	Operation of one or more SP	Maximum or zero.	Maximum if SP exist.  Zero if not.
92	Market share of MVNOs and SP	Maximum, intermediate or zero.	Maximum to upper-third.  Intermediate to middle-third.  Zero to others.

203. **Section C.3** examines the effective regulation and degree of competition for the provision of services to business customers. The access services essential to the business segment consist, in particular, of leased lines, PPCs and successor products. Besides the existence and tariffs of these access service, it is also important to ensure that strict service level agreements are foreseen which prevent non-price discrimination and quality deterioration. Moreover, there should also be clear paths enabling operators to migrate from leased line solutions to PPCs. In view of recent technical developments, it is also important to assess whether wholesale Ethernet offers are available.

204. **Question 93.** Question 93 examines whether there is an offer for wholesale leased line termination segment. A maximum score is given if such a wholesale offer exists. Zero is given if no such offer exists.

205. **Questions 94 and 95.** Questions 94 and 95 compare the tariffs for certain types of PPCs (*i.e.*, 2Mbit/s, 5km and 34Mbit/s, 5km). The score is given on the basis of a comparison of the value of the PPCs tariffs. The data are taken from figures 36, 37, 38 and 39 on pages 37 – 40 of the 11<sup>th</sup> Implementation Report. The highest score is given to countries whose price falls into the lowest-third of the spread between the most expensive and cheapest cost. An intermediate score is given for those in the middle-third, and zero is given where the price falls into the upper-third.

206. **Question 96.** Question 96 examines whether the wholesale leased line offer and the PPC offer include service level agreements (including delivery and restoration times and financial penalties for failure to meet targets). It also specifies whether the KPIs (i) include internal and external service provisioning and (ii) are published. A

maximum score is given if such KPIs are published and include both financial penalties and differences between internal and external supply. An intermediate score is given if KPIs are published and include financial penalties. Zero is given if there are no KPIs, KPIs are not published or published without financial penalties.

207. **Question 97.** Question 97 examines whether there is a standard procedure for migrating leased lines to PPCs. A standard procedure refers to an existing specific procedure for migration which does not require an interruption of the service. A maximum score is given if such a procedure exists. Zero is given if no such procedure exists.

208. **Question 98.** Question 98 examines whether a wholesale Ethernet offer (“WES”) is available from the incumbent on a non-discriminatory basis such that competitors can offer retail services across the full range of technically possible speeds offered on the retail market. A maximum score is given if such a service exists. An intermediate score is given if it is being considered or if commercial terms are too restrictive. Zero is given if no such service exists.

209. **Question 99.** Questions 99 compares the tariffs for certain types of retail leased lines from the incumbent (*i.e.*, 2Mbit/s, 200 km). The score is given on the basis of a comparison of the cost of the leased lines. The highest score is given to countries whose price falls into the lowest-third of the spread between the most expensive and cheapest cost. An intermediate score is given for those in the middle-third, and zero is given where the price falls into the upper-third.

210. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
93	Existence of PPCs in your country	Maximum or zero.	Maximum if wholesale PPCs are offered.  Zero if wholesale PPCs are not offered.
94	Price of set-up and monthly rental for a 2Mbit/s, 5km PPC	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
95	Price of set-up and monthly rental for a 34Mbit/s, 5km PPC	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.
96	Availability for leased line wholesale and PPC	Maximum,	Maximum if KPIs

	products of a SLA and KPIs.	intermediate or zero.	are published and include both financial penalties and differences between internal and external supply.  Intermediate if KPIs are published and include financial penalties.  Zero if KPIs are not published or published without financial penalties.
97	Standard procedure for the migration from leased lines to PPCs	Maximum or zero.	Maximum if migration rules exist.  Zero if migration rules do not exist.
98	Availability of WES on discriminatory terms	Maximum, intermediate or zero.	Maximum if WES is offered.  Intermediate if it is being considered or if commercial terms are too restrictive.  Zero if WES is not offered.
99	Price of a 2Mbits/s, 200km leased lines from the incumbent	Maximum, intermediate or zero.	Maximum if in lowest-third of prices.  Intermediate if in middle-third.  Zero if in upper-third.

211. **Section C4** considers whether the provision of wholesale broadband access is competitive. The provision of wholesale broadband services (bitstream) constitutes the first rung on the ladder of investment for broadband and in most countries provides an essential access route in reaching geographic areas where network roll-out to local exchanges is not economically feasible. Business service provides offering access to customers across a widespread geographic footprint may also be reliant on bitstream.

212. Whilst nearly all countries have found significant market power across the broadband ladder of investment, we recognize that in a few countries with particular geographic characteristics and historic infrastructure, significant market power has not been found in certain aspects of bitstream. An assessment has thus been made based on the availability (rather than regulation) of bitstream, on the basis that it is likely to

be a feature of a well-functioning competitive market in the same way that secondary markets have developed for the competitive international transit segment.

213. **Question 100.** Question 100 examines the connectivity options offered for wholesale xDSL bitstream access services following the ERG classification. Maximum points are awarded to countries offering at least ERG options 2 and 3. A high intermediate score is given for 2 or 3, a low intermediate score for option 4 (resale) and zero where no option is available.

214. **Question 101.** Question 101 compares the percentages of DSL lines provided by competitors on the basis of wholesale bitstream access (ERG options 2 and 3) compared as a proportion of the total retail DSL lines based on the ECTA Broadband Scorecard. Resale (ERG option 4) is not included in this assessment, as is not considered to allow for sufficient differentiation between players to stimulate competition. The highest score is awarded to countries where the proportion of bitstream access is the upper-third, intermediate score is given to countries in the middle-third and an intermediate score to countries in the lowest-third.

215. **Question 102.** Question 102 examines whether the wholesale bitstream offers include (i) SLAs and (ii) KPIs (including delivery and restoration times and financial penalties for failure to meet targets). It also specifies whether the KPIs (i) include internal and external service provisioning and (ii) are published. A maximum score is given if such KPIs are published and include both financial penalties and differences between internal and external supply. An intermediate score is given if KPIs are published and include financial penalties. Zero is given if there are no KPIs, KPIs are not published or published without financial penalties.

216. **Question 103.** Question 103 examines whether a wholesale naked bitstream offer is available and whether there are detailed conditions for use. A maximum score is given if such an offer is available. Zero is given if it is not available.

217. **Question 104.** Question 104 examines whether there are any technical or economic restrictions preventing the use of bitstream for IPTV services. A maximum score is given if no such restrictions are imposed. Intermediate score is given if there are problems with associated facilities, e.g. backhaul. Zero is given if there are such technical restrictions.

218. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
100	Connectivity options available for xDSL bitstream.	Maximum, high intermediate, low intermediate or zero.	Maximum if ERG options 2 and 3 offered.  High intermediate if either 2 or 3 offered.  Low intermediate if only option 4.

			Zero if none offered.
101	Percentage of DSL lines provided by competitors on the basis of wholesale bitstream access as a proportion of total retail DSL lines.	Maximum, intermediate or zero.	Maximum if bitstream share is upper-third.  Intermediate if in middle-third.  Zero if in lowest-third.
102	Inclusion by wholesale broadband products of a SLA and KPI	Maximum, intermediate or zero.	Maximum if KPIs are published and include both financial penalties and differences between internal and external supply.  Intermediate if KPIs are published and include financial penalties.  Zero if KPIs are not published or published without financial penalties.
103	Availability of wholesale naked DSL.	Maximum or zero.	Maximum if wholesale naked DSL is offered.  Zero if wholesale naked DSL is not offered.
104	Technical/economic restrictions for use of bitstream for IPTV service	Maximum, intermediate or zero.	Maximum if no restrictions.  Intermediate if problems with associated facilities, e.g. backhaul.  Zero if restrictions.

219. **Section C.5** examines the effective regulation and degree of competition of infrastructure-based broadband services. The economics of access networks mean that the last mile to the customer is typically not competitive and, therefore, regulation is needed to ensure that consumers have a choice of broadband supplier. This is also confirmed by the fact that, following market analyses, all NRAs have confirmed that the provision of ULL services should be regulated.

220. It is useful to assess consistency in broadband remedies and the operation of the ladder of investment by assessing whether the regulator has applied relevant rules to ensure consistent prices and enable migration from one rung to the next.

221. **Question 105.** Question 105 examines whether there is an IPTV offer available on the market from (i) the incumbent and (ii) alternative operators. A maximum score is given if there is at least one competitive operator offering such services. An intermediate score is given if it is available, but only from the incumbent. Zero is given if there are no offers.

222. **Questions 106 and 107.** Questions 106 and 107 examine whether there full and shared access to the local loop is offered. Maximum scores are given where access is available. Zero where there is no unbundled access.

223. **Questions 108 and 109 .** Questions 108 and 109 compare the tariffs for LLU. The score is given on the basis of a comparison of the value of access. Prices are calculated at the annual cost assuming a two-year contract. The formula used is  $(\text{monthly rental} \times 12) + (\text{connection fee} / 2)$ . The highest score is given to countries whose price falls into the lowest-third of the spread between the most expensive and lowest costs. An intermediate score is given for those in the middle-third, and zero where the price falls into the upper-third.

224. **Question 110.** Question 110 examines whether the associated facilities such as co-location and backhaul must be provided at cost oriented tariffs. A maximum score is given if the regulator has intervened to set terms and tariffs. Intermediate score is given if there are problems with associated facilities, *e.g.* backhaul. Zero is given if such services are not subject to the cost orientation principle.

225. **Question 111.** Question 111 compares the number of unbundled lines and shared access compared to the total number of retail DSL lines based on the ECTA Broadband Scorecard. The highest score is awarded to countries where the proportion of LLU lines is the upper-third, an intermediate score is given to countries in the middle-third, and an intermediate score to countries in the lowest-third.

226. **Question 112.** Question 112 examines whether the LLU offers include (i) SLAs and (ii) KPI (including delivery and restoration times and financial penalties for failure to meet targets). It also specifies whether the KPIs (i) include internal and external service provisioning and (ii) are published. A maximum score is given if such KPIs are published and include both financial penalties and differences between internal and external supply. An intermediate score is given if KPIs are published and include financial penalties. Zero is given if there are no KPIs, KPIs are not published or published without financial penalties.

227. **Question 113.** Question 113 examines whether subloop unbundling (SLU) is offered. Maximum scores are given where access is available with detailed conditions. Intermediate if available but no detailed conditions are determined. Zero where there is no access offer.

228. **Question 114.** Question 114 examines whether detailed conditions on price, terms, collocation and backhaul arrangements have been set for SLU to render the product usable in the market. A maximum score is given if such conditions have been

set. Intermediate score is given if general but not specific conditions are set. Zero is given if no such conditions are available.

229. **Question 115.** Question 115 examines whether there is a standard procedure for migrating from a resale ADSL offer to a bitstream offer to LLU. A standard procedure refers to an existing specific procedure for migration which does not require an interruption of the service. A maximum score is given if such a procedure exists. An intermediate score is given if there are migration processes for migrating between certain access levels. Zero is given if no such procedure exists.

230. **Question 116.** Question 116 examines whether the NRA conducts a price squeeze analysis between LLU, bitstream and retail tariffs and whether such analysis is conducted across the value chain. A maximum score is given if such an analysis is conducted. Zero is given if not.

231. **Question 117.** Question 117 examines the percentage of broadband lines supplied end to end (*i.e.*, without use of the incumbent's fixed network) by competitors on the basis of (i) cable networks, (ii) fibre to the home, (iii) fixed (non-mobile) wireless networks and (iv) own copper network. The highest score is awarded to countries where the proportion of broadband lines provided end to end by competitors is in the upper-third, intermediate score is given to countries in the middle-third, and zero score to countries in the lowest-third.

232. **Question 118.** Question 118 examines the pricing per megabit for retail broadband access and inquires more particularly on the lowest price applied per megabit on the market. The highest score is awarded to countries where prices fall into the lowest-third, intermediate score is given to countries in the middle-third, and zero score to countries in the upper-third. Data is sourced from the OECD Broadband Portal and prices are calculated as the simple average of prices in October 2006 and October 2007.

233. The weighting given to the assessment criteria of this section is set out in the table below:

	<b>Criteria</b>	<b>Weight</b>	<b>Comments</b>
105	Is an IPTV offer available on the market	Maximum, intermediate or zero.	Maximum if it is available from at least one competitor.  Intermediate score if it available, but only from the incumbent.  Zero if it is not available.
106	Availability of full LLU	Maximum or zero.	Maximum if LLU is offered.  Zero if LLU is not offered.
107	Availability of shared ULL access	Maximum or zero.	Maximum if shared access is offered.  Zero if shared access is not offered.
108	Set-up and recurrent tariff charged for full ULL.	Maximum, intermediate or zero.	Maximum for countries in the lowest-third.  Intermediate for countries in the middle-third.  Zero in the upper-third.
109	Set-up and recurrent tariff charged for shared ULL access.	Maximum, intermediate or zero.	Maximum for countries in the lowest-third.  Intermediate for countries in the middle-third.  Zero in the upper-third.
110	Requirement for facilities associated to ULL to be made available at cost-oriented rates.	Maximum, intermediate or zero.	Maximum if cost orientation obligation applies to associated facilities.  Intermediate if problems with associated facilities, e.g. backhaul.  Zero if cost



			orientation does not apply.
111	Number of unbundled lines and shared access as a percentage of total (retail) DSL lines.	Maximum, intermediate or zero.	Maximum if LLU share is in upper-third.  Intermediate if in the middle-third.  Zero if in the lowest-third.
112	Inclusion in contracts for ULL and associated facilities of a SLA and KPI.	Maximum, intermediate or zero.	Maximum if KPIs are published and include both financial penalties and differences between internal and external supply.  Intermediate if KPIs are published and include financial penalties.  Zero if KPIs are not published or published without financial penalties.
113	Availability of sub-loop unbundling	Maximum, intermediate or zero.	Maximum if available and detailed conditions.  Intermediate if available but no detailed conditions are determined.  Zero if not available.
114	Availability of detailed conditions for SLU	Maximum, intermediate or zero.	Maximum if available.  Intermediate if general but not specific conditions set.  Zero if not.
115	Standard procedure for the migration from a resale ADSL offer to a bitstream offer to fully unbundled or shared loops.	Maximum, intermediate or zero.	Maximum if migration rules exist.  Intermediate if

			<p>there are migration processes for migrating between certain access levels.</p> <p>Zero if migration rules do not exist.</p>
116	Price squeeze test applied by the NRA in relation to wholesale DSL products and LLU. Application across the whole value chain (if applicable).	Maximum or zero.	<p>Maximum if price squeeze test is applied across the value chain.</p> <p>Zero if price squeeze test is not applied across the value chain.</p>
117	Percentage of broadband lines supplied end to end by competitors on the basis of cable, fibre, fixed wireless networks and own copper network	Maximum, intermediate or zero.	<p>Maximum if share in highest third.</p> <p>Intermediate in middle third.</p> <p>Zero in lowest third.</p>
118	What is the lowest price per megabit for retail broadband access offered on the market	Maximum, intermediate or zero.	<p>Maximum to lowest three.</p> <p>Intermediate to middle third.</p> <p>Zero to others.</p>

#### **IV. Scoring Methodology and Weighting**

234. As with the 2006 Scorecard we have adopted a top down principle when setting the scores available for each question. We have begun by deciding on the maximum number of points to be allocated to all 118 criteria, which we have set as 485 for easy comparison with 2006 when the same number of points were assigned. The points are then allocated to individual criteria based on the weighting assigned to each criterion.

235. The “base” version reported is “unweighted”, that is, we have assigned weights at the individual criterion level so the weight of each Section and Sub-Section is the sum of the points for each criterion in the Section or Sub-Section.

236. The vast majority of questions have been weighted ‘medium’ to signify that, in the absence of any evidence to the contrary, we assume that they have an equal contribution to the effectiveness of regulation. Where a ‘high’ or ‘low’ weight has been applied, there are two possible reasons:

- To improve granularity we have divided one question asked in 2006 into two questions this year, as is the case with questions 10 and 11 regarding publication of and consultation on an action plan. Here we have assigned a low weight to each question so that the two combined carry an equal weight to that carried last year.
- To balance the weightings in a particular section, such that there is neutrality in the weightings amongst the type of questions asked. Thus, for example, interconnect tariffs are weighted low because there are a number of such questions specifically concerning interconnect, whilst question 117 on alternative infrastructure access to broadband is rated high because within Section C5 there is only one question on that topic.

237. In addition, we considered it of interest to examine whether applying different weightings to the different sections of the report might affect the scores – for example, through adjusting the relative weights given to ‘implementation in practice’ (Section C) versus ‘the Regulatory Framework’ (Section A), which outlines the regime under which regulation is applied. We have therefore produced three versions of the Scorecard: Unweighted (reported in full), Equal Section Weights, where each Section carries 33.3% of the total score and Equal Sub-Section Weights, where each Sub-Section carries equal weight, regardless of how many criteria are in the Section or Sub-Section

238. Table 1 below summarizes the points assignment.

239. Table 2 shows the overall results of the Scorecard according to the different weightings. As can be seen, the points earned by each country change very little according to the weights. However, due to the closeness of some countries, the rankings change rather more.

240. Table 3 shows the coefficients of correlation between each of the various weightings. As can be seen, the lowest coefficient is 0.980, indicating that the weights applied make very little difference to the overall results.

**Table 1 : Weightings Table**

Version	Section			Sub-Section								Sub-Section						Sub-Section				
	A	B	C	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5
Unweighted	155	142	189	9	13	26	17	13	26	26	26	21	21	21	21	34	21	47	43	30	21	47
Section Weighted	162	162	162	9	13	27	18	13	27	27	27	24	24	24	24	39	24	40	37	26	18	40
Sub-Section Weighted	204	153	128	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26

**Table 2: Results by Weightings**

	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
Unweighted	258	229	204	341	263	304	253	216	240	261	284	381	320	196	279	238	277	284	385
Section Weighted	254	225	204	343	259	304	254	215	240	265	288	386	320	197	272	237	276	282	388
Sub-Section Weighted	262	204	216	341	259	305	229	221	250	280	292	375	329	194	266	245	279	280	395

**Table 3: Correlation Matrix of Model Versions**

	Unweighted	Section Weighted	Sub-Section Weighted
Unweighted	1.000		
Section Weighted	0.999	1.000	
Sub-Section Weighted	0.979	0.982	1.000

## V. In-country analysis

<b>INSTITUTIONAL FRAMEWORK</b>																							
<b>Implementation of EU Regulatory Framework</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	1	1	Date EU Framework adopted & in force	4.3	2	0	0	4	4	0	0	0	4	4	2	0	4	2	0	4	2	4	4
		2	Have infringement proceedings been initiated	4.3	2	0	2	2	0	2	0	2	2	2	2	2	4	0	0	2	2	2	2
			TOTAL	8.6	4	0	2	6	4	2	0	2	6	6	4	2	9	2	0	6	4	6	6
<b>Process for market analysis and implementation of remedies</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	2		No. of markets for which final decision adopted	4.3	4	0	4	0	4	0	0	2	2	0	2	4	4	0	2	4	4	4	4
			Average duration of market analysis procedure	4.3	4	0	4	0	4	4	2	4	4	4	0	0	0	0	4	4	2	2	2
			Are market analyses findings and proposed remedies notified at the same time?	4.3	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4
			TOTAL	12.9	13	4	13	4	13	9	2	11	11	9	6	9	9	4	11	13	11	11	11
<b>Transparency and consultation</b>																							
Section	Sub-section	Question	Question		AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	3	6	Is NRA required to hold public consultations		4	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	4
		7	Timescale for responses	4.3	4	2	2	4	4	4	4	4	0	4	4	4	4	2	2	4	2	4	0
		8	Is NRA required to publish all decisions	4.3	4	4	4	4	4	4	0	0	4	4	4	4	4	4	4	4	4	4	4
		9	Is there strict scrutiny of confidentiality claims	4.3	4	0	0	4	4	4	0	0	0	4	4	4	4	4	2	0	4	0	4

Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
		10	Does NRA produce and publish an action plan	2.1	2	2	2	2	2	2	2	1	2	2	2	2	0	0	2	0	0	1	2
		11	Is an action plan subject to prior consultation	2.1	2	0	0	0	0	0	2	0	0	2	0	2	0	0	0	0	0	0	2
		12	Are NRA costs transparent	4.3	4	0	4	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4
			TOTAL	25.8	26	13	17	24	24	24	15	12	15	24	24	26	21	19	19	17	19	18	21
<b>Enforcement</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	4	13	Up to what level is your NRA entrusted to impose fines	4.3	0	0	0	4	2	4	0	0	0	2	4	4	0	4	0	0	4	4	4
		14	Is NRA empowered to impose periodic penalty payments	4.3	0	0	4	4	0	0	4	4	0	0	0	4	4	0	4	0	4	4	0
		15	Is NRA empowered to suspend commercial launch	4.3	4	0	0	0	0	4	0	4	4	4	4	4	4	4	4	0	4	4	4
		16	Has NRA ever used this possibility	4.3	0	0	4	4	0	4	0	4	0	2	4	4	0	4	4	4	4	0	4
			TOTAL	17.2	4	0	9	13	2	13	4	13	4	9	13	17	9	13	13	4	17	13	13
<b>Score and Scale of Resources</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	5	17	Powers: apply competition law, assign frequencies, regulate media issues	4.3	2	2	2	4	4	2	2	4	2	4	2	0	2	2	2	4	2	2	4
		18	Total no. of qualified employees	4.3	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		19	Financial capability to attract suitably qualified staff	4.3	4	2	0	4	0	4	0	2	2	2	4	4	4	0	4	4	4	4	4
			TOTAL	12.9	11	4	6	13	9	11	6	11	9	11	11	9	11	6	11	13	11	11	13

Effectiveness of appeals procedure																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	6	20	Does appeal suspend effects of decisions	4.3	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4
		21	What is the applicable standard for suspension	4.3	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	0	4
		22	Average timeframe between appeal and final decision	4.3	4	2	4	4	4	2	0	0	0	4	0	4	4	0	0	0	0	2	2
		23	How many market reviews appealed?	4.3	2	0	4	2	2	4	0	4	2	4	2	0	2	2	4	2	4	2	4
		24	Proportion of NRA decisions being annulled	4.3	2	0	4	2	2	4	4	2	4	2	4	4	4	4	4	4	4	4	4
		25	Have <i>locus standi</i> standards been applied restrictively	4.3	0	0	0	4	2	2	0	4	4	4	4	4	4	4	4	0	2	0	4
			TOTAL	25.8	17	11	21	21	19	21	13	19	11	24	19	21	24	19	21	15	19	13	24
<b>Independence</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
A	7	26	Are powers of NRA restricted through national law?	4.3	4	0	4	4	0	4	0	4	4	4	4	4	4	0	4	4	0	4	4
		27	Does Ministry have power to give policy directions to NRA?	4.3	0	4	4	4	0	4	0	4	0	0	4	0	0	0	0	0	4	0	4
		28	Are there NRA decisions which cannot be enacted without Ministerial approval?	4.3	4	4	4	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4
		29	Grounds for removal of head of NRA	4.3	0	2	4	4	0	4	4	4	4	4	4	4	4	0	4	4	4	4	4
		30	Duration of NRA's management office	4.3	4	4	4	4	0	4	4	4	4	4	4	4	0	0	4	4	4	0	0
		31	Percentage of incumbent owned by government	4.3	0	0	4	4	2	2	0	0	4	4	4	4	0	0	0	0	4	0	4
			TOTAL	25.8	13	15	26	26	2	19	13	21	21	21	26	21	13	4	17	17	21	13	21



<b>Efficiency of NRA acting as a dispute settlement body</b>																								
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
A	8	32	Can NRA adopt interim measures	4.3	0	0	4	4	0	4	4	4	4	0	0	4	0	0	0	4	0	0	0	
		33	Average timeframe for obtaining interim decision	4.3	0	0	4	4	0	2	0	0	4	0	0	0	0	0	0	0	2	0	0	
		34	Average timeframe for obtaining final decision	4.3	2	0	2	0	4	4	0	0	2	4	2	4	4	0	2	4	2	4	4	
		35	Does NRA publish pending disputes	4.3	0	0	0	0	4	0	4	0	0	4	0	4	4	0	4	4	0	4	4	
		36	Are 3rd parties consulted and allowed to intervene in dispute settlement process?	4.3	0	4	4	0	2	2	4	4	4	4	2	4	0	4	2	2	2	0	4	
		37	Mandatory timeframe for negotiations	4.3	0	4	0	4	0	4	4	4	4	4	4	4	4	0	4	0	0	4	4	
			TOTAL	25.8	2	9	15	13	11	17	17	13	19	17	9	21	13	4	13	15	6	13	17	
<b><u>GENERAL MARKET ACCESS CONDITIONS</u></b>																								
<b><u>Technological Neutrality &amp; Forward Looking Policy</u></b>																								
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
B	1	38	Are incumbent's plans for PSTN to IP upgrade transparent?	4.3	0	0	0	0	0	0	0	0	0	2	2	4	2	0	0	2	0	0	4	
		39	Process for migration to NGN established?	4.3	4	0	0	4	4	0	4	0	0	4	4	4	0	0	0	0	0	4	4	
		40	Are incumbent's plans for access upgrade to NGA transparent?	4.3	0	0	0	4	0	0	0	0	0	2	2	4	2	0	2	2	4	0	4	
		41	Consultation process re NGA	4.3	4	0	0	4	4	4	0	0	0	4	4	4	0	0	0	0	4	0	4	
		42	NGNs included in relevant market analyses	4.3	2	2	2	2	2	4	4	0	4	2	4	2	4	0	4	2	2	4	4	
			TOTAL	21.5	11	2	2	15	11	9	9	0	4	15	17	19	9	0	6	6	11	9	21	

Accounting Separation (Art 11 AD)																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
B	2	43	Does cost accounting separation accompany non-discrimination	4.3	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	2	4	4	4
		44	Is cost accounting separation methodology clearly specified	4.3	0	2	4	4	0	4	0	0	0	4	2	4	2	2	0	0	4	0	4
		45	Are accounting separation accounts published	4.3	0	0	0	0	0	0	0	0	0	4	2	4	0	2	0	0	0	0	4
		46	Do separated accounts show transfer charging	4.3	0	0	0	0	0	0	0	0	0	4	2	2	0	0	0	0	0	0	4
		47	Do regulatory accounts demonstrate consistency of the costing of products using the same assets?	4.3	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4
			TOTAL	21.5	4	6	9	9	4	9	2	4	4	17	13	17	6	9	4	2	9	4	21
Non-Discrimination and Margin Squeeze																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
B	3	48	Are there clear rules for non-discrimination in an <i>ex ante</i> context	4.3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	4
		49	Clear rules for price squeeze test	4.3	4	4	0	0	0	4	2	4	0	2	4	4	2	4	2	0	4	2	4
		50	Does NRA have provisions for non-price non-discrimination	4.3	4	4	0	0	2	4	2	2	0	2	4	2	2	2	2	0	4	2	4
		51	Clear rules for anti-competitive bundling?	4.3	4	0	0	0	0	2	4	2	0	0	2	2	4	4	2	2	4	0	2
		52	Specific restrictions on exchange of information within a dominant provider?	4.3	4	4	0	4	0	4	4	4	0	0	4	4	4	0	4	0	2	0	4
			TOTAL	21.5	19	15	2	6	4	17	15	15	2	6	17	15	15	13	13	2	17	6	19

<b>Rights of Way and Facilities Sharing (Art 11 FD)</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
B	4	53	Clear rules for applying for ROW	4.3	4	4	4	4	4	4	4	0	4	4	0	4	4	4	4	4	0	4	4
		54	Reasonable cost for ROW	4.3	0	4	4	4	4	0	4	0	2	2	0	4	4	2	0	0	0	0	0
		55	Reasonable timescale for ROW	4.3	0	2	4	4	4	4	4	2	4	4	0	4	4	2	0	2	0	0	4
		56	Effective mechanism for appeal	4.3	0	0	0	4	2	4	4	0	4	0	4	4	4	0	0	0	0	4	4
		57	Is duct access available on reasonable terms	4.3	0	0	0	0	2	2	2	0	0	0	2	4	2	4	4	0	2	0	0
			TOTAL	21.5	4	11	13	17	17	15	19	2	15	11	6	21	19	13	9	6	2	9	13
<b>Numbering</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
B	5	58	Average timeframe for obtaining allocation of numbers	4.3	4	4	0	4	4	4	2	4	4	4	2	4	4	4	4	4	4	4	2
		59	Is NP limited to: geographic numbers; PATS; switched telephony	4.3	0	0	0	4	0	4	4	0	0	4	4	4	4	4	4	0	0	0	0
		60	Average wholesale price for fixed NP	4.3	0	4	0	2	0	2	4	2	2	0	2	4	0	2	0	4	2	4	4
		61	Average wholesale price for mobile NP	4.3	2	4	0	2	2	0	4	2	2	0	2	4	0	0	0	2	4	4	4
		62	Proportion of fixed numbers ported in 2006	4.3	0	2	0	4	0	2	2	0	4	0	4	4	4	0	2	2	2	2	4
		63	Proportion of mobile numbers ported in 2006	4.3	2	4	0	4	4	2	0	0	2	2	2	4	4	0	0	0	2	4	2
		64	Restrictions on number ranges for VOB	4.3	0	4	0	4	4	2	2	4	0	2	0	2	0	4	0	0	4	4	4
		65	Is NP synchronised with: LLU; bitstream; WLR	4.3	2	0	0	2	2	2	2	2	2	2	2	2	4	0	2	4	2	0	2
			TOTAL	34.3	11	24	0	28	17	19	21	15	17	15	19	30	21	15	13	17	21	24	24

<b>Frequencies</b>																								
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
B	6	66	Are rules for spectrum trading in place	4.3	4	2	4	4	2	4	2	2	4	2	4	4	4	4	0	4	2	4	4	
		67	Are there restrictions on services in 3.5 GHz band?	4.3	0	0	0	4	0	0	0	0	0	0	0	4	4	0	2	4	0	4	4	
		68	Has NRA planned allocation of 2.6 GHz on technologically neutral conditions?	4.3	0	0	0	4	0	0	4	0	0	0	0	4	4	0	0	0	0	4	4	
		69	Has consultation started on "digital dividend"?	4.3	0	0	0	4	4	4	4	0	4	0	0	4	4	0	0	0	0	4	4	
		70	Has spectrum been allocated for mobile TV	4.3	4	4	0	4	4	0	4	0	4	0	4	4	4	0	0	4	0	0	4	
			TOTAL	21.5	9	6	4	21	11	9	15	2	13	2	9	21	21	4	2	13	2	17	21	
<b>EFFECTIVENESS OF IMPLEMENTATION</b>																								
<b>Narrowband Voice</b>																								
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
C	1	71	Interconnect charges for termination local	2.1	0	1	0	2	0	0	2	1	1	2	2	1	0	1	1	0	2	1	2	
			Interconnect charges for termination double tandem	2.1	0	1	0	2	0	0	1	1	0	2	2	1	1	1	1	1	0	2	2	2
			Interconnect charges for termination single tandem	2.1	0	2	0	2	0	0	1	1	2	2	1	1	1	1	1	1	0	1	2	2
		72	Is there a Capacity Based Interconnection offer in place?	4.3	0	0	0	0	4	2	0	0	2	0	2	2	0	2	4	0	4	4	2	
		73	Are termination rates for different operators cost oriented?	4.3	0	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0

Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
		74	Proportion of customers using an alternative provider, ex LLU	2.1	1	2	1	1	0	1	0	0	1	0	0	2	2	2	2	0	2	1	2	
		75	Proportion of customers using an alternative provider LLU	2.1	2	2	0	1	1	2	2	1	0	0	2	2	1	0	0	1	1	1	0	
		76	Proportion of customers using an alternative provider WLR	2.1	0	0	0	2	0	1	0	0	0	2	0	2	2	1	1	0	0	2	2	
		77	Proportion of lines with active CPS	4.3	4	4	2	2	0	2	2	4	0	4	2	0	2	0	2	0	0	4	4	
		78	Market share of alternative operators for all types of voice calls	4.3	4	2	2	2	0	2	4	4	0	2	0	4	2	0	2	0	0	4	4	
		79	VOB services available as primary voice line	4.3	2	4	4	2	4	2	2	4	2	4	4	4	4	0	4	2	2	4	4	
		80	Price squeeze test to LLU, naked bitstream, WLR and retail line rental?	4.3	2	0	0	0	0	2	0	0	0	2	2	2	0	0	4	2	0	0	2	
		81	Value of residential retail price basket	4.3	4	0	2	2	0	0	4	2	2	0	2	2	0	0	4	4	2	4	4	
		82	Value of business retail price basket	4.3	2	0	2	4	0	2	4	4	2	0	0	2	0	2	4	4	2	4	0	
			TOTAL	47.2	23	24	14	28	14	24	28	28	17	26	25	31	20	15	36	18	24	40	32	
<b>Mobile Services</b>																								
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK	
C	2	83	Fixed to mobile termination rates for largest operator	4.3	4	2	0	2	4	4	2	0	2	0	2	2	4	0	0	0	2	4	4	
		84	Do remedies imposed on largest operator for FTM termination include: cost orientation, glidepath, non-discrimination	4.3	0	4	0	0	4	4	4	0	4	4	4	0	4	4	4	4	4	4	4	0

Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
		85	Are FTM and MTM termination rates the same	4.3	4	4	4	4	4	4	4	4	4	4	4	4	4	0	4	4	4	4	4
		86	Do termination rates for different operators taken into account objective differences?	4.3	4	4	0	4	4	4	4	4	4	4	4	4	4	0	4	4	4	4	4
		87	Market share of two largest operators	4.3	2	0	2	4	2	0	4	4	2	0	2	4	2	4	0	0	0	2	4
		88	Price basket for low users	4.3	2	2	2	4	4	0	2	0	4	0	0	0	4	4	2	4	2	2	0
		89	Price basket for average users	4.3	2	0	2	4	4	0	0	2	4	0	0	2	4	4	4	2	0	2	2
		90	Are real MVNOs operational?	4.3	4	0	0	4	4	0	4	0	0	0	0	4	4	0	0	0	4	4	4
		91	Are mobile service providers operational?	4.3	4	4	4	4	4	4	4	0	0	4	0	4	4	4	4	4	4	4	4
		92	Combined market share of MVNOs and Service Providers	4.3	2	2	0	4	2	2	4	0	0	0	0	4	4	2	0	4	2	2	4
			TOTAL	42.9	30	24	15	36	39	24	34	15	26	17	17	30	41	24	24	28	28		32
<b>Business Services</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
C	3	93	Are wholesale PPCs available	4.3	4	4	4	4	4	4	0	0	4	4	4	4	4	0	4	4	4	0	4
		94	Set-up and monthly rental 2 mbit/s 5km PPC	4.3	2	0	0	4	4	2	4	2	0	0	2	4	0	2	4	0	2	0	2
		95	Set-up and monthly rental 34 mbit/s 5km PPC	4.3	2	4	0	0	2	2	4	0	0	0	0	4	2	2	4	0	2	0	2
		96	Is an SLA included	4.3	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	4
		97	Standard migration path from leased lines to PPCs	4.3	4	0	0	0	0	4	0	0	0	4	0	4	4	0	4	0	0	0	4
		98	Is WES available	4.3	0	2	2	4	2	0	0	0	2	0	2	0	2	0	2	0	2	0	4

Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO		PT		ES	SE	UK
		99	Price of 2 mbit/s 200km leased line from incumbent	4.3	2	4	0	4	0	2	4	0	0	2	0	4	4	2		2	2	4	0
			TOTAL	30.0	15	15	6	17	13	17	13	2	6	11	9	24	17	6	24	6	13	4	21
<b>Broadband Bitstream</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL		SI		SE	UK
C	4	100	What connectivity options are available for xDSL bitstream	4.3	3	4	1	3	3	4	1	4	3	3	4	3	4	3	4	4	4	2	4
		101	Percentage of DSL lines from competitors via wholesale bitstream access	4.3	2	4	2	2	0	4	0	4	4	4	2	2	2	0	0	2	0	0	4
		102	Do wholesale broadband products include an SLA and KPIs	4.3	0	2	2	0	0	2	0	2	0	0	0	0	0	0	2	0	4	0	4
			Is naked bitstream available	4.3	4	4	0	4	4	4	0	0	4	0	4	0	4	0	0	0	0	4	0
		104	Are there technical or economic restrictions preventing the use of bitstream for IPTV	4.3	4	0	4	4	4	2	0	0	4	4	2	4	4	0	4	0	0	0	4
			TOTAL	21.5	13.9	15.0	9.7	13.9	11.8	17.2	1.1	10.7	16.1	11.8	12.9		15.0	3.2	10.7	6.4	8.6	6.4	17.2
<b>Broadband Infrastructure</b>																							
Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL		PL		SI	ES	SE	UK
C	5	105	Is there an IPTV offer available from the incumbent or alternative operators	4.3	4	4	4	4	4	4	4	4	4	0	4	4	4	2	4	4	4	2	4
		106	Is full LLU available	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		107	Is shared LLU available	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		108	Set up and recurrent charges of full LLU	2.1	0	2	0	1	0	1	0	2	2	0	2	2	0	1	2	1	1	1	1

Section	Sub-section	Question	Question	Weight	AT	BE	CZ	DK	FI	FR	DE	EL	HU	IE	IT	NL	NO	PL	PT	SI	ES	SE	UK
		109	Set up and recurrent charges of partial LLU	2.1	1	2	0	1	0	1	0	2	1	0	1	2	0	1	2	1	2	0	2
		110	Are related facilities required to be available at cost oriented rates?	2.1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2
		111	Number of LLU as percentage of total DSL lines	2.1	1	0	0	1	1	2	2	0	0	0	1	2	2	0	1	1	1	2	2
		112	Do contracts for LLU include SLA and KPIs	4.3	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	2	4	0	4
		113	Is SLU available?	2.1	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2
		114	Have detailed conditions been set for SLU	2.1	1	0	0	2	2	1	1	0	0	0	0	2	2	1	0	2	0	0	0
		115	Standard procedure for migration from resale DSL to LLU	2.1	1	1	0	2	2	2	0	2	0	2	0	2	2	0	1	2	2	2	2
		116	Is a price squeeze test applied in relation to DSL and LLU	2.1	2	0	0	0	2	2	0	0	0	0	2	0	0	0	2	0	0	0	2
		117	What % of BB lines are supplied end to end ( <i>i.e.</i> without the incumbent) by: cable, FTTH, Own PSTN, Wireless	8.6	9	9	4	4	9	0	0	0	4	0	0	9	4	9	0	4	4	9	4
		118	What is the lowest price per Mbit for broadband access	8.6	0	4	0	4	9	9	9	0	0	0	9	4	4	0	9	4	4	9	4
			TOTAL	47.2	27.9	31.1	19.3	29.0	37.6	31.1	24.7		22.5	8.6	27.9	35.4	26.8	21.5	32.2	31.1	32.2	33.3	35.4
			Total LLU Only	28	18	18	15	19	19	20	14	19	18	9	18	20	16	13	23	21	23	14	25