EUROPEAN
COMMISSION

Brussels, 11.9.2013
SWD(2013) 331 final

COMMISSION STAFF WORKING DOCUMENT

Impact Assessment

Accompanying the document

Proposal for a Regulation of the European Parliament and of the Council

laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012

{COM(2013) 627 final}
{SWD(2013) 332 final}

Executive Summary Sheet

Impact Assessment on the measures concerning the European Single Market for electronic communications and to achieve a Connected Continent

A. NEED FOR ACTION

Why? What is the problem being addressed?

The Union is fragmented into distinct national markets lacking thus a genuine Single Market for electronic communications services. EU rules are implemented in diverging ways, raising barriers to entry and making it difficult and costly for operators to provide cross-border services. Fragmentation extends to all the vital sector-specific rules: authorisation to operate under consistent rules, access to key inputs for fixed or mobile business, rules on end-user protection; a major symptom is unjustified costs for communications across borders within the Union. Fragmentation is not only a sector-specific issue, it affects many other industries such as transport and cross border service providers (commerce, tourism, financial services).

European operators cannot benefit sufficiently from economies of scale and new growth opportunities. They have not fully embraced opportunities offered by the internet. At the same time, consumers have less choice, less innovative quality services, and they still pay a high price when their calls cross borders or when they use data and voice communications while travelling in the Union.

What is this initiative expected to achieve?

The objective of the initiative is to enable the completion of a European Single Market for electronic communications.

Removing the identified obstacles to the Single Market, by targeting the different types of known fragmentation in one single initiative, will foster greater competition, enable innovation in new services and applications. A Single Market will create opportunities for firms to operate on a bigger scale helping European operators to become more competitive global players and attract new market entrants.

What is the value added of action at the EU level?

Measures at EU level are necessary to tackle the current fragmentation by addressing the identified bottlenecks and enabling operators to benefit from regulatory consistency and common inputs in order to provide services on a pan-European basis.

Measures at EU level would also lead to a reduction of administrative and regulatory burden, a consistently high level of consumer protection which would promote trust and confidence and a wider choice for users.

B. SOLUTIONS

What legislative and non-legislative policy options have been considered? Is there a preferred choice or not? Why?

Option 1 aims at fostering completion of the Single Market through regulatory coordination. It addresses the identified problems using recommendations (Art. TFEU 292 and Art. 19 of the Framework Directive) and through the foreseen review of elements of the regulatory framework for electronic communications services and networks e.g. the Universal Service Directive in 2014

and the Roaming Regulation in 2016.

Option 2, the preferred option, consists of a set of integrated legislative with targeted measures to establish a complete Single Market in electronic communications services supported by enhanced EU coordination (by introducing a single EU authorisation for European electronic communications providers and provision of services on the basis of harmonised consumer protection rules, convergent regulatory remedies, access to common inputs such as spectrum, leased lines and bitstream and a single consumer space where roaming and cross-border charges are no longer an impediment and with guaranteed access to the open Internet). This option builds on the current regulatory framework, preserving its key features (e.g. market analysis, finding of dominance and imposition of *ex ante* remedies to ensure effective competition), progressively decreasing regulatory pressure if markets are proven to be competitive, and through targeted changes aims at achieving greater regulatory consistency especially for companies operating in more than one Member States and, at the same time, securing for the users the advantages of a connected Continent.

Option 3 is identical to Option 2 in terms of measures but differs in the governance structure. Under this option, a single EU regulator would be established that would have responsibility for implementation and enforcement of pan-European services, including in the area of spectrum, where appropriate in cooperation with national regulators.

Who supports which option?

There is a large degree of convergence on the urgent need to overcome the identified fragmentation of the Single Market for electronic communications services. However views differ on how best to achieve this, depending on the interests of different stakeholder groups.

Some stakeholders (notably incumbent operators) argue for far-reaching change, including greater consistency of regulatory approaches, both in fixed and mobile networks, more predictability and continuity, as well as a more significant deregulation. Some operators have expressed concerns about the impact of certain elements of these proposals, notably on roaming and international calls, on their revenues. Other parts of the industry (including access seekers) argue for better implementation and more consistency in the provision of "virtual" access products.

All telecom operators agree on the need to improve coordination in spectrum policy in order to free more spectrum for broadband service in a regulatory environment that favours stability and investments.

Consumer organisations argue for removing artificial costs (e.g. for roaming) arising whenever consumers use services when they cross borders. Many service providers (transport, navigation, logistic) also argue in favour of the end of roaming charges in order to develop innovative business models.

They also insist on removing discrimination resulting from blocking and throttling of services. Industry users, large as well as SMEs, including web entrepreneurs and start-up's, stress the importance of access to high-quality connectivity for competitiveness, allowing them for example to reap the benefits of cloud computing and machine-to-machine communications services applications.

Growing concerns are voices about the lack of broadband coverage and congestion of mobile networks.

In a policy debate held in the Transport, Telecommunications and Energy Council of 6 June 2013, a considerable number of Delegations supported the objective of completion of a Single Telecoms Market, with an emphasis i.a. on ensuring vigorous competition, promoting better choice for consumers, addressing net neutrality, tackling roaming in a proportionate way, ensuring greater regulatory consistency, avoiding regulatory arbitrage and ensuring closer coordination of national spectrum approaches. A large number of delegations expressed concerns about centralising policy

through a single European regulator and/or central EU authorisation and assignment of spectrum.

The European Parliament has already held three meetings to discuss the forthcoming proposals. MEPs in particular highlighted the need as part of a true Single Market for electronic communications services to eliminate roaming, to introduce clear and stringent rules on net neutrality and ensure a high level of consumer protection. MEPs have also stressed the need for realism and for assessing new proposals in terms of expectations and time constraints.

C. IMPACTS OF THE PREFERRED OPTION

What are the benefits of the preferred option (if any, otherwise main ones)?

The major direct benefit of a Single Market for electronic communications services is estimated to be of the order of €110bn p.a. Moreover, the positive spill-over effects on other sectors are expected to be several tens of billions of potential gains p.a. The benefit of the preferred option, relative to the others, is that it builds upon existing legislation and governance and that it is focused on the essential aspects of the identified problems of fragmentation, without undue centralisation, and is therefore a realistic approach to achieving these benefits more rapidly and more surely than the other options. The preferred option is a pragmatic answer to compelling problems in particular with regard to spectrum ensuring timely availability to avoid congestion or the collapse of networks.

Firstly, directly related sectors such as telecoms equipment manufacturing, application developers and content industry are set to immediately benefit from a more dynamic European telecoms market.

Secondly, sectors like the automotive industry, the logistics sector or the energy sector will benefit from enhanced connectivity in the Single Market and productivity gains through e.g. ubiquitous cloud applications, connected objects and possibilities for integrated service provision for different parts of the company.

Thirdly, public administrations and general services such as in particular the health sector are also due to benefit from wider availability of eGovernment and eHealth services. E-Health in particular has the potential to deliver better quality care at much lower costs.

Finally, European consumers would benefit from more choice, more innovative and better quality services. The preferred option can attain the desired objective without creating new administrative burdens.

What are the costs of the preferred option (if any, otherwise main ones)?

The proposed simplified regulatory regime would not generate regulatory and administrative costs to companies; on the contrary it would lower them.

Some measures may result in a reduction of some revenue stream for operators. If roaming and intra-EU calls were provided at the level of domestic rates, an annual revenue loss of 1.650 million EUR resulting from loss of roaming revenues and a 700 million EUR decrease on revenue linked to international calls is estimated in a worst case scenario (i.e. when no account is taken of effects of price elasticity or reasonable use criterion for roaming). Therefore in reality the impacts are likely much smaller. In addition, a loss of operator's revenues would have taken place anyway, notably as a result of the roaming regulation (which requires that the difference between national and international roaming approaches zero by 2016) and of increasing competition as well as technological change (for example, Voice over IP). On the other hand, the framework will enable new sources of revenue to be tapped, better conditions to use spectrum and economies of scale to be exploited.

How will businesses, SMEs and micro-enterprises be affected?
The preferred option – by removing obstacles to such connectivity – enhances productivity and provides new business opportunities to all. Under the new rules it will be much easier for web services providers to purchase the suitable quality of connectivity fitting for the services provided, whilst the overall quality of access to the internet will improve in Europe serving all suppliers and users of internet based services.
Will there be significant impacts on national budgets and administrations?
The choice of a Regulation as legislative instrument would not imply any transposition or implementation costs for public authorities. For administrations, the long term impact of the proposed measures would also be generally beneficial as higher revenues from spectrum will increase tax income over time. However, there might be some shortcomings in case best practices are not followed. Enhanced regulatory co-ordination between authorities is unlikely to require additional resources.
Will there be other significant impacts?
A Single Market for electronic communications services underpins the digital Single Market and therefore the positive effects will spill over into the wider digital economy.
D. FOLLOW UP
When will the policy be reviewed?
The Commission will evaluate, after four years, the impact of the proposed measures, with a view to proposing appropriate adjustments, if necessary.

Table of Contents

Executive Summary Sheet **1**

A. Need for Action **1**

B. Solutions **1**

C. Impacts of the Preferred Option **2**

D. Follow Up **4**

Impact Assessment Report **7**

1. INTRODUCTION **7**

2. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES **9**

2.1. Introduction *9*

2.2. Consultation and Expertise *9*

2.3. Opinion of the Impact Assessment Board *12*

3. PROBLEM DEFINITION AND SOURCES OF REGULATORY FRAGMENTATION **13**

3. 1. Barriers to the Single Market through National Authorisation Regimes linked with inconsistency in regulatory approaches implemented by National Regulatory Authorities *16*

3. 2. Lack of co-ordination in spectrum assignments and regulatory uncertainty as to the availability of frequencies that severely hinders the roll-out of Next Generation Wireless Networks *18*

3.3 Lack of pan-European Virtual Network Access and Inputs (wholesale products which allow the provision of services using the network of another operator) with consistent service interoperability levels . *22*

3. 4. Evidence of market fragmentation on consumer interests: high costs of roaming and international calls, blocking or throttling of services and uneven levels of consumer protection. *23*

4. MANIFESTATION OF THE IDENTIFIED PROBLEMS AND STAKEHOLDERS AFFECTED **26**

4.1. Single Market fragmentation affecting ICT user industries *26*

4.2. Single Market fragmentation affecting European consumers *28*

4.3. Single Market fragmentation affecting telecom operators *33*

4.4 Single Market fragmentation affecting telecoms equipment and device manufacturers *36*

5 Justification for EU Action **36**

5.1. Single Market Perspective and Subsidiarity *36*

5.2. Proportionality *38*

5.3 Legal Basis *38*

6. Objectives **39**

6.1 General Objective *39*

6.2 Specific Objectives *41*

6.2.1 Specific Objective 1 41

6.2.2 Specific Objective 2 41

6.2.3 Specific Objective 3 41

6.2.4 Specific Objective 4 42

7. Policy Options 42

7.1 Baseline Scenario 43

7.2 Option 1 43

7.3 Option 2 44

7.4 Option 3 52

8. Analysis of Impacts 53

8.1 Methodology 53

8.2 General Impacts of the Single Market for Electronic Communications 54

8.2.1 Effects on Telecoms Markets 54

8.2.2 Effects on Other Sectors and on the Ecosystem 70

8.2.3 Effects on Different Member States 71

8.2.4 Impacts on GDP 73

8.2.5 Social Impacts of the Single Market 74

8.2.6 Administrative impacts 76

8.3 Evaluation of Policy Options 76

8.3.1 Impacts of Option 1 76

8.3.2 Impacts of Option 2 76

8.3.3 Impacts of Option 3 76

9. Choice of the Preferred Option 76

9.1 Baseline Scenario 76

9.2 Option 1 76

9.3 Option 2 76

9.4 Option 3 76

9.5 Risk Assessment of the Preferred Option 76

10. Monitoring and Evaluation 76

10.1 Specific Objective 1 76

10.2 Specific Objective 2 76

10.3 Specific Objective 3 76

10.4 Specific Objective 4 76

References 76

Glossary 76

Annexes 76

Annex I – Detailed Overview of the Consultation of Stakeholders and other EU Institutions 76

1. Public Events Organised by the Commission 76

2. Other Public Events 76

3. Comments of Stakeholders on specific elements of the package 76

4. Discussions with Other EU Institutions 76

4.1. The Council of Ministers 76

4.2. The European Parliament..... 76

5. Relevant Public Consultations, EP Resolutions and Citizens' Initiatives on Related Subjects/Specific Measures 76

Annex II – European Consumer Consultative Group (ECCG) Meeting 11-12 June 2013 (Sub-Group on the Provision of Internet Services) - Operational Recommendations 76

1. Clarity and Understanding of the Information Provided to Consumers 76

2. Contract Terms, Usage and Switching 76

3. Quality of the Service - Complaints 76

4. Enforcement.....76

5. Net Neutrality 76

6. Roaming.....76

Annex III – Examples of Regulatory Divergence in the Electronic Communications Sector 76

1. General Authorisation 76

2. Access Regulation.....76

2.1. Regulated Markets..... 76

2.2. Access Obligations 76

2.3. Non-Discrimination Obligations in Key Wholesale Broadband Markets..... 76

2.4. Costing Methodologies in the Key Wholesale Broadband Markets 76

3. Authorisation and Spectrum Management - Harmonised Bands for Wireless Broadband.....76

4. Net Neutrality and Consumer Issues 76

Annex IV - Overview of the Market for Electronic Communication Services, 2013.....76

1. Developments in the Electronic Communications Sector 76

1.1 Deployment of Broadband..... 76

1.2 Mobile Services 76

1.3 Marketing Strategies and Broadband Pricing..... 76

2. Competitiveness in the Sector 76

2.1 Revenues..... 76

2.2 Average Revenues in the Mobile Services Sector..... 76

2.3 Market Share 76

Annex V – Methodological Annex 76

1. Steps Towards a Truly Internal Market for e-Communication 76

2. The Socio-Economic Impact of Bandwidth.....76

Annex VI - Incoming roaming calls 76

Annex VII - Input from RSPG concerning spectrum for wireless broadband.....76

Annex VIII – International calls 76

List of Figures

Figure 1 – Investment Trends - Wireless CAPEX in US, Canada, Europe (Local Currency, 2002 = 100) 14

Figure 2 – Main European Operators' Footprint through Separate National Operations.....15

Figure 3 – Number of Mobile Operators in Different EU Countries.....20

Figure 4 – Structure of Multi-Site/Multi-National Business Operations.....26

Figure 5 – Difficulties with Sourcing Fit-for-Purpose MCS/MNC Solutions 27

Figure 6 – Experience with Obtaining Multiple Offers for MCS/MNC 27

Figure 7 – Number of Connected Devices 28

Figure 8 – High Differences between Price Levels in the EU 30

Figure 9 – Price Disparities in Various Electronic Communication Segments 31

Figure 10 – Average Delivered Broadband Speed (Mbps) 32

Figure 11 – US vs. Europe 4G Population Coverage.....33

Figure 13 – Global Fixed Traffic 2010-2018 34

Figure 16 - Domestic Capex/Sales of EU Incumbents vs International (2006-12).....35

Figure 17 – Global Total Traffic in Mobile Networks, 2007-2012 35

Figure 18 – Telecom Equipment Providers' Performance (Total Returns) 36

Figure 19 – Economic Benefits for Business Communication Services of a Single Market for Electronic Communications 72

Figure 20 – Consumer Surplus by Scenario (Western Europe) 76

Figure 21 – Consumer Surplus by Scenario (Central and Eastern Europe) 76

Figure 22 – Impact of the Single Market on GDP by Option 76

Figure 23 – Broadband Penetration (Subscriptions/Population), January 2013 76

Figure 24 – Mobile Subscribers & Penetration Rate at EU Level, Oct. 2004 – Oct. 2011 76

Figure 25 – Voice Traffic on Fixed and Mobile Networks, 2005-2010.....76

Figure 26 – Mobile Broadband Penetration – All Active Users, January 2013 76

Figure 27 – Bundled Offers Penetration (Subscriptions/Population), July 2012 76

Figure 28 – Broadband Retail Prices, Stand Alone Offers, 12 to 30 Mbps, 2012 76

Figure 30 – Electronic communications sector revenues, 2011.....76

Figure 31 – Average Revenue per User (ARPU) in Mobile Communications, 2011 76

Figure 32 – Average Revenue per Minute (in €-cents) in Mobile Communications, 2011 76

Figure 33 – Fixed Broadband Lines – Operator Market Shares, January 2013 76

Figure 34 – Mobile Subscribers: Operator Market Shares, October 2012 76

Figure 35 – Wholesale & Retail roaming financial transaction 76

List of Tables

Table 1 – LTE subscriptions worldwide (in thousands) 18

Table 2 – Prices for Spectrum in the EU 20

Table 3 – Examples of Prices of International Mobile Calls for Different Operators (per minute) 31

Table 4 – Problem Drivers and Objectives 40

Table 5: Annual Revenue Loss Resulting from the Introduction of RLAH in a Static Scenario with Fixed Roaming Volumes 64

Table 6 – Impact of Limiting Price Differentials between Domestic and Intra-EU International Calls 68

Table 7 – Summary of Impacts from Different Policy Options 76

Table 8 – Input on spectrum policy for wireless broadband 76

Table 9 – Illustrative tariffs for international calls in the EU 76

Impact Assessment Report

1. INTRODUCTION

In the face of the deep crisis affecting its economy and society, Europe needs to tap into new sources of growth in areas that will reinstate its competitiveness, drive innovation and create new job opportunities. At a moment in time when the world evolves towards an Internet economy, directly affecting all sectors, from traditional services such as banking and insurance to retail commerce, industrial production and energy supply, Information and Communications Technologies (ICT) needs to be fully recognized as a source of the smart, sustainable and inclusive growth envisaged in the Europe 2020 Strategy.

As one of its Europe 2020 flagship initiatives, the Digital Agenda for Europe[1] (DAE) defines a set of ambitious targets to ensure that Europe taps the benefits of the digital economy, notably that by 2020, all Europeans should have access to high-speed broadband networks offering at least speeds of 30 Mb per second, and that 50% of Europeans should enjoy speeds in excess of 100 Mb per second. These targets recognize that the availability of high-speed networks in Europe is the foundation for the digital economy to flourish.

Consistent with these agreed policy objectives, the 2013 Spring European Council stressed the importance of the digital Single Market for growth and, in its conclusions, included the need for concrete measures to be presented by the Commission in time for the October European Council to establish a Single Market for Information and Communications Technology as early as possible. The initiative discussed in this Impact Assessment responds to this challenge.

Not long ago, Europe was leading the world in communications technologies and services. This was a result of conscious policy choices such as the opening up of the telecoms markets or the engineering of the global success of GSM through the adoption of EU-wide standards resulting from European research. With such policy decisions, Europe recognised the importance of digital 'connectivity' to sustained economic growth and supported the leadership of European companies. That lead has been lost. In the EU telecommunications sector[2] overall revenues have been shrinking for the last few years, a trend to which the economic crisis has also contributed. Moreover, new business models to exploit fast data growth and compensate for rapidly decreasing revenue from voice communications (as consumers increasingly embrace Voice over IP) have been slow to emerge and operators have typically been cautious to invest in rolling out new high speed infrastructures.

Whilst there are multiple reasons for the lack of dynamism and unexploited growth potential of the telecommunications sector for the economy as a whole, the fact that operators provide their services within distinct national markets, each subject to specific rules and practices, and that consumers cannot in practice benefit from services provided from other Member States, constrains the potential of industry to expand across borders and grow, whilst slowing down the introduction of new business models. Another reason for the present situation is the delay of European companies in embracing the internet revolution. The low usage patterns of

[1] COM(2010) 245 final/2.

[2] "Telecommunications or Telecoms" and "electronic communications" are used in the present document as interchangeable terms, using the latter primarily when referring to the legal framework.

internet services are a significant hurdle for the economic growth affecting the EU economy as a whole. The impact of this goes in fact well beyond the telecoms sector itself. Another element that explains the poor performance of the telecom sector is the slowness of adoption of 4G mobile technology due to a difficult process of spectrum licencing that is not yet over and very diverse and sometimes extremely burdensome authorisation conditions for deploying wireless networks.

With the adoption of successive electronic communications reform packages, Europe made important progress towards a single market for electronic communications putting in place a supportive and consistent regulatory environment fostering competition and better rights for consumers. However, specific issues connected with the completion of the Single Market, and identified on the basis of extensive stakeholder consultation and regulatory practice to date. remain and must be addressed as a priority. The principal outstanding integration challenges are:

i. to remove unnecessary obstacles in the authorisation regime and in the rules applying to service provision with the aim of making it easier for companies to contemplate multicountry operation.

ii. to ensure greater harmonisation for accessing essential inputs, regarding both predictable assignment conditions and coordinated timeframes to access spectrum for wireless broadband across the EU; an essential feature if we want full continental coverage and affordable connections; and promoting more internet based access products to European fixed networks so that providers can more easily offer their IP services across the single market.

iii. to guarantee common high levels of consumer protection across the Union and common commercial conditions in this respect, including the persistent problems of mobile roaming surcharges and of access to the open internet.

These are distinct challenges, to which distinct solutions must be found, but which, if addressed together, could have a transformative rather than merely incremental effect on sectoral dynamics in the Union.

The potential macro-economic impact of completing a genuine Single Telecoms Market is significant: this will create opportunities for firms to operate on a bigger scale with less regulatory burden, enhancing their capacity to innovate, to grow, become more productive and generate jobs, widen consumer choice and raise the quality of service. Improved connectivity would in turn enable growth possibilities across all economic sectors enabling the use of applications such as eCommerce, cloud computing and organisational innovation, driving productivity gains especially for SMEs.

It is estimated that the untapped potential of a Single Telecoms Market corresponds to a yearly amount of an additional 0.9% GDP or €110bn p.a.[3]

[3] Ecorys, TU Delft and TNo (2012), Steps towards a truly Internal Market for e-communications in the run up to 2020.

2. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

2.1. Introduction

The current regulatory framework was implemented in 2002, and has been updated once in 2009 (with entry into force by mid-2011). The current framework has successfully liberalised previously monopolistic national markets by reducing barriers to entry and promoting effective competition and incrementally paved the way towards a single market for electronic communications. The framework is based on market analysis by national regulatory authorities (NRAs), one in each Member State, and in case where significant market power (or dominance) of one or more operators is found, the imposition of ex-ante remedies to ensure effective competition. The current framework makes provision for supranational markets to be defined and addressed, but the current regulatory and industry structure is not well designed to the development of such markets, in particular on the supply side.

The current framework is therefore premised on the implementation of rules by national authorities in 28 Member States. Experience shows, however, that these rules tend to be implemented in different ways, which makes it more burdensome, if not practically impossible, for operators to provide services on a cross-border basis or to enter new markets on the basis of a mere extension of existing commercial and technical models. Similarly, consumers cannot in practice enjoy services provided from other Member States, as they can in other sectors subject to Single Market rules. A serious degree of regulatory divergence is experienced in the new generation regulatory products such as internet based access products where different solutions are applied to solve essentially the same problems.

In the context of the regulatory framework centered on distinct national markets, the obstacles to cross-border provision of services and consumption are well documented (see Annex III for details and examples) and have been confirmed by a number of studies, several of which have been carried out for the Commission. The Impact Assessment draws on many other sources of evidence, such as the effect of the application of European rules in the annual Digital Agenda Scoreboard and economic studies conducted by DG ECFIN, for example on fragmentation of the telecommunications market in Europe (see list of references).

2.2. Consultation and Expertise

The Commission has engaged extensively with all relevant external stakeholders in order to assess the state of the telecommunications market and to determine how to improve conditions for establishing a digital Single Market. In the consultation process broad public events were combined with more targeted consultation to achieve the required breadth and depth of stakeholder inputs, supported by market studies. Over the course of the past two years, the Commission received substantive input on the subject matter of a Single Telecoms Market from a wide range of stakeholder organisations, including those representing established and alternative operators, business and consumer organisations as well as users of telecommunications services, national regulators and governments. The Commission has engaged in each Member State with a "going local exercise" that allowed to review the status of the market and the outstanding problems.

The Commission has also drawn on the results of a CEO Round Table dialogue, held during 2011, involving senior company representatives from the telecom, equipment manufacturers and media sectors, which produced a set of concrete recommendations. In particular, the

Round Table called for one single binding European regulatory framework and concluded that Europe needs healthy companies with sufficient scale and specialisation. It was also recognised that pan-European companies should help market integration and the emergence of truly pan-European services, which are not sufficient today. The lack of necessary investments in high-speed Internet was identified as an important concern. The Round Table concluded that this trend needs to be addressed in the long-term interest of consumers and competitiveness. Also the need to develop open and interoperable standards for next generation products was highlighted.

The work undertaken by the Body of European Regulators for Electronic Communications (BEREC) has been instrumental in preparing the initiative in hand. For instance, BEREC has been actively looking into the issue of net neutrality (or the 'Open Internet'). In its report on best practices to facilitate consumer switching[4] it concluded that for competition to be able to deliver effective outcomes for consumers, it was essential to ensure transparency for consumers and called, inter alia, for keeping unnecessary switching costs and barriers to a minimum. BEREC's traffic management investigation showed that Internet subscribers are subject to significant restrictions[5]. Furthermore, in its report on the impact of administrative requirements on the provision of transnational business electronic communications services[6] BEREC assessed possibilities for a 'one-stop shopping' type of authorisation procedure and concluded that "interventions on EU and national legislations may be necessary in view of any implementation of a system of this sort".

The work of the Radio Spectrum Policy Group (RSPG) in recent years has underlined the importance of radio spectrum for wireless broadband, the potential benefits of infrastructure sharing and the need for closer cooperation amongst Member States on cross-border coordination issues. Already in 2011, the RSPG in a joint report with BEREC highlighted the possibilities of infrastructure and spectrum sharing in mobile wireless networks[7], stating that sharing agreement solutions that are compatible with competition law may have advantages for all parties involved, including end users (e.g. in terms of coverage and/or quality of service). In June 2013, the RSPG issued a comprehensive opinion on the strategic challenges facing Europe in addressing the growing spectrum demand for wireless broadband[8]. The RSPG highlights in particular the tremendous increase in the volume of data traffic for delivery of broadband services over both wireless infrastructures and defines wireless broadband as high-speed wireless transmission of data that may be provided via either fixed/RLAN, mobile or satellite platforms. Based on a developed roadmap for future broadband spectrum, the Commission is urged to develop a strategic plan to make sufficient and appropriate spectrum available to meet the increasing demand for wireless broadband services in the time frame 2013-2020[9]. In addition, in 2012, the RSPG proposed a process for assistance from the Union or “good offices” from the RSPG for facilitating cross-border

[4] http://berec.europa.eu/doc/berec/bor_10_34_rev1.pdf

[5] In the case of P2P restrictions on fixed networks, all of the potentially affected users (i.e. 21%) are in fact ("technically") restricted. In the case of P2P restrictions on mobile networks, about 30% of users are technically restricted and 6% only contractually (i.e. where the ISP reserves the right to restrict but has not technically implemented this restriction). Regarding VoIP restrictions on mobile networks about 16% are technically restricted and 5% are only contractually affected.

[6] http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/120-berec-report-on-the-impact-of-administrative-requirements-on-the-provision-of-transnational-business-electronic-communications-services

[7] http://rspg-spectrum.eu/_documents/documents/meeting/rspg25/rspg11-374_final_joint_rspg_berec_report.pdf

[8] https://circabc.europa.eu/d/a/workspace/SpacesStore/c7597ba6-f00b-44e8-b54d-f6f5d069b097/RSPG13-521_RSPG%20Opinion_on_WBB.pdf

[9] https://circabc.europa.eu/sd/d/0fb28fab-3007-46b4-bdbf-883b02da318c/RSPG12-409%20on%20EU%20assistance%20as%20Adopted.pdf

coordination negotiations for cases of harmful interference between Member States or with third countries, respectively. Whereas the need for enhanced coordination of spectrum management has been recognised by Member States, they argue that there needs to be enough room for specific national situations. Relevant RSPG reports and opinions and details regarding the related public consultations are listed in Annex 6.

The Commission closely monitors the implementation of the legal framework for electronic communications. It has not only noted inconsistent practices by NRAs when regulating relevant markets, but it has also detected a structural lack of coherence across Member States with regard to the authorisation and the opening of spectrum bands for technology-neutral use.

The Commission has also contracted several studies (for example on the impact of traffic off-loading and related technological trends on the demand for wireless broadband spectrum) and conducted public consultations on specific problems over recent years (notably public consultations on a structural solution addressing high roaming charges, on spectrum policy coordination and shared use, on Wireless Broadband, on the possible reduction of costs for infrastructure roll-out, on the consistent application of ex-ante remedies imposed on dominant/SMP operators by national regulators, on a revision of the list of relevant markets susceptible to ex ante regulation, on specific aspects of transparency, traffic management and switching in an Open Internet and on the functioning of the market for Internet access and provision from a consumer perspective).

On the specific issue of the functioning of BEREC the Commission has contracted an external study and has discussed the results of the study with a panel formed by stakeholders.

Following the 2013 Spring European Council meeting, which stressed the need for concrete measures to establish the Single Market in ICT as early as possible, the Commission organised several consultative events attended by stakeholders representing all segments of the industry, consumers and civil society (namely a public information meeting in Brussels on 17 June 2013 and a comprehensive discussion as part of the Digital Agenda Assembly 2013 and the Digital Champions' meeting in Dublin on 18-20 June 2013). However, due to time constraints a full (12 weeks) public consultation could not be organized. As more details on the draft proposal emerged in early July, the Commission also received contributions from many stakeholders and their representative organisations on some of the specific measures under consideration (see Annex I for details).

Discussions have shown a large degree of convergence on the urgent need to overcome the remaining fragmentation[10] of the Single Telecoms Market, acknowledging the benefits that would flow from this in terms of additional growth. However, views differ on how best to achieve this, depending on the specific interests of different stakeholder groups. More detailed stakeholder views are presented throughout the report.

Some stakeholders (notably incumbent operators) argue for far-reaching change, including greater consistency of regulatory approaches, both in fixed and mobile networks (e.g. full harmonisation of spectrum assignment), more predictability and continuity, as well as more significant deregulation. However, whilst recognising the importance of a Single Telecoms Market for consumers, some operators have expressed concerns about the impact of certain elements of these proposals, notably on roaming and international calls, on their revenues. Other parts of the industry (including access seekers) argue for better implementation and

[10] Market fragmentation means in this context the extent national borders influence the pattern of commercial activity. See also K. Head et. al., "Non-Europe: The Magnitude and Causes of Market Fragmentation in the EU".

more consistency in the provision of "virtual" access products, which would enable them to provide seamless pan-European services, particularly to business customers.

Consumer organisations argue for removing artificial costs (e.g. for roaming) arising whenever consumers use services when they cross borders. They also insist on removing discrimination resulting from blocking and throttling of services. Industry users, large as well as SMEs, including web entrepreneurs and start-up's, stress the importance of access to high-quality connectivity for competitiveness, allowing them for example to reap the benefits of cloud computing and machine-to-machine communications services applications. In sum, different stakeholders support or oppose different elements set out under each of the options.

By and large, Member States support efforts to achieve a Single Telecoms Market, even though on specific aspects a number of them have called for caution. In a policy debate held in the Transport, Telecommunications and Energy (TTE) Council of 6 June 2013 a considerable number of Delegations supported the objective of a Single Telecoms Market, with an emphasis inter alia on ensuring vigorous competition, promoting better choice for consumers, addressing net neutrality, tackling roaming in a proportionate way, ensuring greater regulatory consistency, avoiding regulatory arbitrage and promoting closer coordination of national spectrum approaches. A large number of delegations expressed concerns about centralising policy through a single European regulator and/or central EU authorisation and assignment of spectrum. Discussions were also held in June 2013 with the Body of European Regulators for Electronic Communications (BEREC) and the Radio Spectrum Policy Group.

The competent committees in the European Parliament held three meetings to discuss the forthcoming proposals: In general, MEPs expressed strong support for the thrust of the Commission's forthcoming proposals. MEPs in particular highlighted the need, as an integral part of a true Single Telecoms Market, to eliminate international roaming charges, to introduce clear and stringent rules on net neutrality and ensure a high level of consumer protection. Some MEPs have pointed to the challenging time-table for agreeing a set of ambitious measures before the forth-coming EP elections.

More recently after the intended measures which were subject to the ISC have been amply debated in the press the Commission has received a number of unsolicited written contributions on the specific issues of the proposal that allowed to have a very granular view of the opinions of the market participants and of the interest groups on all aspects of the proposal.

2.3. Opinion of the Impact Assessment Board

The draft Impact Assessment was presented to the Impact Assessment Board on 17 July 2013 and resubmitted on 14 August and 4 September. The Board examined it and delivered its opinions on 19 July and 29 August 2013. Following the latter opinion the draft Impact Assessment was further revised. The IAB examined it and delivered its final opinion on 6 September. In response to the recommendations of the Board, the document was revised introducing the following main changes:

- The text has been significantly streamlined and any duplication removed. The overall narrative has also been adjusted in light of the Board's comments;
- The text has been fully aligned with the latest draft of the proposed legal instrument;
- A full section on international roaming has been integrated. In this regard, it is important to note that the approach foreseen in the legal instrument, i.e. the gradual introduction of 'roam like at home' (RLAH) type of tariffs through bilateral or multilateral roaming

agreements, is optional and fully consistent with the current regulatory framework (Roaming III Regulation). It follows that the proposed approach will produce impacts only to the extent that operators decide to opt-in. In that case, the impact can be expected to be positive compared to the baseline (no change) scenario; -This section also develops the impact of the proposal with regard to international calls and abolishing charges for incoming calls, and refers to any possible unintended consequences (including as regards roaming);

- Figures have been added to illustrate the impacts of other specific parts of the proposal, notably on spectrum coordination, wholesale inputs, international calls and net neutrality;
- The text has been refocused on the aim of completing the single market;
- The subsidiarity section has been developed to highlight certain choices intended to ensure that the EU-level intervention does not go beyond what is needed and preserves Member State freedom, to the extent consistent with the overall objective, in preparing draft SMP remedies, in determining whether European virtual access products would be suitable to resolve local competitive problems or in designing the details of spectrum assignment procedures;
- More attention has been paid in the report to set out the wider aspects of coordination in the spectrum area and to assess the possible impact on Member States;
- Similarly the document was revised to clarify the current authorisation regime and explain the obstacles which a single authorisation can be expected to remove;
- The report explains more clearly what is insufficient about current regulatory framework particularly with regard to the Article 7 procedure and clarifies how the proposed measures are expected to lead to greater consistency of regulatory remedies including as regards virtual access products;
- The description of measures to ensure the protection of consumers, including further assessment of the possible implementation costs is strengthened;
- Positions of stakeholders on individual aspects of the proposal have been added, where available;
- All sources have been referenced.

3. PROBLEM DEFINITION AND SOURCES OF REGULATORY FRAGMENTATION

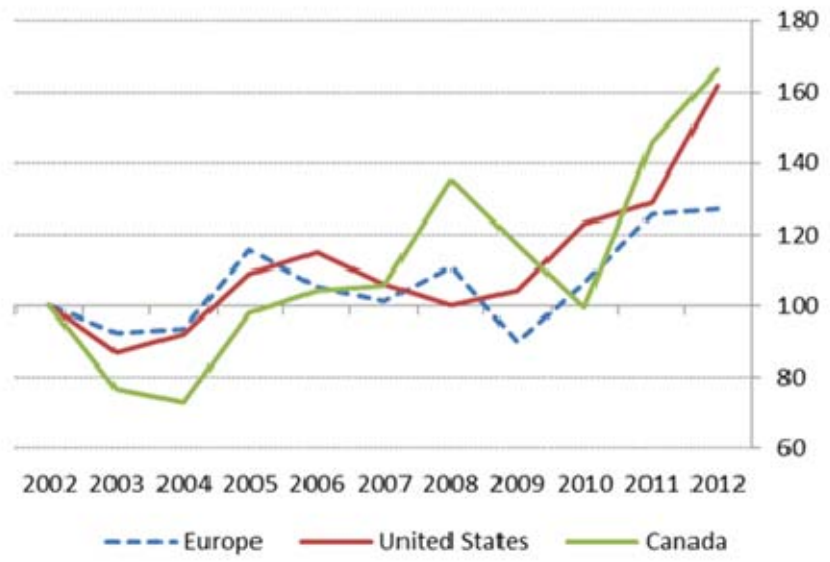
Europe lacks a genuine single market for electronic communications. The Union is fragmented into distinct national markets defined by Member State borders.

Market segmentation and persistent barriers to entry restrict competition which is a key driver of growth and investments. Variations between national markets are observed in market shares and price disparities above 100% and coefficients of variation above 30%, in both

fixed and mobile markets[11]. The lack of a Single Telecoms Market leads to additional compliance, and transaction costs and facilitates market concentration[12].

Today's economy is knowledge-based. The role of ICT, and more specifically that of high-speed broadband networks and 'connectivity', as a driver of growth has been researched extensively[13].At present, the EU is not fully tapping the benefits of ICT for growth, and investments in high-speed networks, for example as regards 4G (on the basis of so-called Long Term Evolution technology – LTE), are not happening fast enough (see figure 1). Investments in infrastructure are indispensable to exploit the opportunities for innovation and new services, such as cloud services, running over these networks. High speed broadband networks are the arteries for digital growth.

Figure 1 – Investment Trends - Wireless CAPEX in US, Canada, Europe (Local Currency, 2002 = 100)



While there are a number of reasons for lower levels of investment, including companies' strategies and wider economic conditions, their financial situation and access to capital markets, competitive pressure or demand-side developments, the right regulatory environment is crucial to contribute to a dynamic and competitive market. It must provide the right balance of risk and reward for those prepared to invest. In order to achieve these objectives, the Commission is adopting together with this proposal a Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment.[14] This Recommendation will promote competition and enhance investments in high-speed networks by providing long-term stability of copper access prices, ensuring access seekers equal access to the incumbent operators' networks

[11] European Commission, European Economy Occasional Papers 129: Market Functioning in Network Industries - Electronic Communications, Energy and Transport, 2013.

[12] "A New Strategy for the Single Market at the Service of Europe's Economy and Society". Report to the President of the European Commission José Manuel Barroso by Mario Monti, 9 May 2010.

[13] Czernich, N., Falck, O., Kretschmer, T. and Woessmann, L. (2011), Broadband Infrastructure and Economic Growth. The Economic Journal, 121: 505–532. doi: 10.1111/j.1468-0297.2011.02420.x; Analysys Mason Tech4i2 (2012) "The Socio-economic impact of bandwidth". Study performed for the European Commission.

[14] COM [insert final reference]

thereby ensuring a level playing field, and by setting out the conditions under which price regulation of NGA networks is no longer warranted,

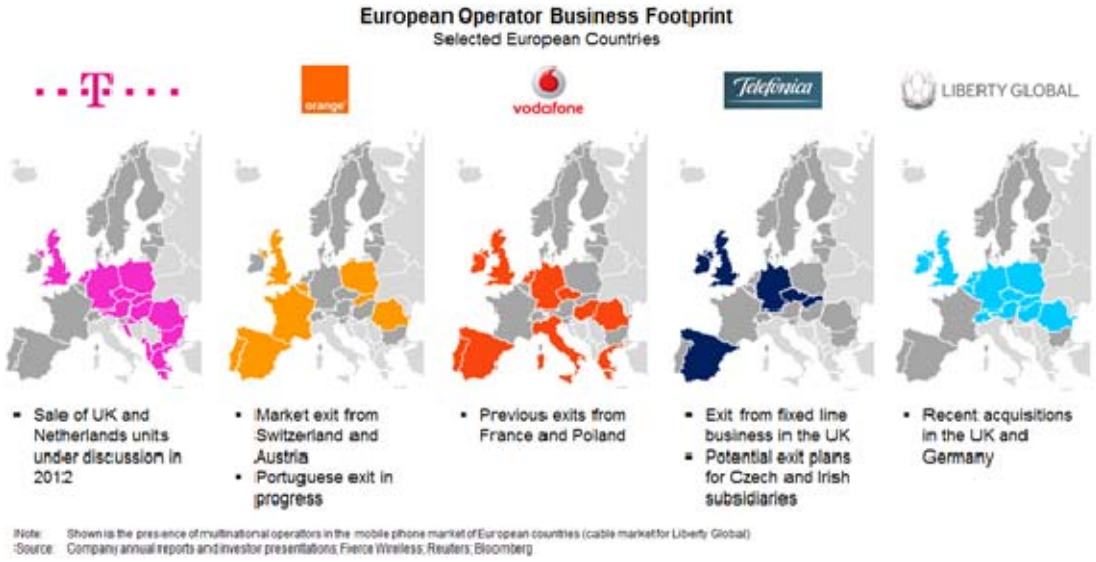
New sources of revenue have not been exploited sufficiently given lack of innovation in business models to address changes in consumer behavior (shifting away from voice to data). Regulatory fragmentation – including inconsistent remedies and sometimes over-regulation - also generates legal uncertainty and in some cases even overregulation, which in turn can slow down the introduction of new business models. For example, different ways of regulating virtual wholesale access products (such as bitstream or leased lines) make it more complicated and costly for operators to develop products for the business-to-business market (which represents some 50% of total turnover in the telecommunications sector) on a multi-Member State or even pan-European basis. Different ways of regulating traffic management practices (also referred to as "net neutrality") create uncertainty as to the possibility to offer specialized services with guaranteed quality. This legal uncertainty hampers product and business-model innovation and, consequently, the introduction of new business models.

Another example is the inconsistent approach to spectrum assignment in the EU, which leads to the fact that the key input for mobile operators is differing across Member States, e.g. in terms of timely availability and license conditions[15].

In particular, telecom operators are hampered by regulatory and administrative obstacles to operate as integrated providers across different Member States. Out of hundreds of telecom operators in Europe, none is active in all Member States. Furthermore, an average European can only choose among 3 or 4 alternative providers. In fact, several major companies (e.g. Vodafone, France Telecom) have begun to reduced their European footprint by withdrawing from certain Member States' markets (see figure 2). Where they expand it is often outside of the European Union.

Figure 2 – Main European Operators' Footprint through Separate National Operations

Major telecom companies have begun to exit some national markets



[15] Even if it is common practice to harmonise technical conditions of spectrum bands at EU level pursuant to the Radio Spectrum Decision, the actual assignment of spectrum to mobile operators is not formally coordinated among Member States.

Source: Booz & co., Building and Leveraging Scale in the Digital Home Sector, a Study for Liberty Global

The completion of the Single Market depends on a number of factors including economic, cultural and wider regulatory divergences. On the demand side, there exist considerable divergences in consumer protection rules, copyright, or data protection, which are often considered as the main barriers to a rich digital Single Market with vibrant, cross-border content. For example, today's copyright and rights' management systems remain territorially-based with important differences between Member States, for example as regards the implementation of exceptions. The implementation of the framework is complex and often cited by stakeholders as an important reason for the lack of multi-Member State or even pan-European premium content offers (in particular in light of the increasingly bundled content and connectivity services).

This, in turn, limits the choice of citizens who want to enjoy legally their content wherever they are in Europe, which the availability of cloud services makes possible. The Commission has already launched important initiatives to address these pressing demand-side issues, e.g. a draft Data Protection Regulation to secure full substantive harmonization and a European coordination mechanism; legislative reform of collecting societies; the "Licenses for Europe" process and a commitment to consider possible copyright reform legislation in 2014. These issues, even though highly relevant to the development of the telecoms sector, are therefore not further addressed in this Impact Assessment.

The main sources of regulatory fragmentation in telecommunications are the following:

3. 1. Barriers to the Single Market through National Authorisation Regimes linked with inconsistency in regulatory approaches implemented by National Regulatory Authorities

The current European authorisation regime falls under the provisions of the Authorisation Directive[16] and follows the principle of national jurisdictions. This principle is in particular confirmed also in the event of cross-border provision of electronic communications services to undertakings located in several Member States.

Despite the attempt of the Authorisation Directive to reduce the administrative formalities that may be imposed in the context of the general authorization (Article 3(2) of the Authorisation Directive), individual notification of activities is nevertheless required in almost all Member States (26 out of 28), with corresponding national notification, each differing in terms of modalities and content of the information required. In addition to that, several Member States link direct and indirect additional national establishment and/or proxy requirements to each national notification regime.

While this widespread practice has already triggered several complaints leading to investigation of the Commission and, in some cases, to the opening of infringement procedures, the overall system in general does not take sufficiently into account the specificities of pan-European electronic communications service providers (for example those addressing business-to-business needs). As a result, a company wishing to offer services in the whole territory of the EU (while it may have only one business customer in each Member State) has to be authorised under each national regime. In addition, such a company with limited activities in several Member States will have to face several national administrative charges as well as universal service contribution regimes. While some Member States provide for a *de minimis* exemption threshold this is often based on different criteria. Finally, notification pursuant to the electronic communications rules may be leveraged by Member States to presume the obligation to establish, without regard to the effective nature of the activity carried out. In conclusion this results in administrative burden and increases the costs of providing a service across borders. As a matter of fact, heterogeneity of notification requirements as well as the additional requirement linked to the notification was raised by stakeholders in the context of a public consultation carried out by BEREC on the impact of administrative requirements on the provision of cross-border services[17].

At the same time telecommunications services have to be customised to different national markets across the EU because of diverging regulatory obligations relating to the provision of a service. These are often as specific as the need to use a particular font in the contract with the end-user. Whereas regulation applying to the networks, which are inherently physically situated in a given Member State, needs to take account of local circumstances (including the number and nature of infrastructures available), varying regulatory approaches and national differences in the application of market remedies are a substantial constraint even in the presence of objectively similar circumstances (see Annex III for details and examples). Still,

[16] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (amended by Directive 2009/140/EC). See for a consolidated version http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/140authorisation_2.pdf

[17] BEREC report on the public call for contributions on possible existing legal and administrative barriers with reference to the provision of electronic communications services for the business segment http://berec.europa.eu/files/doc/berec/bor/bor11_55_input_businessservices.pdf

large differences in wholesale and retail prices across Member States cannot be justified by different underlying national circumstances alone but are also the result of (sometimes significantly) varying regulatory approaches.

In line with current EU rules, national regulators must analyse their telecoms markets, and impose proportionate regulatory remedies on operators with significant market power (SMP) in non-competitive markets, that is, on operators that can act independently of competitors, customers and consumers. Such regulatory remedies can include access, transparency, non-discrimination, accounting separation, cost accounting, price control and, in exceptional circumstances, functional separation obligations.

Even though the Commission received additional powers under the so-called Art. 7/7a procedure through the last review of the electronic communications framework in 2009, allowing it to suspend proposed national remedies in order to seek solutions with the relevant NRA and BEREC, there is still a distinct difference between Commission powers in respect of competition analysis (market definition and SMP), for which it is possible for the Commission to require withdrawal of a draft decision, and its powers in respect of remedies. In case of remedies, if there is disagreement at the end of a so-called "phase II" procedure where the Commission has expressed "serious doubts" on the compatibility of a draft national measure with the proper functioning of the Single Market, it may adopt a recommendation calling for the amendment or withdrawal of the draft measure, but not a binding decision. The NRA must take utmost account of the Commission's recommendation, but can depart from it as long as it provides a reasoned justification. After this step, the Article 7 procedure foresees no further steps for the Commission to continue pursuing its goal of consistent regulation.

This lack of enforceability of the results of the Commission's investigation into proposed remedies creates a problem for the internal market, because NRAs still use a variety of approaches in similar circumstances. The potential lack of consistency is especially problematic for companies operating in more than one member state and could be a potential barrier for further expansion and investments of companies within the EU footprint.

Even in a field such as termination rates, where the approach to pure LRIC calculation of regulated efficient rates under the Commission Recommendation 2009/396/EC has enjoyed the solid backing of BEREC in the individual remedies cases opened to date under the 7a procedure, there have been a number of recent cases where individual Member States have taken a different approach, even if the competition problems of these markets are very similar across Member States. Moreover, this is an issue with important ramifications - for example, in the case of calls between Member States, which can be expected to become more and more significant as the Single Market integrates, it leads to operators in Member States where efficient cost-oriented termination rates have been introduced cross-subsidising operators in Member States where this is not the case and where additional costs are included in the calculation of the termination rates. In addition, the abolition of roaming surcharges for incoming calls is justified by the widespread implementation of efficient cost-oriented termination rates, including for calls from other Member States.

Therefore, effective solutions in this respect are vital for the functioning of the single market. Similar interlinkages can be cited as regards the other main area of ex ante regulatory activity, namely access remedies – the useful effect of the introduction of European virtual access products would be undermined if the Commission were not able to ensure that they are properly taken into consideration in market analysis, at least in respect of remedies applied to SMP operators with a multi-country footprint. Even if access remedies are imposed in relation to next generation fixed broadband networks, there is no consistency of the features of these remedies across Member States (as further demonstrated in Annex III). Access remedies, on

the other hand, will play a fundamental role for operators that will use access products to expand into new geographies within the Union. Such expansion will be more costly without a coherent implementation of standardized remedies across Member States. A study commissioned by the European Commission[18] highlights how national orientation of sector regulation, which results in a lack of standardised wholesale offers fit for multinational corporations, increases the operating costs for multinational operators. This view is particularly supported by stakeholders that supply business customers and offer multi-site connectivity across Member State borders.

The current arrangements with regard to regulatory measures proposed are thus not sufficient to ensure a consistent application of remedies across the EU for companies aiming at multicountry coverage, as they may be subject to different regulatory approaches in objectively equivalent situations in different Member States.

3. 2. Lack of co-ordination in spectrum assignments and regulatory uncertainty as to the availability of frequencies that severely hinders the roll-out of Next Generation Wireless Networks

Wireless broadband communications includes cellular broadband networks (such as 4G networks), which support mobility over a wide area, and radio local area networks (RLAN, such as Wi-Fi networks) supporting nomadic and static usage of broadband services. Other regions such as the US and parts of Asia have deployed high speed wireless networks more rapidly and comprehensively, and generated customer take-up more quickly. (See Table 1 for LTE subscriptions worldwide).

Table 1 – LTE subscriptions worldwide (in thousands)

Year	2012	2013
North America	32080	60425
Western Europe	2634	13008
Central & Eastern Europe	1813	9688
Asia/Pacific	28058	63680
Latin America	334	2745
Africa/Middle East	386	2873
World	65305	152417

Source: Digiworld 2013

The Radio Spectrum Decision 676/2002/EC establishes a procedure whereby the Commission, working on the basis of mandates to CEPT[19] in order to gather the necessary technical expertise, can adopt, through comitology, technical harmonization of conditions of use of radio spectrum. This procedure has enabled the allocation of approximately 1.000 MHz

[18] See footnote 3
[19] Comité européen des postes et telecommunications, a regional organ of the ITU.

of radio spectrum to electronic communications for licensed use under harmonised conditions throughout the Union.

However, allocation is only a first step: in cases where rights of use must be assigned (as is the broadly case for cellular mobile networks), uncoordinated spectrum assignments in the Union are holding back the Union's potential to benefit from the benefits of wireless broadband and the mobile revolution. There are no systematic Union rules on the conduct of assignments. The existing telecoms legislation establishes basic framework conditions, relying mainly on coordination between Member States themselves, and requiring that assignments are based on objective, transparent, non-discriminatory and proportionate criteria and that procedures are open. The legislation also opens a number of options for Member States, regarding issues such as technical quality of service, maximization of spectrum sharing, or transfer and lease of spectrum rights of use. EU rules also establish that fees charged should be proportionate and should ensure optimal use of these resources. As regards timing of assignments and duration of rights of use, there are no general rules. A punctual legislative intervention has been made through the RSPP, establishing deadlines for assignment of a range of electronic communications spectrum to be conducted and for the relevant spectrum to be made available, but with limited success.[20] Despite their legal obligations, Member States have only assigned 650MHz out of 1000MHz of spectrum, designated to wireless broadband. While informal consultations on spectrum assignment plans sometimes take place between individual Member States and the Commission, the only formal tool available to the Commission to enforce even the current very high-level legislative principles is through *ex post* infringement action, which could add additional unpredictability for investors after an assignment has actually taken place.

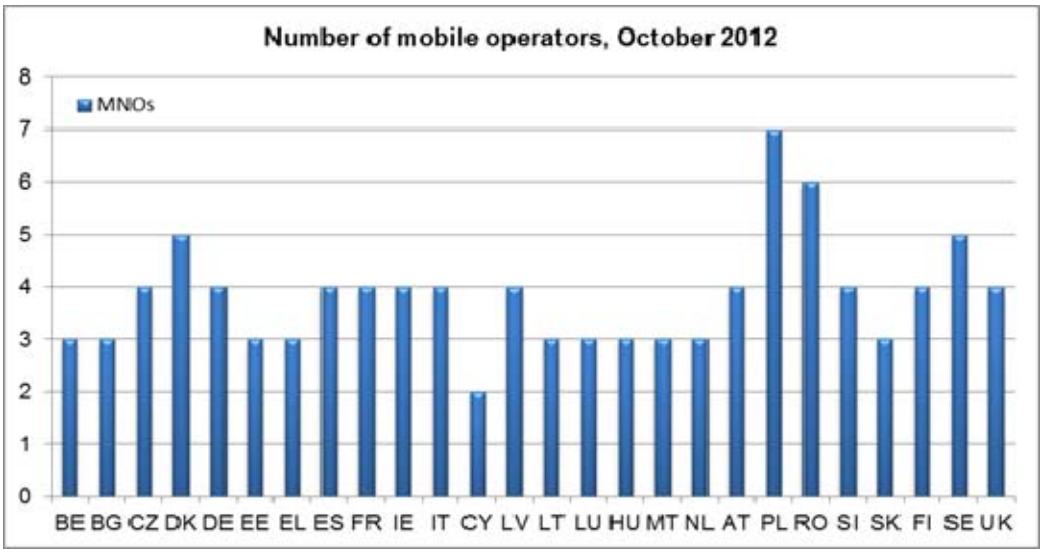
In addition to assignment conditions, other barriers are holding back mobile connectivity, such as fragmented base station permit procedures and legal uncertainty concerning network sharing.

More specifically, obstacles for network operators and service providers to offer pan-EU service include:

i) **different, uncoordinated spectrum assignments** in different Member States do not allow for the same level of roll-out and quality. For example an operator that does not have sufficient spectrum below 1GHz in a given region is not able to economically roll-out wireless broadband services with wide coverage in that region. The amount of EU harmonised spectrum assigned in Member States still varies by a factor of up to three. Different spectrum assignments lead to different levels of competition in national markets (Figure 3 below) and by that perpetuate market segmentation of the Union into national markets. Retail prices for mobile services between different Member States still vary by up to a factor of seven (see Figure 8 further down), which can be partially attributed to widely varying conditions (going beyond price differentials for equivalent spectrum) in access to the most relevant productive input and to differing market structures, which are in turn influenced by spectrum holdings of the market players.

[20] Article 6, Decision No 243/2012/EU of the European Parliament and the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme, OJ 2012 L 81, p. 7.

Figure 3 – Number of Mobile Operators in Different EU Countries



Source: COCOM

Table 2 – Prices for Spectrum in the EU

MS	Total Revenues (billion € - 800 MHz)	Total Revenues (billion € - 2.6 GHz FDD)	Revenues (€/MHz/pop - 800 MHz)	Revenues (€/MHz/pop - 2.6 GHz FDD)
Germany	3,576	0,258	0,73	0,022
France	2,64	0,936	0,68	0,103
Spain	1,302	0,117	0,47	0,023
Italy	2,934	0,432	0,82	0,06
The Netherlands		0,0026	0,5*	0,002**
Portugal	0,27	0,036	0,28	0,028
UK			0,48	0,054

* Based on the price paid by one operator (Tele2) for reserved spectrum for a new entrant in the 2012 multiband **auction. Other operators are reported to have paid significantly in excess of this amount for similar quantities of** spectrum in the same band of €2,00/MHz/pop or even higher.

** All 2.6GHz FDD spectrum was auctioned in 2010, 2.6GHz TDD spectrum was auctioned in 2012.

Source: Commission analysis.

ii) **different prices paid** for spectrum licenses of differing durations imply different investment and pricing strategies which in turn depend on the competitive situation in a given market but also on the timing, the offer available and the auction design. Prices for high-valued sub-1GHz spectrum between Member States vary by up to a

factor of three and exceed in some cases by far the amount paid in other world regions, such as in the US, by companies to gain access to similar spectrum portions. The effect of price variations on commercial decision-making is accentuated through the predominance of one-off payments. Moreover, market players are faced with additional cost through the limitation and renewal of licenses, which is often not the case in other world regions. Variations in duration of rights of use can lead both to variations in the investment horizon and to difficulties in aligning investment decisions across member States over time. Whereas the suitability of auctions to efficiently assign spectrum to market players is not questioned, consistent and efficient auctions are essential for the development of the market. High spectrum prices have an effect on market outcome, either in the form of higher prices than would otherwise apply and/or in lower investment capacity of operators in improved network capacity. Auction designs that aim at revenue extraction may conflict with the goal of maximizing social welfare[21] and with EU rules on optimal use of spectrum resources, but that rather abstract rule is currently difficult to apply.

iii) **uncertainty on the calendar for award or renewal of licence conditions** means less predictability for businesses. Mobile operators or consortia of mobile operators are not currently able to acquire licenses for already harmonised but unassigned bands, or newly harmonised bands across different Member States with similar license conditions, in a pre-defined time window to allow them to expand their European footprint and to offer the same service across different Member States. Such lack of synchronisation in the authorisation of spectrum for wireless broadband means not only that new technologies such as 4G are available only in parts of the Union but also that operators cannot place larger orders with equipment manufacturers and thus negotiate discounts, which would be possible if authorisations across different Member States would be granted within a shorter time-frame.

iv) **considerable differences in conditions and obligations, such as those relating to auction design, payment and fees, coverage and network/spectrum sharing, creates uncertainty.** An example of legal uncertainty is the approach taken towards Mobile Virtual Network Operator (MVNO – companies that provide services by using the network of another operator). In some 10 Member States, MVNO access is provided for mainly through attachment as a condition to spectrum assignments rather than as the result of a market analysis based on the existence of significant market power. Although the Radio Spectrum Policy Programme (RSPP) indicates that MVNO access is one possible tool to address competition problems, there is no clear and objective test or threshold for using this tool in the context of spectrum assignments, or on how it should interact with other interventions to enhance (infrastructure-based) competition, such as spectrum caps. This has significant and diverging effects on market structure, within a context which is normally characterised by greater infrastructure competition than in fixed-line markets.

v) **fragmented permit procedures to deploy small access points.** This means that in more densely populated areas increased capacity cannot be realised by using additional spectrum resources, by reusing spectrum resources through the deployment of additional smaller cell base stations or by deploying wireless hotspots. These small installations can be integrated in public infrastructure such as street lampposts with low visibility or be based in end-user premises. However, a number of administrative

[21] See for example: Hazlett, T.W., Munoz, R.E., "A Welfare analysis of spectrum allocation policies", (2009)

and structural barriers exist for upgrading existing sites to provide higher capacity and for deploying new sites. Moreover, in many cases, operators encounter significant delays in the approval of planning permission requests, which can range from one month to up to two years. This is hampering in particular the roll out of small cell technology as it requires huge numbers of base stations and thus permits.

Some Member States have introduced permit exemptions for low-power base stations and simplified procedures, including by setting up a single contact point for permit requests ('one-stop-shop' licensing). Furthermore significant variations can be observed between Member States as regards the application of electromagnetic field (EMF) limits. It has even been the case that Member States (or regions / municipalities thereof) have imposed limits that are more than 100 times stricter than the recommended limit in Council Recommendation 1999/519, without clear scientific underpinning, which can restrict the deployment even of very low-power equipment.

vi) **Legal uncertainty concerning network sharing, spectrum sharing and spectrum trading or leasing.** With a limited business case for deploying wireless broadband in certain areas, rolling-out several parallel infrastructures in such regions can be highly uneconomical. Recent studies have identified the possibility for significant roll-out cost savings in the order of 30-40% through infrastructure or spectrum sharing and several Member States have developed first guidance in this regard. The authorization of active as well as passive network sharing arrangements, while respecting competition rules, which can be applied contextually according to the efficiencies achieved and shared with end-users, may allow economic wireless broadband roll-out in certain areas and for higher broadband speeds if combined with national roaming and spectrum pooling schemes which increase spectral efficiency through wider bands. At the same time, easier spectrum transfers, leases or sharing could, consistently with competition rules, allow more efficient spectrum use, greater network differentiation and thus greater investment incentives. However, there is currently wide variation in national licensing practices in these respects.

Overall, the lack of a single wireless space, where providers can offer wireless services wherever they are based and a lack of consistency in spectrum assignment inhibit efficient spectrum utilisation and gives rise to a lower availability of quality services. The situation in the 800 MHz frequency band is a case in point of this fragmentation and underscores Europe's inability, to date, to deploy precious spectrum for wireless internet services (4G or LTE) in an efficient way. The time needed between the early and late movers amongst EU Member States will likely reach as much as 6 years which explains why certain leading smartphone manufacturers have decided not to equip their devices with the necessary technology for it to serve in those bands in Europe.

3.3 Lack of pan-European Virtual Network Access and Inputs (wholesale products which allow the provision of services using the network of another operator) with consistent service interoperability levels

The slowness of companies and regulators to embrace the internet revolution has put the EU at a significant disadvantage. There is a consistent lack of interoperable, cross-border wholesale IP products which allow for the provision of digital services not only telecommunications but also innovative value added services such as online content, cloud, e-

Health applications or gaming services, using the network of another operator on a cross-border or pan-European-wide basis. The possibility to provide such services on a pan-European level creates opportunities for operators to develop new business models and exploit new revenue streams.

As present, operators who wish to develop cross-border offers and exploit pan-European business strategies, have difficulties finding wholesale access inputs at consistent and appropriate quality and service interoperability levels. Quite often, the relevant wholesale access products, if available at all, require different processes and exhibit different technical features in each Member State. As a consequence, integrating the different inputs into a single cross-border service of consistent quality raises costs or even makes the provision of some types of offers impossible. This costly and time-consuming process deters cross-border and pan-European strategies.

A further obstacle to the Single Market is the lack of products that guarantee end-to-end quality of service at the IP level when networks interconnect for achieving end-to-end communications (which should not be confused with the IP interconnection market). Such IP Interconnection products are needed in order for telecoms providers to enable their clients to offer services with guaranteed quality across different Internet network layers, such as for real-time applications (e.g. video conferencing, e-health applications, e-procurement, online trading or gaming). If the parameters for these products could be defined on a common basis, this could provide an impulse for the development of offers on commercial terms compliant with those common parameters and bring about a Single Market for guaranteed quality online service provision in a relatively short period of time.

Most of the next generation network operators and Internet service providers deploy and run networks based on the Internet protocol ("all-IP networks"), but with a strong control at the borders of their network (e.g. translation of format and change of addresses through IP gateways). Typically TV distribution over a telecom network (IPTV), audio streaming services, but also voice calls (when on-net) are services currently delivered with managed quality of service. The paradox is that while operators use IP (managed) guaranteed quality for their own services, they do not generally offer them to third parties, or if at all they offer only limited versions. As a consequence, a large part of the potential efficiency gains associated with the shift to all IP are foregone and the development of innovative services constrained.

One reason why appropriate service offers in this area have not evolved is that the current fragmentation shields operators from international (intra-EU and global) competition. This may explain why some incumbent operators have reacted rather critically to ideas to ensure greater consistency of virtual access and IP interconnection products, since such consistency will likely trigger additional competitive forces.

Evidence supporting the seriousness of this problem includes the conclusions of the CEO Round Table of July 2011, the findings of the study into the cost of non-Europe in electronic communications cited above, a recent study by WIK for ECTA and INTUG on international business communications services, and a series of bilateral meetings with stakeholders.

3. 4. Evidence of market fragmentation on consumer interests: high costs of roaming and international calls, blocking or throttling of services and uneven levels of consumer protection.

Many consumers in the EU directly experience the lack of a Single Telecoms Market and the costs of market fragmentation. The connected car of the future risks not working in an environment with high roaming costs, the same applies for the personal health network or the virtual reality tools of the future. Innovation in the EU is hampered by high roaming charges.

International roaming charges are probably the most visible example of an unfinished Single Market. While successive Roaming Regulations have brought tangible benefits to consumers in the form of price reductions for voice and SMS roaming services, and more recently for data communications, roaming charges continue to be an important cost to citizens and businesses and, as such, constitute an important impediment to mobility within the Single Market. Many Europeans avoid, or curtail usage of their mobile phones, navigation services when travelling outside of their home Member State in order to avoid incurring mobile roaming charges[22].

The Roaming III Regulation, adopted in 2012, introduces the possibility for "decoupling" which allows customers to contract with separate roaming providers. This will inject greater competition into the market but is not expected of its own to create a situation where customers can confidently replicate their consumption behavior in their home Member State when travelling abroad (also referred to as "Roam Like at Home" or RLAH).

Of a similar nature, consumers are still confronted with the impact of borders when they make **international calls** within the European Union. It can sometimes be up to five times more expensive to call between cities in different Member States when the distance is, say, 100 kilometers than it is to call between two cities in the same Member State when the distance can be many hundreds of kilometers. Current EU rules however do not address the issue of unjustified costs for calls which involve a cross-border element, such as international calls within the Union. As a result, rates that consumers are charged are often multiples of national rates while technically the difference in the cost of provision can be marginal.

To date many consumers are not always in a position to access and distribute information or run applications and services of their choice over the Internet. Any limitations to **access to the Open Internet** can impact on end-users' freedom of expression and the way in which they can receive and impart information. Although operators need to manage Internet traffic in order to ensure the proper functioning of the networks (including managing network congestion, security threats, etc.), there are many instances when unjustified blocking and throttling occurs.

According to a major 2012 BEREC Internet traffic management investigation[23], access restrictions due to traffic management measures are relatively frequent and affect a significant number of mobile and fixed end-users in most Member States. The blocking and throttling of P2P and VoIP is the most common example: over 21% of Internet access subscribers are affected by fixed P2P and mobile VoIP restrictions and over 36% by mobile P2P restrictions. Deliberate blocking or slowing down of traffic, in particular the service of a competitor is anti-competitive. The risk that any service can be blocked or throttled creates uncertainty which may impact negatively on innovation and growth. Indeed, web entrepreneurs and start-up's for example in the content or applications field would not likely invest in new ventures in Europe if such risk were perceived to be real.

Absent clear and predictable rules at EU level, some EU Member States have begun to adopt their own approaches regarding traffic management practices (often referred to as 'net neutrality'). Regulatory measures have been developed at national level ranging from non-binding instruments (self-regulatory measures in the United Kingdom and Denmark) and more elaborated guidelines (NRA guidance in France) to the enactment of specific legislation

[22] Special Eurobarometer 396, E-Communications Household Survey (Fieldwork: February - March 2013; Publication: July 2013) http://ec.europa.eu/public_opinion/archives/ebs/ebs_396_data_en.pdf

[23] For more detail on BEREC's findings on traffic management, http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/Traffic%20Management%20Investigation%20BEREC_2.pdf

on net neutrality (the Netherlands and Slovenia). Additionally, Germany is planning to adopt legislative proposals in the near future. Several initiatives have been announced or are under preparation in other Member States. This could result in further fragmentation of the Single Market that significantly complicates the integrated management of multi-territorial networks.

At the same time, regulatory diversity and rigid rules may make it difficult or even impossible for Internet Service Providers (ISPs) to offer specialised services to businesses who would need specific guarantees to develop successful products to particular types of customers such as in e-health (e.g. distant health monitoring), video-conferencing, ultra-high definition quality content, stock trading or gaming which require higher delivery standards (notably with regard to latency and jitter) than "best efforts" Internet. If European operators would have legal guarantees that they could offer such high-quality products, whilst ensuring "best efforts" Internet for all other traffic, this could spur new business models and also give them greater leverage in negotiating agreements with so-called 'Over The Top' (OTT) providers.

The current EU regulatory framework provides for sector-specific consumer protection for users of electronic communications services. A number of the EU provisions in this context have an enabling character and the telecoms consumer rules in general are considered a set of minimum harmonisation measures. This means that **EU consumer protection rules in telecommunications are implemented with varying levels of detail, focus and impact at national level**. As a result electronic communication service providers wishing to operate across borders face a wide variety of diverging national consumer protection rules which leads to a fragmented Single Market. The same goes for consumers wishing to contract services abroad.

Transparency is an essential part of consumer empowerment. As stated by BEREC, "to date end-users in Europe have reportedly met repeated difficulties in identifying and understanding the characteristics of offers, in particular for access to Internet. In this context, improving transparency is an obvious necessity"[24]. As operators are often not sufficiently transparent, end-users are not able to clearly understand the characteristics of the products and to make a well-informed choice. This lack of transparency exists for traffic management practices as well as for quality of service. This is confirmed by findings of a DG SANCO study regarding the transparency of offers provided by ISPs on their websites[25]. Indeed, 94% of respondents consider that ISPs do not provide information on their website on blocking/throttling of specific applications or services.

According to a recent Eurobarometer survey[26], nearly six out of ten respondents (57%) are not aware of their Internet connection maximum download speed. In this context, there are also important discrepancies between advertised speeds and actual speeds. Findings of a Commission study conducted by Samknows[27] show that there can be a significant difference between advertised speeds and actual speed on fixed networks. On average, EU consumers receive 74% of the advertised headline speed they have contracted for. xDSL based services

[24] BEREC Guidelines on Transparency in the scope of Net Neutrality: Best practices and recommended approaches December 2011 BoR (11) 67
See http://berec.europa.eu/doc/berec/bor/bor11_67_transparencyguide.pdf

[25] European Commission, DG SANCO, Consumer Market Study on the Functioning of the Market for Internet Access and Provision from a Consumer Perspective, 2012.

[26] Special Eurobarometer 396, E-Communications Household Survey (Fieldwork: February - March 2013; Publication: July 2013) http://ec.europa.eu/public_opinion/archives/ebs/ebs_396_data_en.pdf

[27] Samknows study for the European Commission, Quality of Broadband Services in the EU March 2012, https://ec.europa.eu/digital-agenda/en/news/quality-broadband-services-eu-march-2012

achieved only 63.3% of the advertised headline download speed, compared to 91.4% for cable and 84.4% for FTTx (including VDSL).

An important element of consumer protection is the possibility to switch providers easily. It is also an important condition for enabling competition. In practice many barriers to switching exist and there are many differences in national rules on switching. This issue is closely linked to the rules on transparency. As BEREC has highlighted, the effectiveness of transparency measures crucially depends on the ability of the customer to switch to another ISP when s/he is not satisfied with the service provided (i.e. the competitiveness of the end-user market). This depends on the availability of alternatives which meet consumer demand. The public consultation on specific aspects of transparency, traffic management and switching in an open Internet revealed that improved transparency and easier switching are considered very important by citizens.

Contracts are an important element relevant to switching, as restrictive contractual terms and conditions can be one of the main barriers to switching. In the BEREC report on best practices to facilitate consumer switching, some of the main obstacles to switching identified by NRAs were: contractual issues (in particular restrictive terms and conditions e.g. early termination charges), lack of consumer information (especially regarding pricing structures and the implications of switching), technical issues (such as process deficiencies in the switching process particularly for Internet/broadband and bundles) and other obstacles, such as lack of one-stop-shops, abuse or delay of the switching process by the operators. There is also a lack of clarity on the switching and contract rules regarding bundles. For example, in some jurisdictions contracts are extended tacitly (by up to one year) after the expiry of the initial contract period, without any advance notice, sometimes on the basis of the ISP's general terms and conditions. There is however no justification to require a customer to stay with the provider after the initial contract period is over. Such practices reduce considerably the effective "time window" for end-users to switch or for competing ISPs to "lure away" end-users with attractive offers.

As to the switching costs that consumers face, according to the study "The Functioning of the Market for Internet Access and Provision from a Consumer Perspective", on average, respondents in EU Member States spent 2.5 hours of personal time on the switching process, ranging from less than 1 hour (25%) to more than 10 hours (3%). This includes "the initial search for new providers, comparing offers, contacting the new provider, signing the contract and installing new equipment". Although only 10% of consumer survey respondents found it difficult to switch, "almost half (44%) say they experienced problems of some kinds when switching", thus corroborating BEREC's assessment of the switching process. The study finds that "for the EU the average financial (time) cost associated with switching provider is €31.9 per household, assuming the switching efforts are made during work time, and €9.6 if they are made in leisure time".

4. MANIFESTATION OF THE IDENTIFIED PROBLEMS AND STAKEHOLDERS AFFECTED

4.1. Single Market fragmentation affecting ICT user industries

The lack of a genuine Single Telecoms Market affects all companies both large multinationals and SMEs. Business users face obstacles in sourcing telecoms services and connectivity solutions from a single supplier and with consistent quality. This increases transaction costs, impedes the use of business-critical multi-site applications and undermines the efficient design of value chains with detrimental effects on productivity. In a fully-fledged Single

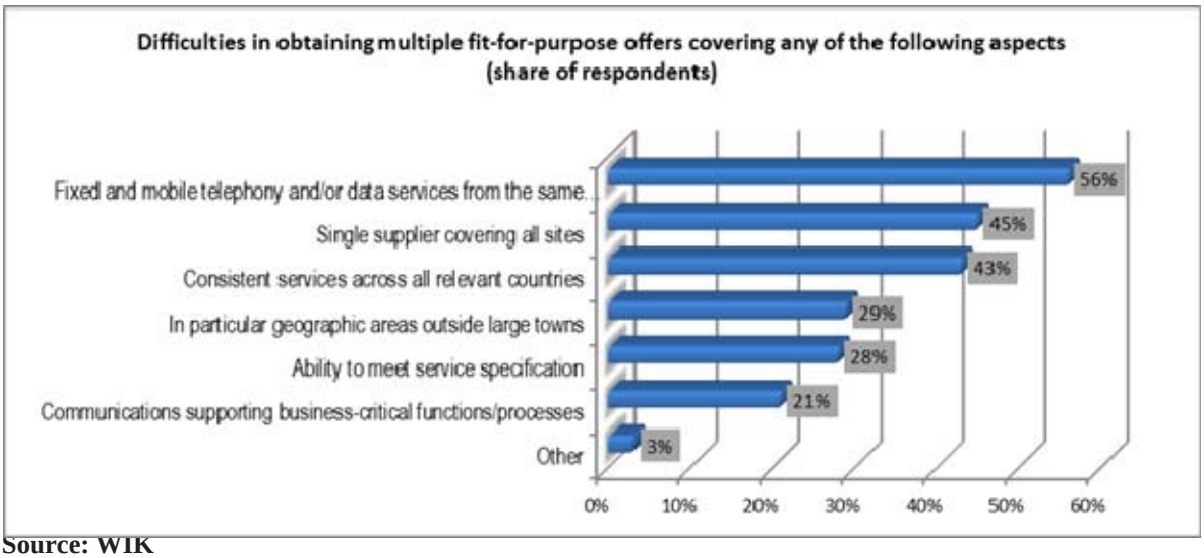
Market, one of the crucial strengths of European integration should be the ability of businesses to locate their operations in all areas of the EU so as to realise a maximum amount of benefits from regional specialisation patterns and factor endowments. A strategy that efficiently organises the value chain this way will typically induce companies to spread production and workflow process across multiple sites and countries throughout the EU (as depicted in Figure 4).

Figure 4 – Structure of Multi-Site/Multi-National Business Operations

Source: WIK, taken from BT et al.

Telecommunication services that ensure seamless exchange of information between all sites become truly vital. According to WIK[28], the value of telecommunication services and products supplied to multi-site/multi-national corporations (MSC/MNC) accounts for 28% of the European telecommunications market. Companies are however rarely able to find solutions that meet their needs (see Figure 5).

Figure 5 – Difficulties with Sourcing Fit-for-Purpose MCS/MNC Solutions

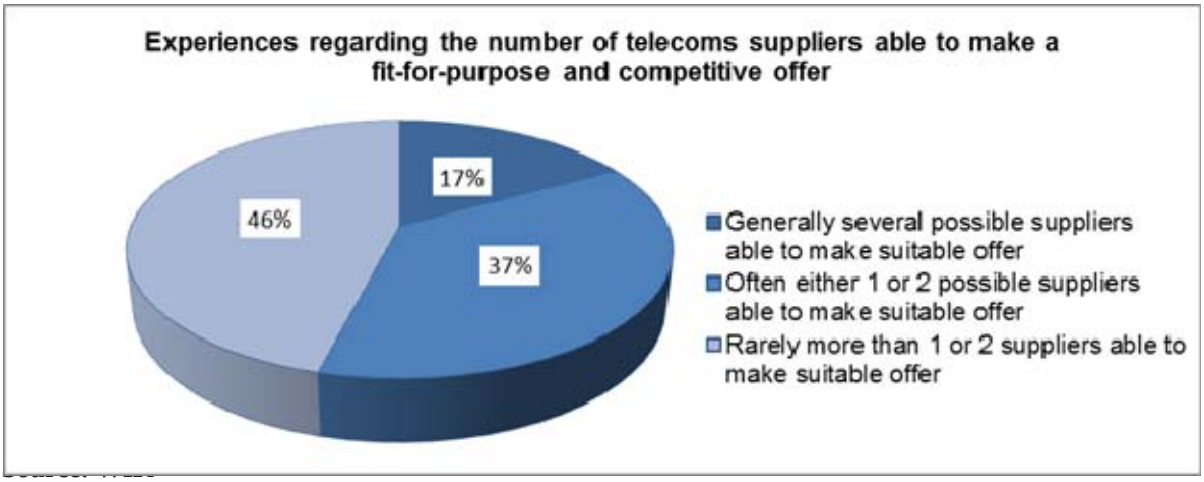


Source: WIK

Likewise, only a minority of respondents in the survey was able to find several suppliers with almost half reporting that they were rarely able to find more than one or two suppliers (see Figure 6).

[28] WIK (2012), Business communications, economic growth and the competitive challenge. Study commissioned by ECTA.

Figure 6 – Experience with Obtaining Multiple Offers for MCS/MNC



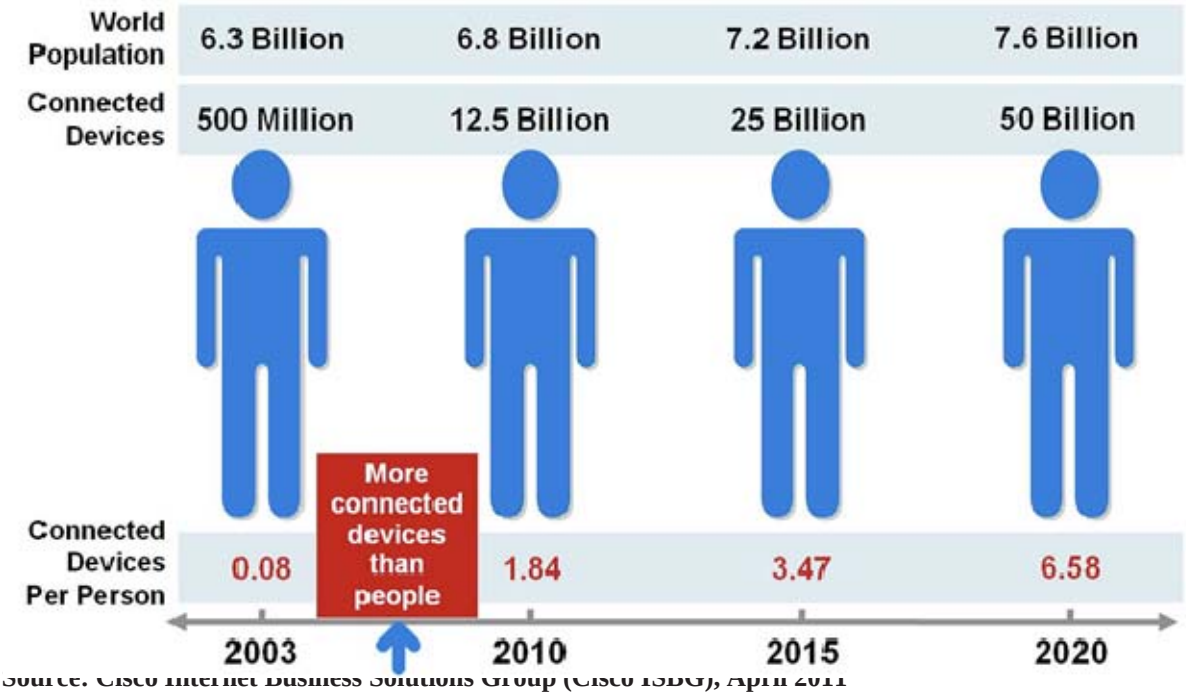
As noted in a paper prepared by DG ECFIN earlier this year[29], different dispersion measures (price disparities generally above 100% and coefficients of variation over 30%) seem to confirm that significant fragmentation still exists among national electronic communications markets. It also appears that this fragmentation has not been significantly decreasing over time. The paper argues that it is particularly striking that integration remains limited also in highly regulated segments like roaming. Overall, the analysis confirms that fragmentation can at least be partly attributed to the still national orientation of sectoral regulation. At the same time price dispersion within the EU is the result of many factors, including different cost levels (of capital and labour inputs) and different purchasing power parity levels. The current initiative is not seeking to address price dispersion per se but focuses on removing artificial border effects, so that competitive entry and expansion is facilitated on common terms, with likely indirect effects on price divergence to the extent that it is in part due to non-competitive rents; while also addressing directly a more limited example of divergence, namely where disproportionate price differences relative to the domestic level arise from the mere fact that communications cross borders (i.e. international calls, roaming).

Large and small companies are equally likely to benefit from cloud services which allow them to quickly adapt their ICT capabilities to business performance. Such services may be adversely affected, for example by the lack of assured end- to- end quality of service in a fragmented market or high costs of connecting to the cloud resources from across a border or on the move.

Products themselves are also becoming increasingly connected: e.g connected elevators that call for assistance through the Internet or connected appliances (e.g. domestic sensor systems, alarms, energy monitors) that can be operated from a distance. Industry sources expect 25 billion devices to be connected to the Internet by 2015 and 50 billion by 2020 (Figure 7).

[29] European economy occasional paper 129 of February 2013.

Figure 7 – Number of Connected Devices



Source: Cisco Internet Business Solutions Group (Cisco IBSG), April 2011

All these products need to have ensured access to a network. This is much easier to achieve for a manufacturer or a retailer in the US or China where a contract with a single operator opens up immediate access to a large market (e.g. AT&T's "Digital Life" portfolio of services offered across its network). This is not the case in Europe. The effect goes beyond this being a problem of lack of scale for many telecom operators in Europe making it difficult to develop such integrated, innovative service portfolios. For example, connected cars, which are expected to come onto the market before the end of this year. While a connected car crosses borders without any difficulty, its continuous connectivity requires multiple agreements with service providers in different Member States (since no single operator covers the whole EU territory) offering different products with different quality of service. The result may be inflated costs related to data roaming across networks, lock-in since changing of supplier(s) will be complicated and costly and, in a worst case scenario, even interruption of service. The complexity and additional costs of seamless connectivity for connected cars puts European automobile manufacturers at a competitive disadvantage.

Also, organising supply chains across the EU is challenging if connectivity cannot be ensured or only at higher charges. This is the case for example for equipment with in-built SIM cards (such as GPS or other mobile devices). If suppliers want to ship such equipment to other Member States to meet demand, this will involve significant extra costs.

There are numerous other examples of how the lack of a Single Telecoms Market is an impediment to innovative services across sectors. Distribution and logistics sectors are likely to benefit from the positive effects on productivity of machine to machine (M2M) communications provided a Single Market is in place to underpin the connectivity and foster access to numbering resources. Health equipment such as a connected heart monitors requires a constant and reliable network connection wherever the user is located in Europe. And so on.

The EU's trading partners are already exploiting this potential. The ICT sector and the wider internet economy in the US, Asia and some emerging countries is booming and driving

growth and jobs across the entire economic value chain. It is estimated that between 2010 and 2016 growth in the European ICT sector will only reach 0,3% compared to 15% in the US, 26% in Asia and 57% in Africa[30]. The EU share of the digital value chain is smaller but that does not diminish the importance of telecommunications inputs for the EU economy at large.

4.2. Single Market fragmentation affecting European consumers

The consumer's place of residence still plays a significant role in the quality of the level of consumer protection received and in the choice of services available.

In many cases consumers are served on different terms or are prevented from using certain services abroad or from providers elsewhere in the EU for reasons related to the existence of national borders.

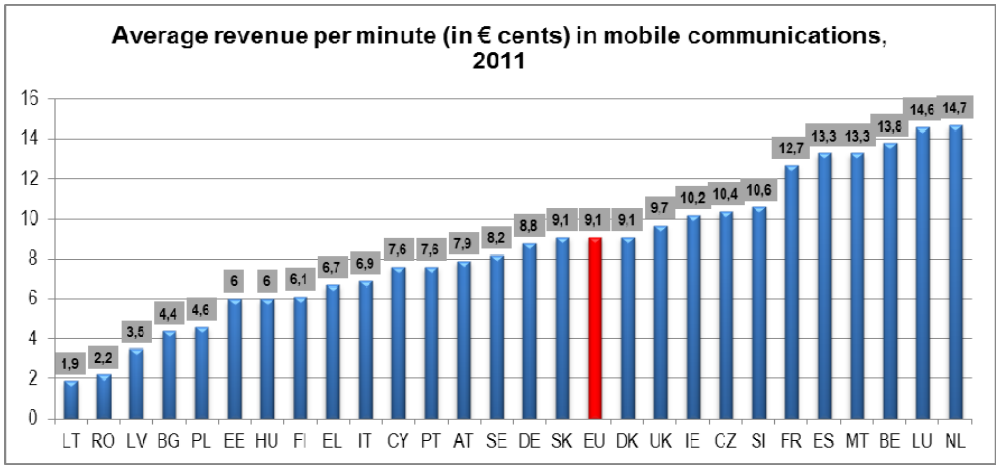
Obvious examples of an unfinished Single Telecoms Market such as roaming and differences between costs of local and international calls reduce consumer demand. Fragmentation resulting from different levels of consumer protection (for example, regarding price transparency, quality of service and switching) restricts consumer choice. Rules also tend to be too complicated for the average consumer. Complex contracts make comparisons, particularly on a cross-border basis, difficult if not impossible.

Prices for most basic communication services such as fixed line broadband subscriptions or mobile voice calls are often lower in the EU than in comparable countries. Price reductions as a result of competitive pressure have generated considerable benefits for consumers and produced overall net welfare gains.

However, from the perspective of consumers, the current patchwork of rules and national markets in the EU has also perpetuated certain tendencies. For example, there are still considerable variations in mobile voice prices among Member States, which cannot be justified by underlying national circumstances alone (e.g. different cost structures and/or purchasing power). Average revenue per minute for mobile voice stood at above €14cents in the Netherlands and Luxembourg but was well below €3 cents in Lithuania and Romania.[31] Similar discrepancies are confirmed by newly released OECD data.[32]

[30] Digiworld Yearbook, Idate (2012)
[31] Source: COCOM, published in Digital Agenda Scoreboard 2013
[32] OECD communications outlook 2013. For example, a median mobile basket 100 calls + 500 MB has gaps of 439%.

Figure 8 – High Differences between Price Levels in the EU



Source: Digital Agenda Scoreboard 2013

In particular, in a Single Telecoms Market, both roaming and international call prices[33] should gradually approach national rates. In particular for data roaming, however, the difference between domestic and roaming rates remains very high. The effective data roaming rates are lower than regulated caps and were in the region of €0.58 per MB on average at the EU level at the beginning of 2013. The domestic average price for data roaming is around €0.01 per MB[34]. The average spending on mobile data in Europe is €8.30 per month, which would allow for just over 14 MB of data roaming as opposed to the average domestic use of 250MB in the UK currently. It is clear that in particular in data roaming, such current pricing substantially reduces usage (i.e. there appears to be substantially greater price elasticity than for voice calls). There is thus far little sign of competitive downward pressure to close the gap between national and international roaming prices.

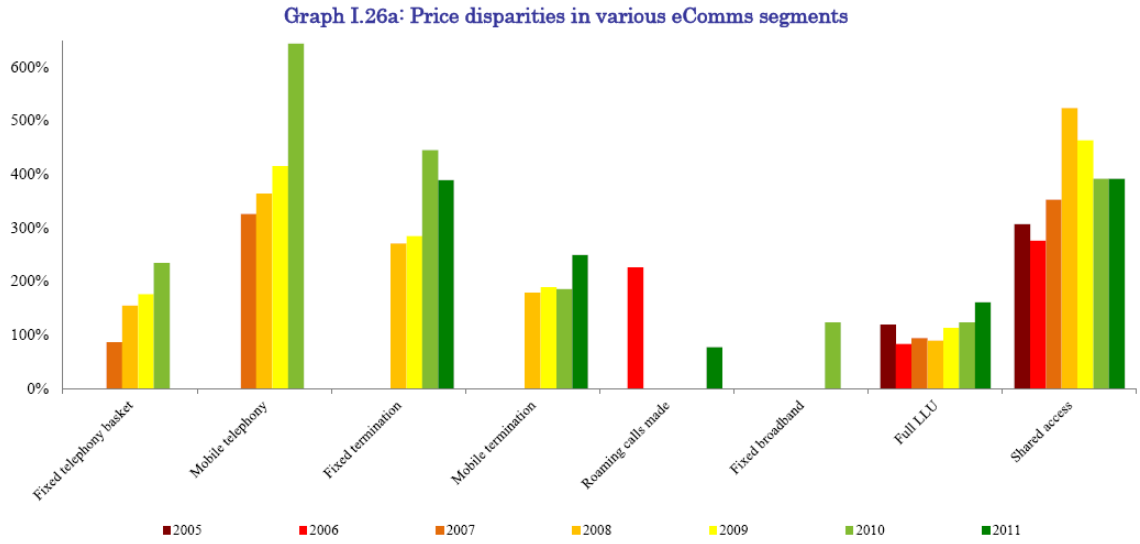
Currently international call prices are not regulated, and the base prices tend to be higher than roaming prices despite the fact that roaming when using the networks of others definitely entails higher costs for the operator, and such international communication prices are even increasing in some markets. Examples are provided in Annex VIII. The additional costs for an international call are limited and will diminish further in the current shift to Internet based services (in an 'all-IP' world) and given the increasingly widespread use of smartphones. It is possible that outstanding very high price levels in this segment are untouched by, if not even underpinned by, greater competition for certain customer segments – from VOIP or comprehensive bundled packages including international minutes to at least significant destination countries for communications traffic – because customers who do not benefit from such offers are identifiable as susceptible to pay such higher charges.

Different cost profiles also affect other segments of the market (see figure 9).

[33] Source: operator websites, list prices are selected, special offers and bundled packages are not taken into account

[34] Source: Quantum Web.

Figure 9 – Price Disparities in Various Electronic Communication Segments



Source: European Commission35

Table 3 – Examples of Prices of International Mobile Calls for Different Operators (per minute)

Country	Operator	Price of International Mobile Calls
Portugal	Vodafone	€0.465
Spain	Movistar	€0.65
Italy	TIM	€0.35
France	Orange	€0.35
Belgium	Belgacom	€0.97
UK	Vodafone	€1.19
Germany	T-mobile	€0.48
Germany	O2	€0.75
Hungary	Telenor	€0.35

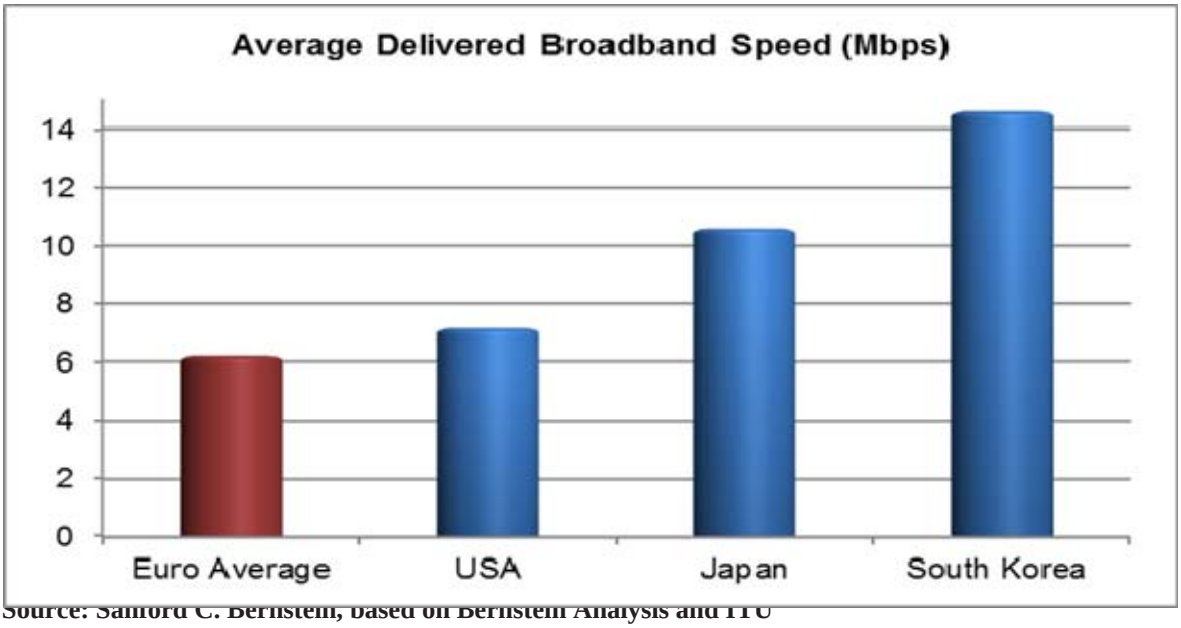
Source: Operator websites

[35] "Market functioning in network industries –electronic communications, energy and transport"European Economy. Occasional Papers. 129. February 2013. Brussels.

For wireless communications, fragmented market structures, competition within markets, and the modest size of European operators have led to limited exploitation of economies of scale. As a result, European operators have been investing less in network and services upgrades relative to other industrialised regions of the world. Whereas in Europe wireless CAPEX in 2012 exceeded its 2002 level by around 28%, in the US and Canada spending was more than 60% above 2002 levels (Figure 1). As a result, many European consumers have access to networks and services with lower characteristics particularly for wireless communications.

The EU also lags behind with respect to the actual speeds in use (Figure 10). A qualitative assessment suggests that lower EU high speed penetration is at least to some extent attributable to insufficient/lower coverage.

Figure 10 – Average Delivered Broadband Speed (Mbps)

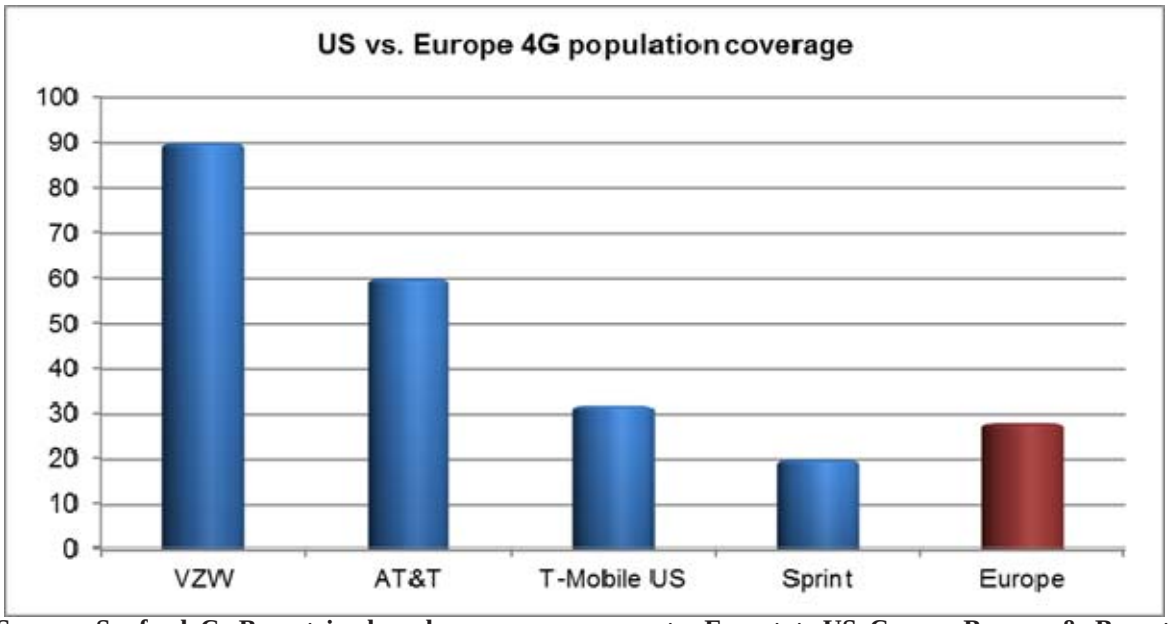


Source: Sanford C. Bernstein, based on Bernstein Analysis and ITU

The situation is similar in wireless where, to date, mainly as a result of delayed LTE roll-out, the speed of high-end mobile data connections in Europe is lower than in the US[36]. European LTE/4G networks are estimated to cover just under 30% of the European population whereas in the US the largest two operators Verizon and AT&T cover around 90% and 60% of the population with 4G, respectively (Figure 11).

[36] CISCO, Visual Networking Index, February 2013 and Akamai, State of the Internet, Q1 2013.

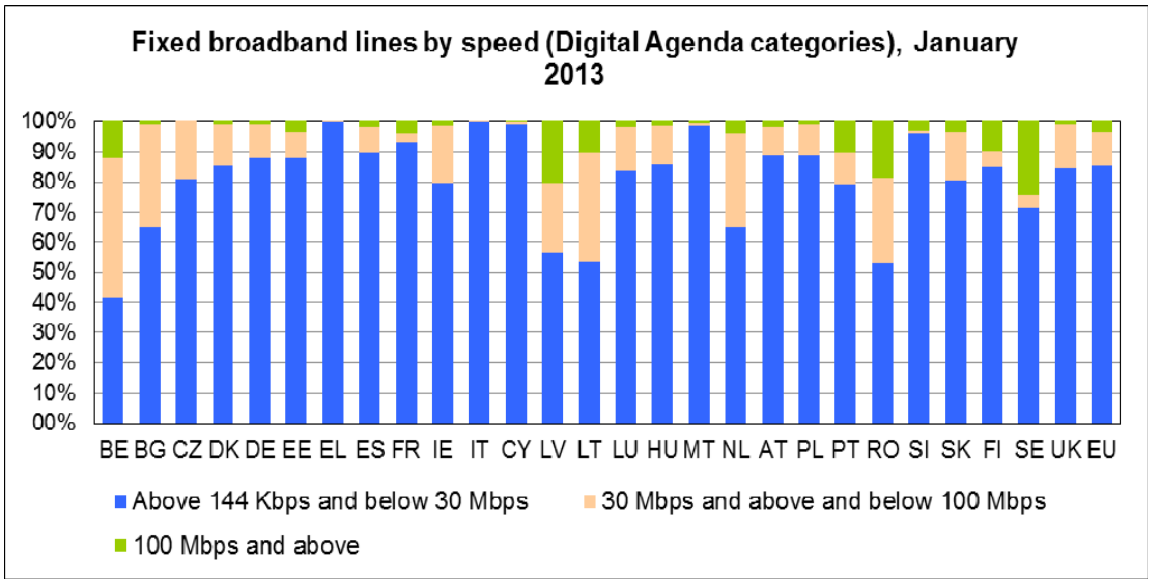
Figure 11 – US vs. Europe 4G Population Coverage



Source: Sanford C. Bernstein, based on company reports, Eurostat, US Census Bureau & Bernstein Analysis

The quality of broadband also presents a fragmented picture (Figure 12), meaning that users access different speeds in different countries. This is mainly due to fragmentation in terms of technologies across countries and to different degrees of competition.

Figure 12 –Fixed broadband lines by speed



Source: Communications Committee

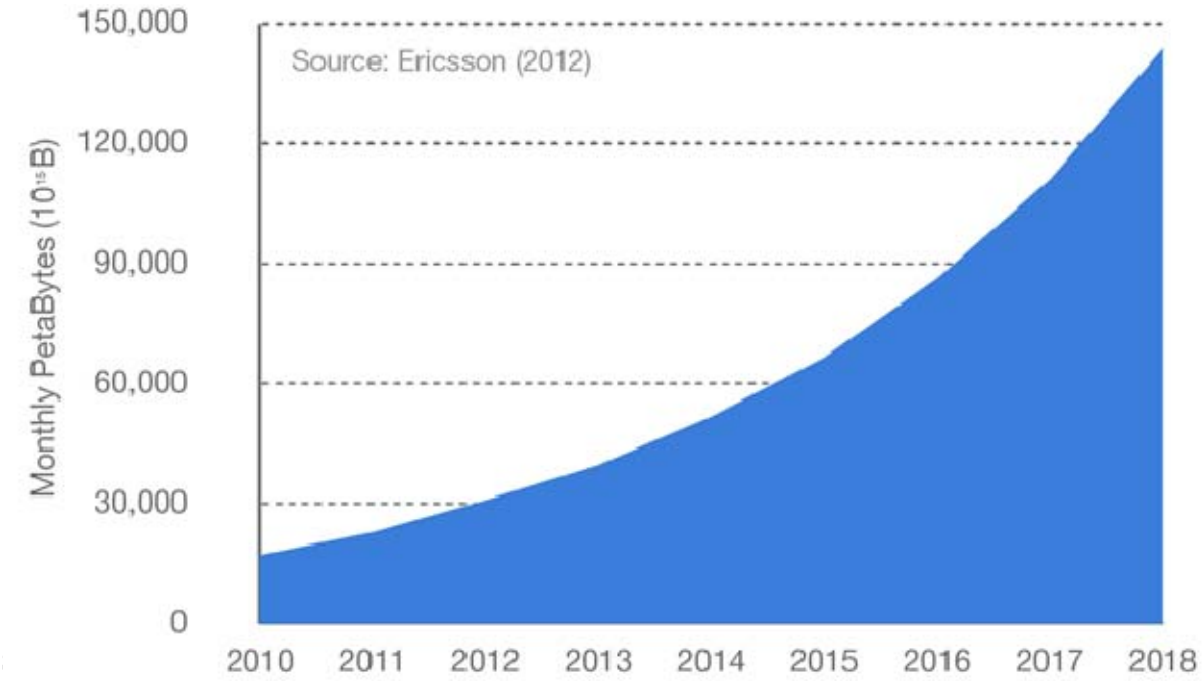
4.3. Single Market fragmentation affecting telecom operators

The telecommunications sector consists of fixed incumbent operators and their challengers often relying on wholesale access to networks for their services, cable operators that have

built their strength around content delivery but now compete head to head with the more traditional players, mobile operators and satellite platforms.

The sector has, as a whole, witnessed strong price competition over the last years and limited innovation. The previously cited analysis by DG ECFIN[37], notes that the national orientation of the current framework may have contributed to "inconsistencies in its implementation" including as regards market analysis and remedies "thereby forcing multi-country operators to duplicate costs and limiting opportunities to realise economies of scale". Similarly the lack of standardised wholesale offers fit for multinational corporations increases the operating costs for such operators. The resulting regulatory uncertainty contributes to making markets "less attractive for entry and reduces incentives to invest, especially in riskier new generation access networks". Annex IV presents the state of the electronic communications markets in more detail.

Figure 13 – Global Fixed Traffic 2010-2018



Business models in Europe are still largely based on (declining) voice revenue; operators have not yet managed to successfully monetise the growing demand for data (see Figure 17 on data traffic below). Despite competition from global content and applications providers (e.g. Skype, What'sApp) that have disrupted traditional services of telecom operators, there has so far been limited differentiation of products or few new services which in other parts of the world have helped increase revenues even as voice has become a commodity which operators increasingly offer for 'free' as part of packages. The fragmentation of the legal framework related to sector-specific consumer protection rules increases compliance costs for business wishing to offer services cross-border, which in turn is a disincentive to international expansion and cross-border provision of services.

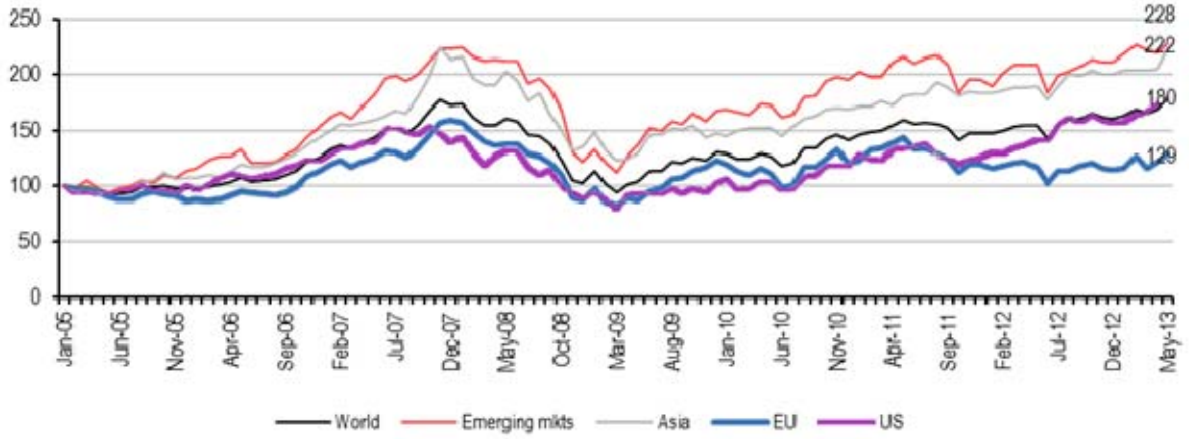
[37] "Market Functioning in Network Industries – Electronic Communications, Energy and Transport". European Economy. Occasional Papers. 129. February 2013. Brussels.

More competition and access to a larger market can be expected to spur such innovation and new business models. This can help grow the size of the overall 'pie' and enable revenues to rise as many consumers would likely be willing to pay more for more and better-quality services, particularly those tailored to their needs and 'lifestyle' choices[38].

Fixed networks

The telecoms sector and in particular the fixed segment in Europe is not performing well in comparison with other regions. The European telecoms market is characterised by stagnation in terms of revenue and investment. In global capital markets, institutional investors play a crucial role and their confidence in European markets has been eroding as European operators underperformed compared to their peers in other parts of the world (figure 14). While the level of investment is influenced by a number of factors including the health of the economy, regulation, compliance costs and legal certainty are all important factors in the assessment of possible returns on investment, particularly as investments in next generation infrastructure tend to be expensive and are typically earned back only over a longer period of time.

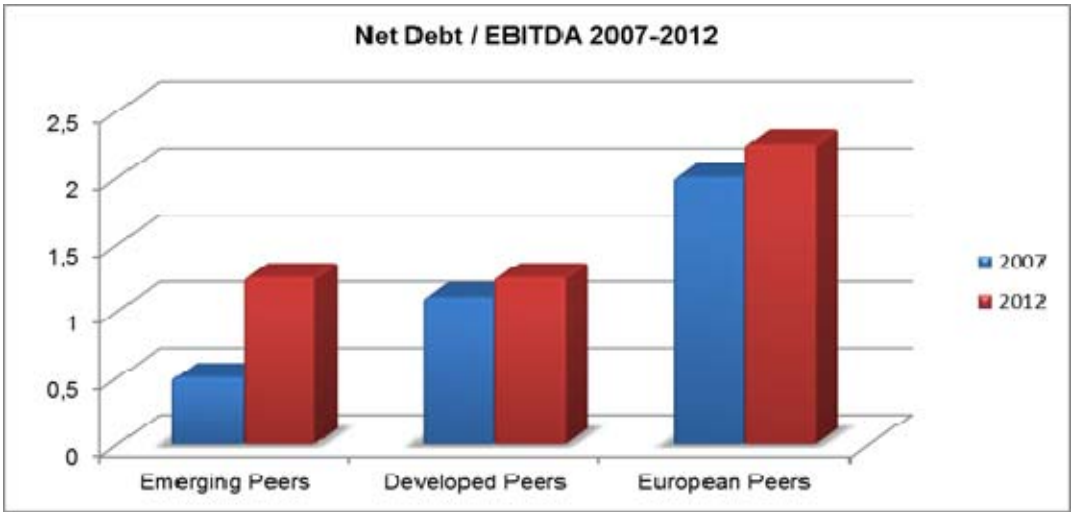
Figure 14 – Telecom Service Providers Performance (Total Return)



Source: HSBC

[38] This is confirmed by a recent Eurobarometer survey (2013).

Figure 15 – Net Debt/EBITDA



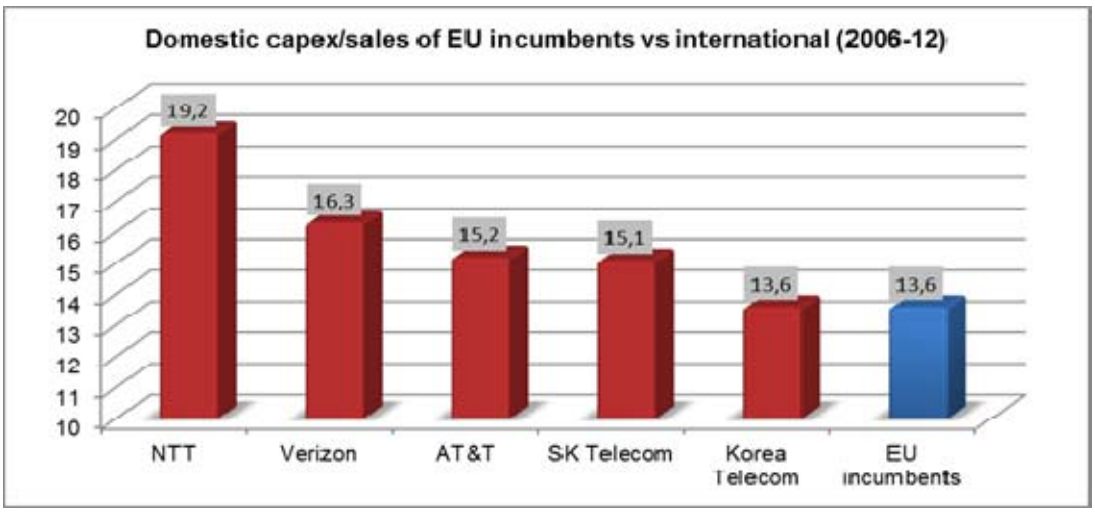
Source: HSBC

European companies are also highly indebted in comparison to their peers (Figure 15).

While fixed line investment per capita was flat both in Europe and the US for most of the past decade, spending levels in the US and Canada are currently about two to three times as high as in Europe.

According to HSBC, over the period 2006 – 2012, domestic investments of EU incumbents as measured by CAPEX to sales lagged those of larger network operators in other developed economies such as the US, Japan or Korea (figure 16).

Figure 16 - Domestic Capex/Sales of EU Incumbents vs International (2006-12)



Source: HSBC

Cable

Cable is currently the strongest performer in the EU telecom sector. Despite a few larger players and notably one operator with presence in some ten Member States, the European cable industry is very fragmented with more than 1500 operators serving the market. Scale matters in this industry as bigger players have more negotiating power in acquiring content and end-user equipment (routers, set-top boxes). Cable networks cover mainly densely

populated areas and are not generally extending their network footprint. However, they have been able to successfully build on their TV customer base and upgrade their Internet services to very high speed. Much of the original legacy infrastructure investment has been written off, and the additional cost of upgrading to ultra-high speeds is much more limited for cable (Docsis 3 technology) than it is for traditional fixed networks.

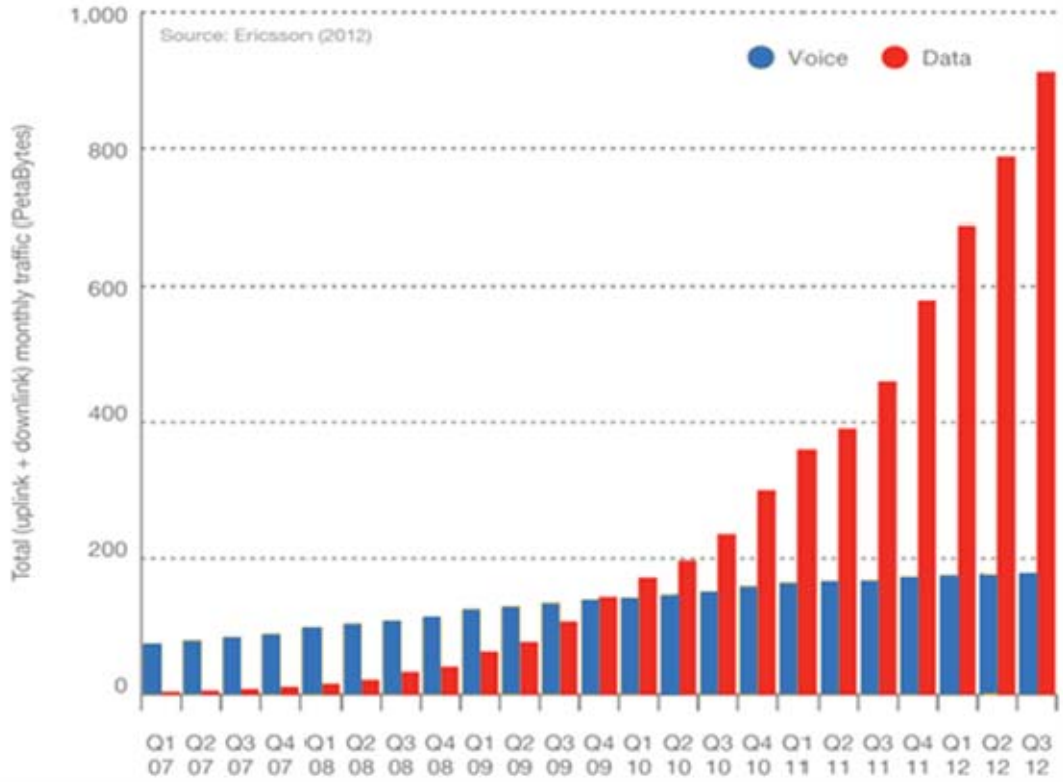
Despite their relative strength, and lighter access regulation, cable operators are generally running separate national operations rather than offering integrated services from a single headquarters base in Europe. This illustrates the fragmentation of the European market and the difficulty for even a large single company to deal with the variety of rules, conditions and national specificities from one place in Europe.

Mobile

Mobile data traffic is increased very much in EU as in the rest of the world but average data consumption per user is very low compared to US. The fragmentation in Europe with twenty-eight spectrum authorities, twenty-eight sets of access rules and frequency assignment conditions is a barrier to integrated cross-border provision of mobile services. Different sets of consumer protection rules equally stand in the way of the efficiencies of a larger market. The difficulty for consumers from outside a Member State to access services, due to excessive roaming tariffs particularly in data, creates disincentives for operators to offer services outside their home border and at times might even provide incentives to reap benefits from higher tariffs in less competitive markets. Business models have not yet fully caught up with the trend of massively increasing mobile data traffic (see figure 17) and given competitive pressure, revenues have steadily declined.

Mobile data traffic has exploded over the last years while mobile voice has increased very moderately.

Figure 17 – Global Total Traffic in Mobile Networks, 2007-2012



Source: Ericsson Mobility Report Nov 2012

Satellite

Satellite holds the smallest segment of the telecom market. While satellite services cover large parts of Europe, they have generally not been able to offer cross-EU services without a presence in the Member State. The current general authorisation requirements are one of the reasons. Even where there is no need for any uplink equipment in a Member State, satellite operators are usually required to notify and to fulfill the relevant associated obligations. National conditions may sometimes prove burdensome and there is a great variety of rules and levels of applicable fees which fragment the Single Market.

4.4 Single Market fragmentation affecting telecoms equipment and device manufacturers

The weak performance of the European telecom industry affect the wider digital eco-system including content and application providers which depend on connectivity and notably Europe's equipment manufacturers (see figure 18).

Figure 18 – Telecom Equipment Providers' Performance (Total Returns)

Source: HSBC

The global success of GSM was a time of leadership for European equipment manufacturers. Since then their overall performance has weakened. They face strong competition from abroad while demand in their domestic market is stagnating. Therefore, for Europe's equipment manufacturers to be successful, Europe needs a growing and vibrant EU telecom market. If the current stagnation continues their position within the EU economy will come under threat and further job losses cannot be excluded.

European equipment manufacturers are looking for the scale of a larger market. At present they are not able to benefit from efficiencies when rolling out new high speed networks such as LTE. The lack of a strong home market with harmonised rules drives up costs for device manufacturers given that they need to adapt their devices to different regulatory conditions or spectrum bands. The EU manufacturing sector can significantly profit from two major innovations:

1- the integration of the core and service delivery network using the internet protocol phasing out outdated technologies;

2- the deployment of wireless broadband networks through the use of small cell technology.

5 JUSTIFICATION FOR EU ACTION

5.1. Single Market Perspective and Subsidiarity

The current patchwork of national rules, and their divergent implementation, creates barriers to the provision of electronic communication services on a cross-border basis and the operation of networks across the EU, thereby impinging on the freedom to provide services and the freedom of establishment, which are guaranteed under EU law. These obstacles therefore have a direct effect on the effective functioning of the Single Market[39]. Member States neither have the competence, the ability nor the incentive to change the current regulatory landscape to achieve an effective Telecoms Single Market.

Measures at EU level are needed to tackle the underlying cause of the problem by enabling operators to benefit from harmonised procedures and access inputs in order to provide services on a pan-European basis. Measures at EU level would also lead to a reduction of administrative and regulatory burden, more harmonised consumer protection rules at a high level and a wider choice for users.

The principle of subsidiarity is respected as EU intervention will be limited to cases that enable operators who so wish to carry out their activities on a pan-EU dimension, and offer consumers who so wish wider choice of services provided on a cross-border basis on the basis of a high level of protection.

At the same time, the EU measures foreseen will not limit the national margin of policy assessment more than is necessary to achieve Single Market goals. For example, enhanced Commission powers to review ex ante remedies under Article 7a of the Framework Directive can be limited to those addressed to telecoms operators active in more than one Member State, whose need for convergent regulation as a basis for integrated commercial and technical decision-making is greatest. It also preserves Member State freedom in determining whether European virtual access products would be suitable to resolve local competitive problems.

In the field of spectrum, revenues levied from spectrum assignments will remain with the Member State concerned. Moreover, while it may be necessary to harmonise certain aspects of assignment procedures, such as the timing and duration of licences, in order to gradually establish a European licensing cycle, other assignment conditions may be suitably addressed through a framework of EU decision-making criteria to be applied by national spectrum authorities, subject to an EU review period in which the spectrum authorities of the Member States as a whole retain significant influence through comitology.

As regards authorization of ECS providers, virtually all supervision and enforcement powers can remain with host country authorities, who may be better placed for fact-finding, etc., with only the power of suspension or withdrawal of authorization retained for all countries of operation by the authorities of the home Member State. While European electronic communications providers will be able to operate across the Union due to a single notification to their home Members State, regulatory obligations inherently linked to the place where a

[39] See also Cases C 434/02 Arnold André [2004] ECR I 0000, paragraph 30, and Case C 210/03 Swedish Match [2004] ECR I 0000, paragraph 29; see also, to that effect, Germany v Parliament and Council, paragraph 95, and Case C 491/01 British American Tobacco (Investments) and Imperial Tobacco [2002] ECR I 11453, paragraph 60.

network is located or a service is provided remain to be decided by the national regulator of that Member State, subject to the EU-level coordination mechanisms in place.

The Commission would in the various fields take utmost account of the views of national authorities assembled in BEREC and the Radio Spectrum Policy Group (RSPG). Certain sensitivities, e.g. from local authorities, can also be anticipated regarding provisions to lighten administrative burdens on deployment of dense networks of low-power wireless access points, as have also been expressed regarding the provisions on permits in the draft Regulation on reducing the cost of broadband deployment. These can be addressed through the setting of very prudent parameters such as on the power of emissions, well below general EU guidance, and by leaving scope for additional national or regional criteria of general character, which thus do not need to be applied through individual permitting procedures for each deployment.

The imposition of European virtual access products remains with the national regulatory authority of the Member State where the network is located, following a market analysis based on the existing framework; harmonisation of virtual access products uses the same mechanism as for physical wholesale access products foreseen already under the existing framework.

The full harmonisation which is envisaged in respect of sector-specific end-user protection rules is in keeping with a broader tendency in EU consumer protection in recent years; it is pitched at a high level of protection in order to respect as much as possible the choices of Member States which have up to now chosen to go beyond the minimum or facultative provisions of the Universal Service Directive; and the overall gains in both end-user protection and alignment of business conditions for operators justify such a harmonising step.

5.2. Proportionality

EU action will be limited to what is necessary to achieve the objectives identified. Measures will focus on tackling concrete bottlenecks to the Single Market and the intervention will make the least necessary amendments to the existing regulatory framework.

This Impact Assessment also responds to the question whether it is necessary, and thus whether it would be consistent with the subsidiarity and proportionality principles, to envisage far-reaching changes to governance or shifting competences to the European level e.g. through a central EU regulator.

The concrete solutions will enable the relevant stakeholders to exploit synergies of a large Single Market and reduce inefficiencies in their operations and investments. The burden that the intervention would be placing on Member States and stakeholders, in any event, is more than outweighed by the significant benefits in terms of permanent economic efficiency gains and consumer welfare deriving from the realisation of the Single Market for telecommunications as described in Chapter 8.

5.3 Legal Basis

Art. 114 TFEU[40] is the legal basis for measures adopted in accordance with the ordinary legislative procedure with the aim of establishing or ensuring the functioning of the internal

[40] See case C-66/04 paragraph 44 and case C-217/04 paragraph 42.

market as foreseen in Art. 26 TFEU. The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of the Treaties.

As confirmed by the case law of the European Courts, Art. 114 confers on the EU legislature discretion, depending on the general context and the specific circumstances of the matter to be harmonised, as regards the harmonisation technique most appropriate for achieving the desired result, in particular in fields which are characterised by complex technical features[41].

6. OBJECTIVES

6.1 General Objective

The general objective is to **complete the Single Market for electronic communication services**[42] to ensure that:

- **citizens and businesses** have the right to access electronic communications services irrespective of from where they are provided in the Union, without being hampered by cross-border restrictions and unjustified additional costs;
- **providers of electronic communications services and networks** have the right to operate their networks and provide services irrespective of where the company is established or its customers are situated in the Union.

The initiative aims at unleashing the growth potential that can be generated through a Single Market for telecommunications to the benefit of the entire EU economy. To this effect, it aims to inject greater dynamism into the telecommunications sector by facilitating cross-border expansion, reducing administrative burdens and ensuring greater legal certainty, promoting competition and helping to spur innovation in the form of new innovative products and services and the emergence of new business models. On the demand side, providing for a high harmonized level of consumer protection and removal of obstacles such as excessive roaming tariffs and charges for international calls that cannot be objectively justified, and putting an end to blocking and throttling of particular services should contribute to generating greater consumer confidence and stimulating demand.

The combined effect of measures to achieve a Single Market should be to contribute to transforming the sector from one in contraction to growth, increasing competition, promoting innovative services, consumer choice and quality of service. While certain component elements may have a short-term effect on telecom operators' revenues, these provisions are part of a wider aim to shift the sector from declining business models which are excessively focused on preserving rents within national markets, to a growth model. Greater returns on investments stimulating the roll-out of next generation networks may be an indirect consequence of the initiative. Availability of high speed networks and new services across the EU should potentially promote substantive positive spill-over effects on the European economy as a whole. This could set in train a positive virtual cycle whereby growth in demand supports fresh network investments which in turn spur demand for new services.

The general objective can be achieved by means of a number of specific objectives, defined below.

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[41] See Case C-66/04 paragraph 45 and Case C-217/04 paragraph 43

[42] The general objective is derived from the Treaty mandate and from the legal base of the existing regulatory framework for electronic communications.

Table 4 – Problem Drivers and Objectives

Problem		General Objective	
Regulatory fragmentation in Europe's electronic communication markets which reduces growth, competition, investments, innovation and consumer choice		Create a Single Market for electronic communication services, with the aim of fostering growth, competition, investment, innovation, better services and greater choice for consumers	
Policy Areas (PA)		**Specific Objectives**	
PA1	National authorisation regimes and inconsistency in regulation for cross-border services	SO1	Enabling unrestricted EU-wide provision of service by removing obstacles in the authorization regime and as regards rules applicable to service provision
PA2	Lack of coordination in spectrum assignment resulting in major divergencies, making pan-European strategies for mobile operators virtually impossible to implement	SO2	Ensuring greater consistency in spectrum assignment and deployment conditions in order to allow wireless broadband operators to access spectrum across the EU on the basis of predictable rules and coordinated conditions
PA3	Lack of pan-European virtual network access and inputs with consistent service interoperability levels is an obstacle to pan-European service provision, particularly in the business-to-business market	SO3	Ensure consistent European wholesale inputs to enable electronic communication service providers to offer their services across the Single Market
PA4	Fragmentation of consumer rights and lack of a European consumer space deters cross-border consumption of services and restricts choice	SO4	Enable consumers to freely enjoy electronic communication services seamlessly across the Union, and establish a common high level of protection to the benefit of both consumers and cross-border telecoms undertakings, providing the necessary legal certainty to develop new services and business models

6.2 Specific Objectives

The specific objectives are interlinked and should enable the provision and consumption of telecommunications services across national borders throughout the EU.

6.2.1 Specific Objective 1

Enabling unrestricted EU-wide provision of service by removing obstacles in the authorisation regime and as regards rules applicable to service provision.

The objective is to enable operators to provide electronic communications networks and services across the EU without being restricted by the need to obtain separate national authorisations in each Member State and, to the extent possible, without being hampered by fragmented sector specific rules as regards service provision. The objective is also to foster consistency of network-related remedies with the functioning of the Single Market. Achieving the objective would therefore streamline applicable rules and significantly reduce the costs of regulatory fragmentation contributing to the achievement of the general objective

6.2.2 Specific Objective 2

Ensuring greater consistency in spectrum assignment and deployment conditions in order to allow wireless broadband operators to access spectrum across the EU on the basis of predictable rules and coordinated conditions.

The objective is to ensure closer coordination of spectrum assignment for mobile/wireless services, in particular to align timing and specific authorisation conditions, so operators can more easily organise pan-European activities within a predictable legal framework, while also promoting convergence as regards the substantive conditions under which spectrum assignments are granted and wireless broadband network deployments can take place. Revenue generated from spectrum auctions/sales should remain with Member States.

6.2.3 Specific Objective 3

Ensure consistent European wholesale inputs to enable electronic communication service providers to offer their services across the Single Market.

The objective is to ensure that providers have access to consistent inputs allowing them to provide their services across borders. In particular providers should be able to access **common EU-wide (virtual) access products** for fixed networks, meeting the needs currently met respectively by varying national bitstream access products, and by varying national virtual access products emulating the functionalities of physical unbundling of passive infrastructures, which SMP operators are required to provide. This would also relate to the provision between electronic communications undertakings of guaranteed quality IP-based interconnection and Ethernet leased line products according to common EU-wide parameters. This would resolve the problem of a high degree of variation of virtual inputs between Member States, which frustrates the seamless provision of pan-European services, particularly but not exclusively in the business-to-business market.

6.2.4 Specific Objective 4

Enable consumers to freely enjoy electronic communication services seamlessly across the Union, and establish a common high level of protection to the benefit of both consumers and cross-border telecoms undertakings, providing the necessary legal certainty to develop new services and business models.

The objective is to enable consumers to purchase and enjoy electronic communication services wherever they wish in the Union without restrictions of national borders with the quality required for the service and according to their preference and with a high level of consumer protection. Moreover, consumers should enjoy these services seamlessly across national borders without unjustified cost depending on their actual location in the Union (international roaming) or depending on the condition that the communication source and destination are in different Members States (international calls or messages). The freedom to consume services, wherever located, would bring greater competition and choice for the average telecoms user, citizen or business; while such a harmonisation of varying sector-specific consumer-protection rules would also bring benefits in terms of business and marketing planning for multi-country operators.

7. POLICY OPTIONS

This chapter presents the baseline scenario which is the starting point in relation to the issues that the initiative is aiming to improve and the three detailed policy options to create a Single Telecoms Market for electronic communications, with the aim of fostering growth, competition, investment, innovation, inclusion, better services and greater choice for consumers.

The options all aim to address each one of the policy objectives defined in the previous chapter. Only those options which deal with the totality of the problems identified are considered.

The individual issues identified are related to the elements necessary to provide electronic communications services and networks on a pan-EU basis irrespective of where the provider is established and whereby users have the right to access these services without being hampered by cross-border restrictions or unjustified additional costs. As each problem area is linked to a specific element of the process, tackling these problems together will result in a set of interlinked, coherent and mutually reinforcing actions. It is therefore essential that any solution proposed to respond to the identified issues covers all problem areas. Individually addressing only selected identified issues would not be sufficient to establish the preconditions of a Single Market.

The three options are described in full in this chapter and then assessed in Chapter 8. Detailed stakeholder views in relation to the full set of concrete options proposed are not available however this chapter should be read together with Annex I which present the positions of key stakeholders on specific elements.

The three options only include measures related to electronic communications services and networks and do not address certain elements of the broader digital Single Market such as content or e-commerce or online services. Furthermore the options do not address certain issues which could contribute to establishing a genuine Single Telecoms Market but which are primarily in the competence of Member States or international organisations, notably numbering resources. The management of national numbering plans is ensured by the national regulatory authorities, subject to EU rules on granting the rights of use and rules concerning

specific harmonised numbers such as the single European number for emergency services and harmonised numbers for harmonised services of social value. Moreover, in order to ensure global functioning the numbering resources, decisions relating to numbering, naming and addressing are taken at international organisations and forums, in particular the International Telecommunications Union (ITU) and the European Conference of Postal and Telecommunications Administrations (CEPT) where the EU Member States are members.

Any measures relating to creation of a European numbering space would in practice require an allocation of a new European international access code by the ITU. The allocation would have to be preceded by a concerted effort on the part of the Member States to acquire such a code, given that the Union is not a member of the ITU. The public consultation on possible future EU harmonisation of numbering resources, carried out by the Commission in 2011, did not demonstrate much support or demand for such harmonisation. The process of applying for a new EU international access code thus may be a lengthy one, taking up to several years, and with an uncertain outcome. It is therefore considered appropriate at this stage not to proceed with proposals related to European numbering space in the context of this initiative.

7.1 Baseline Scenario

The current situation, i.e. a continued application of the regulatory framework for electronic communications as it stands at the moment, constitutes the baseline scenario. Chapter 3 provides a broad overview of the regulatory framework including an assessment of recently reviewed elements (such as the 2012 review of the Roaming Regulation) and their impact on the likely evolution of the problems identified.

7.2 Option 1

Gradual regulatory harmonisation fostering the integration of the Single Market.

Under this option, all the identified problem areas are addressed, over time, with the tools provided in the regulatory framework for electronic communications and using the possibilities offered under the Treaty (including issuing of non-binding recommendations under Article TFEU 292). The regulatory framework provides in Article 19 of the Framework Directive for the possibility in certain areas to issue specific recommendations to harmonise the application of the provisions across the EU, of which the national regulatory authorities must take utmost account, as well as to adopt, under certain conditions, decisions to address inconsistent implementation of general regulatory approaches by the national regulatory authorities on ex ante regulation of electronic communications markets throughout the Union. Moreover, the framework foresees the review of its component parts at various intervals e.g. a review of the scope of Universal Service in 2014 or the review of the Roaming Regulation in 2016.

Such gradual harmonisation would be complemented by a reinforcement of coordination and cooperation measures such as exchanges of best practices or voluntary commitments. As regards governance, BEREC and its guidance would together with National Regulatory Authorities play a role in fostering more regulatory consistency in the implementation of the regulatory framework.

In particular, the specific objectives would be addressed in the following manner:

The objective of enabling unrestricted EU-wide provision of service by removing obstacles in the authorisation regime and as regards rules applicable to service provision (SO1) would be tackled by recommending, in cooperation with BEREC, the harmonisation of the procedures for authorising operators in Member States.

The availability of consistent inputs in the area of spectrum **(**SO2**)** could be addressed through the implementation of the existing Radio Spectrum Policy Programme (RSPP)[43], Radio Spectrum Decision and through the issuing of guidance and a continued important supporting policy convergence role for the Radio Spectrum Policy Group (RSPG, a high-level group advising the Commission). In particular this would imply making full use of the mandate with regard to coordination of spectrum assignment conditions under the RSPP (Art.4.8) to "facilitate the identification and sharing of best practices on authorisation conditions and procedures". The Commission would promote informal discussions, such as workshops, to guide Member States to implement consistent assignment approaches.

Common EU virtual access products (SO3**)** would be met by recommending harmonisation of the provision of fixed inputs through specific Recommendations on a case by case basis under the Article 7 procedure and potentially by a legislative amendment of the relevant Annex to the Access Directive.

This option would address SO4 (enabling consumers to freely enjoy electronic communication services seamlessly across the Union) by means of the review of Universal Service provisions (and of the full Directive) scheduled for 2014. The review would fully harmonise sector specific requirements with regard to consumer protection in the EU and in particular set common rules with regard to end user rights, transparency, contract information and termination, switching, as well as quality of service.

The issuing of Recommendations would provide Member States and NRAs with more guidance on how to apply the regulatory framework further fostering harmonisation. For example, a Recommendation on net neutrality would be issued.

Moreover, the need to create the conditions whereby end-users have the right to access electronic communications services without being hampered by cross-border restrictions or unjustified additional costs would be addressed by a review of the functioning of the Roaming Regulation by mid-2016. As provided in Art.19 of the Regulation, if structural measures have not been sufficient to promote competition in the internal market for roaming services for the benefit of all European consumers or if the differences between roaming tariffs and national tariffs have not approached zero, the Commission would make appropriate proposals to the European Parliament and the Council to address this situation and thus achieve an internal market for mobile communication services, ultimately with there being no difference between national and roaming tariffs.

7.3 Option 2

A single legislative instrument complementing the regulatory framework with a view to completing a Single Market for electronic communications supported by enhanced EU coordination.

This option would consist of a single legislative instrument to establish the regulatory principles and detailed rules necessary to complete a Single Market for electronic communications by tackling the entire set of the four main bottlenecks hindering the achievement of the Single Market. Such a measure would build on the principles of the existing regulatory framework, amending it only where necessary, in order to create the conditions for new cross-border electronic communications markets to develop at EU level. In particular, the competition-law based principles of regulatory intervention to address durable bottlenecks would remain intact. In order to ensure consistent application of the rules in all

[43] Decision No 243/2012/EU.

Member States and timely implementation, the most appropriate legal instrument would be a Regulation. Depending on the progress with the legislative process, the Regulation could in principle apply from 1 July 2014 save for the fully harmonised provisions with regard to rights of end users and facilitating change of provider which could enter into force by 2016 given that Member States would need some time to repeal inconsistent national rules. The Regulation would be binding in its entirety and directly applicable in all Member States**.**

The specific elements of this option are interlinked and should enable the provision and consumption of electronic communications services across national borders throughout the EU. Once operators have obtained EU wide authorisation through the single EU notification they need the inputs necessary to provide these services. These inputs include common fixed wholesale products and radio spectrum. As fixed and mobile networks are increasingly converging both inputs have to be available. Finally, harmonisation of consumer rules are needed both for efficient cross-border service provision, but more importantly to give consumers confidence in actually using services wherever they are in the EU.

The details of specific elements of the legal instrument are as follows:

- **A single EU authorisation (SO1)** for electronic communications operators providing services in more than one Member State directly or via subsidiaries, ensuring their right to provide services across the EU subject to the general authorisation in the home Member State, which will be identified according to their main establishment. This entails: a) a single notification system in the home Member State for European electronic communications providers, some *de minimis* exemptions from administrative charges and contributions to the universal service in the host Member States for cross-border new entrants and/or SMEs with revenues below certain thresholds and suspension or withdrawal of the single EU authorization by the home NRA; b) full harmonisation of consumer protection conditions provided for in this Regulation, such as rules on transparency, contracts, non-discrimination of consumers, quality of service and traffic management; and c) greater Commission power to review the consistency of SMP remedies imposed on those European operators.

  During the public consultations, incumbent operators have expressed interest in the single EU authorisation whilst new entrants/access seekers fear this may lead to consolidation which they fear may lead to reducing competition. Both were, however, concerned by the possible complexity of a division of competences between home and host NRAs, which has been reflected in a significant simplification relative to earlier projections. Investors support the introduction of a single EU authorisation. In Council some Member States expressed outright support for this measure whilst others cautioned against it. Several Member States insisted that any such measure should be designed in such a way as to avoid 'forum shopping', i.e. a temptation for operators to move their place of establishment to jurisdictions with the 'lightest' regulatory regime. However, it is not expected that telecom companies will move their headquarters for the sake of obtaining simpler authorization mechanisms, particularly as they are already operating on the basis of existing national authorisations, end-user protection rules would in any event be common throughout the Union, and ex ante regulation based on market analysis and spectrum assignment would both continue to be applied, within a strengthened European framework, by the national authorities of the various Member States where networks are (intended to be) located. Moreover, the identification of the home Member State for the purpose of the electronic communications regulation does not impact on the need to comply with other national requirements that may be applicable to operators by virtue of

general national legislation in compliance with EU law (such as tax or labour law), and these are much stronger drivers of establishment decisions.

- To overcome fragmentation caused by the inconsistent assignment timelines and conditions with regard to current frequencies, a **consistent and coordinated approach to spectrum assignment would be proposed (SO2).** In particular, multi-territorial investment planning by mobile operators (or consortia of mobile operators) should be enabled through the availability of **licenses to unassigned bands across different Member States** within a pre-defined time window **with more consistent license conditions** (license duration could be harmonised; other key conditions such as block sizes, fees, transferability and sharing, network sharing, territorial coverage would be subject to specific Union assessment criteria). This approach would be extended over time to bands which are currently assigned. These provisions would have very gradual effects, over many years, largely dictated by the speed with which the Commission, acting with the Member States under the Radio Spectrum Decision, identifies additional harmonised spectrum for wireless broadband, and as current assignments of harmonised bands come to the end of their term. Giving the Commission and the other Member States the possibility to comment on national draft measures and in cases of incompatibility with Union law to require their withdrawal through comitology, within strictly defined deadlines not exceeding 2 months and 8 months respectively, would meet the objective of achieving consistency across the Single Market, while recognising specific national circumstances that are best assessed by the national spectrum authorities. Finally, rights at EU level concerning the freedom to use Wi-Fi networks and deployment of low-power small cells would be defined, in order to create a common EU framework for these vital vectors for efficient and ubiquitous provision of wireless broadband at an early stage of their development.

  Whilst the specifics of the proposed measures were not yet public when stakeholders were consulted, all industry segments called for ambitious measures to reinforce EU coordination on spectrum. All inputs received by telecom operator stress the importance of the EU action and support the proposed measures.

  In the Council debate conducted on 6 June 2013, whilst there was generally support for the need for closer coordination of national spectrum approaches, several Member States strongly opposed any measures that would lead to centralising spectrum competencies or setting up an EU (spectrum) regulator, which concern is reflected in the details of this option. In the European Parliament, considerable support has been expressed for a more coordinated European spectrum policy.

- **The provision of harmonised inputs for fixed networks (SO3)** would involve the **availability and** definition of common technical specifications for interoperable European virtual broadband access products or pan-European inputs such as **virtual unbundling** or **bitstream access** and enhanced interface leased lines (in particular Ethernet leased lines for terminating segments) allowing operators to offer pan-European services despite the fragmentation of networks and the existence of localized dominant positions. In addition, it is proposed to harmonise **assured service quality (ASQ) connectivity products** for main classes of services (voice, audio/video and data) based on common technical specifications for the quality of service parameters so as to ensure end-to-end network and service interoperability in all-IP environment. A requirement to provide European virtual broadband access products would be part of the access remedies imposed on SMP network operators by the NRAs. IP Interconnection products would be negotiated between

different operators on reasonable terms. For the first three types of access products mentioned, variations of these are already often imposed by NRAs on SMP operators in many Member States, but there is no consistency in the way that the products are designed. With a harmonized product, access seekers that have established a process for accessing a network in one country will be able to apply the same model for entering a new market where the same, harmonized product is available. The novelty in this case is thus harmonization to a high, best practice standard. On the other hand, in the case of ASQ connectivity product, this is a novel product that has not yet been imposed as proposed at the national level.

Incumbents favour virtual access products only if they would not lead to a multiplication of regulated access remedies, and are critical of some of the features that would enhance quality. Alternatives favour such products with high quality guarantees, but are wary of VULA being seen as a general alternative to physical unbundling. Business customers welcome choice and the possibility of having an integrated provider across sites with high standards of provision. The proposal remains committed to a high quality standard with full specification, but has recognised that some demanding features (multicast) may be subject to demand and to market conditions. That high quality for the Level 2 product should in particular justify it being taken into consideration along with physical and wave unbundling (where one or the other is possible) but the proposal does not seek to dictate the NRAs' proportionality assessment in this respect. The proposal is also designed to ensure that such European access products replace rather than add to existing remedies, which could lead to over-regulation relative to local market needs. These measures have not given rise to comments neither in Council nor in the EP. Some bilateral contacts with stakeholders have raised the concern that assured service quality (ASQ) products would further disempower telecoms network operators in the face of powerful online ("over-the-top") players, but this is based on a misunderstanding of the function of such commercially negotiated products as a means of exchanging and distributing high-quality traffic by telecoms providers on the basis of their commercial contracts with clients, which in fact represents a commercial opportunity.

- **A single e-communications space for end-users with a common high level of consumer protection (SO4)** can be attained by ensuring: 1) non-discrimination and elimination of unjustified price differentials based on the place of residence of Union citizens; 2) full harmonisation of rules concerning contracts, transparency, quality of service and traffic management (net neutrality); and 3) common principles to make the switching process easier.

  More detail as to the contents of the envisaged measures to achieve specific objective 4 is set out below.

  1. Elimination of Price Differentials resulting from the inadequate functioning of the single market

  The presence of high price differentials for consumers between charges for domestic calls and those for international calls within the EU (including when consumers are "roaming" when abroad) is a visible consequence of an unfinished Single Market. Fragmentation creates (high) externality costs for operators when they make use of operators' networks in other Member States (so-called 'off-net' use). Furthermore, low demand inelasticity (given that "international" transactions are often only a small

share of overall communication services consumed) can explain why market forces in themselves are unlikely to lead to the disappearance of substantive price differentials.

The establishment of a Single Telecoms Market and emergence of companies that will be able to offer services all over Europe should lead naturally to a situation whereby customers of a pan-European company can roam within that network without incurring additional costs. The concept that is used to describe such situation is that of RLAH. Under RLAH customers pay the same charges for traffic while roaming on a given network outside their home country as they would pay when consuming such services on their home network (so-called 'on-net' use).

The Roaming III Regulation already defines the objective of the elimination of different charges between roaming and national tariffs. This is one the benchmarks against which the impact of the Regulation should be evaluated by mid-2016. One of the innovations of the Roaming III Regulation concerns the legal requirement on operators to allow for the separate sale of roaming services by alternative providers which is expected to inject greater competition into the market and drive prices of international roaming down.

The objective of achieving a genuine Single Telecoms Market, which was not under consideration when the Roaming III Regulation was prepared and negotiated, has added fresh impetus to the achievement of the above objective.

Three sub-options can be considered in order to spur the availability of RLAH:

- Sub-option a: establishing the Single Telecoms Market and relying on a combination of the Roaming III Regulation and market forces;
- sub-option b: consistent with the Roaming III Regulation, providing additional regulatory incentives to industry to offer on a voluntary basis RLAH to customers, combined with market forces;
- sub-option c: introducing new binding measures that would impose the end of roaming charges by an early date

Sub-option a) would imply no changes to the Roaming III Regulation. However, it will likely take considerable time before pan-European operators would emerge who would offer RLAH to their customers. In the interim period, most competitive pressure would come from alternative roaming providers.

Sub-option c) would imply a significant departure from roaming III by imposing RLAH as a legally binding default measure. In economic terms, this solution would bring forward the effects of the Single Telecoms Market without waiting for the industry structure to evolve. This would not only have a strong and almost immediate negative impact on operators' revenue but could even force operators to provide services at a loss with the most likely consequence that some operators would no longer offer international roaming to their customers or only on very strict terms. There are also some fears that it could result in domestic price increases, although this seems unlikely given the very different competitive dynamics and price elasticity in domestic mobile markets.

Sub-option b avoids the disadvantages of the other sub-options. It could take the following form:

1. Charges for incoming calls within the EU would be removed (these are the most visible sign of an unfinished Single Telecoms Market and are unlike to

disappear of their own since there is no competitive pressure on individual operators to remove them);

2. Operators are incentivized to conclude pan-European roaming agreements (thus anticipating the effects of a Single Telecoms Market) so that they can provide RLAH by no later than 2016. The main incentive for operators to choose this option would be an opt-out from the competitive pressure from alternative roaming providers (Article 4 of the Roaming III Regulation) and the possibility to internalize costs through agreements. To avoid uncontrolled costs and possibilities for arbitrage arising from RLAH (in case users would be permanently in roaming mode), a "reasonable use" clause could be considered acceptable.

Bilateral or multilateral roaming agreements between roaming providers (subject to competition law principles and notification to the BEREC) would enable operators to lower wholesale costs in countries where they do not own infrastructure. In order to make sure that savings in wholesale costs are passed on to roaming customers, parties to bilateral or multilateral roaming agreements should be required to charge only domestic prices for roaming services for all their roaming services offers.

The 'reasonable use' criterion could differentiate between different user profiles/subscriptions, but should keep up with evolving consumption patterns (which should be subject to BEREC guidance and Member State scrutiny). Some limited opt-out from the obligation to offer RLAH to all domestic customers could be accepted if customers give their explicit agreement, for example if they are not interested in international roaming, or in return for other benefits. In those cases, the retail caps would continue to apply.

The envisaged approach foresees the introduction of a transitional regime for the period from 1 July 2014 until 30 June 2016 which allows for a derogation from the separate sale of roaming services as of 1 July 2014 provided that the parties to bilateral or multilateral roaming agreements have a certain minimum virtual network coverage through those agreements (covering at least 17 Member States representing 70% of the population of the Union) and undertake to introduce a predetermined glide path to RLAH so that by July 2016 RLAH is applied to all retail packages subject to a reasonable use criterion. Alternatively, during the same transitional period, roaming providers who, as of 1 July 2014, ensure RLAH pricing at least in 10 Member States representing 30% of the EU population and extend RLAH offerings gradually to 17 Member States representing 70% of the EU population by 1 July 2016 would also benefit from the derogation of the separate sale of roaming services.

2. Full harmonisation of rules concerning contracts, transparency, quality of service and traffic management

This set of measures envisages to remove the fragmentation and uncertainty as to the level of protection granted in different Member States by replacing the existing, divergent national legal measures with a single and fully harmonised set of sector-specific rules which create a high common level of end-user protection in the the field of electronic communications. This should allow for a consistent implementation across the Union under the control host Member State authorities and high level of legal certainty both for end-users and market players.

This option would enhance transparency relating to offers and general information provided by operators, as well as the information requirements for contracts. This would in particular enhance the transparency with regard to provision of internet access services, and would include requiring operators to inform customers about actually available data speeds for download and upload including peak hours, traffic management practices, and comprehensive information on available data allowances, implications of exceeding data caps, and simultaneous use of services of enhanced quality on practical use of content, applications and services. Moreover, operators will be obliged to provide information upfront about contract duration, and charges associated with the switching process, including as regards compensation for subsidised terminal equipment.
An inherent part of the transparency measures should be an easy access for end-users to information allowing them to compare offers of different providers. To this end, a certification scheme for interactive websites, guides, or similar tools should be made available by Member States. Where certified comparison facilities were not available at no cost or at reasonable cost, these should be made available by NRAs or other competent national authorities.

The end-user rights would further be strengthened by the possibility to opt for a free-of-charge consumption control facility that would significantly help to reduce the risk of facing a bill shock. Similar to the facility currently available only for roaming customers, end-users should be able to define in advance a specific financial limit for the use of services over a specific period of time that should not be exceeded without the user's additional request.

It is also proposed to strengthen the obligations on operators related to contract termination. While the requirements that contract duration should not exceed 24 months, and at least one offer with a duration of maximum 12 months should be available remain, consumers should now have the right to terminate any contract after 6 months with a one-month notice. Providers of electronic communications to the public should notify their subscribers one month prior to any tacit extension of the contract and once tacitly extended, contracts should be made permanent, termination being possible after a one-month notice period on a cost-free basis. If end-users subscribe to additional elements in a bundle, that fact alone should not extend the duration of the contract.

The out-of-court procedures set up in accordance with the Universal Service Directive should also be available for cross-border consumer disputes involving operators established in another Member State, in line with the recently adopted EU legislation on alternative dispute resolution.

As to traffic management, general principles would be defined in a legally binding instrument, including a general prohibition of blocking, throttling or degrading of Internet traffic, except on legitimate grounds: legal provision or court order, integrity and security of the network, prevention of spam (with the end-user's approval) and managing exceptional network congestion. The provision of specialised services with enhanced/guaranteed quality (required for high-quality IPTV, but also for e-health or other quality and/or time-sensitive services, etc.) should remain possible. The power of NRAs to intervene and impose minimum quality of service requirements will be clarified. This Regulation could be followed up by an implementing act which could

include more details regarding transparency and the implementation of the obligations national authorities related to safeguarding quality of service.

As expressed during the public consultation of 2012, all stakeholders (ISPs, CAPs and end-users) agree that transparency is key for end-users. Regarding the importance of certain parameters to be communicated to end-users, several ISPs, CAPs and public authorities raised that there should be a good balance between overburdening the customers with unnecessary information and over-simplification.

Regarding the measures on traffic management, all stakeholders agree that some traffic management measures, when done for legal requirements, security or for unavoidable technical reasons such as temporary congestion management, are reasonable and part of managing the ISPs infrastructure to have a sustainable business model.

ISPs go further by emphasizing the necessity of traffic management. *Fixed operators* emphasized that traffic management practices are indispensable to ensure a robust, secure and efficient functioning of the network and should be regarded as a commonly accepted technique for network optimization. *Mobile operators* stressed that traffic management is even more important in their sector due to the traffic-sensitive characteristics of their infrastructure. Furthermore, *ISPs* see traffic management practices as an essential tool to support innovative services and new business models by allowing differentiation in products and services.

However, *content providers* stressed that traffic management should remain proportional and not harmful. They warn that traffic management should not be applied in anti-competitive and other harmful ways, such as blocking legitimate content and applications or unreasonably degrading services. Such practices can be detrimental to innovation in general.

Although *end-users organizations* acknowledge that temporarily reasonable traffic management is necessary to combat congestion, they argue that it may never be used for commercial reasons.[44]

In general all traffic management measures were considered as problematic by citizens (in varying gradations). Traffic management was found problematic by 80% of responding citizens when used, without other grounds, against services competing with the ISP's own services. The least problematic were found: measures affecting (similar) applications/content providers of the same category in the same way (only 48% of citizens found it problematic) and measures affecting all applications/content providers in the same way, i.e. application-agnostic traffic management (only 30% of citizens expressed concerns).

3. Switching

Building on the current framework and provisions in the Universal Service Directive, as well as on the provisions relating the transparency and contracts described above, it is proposed to strengthen the obligations on operators related to switching and number portability. Switching process should be led by the receiving provider in order to facilitate one-stop-shops. The end-user should receive adequate information throughout the whole process. The transferring provider should terminate the contract

[44] BEUC

automatically after the switch has been completed. As regards emails, the transferring provider (in case this operator provided also an email address) should ensure continuity of communications, for example, by forwarding e-mail during a transitional period of 12 months. This period may be extended at a charge on request of the end-user. The time limit of 1 working day to port a number should be maintained.

Regarding switching, stakeholders hold quite different views, as was shown by the result of the public consultation carried out in 2012. In general, ISPs do not share concerns related to consumers exercising their right to switch providers. However all other stakeholders, end-users, CAPs and public authorities, have stressed that important barriers to switching exist that cannot be ignored. The UK regulator OFCOM, in particular, has done extensive research on this topic which confirms that consumers experience contractual barriers, interoperability barriers, informational barriers or process barriers to switching. *BEREC*, in its reports, highlights 7 categories of barriers to switching that are still relevant today, including: lack of information, contractual obstacles, pricing strategies of operators, difficulties in the process, retention activity, technical issues and bundles. [45]

- **Reinforcing stability and strategic leadership of BEREC** is needed to support the implementation of all specific objectives (SO1-SO4). The recent evaluation of BEREC concluded that while BEREC is functioning generally rather well and is contributing to a more consistent application of the EU's e-communication regulation in Member States there is room for improvement in the BEREC set up[46]. In particular, the evaluation report pointed out that the decision-making process should provide more room to the Board of Regulators (BoR) to take strategic decisions. In light of these findings it is proposed to provide BEREC with additional stability for its strategic leadership by establishing a professional Chairman for the Board of Regulators with a three-year mandate which could be renewed once. The role of the BEREC Chair would be modeled on those of the Chairs of the financial services authorities (EBA, ESMA) – the impact assessments preceding the establishment of the latter noted the need to go further to ensure effective leadership of such bodies.

7.4 Option 3

A single legislative instrument complementing the regulatory framework with a view to completing a Single Market for electronic communications with a single EU regulator ensuring full coordination

The measures that would be implemented under Option 3 are broadly the same as those listed for Option 2. However under Option 3 the governance structure underpinning the mutual recognition principle would be replaced by a single EU regulator. Therefore, whilst option 2 envisages closer coordination and cooperation between the Commission and NRAs, with the support of BEREC, this option envisages a high degree of centralisation.

A single EU regulator would have responsibility for supervision of the provision of e-communication services by European service providers, flanking and coordinating the action of national regulators that will remain competent for national issues, principally related to

[45] BEREC's response to the public consultation was based on their report on "Best practices to facilitate consumer switching".
[46] SWD(2013) 152 final.

regulating network access. However, in order to ensure regulatory consistency across the EU, the single EU regulator should be given powers to require national regulators to review or withdraw their market analysis and/or access remedies in case these pose risks to the effective functioning of the Single Market.

The single EU regulator would also receive substantive powers in radio spectrum management replacing the current system of very loose best practices coordination of radio-spectrum regulators as regards spectrum assignment. This would involve assigning and authorising spectrum at European level through centralised auctions or spectrum sales. Central assignment and authorisation would enable operators to obtain pan-European licenses through a single mechanism at a single point in time rather than having to seek national licenses in a large number of Member States subject to different conditions and time-tables to enable them to offer such pan-European services.

In order to make centralised management of radio-spectrum policy possible, the single EU regulator should be given powers to require Member States to free up certain spectrum bands and, as far as possible, impose harmonised conditions for the use of spectrum, notably in relation to coverage and capacity obligations, the size of spectrum caps and blocks, and threshold conditions for any pro-competitive measures such as entry of mobile virtual network operators.

The single EU regulator would be given competences to ensure consistent application of consumer protection rules together with the implementation of specific dispute resolution mechanisms. This would involve enforcement powers relating to transparency, traffic management, switching and issues such as roaming. Depending on the set-up, the EU regulator could be involved in day-to-day issues or act as a mediator or appeal body in case of cross-border disputes between different national regulatory authorities.

During the discussions in Council on spectrum, all intervening delegations emphasised national prerogatives and cautioned against any measures that would entail a centralisation of competencies in the area of spectrum.

8. ANALYSIS OF IMPACTS

8.1 Methodology

This chapter presents an analysis of the expected impacts resulting from the creation of a Single Market for electronic communications, followed by an evaluation of the economic and social impacts of the policy options. The impact analysis is organised as follows:

a) paragraph 8.2 provides an assessment of the general impacts of the Telecoms Single Market. The analysis does not concentrate solely on the telecoms sector, but also includes expected spill-overs on the wider economy. The assessment of options looks not only at static, but also at dynamic and forward looking aspects.

b) paragraph 8.3 considers the extent to which the different policy options are likely to achieve the policy goals identified in Chapter 6, the extent to which they are likely to produce the general impacts of the Telecoms Single Market highlighted in paragraph 8.2. and the timeframe required according to which the desired outcomes can be expected to materialise.

8.2 General Impacts of the Single Market for Electronic Communications

8.2.1 Effects on Telecoms Markets

The current structure of EU telecoms markets reflects developments initiated by the liberalization process which started in 1998. Transforming the current concept of liberalized, but national markets, into an EU Single Telecoms Market can potentially give rise to profound effects on market structure and market outcomes. In order to establish whether the transition from the associated changes will result in economic gains or losses, it is essential to flesh out in greater detail the sources of these economic implications.
As the creation of a Single Telecoms Market for electronic communications is a proposal for which no comparable precedent exists, many of the expected impacts can be circumscribed merely in a conceptual rather than quantitative manner.

8.2.1.1 Impacts on the Demand Side

In this section the direct impact of proposed reforms on telecommunications users is assessed. The general objective as described under 6.1 for the Single Telecoms Market is to create the opportunity for citizens and businesses to access services irrespective of where or from where they are provided in the Union without being hampered by cross-border restrictions and unjustified additional costs.

One of the main goals of the Single Telecoms Market initiative is to enable operators to exploit economies of scale and scope that can be achieved on an EU-wide scale with a view to offering an improved value proposition to their users. This will translate into potentially much higher speeds, greater download and upload capacity, better coverage, and the availability of many new and differentiated services across a range of areas such as content, IPTV, e-health and smart home application, mobile payments etc.). Given user's expectations to enjoy access to digital services and content wherever they are, fixed and mobile communications will become increasingly integrated. As more and better services and higher quality will be offered to users according to their specific interests and demand, it can be expected that overall average revenues per user for operators will increase (even if unit costs and prices continue decreasing). This in turn will increase their ability to appropriate part of the gain in value to investments in infrastructure upgrades, offering yet better quality services. As such the Single Telecoms Market holds the potential to trigger a virtuous cycle of mutually reinforcing market growth and investment.

Consumers/users (residential and businesses) would benefit from more innovation in advanced networks and wider choice resulting from lower barriers to cross-border market entry. To the extent that entry is facilitated by removing artificial barriers to entry, consumers are expected to benefit both from lower unit prices and wider product variety. Available academic evidence suggests that these gains might be substantial.[47] Gains from entry would be common both for consumers of fixed and of mobile services.

[47] Economides, Siam and Viard ("Quantifying the Benefits from Entry into Local Phone Services"), RAND Journal of Economics, 2008, find that entry resulting from legislation changes in the US was responsible for causing customers gains corresponding to 6.2% of their bills. These gains accrued primarily from product differentiation and new plans introductions, rather than price cuts alone. These finding are in line with those of Greenstein and Mazzeo ("The Role of Differentiation Strategy in Local Telecommunication Entry and Market Evolution", Journal of Industrial Economics, 2006).

Coordinated spectrum assignment and interoperable pan-European inputs should also reinforce competitive dynamics bringing about more product/service differentiation. Sufficient critical mass will allow European operators to benefit from synergies and to close deals with major content and digital service providers and offer attractive bundles of connectivity and value-added services.

EU inputs including spectrum and standard wholesale products will make it much easier for operators to offer EU-wide connectivity plans, in particular to multi-national business users. This should further stimulate uptake and usage of voice and data traffic. EU inputs should also substantially facilitate the emergence of machine-to-machine communications for mobile objects, such as connected cars or other consumer goods.

Regarding cross-border services, artificially-high roaming charges (for both voice and data) would be gradually eliminated. Lower call and data rates resulting from this will result in direct net welfare gains for consumers (see the quantitative analysis in the next section).

Consumer protection rules regarding transparency of prices, quality of service, data speeds and data volume limitations and easier switching between providers, would be harmonised. This can be expected to increase consumer confidence in buying digital services from service/ and/or content providers wherever they are provided from in the EU.

Predictable rules on net neutrality (in particular, a prohibition of blocking and throttling with certain legitimate exceptions) would mean that all end-users[48] will have unrestricted access to use applications and services provided over the Internet within the limits of contracted data volumes and speeds. All content and application providers will benefit from an assurance that their products and services can reach a market of 500 million consumers. Such guarantee is particularly important for SMEs and start-up's who, in contrast to so-called large OTT providers, typically do not possess the leverage to ensure that ISPs make their services available. On the other hand, the possibility for ISPs to provide specialized services with guaranteed quality of service creates major opportunities for innovation and delivery of new services. The benefits of these measures cannot easily be quantified but are assumed to be positive for consumers and business users.

Competitive pressure and access to a wider market at the services level, including possible accumulation of niche markets, will spur greater service variety with new utility-enhancing features to which consumers attach value (e.g. cloud computing and other business services, online content distribution of ultra HD quality, e-health, e-learning, gaming). This would not only benefit business users but also public administrations, which have important needs for the exchange of data. In this way, the Single Telecoms Market opens up opportunities for ARPU (average revenue per user) growth which are not based on pricing power, but on differentiation in terms of offer and quality and, overall, an improved value proposition. This untapped source of growth can in turn be expected to lead to improving returns on network infrastructure investments.

[48] For example, 44 million mobile users had their Voice over Internet protocol (VoIP) services blocked according to the abovementioned 2012 BEREC survey on traffic management – See footnote 17.

8.2.1.2 Impact on the Supply Side

The general objective as described under 6.1 for the Single Telecoms Market is creating the effective opportunity for providers of electronic communications services and networks to operate their networks and provide services irrespective of where the company is established or its customers are situated in the Union.

Advantages for cross-border operations

In a genuine Single Telecoms Market, several parameters would change for electronic communications providers. A single regime for administrative authorizations whereby operators can provide services across the EU on the basis of the authorization received in their home country lowers barriers to cross-border market entry and significantly reduces legal uncertainty. More specifically, benefits for companies wishing to operate on a cross-border basis would be the result of:

- Lower costs for multi-country operations. The advantages of a single authorization regime are difficult to quantify as the scale of operations varies with company size. Nonetheless, on the basis of impacts assessed for the Services Directive, it has been estimated that professional advice to ascertain legal and regulatory requirement for advertising the provision of services could amount to at least € 100.000. Other estimates suggest that up to €3.600.000 p.a. is needed to ensure on-going compliance with administrative requirements[49]. The harmonization of *de minimis* thresholds will accordingly reduce the administrative burden for smaller operators when providing services cross border as well as provide incentives for existing operators to extent services across border, with negligible impact on other stakeholders[50]. Moreover, for large companies the advantages of single authorization, uniform consumer protection rules and greater predictability in regulation can contribute significantly to streamlining multi-country operations.

- A larger target market enables integrated network and service management, consolidation of activities and operations and larger scale. Larger scale would be achieved through greater expansion beyond borders, either through organic expansion or acquisitions of foreign operations/mergers, i.e. cross-border (as opposed to in-market) horizontal consolidation. The resulting structure of operations may improve efficiency and yield economies of scale in the form of cost savings from a leaner and more efficient service provision. Concretely, savings can be expected from (i) joint treasury and liquidity pooling that would optimise asset and cash flow management; (ii) better structuring of EU subsidiaries (iii) pooling of R&D efforts; (iv) central procurement of equipment. These factors tend to be positive for profitability[51]. If this improved operating efficiency also increases the efficiency of operating new networks, it may also strengthen investment

[49] See Extended Impact Assessment of a proposal for a Directive on Services in the internal market, SEC(2004)21, see in particular Section 4, available at http://ec.europa.eu/internal_market/services/docs/services-dir/impact/2004-impact-assessment_en.pdf.

[50] While addressing obstacles for new and small operators in the EU, the overall impact of the imposition of a *de minimis* thresholds is considered to be negligible. First of all, *de minimis* thresholds for the application of administrative charges are currently already applied in several Member States and/or national systems provide for reduced fees for the smallest operators (for example operators below 5mil£ turnover are exempted in UK). Secondly, from the point of view of the budget available to the NRAs, the impact of such a measure should be neutral, taking into account that any loss of contributions as a result of the proposed threshold could be compensated by means of an marginal increment of the other operators' contribution.

[51] A preliminary of the potential efficiency gains amount to 1.5 to 2.5% of total telco OPEX if the current regulatory regime remains in place according to BCG.

incentives. Last but not least, greater market size will allow operators in the EU to develop more attractive combined offerings of connectivity and value-added content and services in cooperation with digital services and content providers. One major operator for example consolidated all its European data centers in two central hubs in Germany and Italy, thereby benefitting from cost savings in the order of 25 to 30 percent. Such efficiency gains will become easier to achieve in the context of a Single Telecoms Market. Moreover, the provision of specialized services will be facilitated by greater legal certainty.

- Combined with the single authorization regime, the Single Telecoms Market will result in much greater consistency of regulatory remedies as Commission oversight of national remedies applied to companies operating in more than one Member State would be strengthened. Consistency of regulation by co-operation between the Commission, BEREC and the individual NRAs is already an objective of regulation enshrined in the Regulatory Framework (Article 8(3)(d) of the Framework Directive), linked to the key related regulatory principle of regulatory predictability by ensuring a consistent regulatory approach (Article 8(5)(a) of the Framework Directive). The attainment of this objective and implementation of the related regulatory principle are particularly important for cross-border operators, which are active under the jurisdiction of different NRAs, particularly at a time of technological change, when large scale investments are needed. For this reason, a strengthening of procedures that ensure consistency is necessary. Greater consistency of regulatory remedies will not translate into uniform regulatory remedies across the Union, because of the heterogeneity of market structures across Member States, as well as, often, within Member States. Regulation must be appropriate and proportionate to address the specific issues that are identified in a specific geographic territory, so that variations are inevitable. However, consistent regulation will ensure over time and across geographies that approaches to solve similar problems are comparable and free from contradictions, while differences between regulatory approaches are objectively justified and predictable for market players. This brings significant benefits, ensuring predictability of regulatory outcomes although these cannot be easily quantified. It might however be derived that this could significantly increase the value proposition of a cross-border business. For example the stability of regulated access products might change a company valuation by up to 30% making it more attractive for a company to expand cross border.

Impact of European inputs

Spectrum policy

- The key input for EU providers that intend to offer wireless broadband services throughout the EU based on the single EU authorisation is spectrum. Consistency of all the main parameters for spectrum assignment conditions would provide greater predictability for investment and would enable operators to take a more strategic approach to market entry. It would also contribute to ensuring optimal use of scarce spectrum resources reflecting their societal value.
- In particular comparable conditions based on a set of common best practices for synchronised timing of spectrum release, sufficient and coherent duration of licences, equality of treatment of existing and new operators and the conditions attached to licences would potentially enable wireless broadband providers to offer services on a multi-country or European scale. Duration of rights of use is a key parameter for investment decision-making, as it defines the period of foreseeable returns. While it does not seem possible to replicate Union-wide the approach in certain Member States and third countries (e.g. the US) to very long if not indefinite licences, harmonization of duration would allow due weight to be given to the need for long investment horizons as well as to gradually bring about a pan-European spectrum assignment cycle. Moreover, best practices leading to spectrum block sizes as large as possible would enable operators to offer high-speed services with wide coverage resulting in higher-value infrastructure and therefore enabling pro-competitive service differentiation. Overall welfare gains of allocating the 800 MHz band in Europe to wireless broadband as a result of the digital dividend have been estimated between €30bn and €40bn over 15 years[52]. Gains in the same order can be expected from future spectrum assignments, if assigned on European scale. In particular, synchronised timing of spectrum assignments would allow the early capture of such gains across the Union, while not constraining first movers from moving even faster.
- Establishing a set of common principles whose implementation in individual Member States will be peer-reviewed by the Commission together with other Members States will create an internal market for spectrum resources for the provision of wireless broadband services. Based on the common best practices to authorise the use of spectrum, Member States will be able to ensure the development of a true EU wireless space that fosters investment and innovation. The coordination would help especially smaller Member States to adopt best practices and therefore enhance market performance. They would be able to better profit from the competences of all Member States without having to build up the competences themselves. At the same time, a coordination procedure in which all Member States take part, and in the preparation of which the views of the RSPG are taken into utmost account by the Commission, will assist in the development of a more common European regulatory culture in this field. The application of the examination procedure should also reassure Member States that the Commission will in practice leave an appropriate scope for national discretion within the scope of the applicable legislative criteria. An ex ante review procedure would also foster legal certainty regarding the

[52]Analysys Mason, DotEcon, Hogan & Hartson, "Exploiting the digital dividend – A European Approach", 2009.

lawfulness of an assignment procedure, favouring rapid decision-making on investments thereafter.

- Consistent and more efficient spectrum assignment would avoid potentially inflated spectrum prices. The past experience with spectrum auctions in different Member States of the digital dividend 800 MHz band shows significant differences in the price that operators had to pay – despite technical usage conditions being harmonised in the EU[53]. This is significant because it is widely accepted that when operators calculate the net present value of a given market development as a determinant of the amount they will invest, sums paid for inputs such as spectrum are effectively subtracted from the overall maximum amount available for investment. Moreover, the positive externalities of broadband investment are expected to generate economic returns – which also feed into fiscal returns – of three to four times the sums invested. While the competitive situation in a given market has an impact on the investment and pricing strategies, the timing, the offer available and the auction design also play a role. For example, if, in the case of the 800 MHz spectrum, the lowest price paid in one Member State (considering differences in buying power) were to be replicated throughout the Union, this could represent an amount saved in the order of €5bn EU-wide[54]. Although no such quantifiable effect flows automatically from the legislative criteria under option 2, lower amounts can be anticipated relative to some of the peaks recently seen in certain national assignment procedures, arising from a combination of factors such as: greater power to enforce ex ante the principle that fees should optimise resource utilisation rather than exchequer returns; more extensive multi-band auctions, and more rigorous conditions for spectrum reservations, thereby reducing artificial scarcity; greater emphasis on a balance between up-front and periodic fees. It cannot be excluded that synchronisation of assignment procedures could also weigh upon direct national auction revenues due to capital constraints on participating, multi-territorial operators. On the other hand, even leaving aside the likely positive overall effect of greater ICT infrastructure investment on national fiscal returns across all sectors, a greater focus on periodic rather than up-front fees should smooth out one-off effects which may distort spectrum-management decisions both by Member States and by operators – in the latter case, by encouraging spectrum rights of use to be treated to a greater extent as an operating expenditure rather than capital expenditure item – and would also mitigate the possible revenue-dampening effects of holding assignment procedures across Europe in a narrow timeframe.
- Framework conditions for network and spectrum sharing are closely related to spectrum assignment rules. For example, spectrum licenses can contain sharing obligations or restrictions. In many cases, network sharing projects are assessed by national authorities in the context of spectrum holdings of the sharing parties. It has been estimated that cost savings through mobile network sharing up to 30-40% of roll-out cost could be achieved[55], if market players have the necessary legal certainty for such sharing arrangements. Assuming potential roll-out cost of at least €27bn until 2020, cost savings

[53] See Table 2 above.
[54] Based on auction revenues with low prices for 800 MHz licenses in Portugal of €0.28/MHz pop compared to average license fees of €0.52/MHz pop and a GDP correction factor for Portugal of 75% compared to the EU average GDP. The Portuguese auction can be considered an interesting benchmark since the main aim was not revenue maximization but promoting fast roll-out of high-quality services across the territory. Extending the analogy, and taking into account the 3-4 times multiplier effect, the overall economic impacts to the European economy of a repetition at EU-scale of this approach could have been as high as €12-20 bn.
[55] Booz and Company, "Sharing Mobile Networks", 2012.

of up to €10bn are potentially available in that time frame, subject to compatibility of any sharing arrangements with competition rules.

- A legal framework enabling the large-scale roll-out of small cells and RLAN networks as well as consistent conditions for access to RLAN access points would lead to significant cost savings in roll-out. At the same time, this can be expected to generate improved price/performance of mobile broadband for consumers and lead to increased adoption and usage of mobile broadband. Already today the amount of traffic in macro cellular mobile networks is rather small, compared with the volume of traffic that is being off-loaded, chiefly to Wi-Fi at end user's homes or premises. In Europe 71% of all wireless data traffic consumed by smartphones and tablets was in 2012 delivered over Wi-Fi. It is estimated that this figure will grow to 78% by 2016. In the same period, Wi-Fi traffic is estimated to grow by more than 850% to over 1900 PB/month[56]. The cost savings through RLAN can be compared to the cost for providing the same amount of data capacity with cellular technologies alone. While cellular traffic will itself continue to grow by an annual rate of 66% until 2016, it is estimated that delivering all the 2012 RLAN data traffic in the EU via mobile networks would have required infrastructure investments of €35bn, while in 2016 around €200bn would be necessary to cope with the projected demand[57]. In the absence of RLAN connectivity it must be assumed that a significant part of the measured or projected traffic would either not occur or be delivered through fixed line broadband connections – hence the description of RLANs as a largely complementary technology. None the less, these estimates of the cost of provision of the same level of wireless connectivity and convenience through cellular technology alone can serve as an indicator of the scale of the direct benefits to citizens and other end users accruing through the availability of RLAN networks.
- This trend is reinforced by equipment vendors and standards bodies who have invested considerable effort in improving the interworking between both Wi-Fi and cellular standards. Automatic authentication processes for accessing Wi-Fi networks will make it much easier to switch between mobile and Wi-Fi traffic. In addition, public Wi-Fi initiatives, such as the partnerships between the Spanish company FON and ECNs such as British Telecom, Deutsche Telekom and Belgacom, are transforming Wi-Fi access points located in end-user premises into an important traffic-offloading infrastructure that can be used by both citizens and mobile operators[58].
- More predictable investment conditions are favoured by all existing operators, both historic operators and so-called "challengers" – as represented both by GSMA and individual contacts. This is true both of spectrum assignment and of low-power access point deployment. As regards RLAN, the proposal is likely to be most popular with operators which also have a fixed-line customer base, but also offers opportunities for pure-mobile operators to enhance data traffic offload and thus make savings on deployment with licensed spectrum. There is wide acceptance of the provision in the sector since it has become clear that it would not affect the use of exclusively licensed spectrum. The provisions on RLAN also empower consumers regarding the use of fixed-line capacity which they have contracted and paid for.

[56] Study on the "Impact of traffic off-loading and related technological trends on the demand for wireless broadband spectrum", WIK/Aegis, 2013 (SMART 2012/0015), available in the EU Bookshop.
[57] WIK/Aegis study, ibid.
[58] WIK/Aegis study, ibid

European broadband inputs

The Single Telecoms Market initiative provides for several common European virtual wholesale products. Harmonisation of virtual access products would address different quality of service (QoS) levels and differences in service level agreements and technical specification which are currently the source of significant market fragmentation.

The European assured service quality (ASQ) connectivity product provides for end-to-end guaranteed quality of service at an interconnection point between two different network domains. This new generation interconnection product is designed, in particular, for the provision of specific Internet protocol (IP) based classes of service, namely voice and video calls, broadcast of audio-visual content and data critical applications. The ASQ will not be a regulated product which NRAs should consider imposing (on an asymmetric basis) on SMP operators. Rather, it is foreseen that ASQ can be negotiated on a reciprocal basis between two telecommunication operators which each have an interest in obtaining virtual access to the other party's infrastructure.

A recent report on the definition of relevant markets prepared for the Commission by Ecorys[59] states that: "the mass-market is increasingly asking for managed IP add-on services (such as VoIP and IPTV). Consequently, end-users may demand differentiated levels of quality of service (QoS) for different services. Mass-market demand is distributed over densely populated (urban) areas and sparsely populated (rural) areas. The second category of end-users already demands higher levels of QoS, even for similar services (specifications may even be customized to the end-user's needs). The prospect is that there may be a continuum of different quality grades demanded by medium-sized and large firms (business grade)."

While ASQ products would be negotiated between telecommunications operators, a standard European virtual product (see below) would only be imposed on those operators who are deemed to have significant market power (SMP) according to an NRA's analysis of the different relevant markets[60]:

- Market 4: wholesale (physical) network infrastructure access (including shared of fully unbundled access) at a fixed location
- Market 5: wholesale broadband access
- Market 6: wholesale terminating segments of leased lines

As the European product will be imposed as an alternative to existing national virtual products, not as an addition to those products, there will be no numerical increase in regulatory requirements. NRAs would not be obliged to impose one of these products in a case where SMP remedies are deemed necessary, but would have to consider such a remedy and to explain why a different remedy was preferred. They would be required to take into account existing investments by both incumbents and access-seekers in identifying the most

[59] See footnote 3.

[60] See Commission recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 344, 28.12.2007, p. 65
http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_344/l_34420071228en00650069.pdf
For the Public consultation on the revision of the Recommendation on relevant markets, see
http://ec.europa.eu/digital-agenda/en/news/public-consultation-revision-recommendation-relevant-markets

proportionate remedy, and to grant a transition period if necessary. More specifically, the expected impact of the European virtual product by relevant market can be summarised as follows:

i) Market 4 - wholesale (physical) network infrastructure access

A well designed virtual unbundled local access (VULA) which corresponds to the wholesale broadband access product at layer 2 'Data Link Layer' of the ISO network architecture model can be considered functionally equivalent to local loop unbundling, in terms of control, product differentiation and innovation, and thus can be considered to be part of Market 4. The corresponding retail market is the (mass) market for broadband access catering mostly residential customers.

Market 4 is regulated in all Member States due to the presence of market players with SMP. VULA is a relatively new type of wholesale access on next generation access networks, and would be available for consideration by NRAs as a potentially proportionate remedy promoting infrastructure-based entry and competition alongside other access products, namely, where possible, the physical unbundling of fibre at the optical distribution frame level and in the future, when technologically possible, wavelength division multiplexing over passive optical network (PON). The technology and topology of networks (FTTH, FTTC, PON, point to point) partly determines the options on available products.

VULA has until now been implemented in several Member States, including the UK, Denmark, Austria and Slovakia however with some important differences. Several other Member States are currently considering the implementation of a VULA-type product.
The availability of a harmonized VULA product will bring benefits to NRAs since they can rely on validated solutions which can be implemented more quickly. Given the consistency of inputs, SMP operators providing services across Member States – and their potential customers - should be able to achieve significant efficiency gains. A harmonised VULA product is also a considerable opportunity for the European manufacturing industry as it can benefit from more cost-effective solutions across multiple locations.

ii) Market 5 – wholesale broadband access

This market includes bitstream access products, a form of non-physical or virtual access offering interconnection generally at Ethernet (data link layer) or managed IP level (network layer), with handover points at either local, regional or national levels.

The proposed harmonised IP level bitstream product will have an impact only on certain type of bitstream products with handover points at regional or national level. In these market segments, as is expected for other harmonised virtual products, the proposed common specifications are likely to enhance regulatory certainty for operators providing services across Member States, lower costs by removing the need to adapt products based on different specifications, speed up time-to-market, improve quality of service for users and overall contribute to greater market dynamism.

iii) Market 6: Terminating segment of leased lines

A wholesale leased line is a service that provides dedicated transmission capacity to carry voice and/or data traffic. Dedicated in this context means uncontended and symmetric means that there are identical download and upload data rates. They are mainly used to carry inter-site and inter-company traffic. Consistent availability of such products are

particularly important for the provision of cross-border business communications services of companies with operations and multiple sites across the EU.

It is difficult to quantify the economic benefits arising from the emergence of cross-border and even pan-European markets for operators, users and the economy as a whole. However, a report prepared by WIK conducted for ECTA and INTUG on business communications services for multi-national and multi-site corporations[61] estimates that achieving consistent and effective wholesale inputs for business communications across Europe could generate yearly gains up to of €90bn after 10 years.

In the business communications market, the availability of harmonized European virtual access products could give a strong boost to market dynamics and innovation since it reduces time-to-market and avoids replication costs in order to adapt heterogeneous wholesale inputs. In particular, new services requiring end-to-end guaranteed quality are developing quickly in cloud computing, but also for online content distribution (e.g. HD/3D TV) and gaming, e-Health, and e-Learning. Consumers would benefit from such new services delivered at higher quality. Further, public administrations which are also major users of data exchange also stand to gain. More generally, the availability of high-quality, tailored business services will make Europe more attractive as a place for establishment of multi-site corporations, international headquarters and IT resource centres.

Harmonised European access products are expected to have a positive effect on investments, especially across Member State borders. First of all, the harmonisation effort will make it easier for companies to enter new markets to follow customer demand, thus increasing the level of competition and requiring operators to improve their offer by investing in infrastructure and services. The range of products that will be harmonised will allow companies to make the investment decision that best suits their business model. It will be possible for companies to choose a product that requires a relatively low level of initial investment (a bitstream product), but which permits a fast entry into a new market and potentially therefore in several markets, to follow demand.

Conversely, the harmonised products will include "local" access products, i.e. access products where the access seeker would be required to invest in its own infrastructure down to a local level (such as the exchange), from which point it would be able to use the existing infrastructure of the dominant operator. Thus, if an access seeker wanted to truly differentiate itself from the retail offer of the former monopoly, it will have the possibility of requesting this type of high quality harmonised local access products, and will have to invest in its own infrastructure up to the handover point. This type of solution exists already in some Member States, but the quality of the proposed solution varies and presents challenges, especially in the presence of "point to multipoint" fibre networks, which are prevalent in most Member States. Only a high quality, European-grade virtual access product would guarantee the type of quality that would reassure access seekers that such infrastructure investment to the exchange is justified and secure.

Further, the harmonisation process will set a high standard of quality for the harmonised access products. Such high standard at the wholesale level will allow companies to compete more effectively and will drive up the quality of the retail offers, increasing the incentives to

[61] See above footnote 22.

upgrade infrastructures and services. In particular, the products that are intended for business-sector end-users will allow multi-national businesses to compare products and offers across the Union, and such competition will make it necessary for companies to invest in state of the art networks for providing state of the art services.

Impact on the provision of cross border services

Mobile roaming

The impact of the proposed optional regime (sub-option b as defined in chapter 7) is not easy to calculate as the effects hinge on the outcome of a complex competitive equilibrium involving a large number of variables (company choices, negotiating roaming agreements with partners, defining reasonable use policies, demand elasticity etc) within a context of uncertain market evolution. In any event, the optional regime should logically be more attractive to operators than the base line scenario (full implementation of Roaming III) otherwise they would not go for it.

It is possible to evaluate a number of effects that would be associated with the optional regime:
One way of assessing the economic impacts of any proposed measure is to take Roaming III (the current regulatory regime) as a baseline scenario and to estimate the difference in consumer and producer surplus resulting from the introduction of RLAH compared to the status quo. In the absence of detailed data on the demand and supply patterns (including information on demand elasticities), a static analysis of welfare redistribution gives an idea how end-users, on the one hand, and the mobile sector, on the other, would likely be affected. This can be done on the basis of volume and prices data provided in BEREC's international roaming Benchmark reports[62].

- In a static scenario in which volumes of roaming usage are fixed the annual transfer from producer to consumer surplus are estimated as follows[63]:

Table 5: Annual Revenue Loss Resulting from the Introduction of RLAH in a Static Scenario with Fixed Roaming Volumes

Removal of charges for incoming calls	~€300 million
SMS prices at domestic level	~€230 million
Calls made at domestic prices	~€580 million
Data roaming at domestic prices	~€540 million
Overall transfer from the mobile sector to end-users	**~€1.650 million**

- When interpreting the figures in Table 5, certain caveats need to be borne in mind. First, the data do not take into account the demand elasticity and its dynamic impacts on the market. Whilst demand for voice roaming services has proven in the past relatively inelastic, elasticity is potentially high for data roaming services. Therefore, in a dynamic perspective at least part of the revenue loss of the sector will be compensated by higher

[62] International Roaming BEREC Benchmark Data Report, January 2012 –June 2012, BOR(13)05 and International Roaming BEREC Benchmark Data Report, July 2012 –March 2013 (forthcoming)..
[63] This estimation is based on the assumption of the following domestic prices: mobile calls 0.103 €/min; SMS 0.02€/SMS; data 0.01€/MB.

volumes. Second, the revenue loss of the sector and corresponding gain in consumer surplus is calculated on the basis of regulated price caps in July 2014. Although on the basis of the observed dynamics in the roaming market one cannot conclude that the separate sale of roaming services alone will lead to the abolishment of roaming charges, structural measures are still expected to drive roaming prices below the regulated caps. Therefore in reality, the transfer from the mobile sector to end-users is likely to be much less than €1.650 million/year. Thirdly, the disappearance of intra-EU roaming revenue will occur over a transitional period (up to July 2016) so that operators will have time to anticipate any revenue losses. Fourthly, the above estimate of impacts is based on the assumption that domestic prices will apply to all roaming traffic whereas the proposed RLAH solution allows for the application of a reasonable use criterion and possible opt-out's for certain customers if they so wish. Finally, since the Roaming III Regulation in its review clause already foresees the elimination of differences between roaming and domestic tariffs, the proposed optional regime allows roaming providers to anticipate the changes in their pricing models which otherwise will likely be imposed through regulation as a result of the July 2016 review. In other words, it is fair to assume that international roaming revenues will disappear sooner or later.

Against this background, the costs and benefits of the various sub-options set out in chapter 7 can be assessed as follows:

For sub-option a), operators will face a decline of roaming revenues as competition by roaming providers will begin to produce effects. However, it will likely take a considerable period of time before comprehensive RLAH offers will appear on the market. The benefits and the corresponding welfare effect of the Single Telecoms Market for consumers will be delayed accordingly;

Imposing a mandatory requirement on operators to offer RLAH by an early date (sub-option c) would see the bulk of the costs of providing RLAH be borne upfront by industry within a time span that would be too short for pan-European operators to emerge. Therefore, pursuing this option would trigger immediate high costs for operators which could lead to serious market disruption, particularly if (direct) revenue losses would be combined with indirect revenue losses through price arbitrage in case customers would avail themselves of more advantageous offers from providers in other Member States and would be roaming permanently on networks of other operators ('off-net'). If, in principle, it can be argued that the expected revenue losses would all be transferred to consumers as greater welfare, in reality, companies would not be able to provide services below costs for very long. One could therefore reasonably expect operators either to cease offering international roaming, offer it only under strict conditions, and/or pushing domestic prices up.

Sub-option b (regulatory incentives consistent with Roaming III to promote RLAH offers on a voluntary basis) can be designed in such a way that it can produce a 'win-win' outcome for industry as well as for consumers. On the one hand, operators are given time to reach roaming agreements which would allow them largely to internalize the costs of providing international roaming beyond their own 'on-net' provision. Furthermore, arbitrage can be avoided and costs controlled by means of a reasonable use criterion. Opting-in will remove the pressure from alternative roaming providers, on the other hand. For consumers, RLAH will remove one of the most visible and often frustrating effects of market fragmentation and an important source

of additional costs. Based on game theory, it can be argued that the outcome will be a near optimal equilibrium between costs incurred by companies and welfare passed onto consumers.

Sub-option b) will generate a cost for operators of € 300 million as incoming call charges are eliminated by 2014 which is a relatively small amount for operators compared to the benefits arising from a Single Telecoms Market. Prohibition to charge for incoming roaming calls may incentivise the most price sensitive users to recourse to a call-back activity and this could eventually have a negative impact on roaming customers' home operator revenue. While on one hand a certain amount of call-back activity can be anticipated with a consequential effect for call origination revenue of both home and host operators the proposal for eliminating incoming call charges the introduction of RLAH offers, on the other hand, will diminish the role of the call-back activity as consumers would be roaming with confidence and familiarity of their domestic tariffs.. In any event, the initial justification for charging incoming roaming calls (i.e. relatively high cost of terminating the call in the visited country compared to domestic termination) has ceased to exist following the widespread implementation of efficient cost-oriented termination rates, including for calls from other Member States.[64] There is indeed little risk for operators actually incurring additional cost for incoming roaming calls. Under these circumstances the international termination cost should be covered by the retail charge levied by the originating operator from the calling party. These retail charges are constrained by the competition in the overall retail mobile market. The eventual call-back activity has not been raised by stakeholders as a concern[65]. An obligation to set a reasonable use criterion will diminish the role of the call-back activity as consumers would be roaming with confidence and familiarity of their domestic tariffs.

The proposed optional regime to gradually introduce RLAH based on bilateral or multilateral agreements allows roaming providers of different size to benefit from the regime. The proposal provides smaller operators who may find it difficult to extend the virtual coverage of their networks by bilateral or multilateral agreements with a flexibility to increase their virtual network footprint. In particular, the possibility of starting the provision of RLAH in 10 Member States representing 30% of the EU population creates a possibility also for a smaller operators switch to the proposed optional regime. This proposal aims at alleviating concerns expressed by smaller operators that too demanding conditions with regard to the coverage of multilateral agreements would put them in competitive disadvantage vis-à-vis larger operators.

If, as expected, a large number of operators opt for the RLAH regime, and benefit from the derogation of Article 4 of the Roaming Regulation, this will inevitably discourage the entry of new roaming providers into the market. However, those roaming providers already present by the time operators exercise the option would continue to be able to provide services for a transitional period to protect their interests.

The negative impact on the efficiency of the structural measures is however outweighed by positive impacts. Once fully implemented, roaming prices would no longer be a material end-

[64] See Annex VI for further details on payment flows for incoming roaming calls.

[65] If call back had been an issue it would have been raised by operators already in the context of Roaming III which sets the price caps for incoming call at a low level compared to outgoing calls. However, this was not considered an issue.

user issue; consumers would not need to worry any more about high roaming bills when travelling. Moreover, the overall pricing models of mobile communications services would become simpler and more transparent. More widely, the abolition of roaming charges will promote the cross-border use of connected devices and services (e.g. M2M solutions), and boost the evolution of mobile data applications, thereby contributing to a more favorable business environment in the European Union.

As said before, any other costs for operators would by definition be lower than the base-line scenario (Roaming III Regulation) since the proposed regime is optional.

International calls within the EU

As can be expected for mobile roaming, the likely effect of establishing a Single Telecoms Market is the gradual convergence of charges between those for national calls and those for calls made within the EU. Although there is some relationship between price and distance, the majority of the price differences observed occurs because of externalities and/or as a result of demand factors due to inelastic prices. Indeed, price difference could be as large as 100%[66] for the same pair of countries depending from which country the call is initiated and with mobile termination rates converging this could not be rationally explained on the basis of cost differences. Many standard international mobile call rates are in the area of €1 per minute, substantially higher than the intra-EU roaming rates which could not be explained by the underlying costs of providing these services. While the costs of intra-EU international mobile calls are largely the same, some operators differentiate prices depending on destination. Fixed to fixed intra-EU international rates are somewhat lower but there exists large differences of prices across Member States and operators. Some operators offer unlimited minutes for a reasonable monthly charge, while others offer international rates close to the level of those of international mobile call rates. Over time, the emergence of pan-EU operators should cancel out network externalities whilst a true Single Telecoms Market should influence the demand factor.

The impact of the envisaged measures will generate consumer benefits without creating major revenue losses for the telecom industry. This is because the approach provides for the removal of excessive prices that are borne by certain customer groups by July 2016 (most likely those customers who are either not aware that more favourable intra-EU tariffs are available, via ECS packages or VOIP, or who only place international calls irregularly)

Regarding the impact of ending the distinction in charges between fixed national long distance and international calls and limiting international mobile communications charges to euro-tariffs for roaming (i.e. € 0.19 per minute), one can expect in the short term a direct impact of around 0,5% revenue decrease, compensated by higher consumption volume in the medium term. However, the change in prices will alter market outcomes both in the market for intra-EU calls as well as other markets which are related e. g. by way of substitute relationships. Whilst short term price elasticity for international calls is estimated, near unitary elasticity, i.e. -1, is expected in the longer term. With the advent of the Internet, social networks and the increasing use of voice over IP (VoIP), the attitude of consumers is likely to lead to quicker adaptations. In other words, a reduction of revenues from international calls would occur in any event as an increasing number of consumers switch over to VoIP applications.

[66] See Annex VIII for more details.

- Some static indications of the impacts of limiting price differentials between domestic and intra-EU calls can be drawn by applying the expected price reduction to current volumes of intra-EU international calls. The results are shown in table 6 below[67].

Table 6 – Impact of Limiting Price Differentials between Domestic and Intra-EU International Calls

	Estimated current price for intra-EU calls	Maximum price under the proposed instrument	Revenue loss at EU level
Fixed communication	~ €0.11/minute	~ €0.04/minute (national long distance call)	~€600 million
Mobile communications	~€ 0.22/minute	~€ 0.19/minute (Eurotariff for roaming calls made as of 1 July 2014)	~€60 million

The maximum overall revenue loss of around €700 million represents a redistribution of surplus from operators to consumers. However, the numbers cannot be assumed to reflect new equilibrium outcomes. The estimated impact will be partly absorbed by an on-going shift from traditional pay-per use voice calls to flat-fees as part of service bundles (already 52% of EU households purchase fixed voice telephony as part of a bundle according to a recent Eurobarometer survey[68]). Likewise, it should be noted that technological trends such as the uptake of voice over IP telephony (or VoIP, enabling voice calls for free or a very low fee) will continue to exert downward pressure on voice call rates in any event.

Indirect negative effects on consumers through so-called "waterbed" effects (raising of prices on other products to compensate for losses) are unlikely. Such arguments assume both that other segments are not very competitive, and that providers are not already engaging in profit-maximising behavior within the margin for manoeuvre allowed by competitive forces, e.g. in other niches such as non-EU international calls. Such a contention is not supported by evidence.

Ensuring access to the Open Internet and transparency measures

The impacts arising from fully harmonised provisions related to access to the Open Internet can be assessed as follows. A prohibition of blocking and throttling (net neutrality) will mean that a number of operators who are engaging in such practices would have to cease them and adjust contracts with their customers accordingly. This will entail some administrative costs but a transitional period could be foreseen to bring existing contracts in line. The immediate effects of an end to blocking and throttling would be increased traffic. Recognising that a business strategy based on blocking and throttling is unlikely to be sustainable over the long term, and exposes companies to possible reputational risk and customer churn, several

[67] The revenue impacts are estimated by using the data by the French NRA, ARCEP, and the Spanish NRA, CMT. See 'Observatory of the electronic communications markets in France, 4th quarter 2012 – final results' and 'CMTdata' at http://cmtdata.cmt.es/cmtdata/jsp/inf_anual.jsp?tipo=1. It is assumed that intra-EU international fixed and mobile calls represent 1.1% and 2.6% of all fixed and mobile calls, respectively.

[68] Special Eurobarometer 396, E-communications household survey, fieldwork February-March 2013, released on 8 July 2013, and available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_396_data_en.pdf

companies have started to offer VoIP services themselves to promote loyalty and/or have shifted from "all you can eat" packages to capped offers to deal with the small share of customers who tend to be responsible for the bulk of traffic (e.g. through peer-to-peer). The impacts on revenues therefore are expected to be limited, the more so as voice revenue is anyway declining rapidly. Regarding costs of increased traffic, the French regulator ARCEP estimates in a recent report[69] that such costs for a generic ISP are likely to be modest: "part of these costs is effectively dependent on traffic, however this part is moderate. For an operator like the generic ISP […], a consumption which is multiplied by a factor 3 could lead to an increase in network costs for providing Internet access of 6% to 12%." This increase is relatively small and especially in mobile communication it is largely compensated by increase of revenues generated by higher data consumption as ISPs retain in any event significant freedom to implement retail tariff schemes to respond to heavy use and any possible associated congestion.

Legal certainty to provide specialized services with guaranteed end-to-end quality is expected to contribute to the development of new revenue streams for operators. Investor analysts estimate that specialized services, mainly for IPTV, could add some 1,5% to industry revenues which would amount to € 3.5 bn (almost evenly split between fixed and mobile). This figure could be higher if other services that would benefit from guaranteed quality (e.g. certain business applications including those related to cloud, gaming, e-health) were to grow significantly in the next few years. There may however be a substitution effect as charging for guaranteed quality may overlap with an existing source of revenue in the form of leased lines which is one of the ways businesses purchase capacity streams at present. Another uncertainty is whether and to what extent content and application providers, notably major Internet companies, would be willing to pay for guaranteed quality of service.

Reduced technological uncertainty and lower adaption costs for devices and services through common inputs (such as IP Interconnection and wholesale access products with guaranteed end-to-end quality of service) can be expected to lead to faster substitution of legacy networks. Likewise, this process will encourage operators to expedite the transition to all-IP networks, increasing the generation of efficiencies at all levels of network management and maintenance (e.g. less costly network transmission equipment will be needed).

As regards to the impact arising from the proposed transparency measures, such measures enhancing transparency of the offers and contracts, or allowing consumers to compare offers of different providers exist in the majority of MS and operators are already baring the associated costs. The harmonisation of such provisions at EU level will mean that operators will need to adjust their contracts and informational material. This will entail some administrative costs but the new rules will be phased in over time. Some of the proposed transparency measures may involve certain extra costs on operators. For instance, the mandatory availability of comparison tools could imply marginal implementing costs (e.g. costs of creating a new website and collecting the relevant data that has to be kept up-to-date). The set of information required to be provided by operators at the main location of the end-user (e.g. actual speed ranges, average download and upload speeds, peak-hour speeds) can represent measurement costs. Costs related to measuring these indicators can only occur if these were not available until now. Some speed measurements are already available in many Member States. It should also be emphasized that these costs are "one-off" type of costs. Once the measurement system is in place the extra costs are marginal. The right to terminate

[69] ARCEP's report to Parliament and the Government on Net Neutrality, Sept. 2012 (ARCEP's report to Parliament and the Government on Net Neutrality, Sept. 2012).

the contract after six months without costs (excluding the residual value of any subsidised equipment or other promotions) might result in higher churn for certain operators and related loss of revenues. Also certain operators might face higher subscriber acquisition costs.

However, increased transparency and facilitated switching should decrease costs for end-users. Easier to understand and more comparable information on the offers of the providers and on the switching process will cut the time end-users spend on the switching process thereby reducing the financial (time) cost associated with switching provider. Facilitated switching may make end-users switch to an offer that better suits their needs. The study on "The Functioning of the Market for Internet Access and Provision from a Consumer Perspective" estimated the net saving of switching in the first year between € 73.4 and € 113.6 per household.[70]Moreover harmonized rules will benefit cross-border operators that will no longer need to adjust to different national requirements in each MS of operation. The risk of systematic divergence of approaches in different MS is minimized by the directly binding nature of the proposed regulation and by its direct applicability. Additionally the Commission foresees the possibility to adopt an implementing act to further detail the information requirements, which should additionally reduce divergences.

8.2.2 Effects on Other Sectors and on the Ecosystem

The Single Telecoms Market for electronic communications would also have effects on other sectors, possibly including a number of spill-overs and externalities.

Firstly, directly related sectors such as telecom equipment manufacturing, application developers, content industry are set to benefit from a more dynamic European telecom market as they all depend on connectivity or on the investments in the underlying infrastructure which provides this connectivity. The examples of the much more integrated US and Japanese telecom markets clearly demonstrate this.

Europe-wide net neutrality rules would be especially beneficial for content and application providers (CAPs). CAPs would have unrestricted access to end-users and would therefore be able to reach a critical mass more quickly. Additionally the administrative burden to comply with different legal approaches in each Member State as regards net neutrality would be eliminated. This would be especially beneficial for small CAPs (SMEs) for which such administrative overheads can be large relative to the size of their operations.

Secondly, an increasing number of sectors is set to introduce the "Internet of Things" or machine-to-machine (M2M) technologies, whereby devices are connected and interact through connectivity. Examples include the automotive industry (with the first connected cars due to be commercialised as of end 2013), the logistics sector (smart tags and tracing) or the energy sector (smart metering). The adoption and commercial success of those technologies depends on the mobility and connectivity offered. If the Single Market helps to contribute to better and more seamless connectivity, it also has positive effects on the development of these technologies.

Thirdly, improved availability of connectivity enhances opportunities for improving public administration and services, e. g. in eGovernment and eHealth. The latter in particular is high bandwidth consuming, demanding as to quality of service and increasingly linked to mobility.

[70] Study " The Functioning of the Market for Internet Access and Provision from a Consumer Perspective", p.186

The costs and complexities associated with cross-border provision of e-health services with a consistent high-quality and reliability can be considered to be at least partly responsible for the low take up of such services at this stage. Those services are generally recognised to increase the efficiency of the public administrations, and in the case of the health sector to allow not only efficiency and quality gains but also help reign in healthcare costs.

Fourthly, more specific benefits are expected from a Single Telecoms Market for multi-national and multi-site corporations as these companies often have a foothold in another Member State, but they have to rely on different business communication service providers with usually different technological specifications and levels of service quality. 45% of the respondents surveyed by WIK[71] indicated that one of the main obstacles was to get a single supplier for business connectivity services to cover all their sites, while 43% of respondents made explicit reference to the need for consistent service quality across borders. The estimated gains are illustrated by Figure 19 below and amount to almost **€90bn p.a.**

8.2.3 Effects on Different Member States

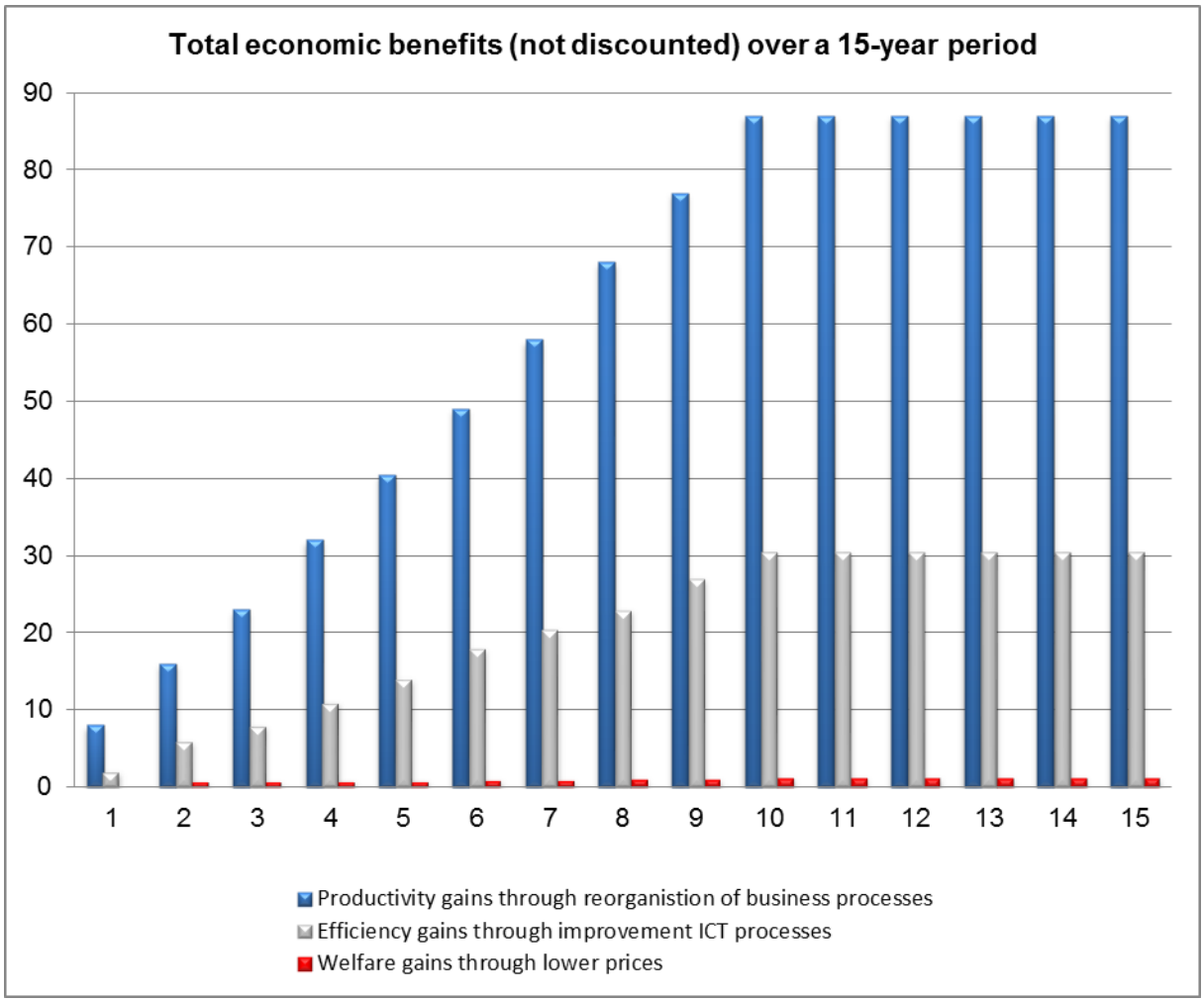
The Single Telecoms Market for electronic communications would be beneficial for all Member States. Firstly the expected adoption of advanced digital services that are enabled by the Single Market would take place in all Member States, because e.g. Internet services are usually not restricted to certain countries.

Furthermore, better coordination with Commission, BEREC and the other Member States, e.g. in spectrum assignments, would help especially smaller Member States to adopt best practices and therefore enhance market performance. They would be able to better profit from the competences of other Member States without having to build up the full set of competences themselves.

No significant additional financial resources for Member States are expected. Public authorities in charge of spectrum are already today holding extensive national consultations at the occasion of spectrum authorisation procedures. These consultations would be extended to the contributions by the Commission and other Member States. Therefore increase in human resources in this respect would be marginal. Whereas more human resources would need to be allocated to monitoring the spectrum authorisation practices of other Member States, the lessons drawn from this monitoring would generate synergies between national administrations and reduce the cost of research on national level. Therefore overall the additional cost through the coordination of spectrum assignment is expected to be marginal.

[71] WIK, Business Communications, Economic Growth and the Competitive Challenge, 2012.

Figure 19 – Economic Benefits for Business Communication Services of a Single Market for Electronic Communications



Source WIK

Finally, due to the nature of telecommunications technology and services as key input to many value chains, there are clear indications that ICT contributes to productivity growth in a range of sectors. As an example, van Ark (2010) concludes that in the US "*there has been significant evidence of genuine technology and innovations effects on productivity in the retail and wholesale sectors, due to extensive ICT applications during the late 1990s and early 2000s*".[72] As a result, the effects of the Single Market can be expected to positively affect a much larger part of the economy. Academic sources tend to agree that there seems to be a strong link between ICT and total factor productivity.[73] One example of positive externalities is the fact that common technological standards for connectivity reduce R&D costs for products and services in other sectors.

In conclusion, it is realistic to assume that a better functioning of national, cross-border and pan-European interconnected network infrastructures and related connectivity services markets will increase the uptake of online services throughout the EU, trigger the development of new and innovative digital services and as a whole should contribute to

[72] B. van Ark for CEPS, "Productivity, Sources of Growth and Potential Output in the Euro Area and the United States" (2010).
[73] Cardona, Kretschmer, Strobel (2012) ICT and productivity: conclusions from empirical literature.

accelerating the achievement of the Digital Single Market, with consequent benefits for economic growth and jobs in Europe[74]. Such development could help set in train a virtuous cycle where investments in modern broadband infrastructure across the EU – unleashing major network effects – fuels uptake and demand, which in turn promote further investments.

8.2.4 Impacts on GDP

8.2.4.1 Increase on GDP from Opening Electronic Communication National Markets

A Single Market in electronic communications represents a step towards further opening of national markets. The Ecorys study on the cost of non-Europe in electronic communications concludes that a further opening up of national markets (thereby increasing the intensity of competition) results in a potentially permanent welfare gain of between €27bn to €55bn or between 0.22% to 0.44% of GDP per year[75]. The Ecorys study identified that as a result of a Single Market for electronic communications *"the upcoming rise of pan-European premium quality over-the-top services (…) more specialisation throughout the value chain; economies of scale in the production of medical systems and other smart machines; (…) improvements in e-Health, e-Learning, and B2B services; head offices and production facilities to move back to the EU (can be expected)."* The additional gains are estimated at €35bn to €55bn per year (0.3% to 0.45% of GDP). **This amounts in total to an estimated 0.52% to 0.89% of additional GDP (or€ 110 bn) per year.**

8.2.4.2 Increase in GDP due to Network Investment

As argued above, a move from national markets towards a Single Telecoms Market for electronic communications would strengthen incentives for network investment. The magnitude of this effect is difficult to estimate as the underlying linkages are complex. Nonetheless, any acceleration of network roll-out can be expected to deliver some of the economic gains that are associated with network investment. These gains have been explored in several reports and studies.

Network investment has a large impact on GDP growth and is therefore necessary even it is not the primary objective of the move towards a Single Market for electronic communications. Czernich et al. (2009)[76] tested the effect of broadband infrastructure on economic growth, using an annual panel of 25 OECD countries for the period 1996-2007. Using a technology diffusion model, the authors find a significant positive effect of broadband introduction and penetration on economic growth. The results suggest that a 10 percentage-point increase in the broadband penetration rate results in a 0.9-1.5 percentage-point increase in annual per-capita growth.

As to the roll-out of 4G (LTE) networks, Deloitte[77] (2011) reports that in the US "*Any $1 investment into 4G infrastructure results in an increase of $2 873 in GDP output p.a. At a forecasted U.S. investment rate of $73-151b in 2012-2016, this leads to additional GDP growth of 0.1% to 0.2% p.a".* This relationship has also been studied more for 3G*: WEF GITR report shows that a 10% increase in 3G penetration leads, on average, to additional GDP*

[74] See in particular Copenhagen Economics (2010), the economic impact of a European digital Single Market, commissioned by CEPS, and Ecorys (2013) the study on the cost of non-Europe conducted for the DG CONNECT.

[75] Full details of the methodology, assumptions and the calculations in Annex V.

[76] Czernich, N., Falck, O., Kretschmer, T. and Woessmann, L. (2009), "Broadband Infrastructure and Economic Growth", CESIFO Working Paper No. 2861, Category 6: Fiscal Policy, Macroeconomics and Growth.

[77] Deloitte (2011) The impact of 4G technology on commercial interactions, economic growth, and U.S. competitiveness.

growth of 0.15% p.a. and that a doubling of data consumption per 3G subscription leads, on average, to additional GDP growth of 0.5% p.a. (linear effect[78])

Analysys Mason and Tech4i2 (2013) estimate the socio-economic benefits of high-speed broadband using two complementary methodologies: input-output analysis[79] and consumer surplus calculations[80]. The three scenarios envisaged are "do nothing", "modest" intervention and "large scale" intervention (NB: the latter scenario presupposes large-scale public investments in infrastructure). The modest intervention scenario shares some features set out in the options considered in the Impact Assessment. However, it is limited to regulatory measures to boost high-speed broadband rather than a wider regulatory intervention as proposed in this Impact Assessment to achieve a Single Market in electronic communications. In the modest intervention scenario the study puts the expected benefits across the EU27 from such intervention at **€270.4**bn based on sector investment triggered by regulation of €102.5bn (benefit ratio of 2.64), which is €89bn more than in the 'do nothing' scenario.

Another study by Copenhagen Economics on the contribution of the digital Single Market on the economy at large concludes that: "*the digital economy can potentially provide a major boost to EU productivity and growth. We estimate that at least **4 per cent additional GDP (EU27) can be gained in the longer run [between 2010 and 2020] by stimulating further adoption of ICT and digital services through the creation of a Digital Single Market***"[81]. E-communications networks and services constitute the backbone of such digital Single Market.

8.2.5 Social Impacts of the Single Market

8.2.5.1 Impact on Jobs

The building of a Single Market will have a significant impact on employment, but more through diffusion effects in the digital eco-system and on the economy as a whole than through direct jobs creation in the electronic communications sector itself. The explanation is quite straightforward: for €1 invested in the roll-out of very high speed networks, 80% go to

[78] WEF-GITR report 2013, p.78-80.

[79] Input-output analysis is based on the premise that investment in one sector of an economy causes growth in the other sectors of the economy through so-called multiplier effects. For example, the roll out of high-speed broadband creates jobs in the construction and telecoms industries. However, the people employed in these jobs also spend money on food, clothing, housing, transport and leisure activities, thus the total impact of the investment is significantly larger than the investment itself. Standard tables are available for the majority of countries covered by this study allowing the multiplier effects for broadband investments to be calculated.

[80] Consumer surplus is a measure of the difference between what consumers would be willing to pay for a good or service and what they actually have to pay: for example, if someone is willing to pay up to €50 per month for high-speed broadband but the retail price is only €30 per month then that person has a surplus of €20 per month. The difference between what someone would be willing to pay for broadband service and what they actually pay varies from person to person. The total consumer surplus is the sum of all of these individual values.

[81] The calculation of the impact of the DSM is based on two steps. The first step looks at the impact of improved physical infrastructure and improved e-readiness on the take-up of online services. The combined effect of better infrastructure and increased e-skills is an increase in the use of online services of 3% per year. This generates two effects: structural change in the EU economy and improved productivity in all sectors. Regarding structural change, the improved adoption of online services is assumed to initiate job shifts from the rest of the economy towards business services. As productivity in business services is relatively high, this leads to a net increase in GDP. Copenhagen Economics calculates an increase in GDP of €5.7bn per year. Secondly, an increase in the use of online services will boost sector productivity. For example, Atrostic and Nguyen (2006) estimate that a 1% increase in the use of online services generates an increase in manufacturing productivity of 0.05%. Copenhagen Economics assumes that the effect on business services is 0.2% (but this is not based on an empirical study).

civil engineering costs for digging trenches and laying down cable, and the remaining 20% to telecoms work (equipment and services). Moreover, the productivity gains in the telecom sector, a consequence of technological progress in semiconductors and IT industries, are so high that it offsets the impact of growth on telecom jobs. For instance, while 25 years ago tens of jobs were necessary to run a central telephone office in a public switched telecom network, the same task can be performed by means of Internet routers (i.e. a dedicated PC). And this trend has been continuous for the last decades and is expected to keep going at this steady pace in the long term.

It can be acknowledged that the main economic work which has been used for this Impact Assessment, the study on the cost of non-Europe in telecoms conducted by Ecorys, does not provide an assessment of the building of the Single Market on employment. It is therefore difficult to apply a multiplier to the €110bn gains which could be generated by the achievement of the Single Market in telecoms.

However, even if different studies point to different numbers according to the methodology chosen, they all point to positive impacts. Reference can be made to a number of recent works in the field which can provide help frame the employment effects and provide a certain order of magnitude:

- In a study for the European Commission, Fornefeld et al. (2008)[82] collect evidence of the impacts of broadband development on labour productivity, employment and growth. According to the model, process improvement, increased specialization in knowledge-intensive activities and broadband-based development of innovative markets results in an incremental growth of the European gross value added of €82.4bn per year (+0.71%). Employment creation in new activities compensates for job losses due to process optimization and structural displacements. In the best case scenario, broadband could lead to the creation of **more than 2 million jobs in Europe in the period until 2015**. Which scenario will actually occur depends on the speed of adoption of online services, underlining the importance of timing as shown in Chapter 6 below.

- Two ITIF studies, Atkinson et al. (2009)[83] and Liebenau et al. (2009)[84], estimate the employment effects of large scale broadband infrastructure investments in the U.S. and UK. For the U.S., Atkinson et al. project a $10bn investment in broadband infrastructure will create (or retain) 498,000 jobs. For the UK, Liebenau et al. project an additional £5bn investment in broadband networks would create or retain an estimated 280,500 jobs a year.

- Katz et al. (2009)[85] calculate the impact of investment in broadband technology on employment and output in the German economy. They analyze two investment scenarios: The first one is based on the government's target to ensure that 75% of German households have broadband access of at least 50Mbps by 2014. The second investment scenario is based on 50% of German households having access to

[82] Fornefeld, M., G. Delaunay and D. Elixmann (2008), "The Impact of Broadband on Productivity and Growth," *Micus Management Consulting* (on behalf of the European Commission).

[83] Atkinson, R.T., D. Castro and S.J. Ezell (2009): "The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost Productivity and Revitalize America," *The Information Technology & Innovation Foundation (ITIF),* http://www.itif.org/files/roadtorecovery.pdf.

[84] Liebenau, J., R. Atkinson, P. Kärrberg, D. Castro and S. Ezell (2009): „The UK's Digital Road to Recovery," *LSE / ITIF,* April 2009, http://www.itif.org/files/digitalrecovery.pdf.

[85] Katz, R., S. Vaterlaus, P. Zenhäusern, S. Suter and P. Mahler (2009): "The Impact of Broadband on Jobs and the German Economy," http://www.elinoam.com/raulkatz/German_BB_2009.pdf.

100Mbps and another 30% to 50Mbps by 2020. Katz et al. estimate that the achievement of the first target for 2014 will require an investment of €20.2bn creating 407,000 new jobs. Achieving the more ambitious second target by 2020 would create 968,000 new jobs in total.

- Analysys Mason and Tech4i2 (2013) estimate the socio-economic benefits of high-speed broadband in three scenarios ("do nothing", "modest" intervention and "large scale" intervention that presupposes large-scale public investments in infrastructure). Even in the modest intervention scenario, job creation can be expected to reach 447,000 new jobs in the first three years and of 1,98 million new jobs by 2020.

Absent more focused research work, one can infer that the impact on employment of the building of the Single Market in electronic communications will lead to greater employment in the EU, but more in the long run, and with transition costs related to the inevitable transformation from 'old industry' to digital activities – e.g. in e-Health, e-Learning - with a shift in the employment structure towards more high-skilled jobs.

The pace of this change and its subsequent diffusion in the economy depends on the intensity of network investment in next generation access networks and on the pace of very high speed connection uptake by end-users, two factors which should benefit from the building of a Single Telecoms Market in telecoms.

Greater legal predictability (e.g. a guarantee that services will not be blocked or throttled) can also have a positive effect on employment by stimulating consumption and growth in the number and expansion of start-ups and other entrepreneurs in the digital economy.[86]

Moreover, a recent LSE-Brunel University study "Alternative routes to good jobs in the service economy: Employment restructuring and human resource management in incumbent telecommunications firms", reflects upon changes in workforce and give a headline on future trends of employment in the European incumbent telecoms. This additional background element confirms the above trends, i.e. that the workforce of incumbents, which continue to represent the largest share of telecommunications employment in most countries, keeps decreasing as the result of changing technologies, market developments and accompanying regulatory development.

These trends encouraged restructuring measures at all firms aimed at downsizing employment, concentrating jobs in fewer locations, redeploying employees to areas of growing demand, externalizing jobs, changing employment contracts for certain employee groups, and adopting new models of work organization and performance management.

The report's findings suggest that ownership and finance patterns, collective bargaining structures and rights, and employment protections played an important role in shaping strategies and outcomes.

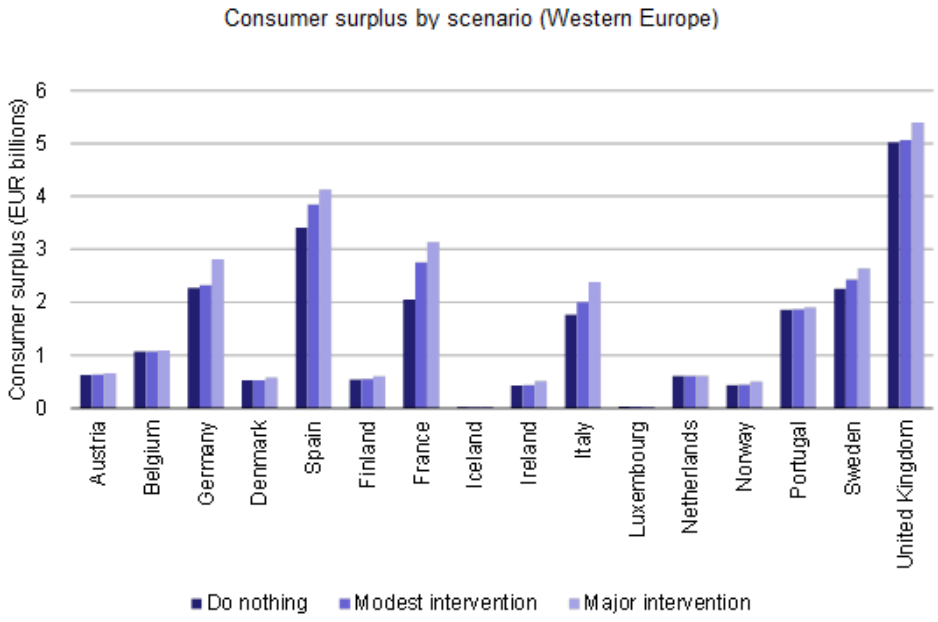
8.2.5.2 Impact on Consumer Surplus

Analysys Mason estimates total consumer surplus from 2011 to 2020 to be of the order of **€28.6bn in the modest intervention scenario,** which foresees some regulatory measures such as cost reduction measures, and more standardisation. This scenario is the closest to the

[86] Discussion Paper Access, *The Importance of Net Neutrality in the Emerging and Developing World*, September 2011, p. 11; http://www.media-alliance.org/downloads/Net%20Neutrality%20in%20the%20Emerging%20World.pdf

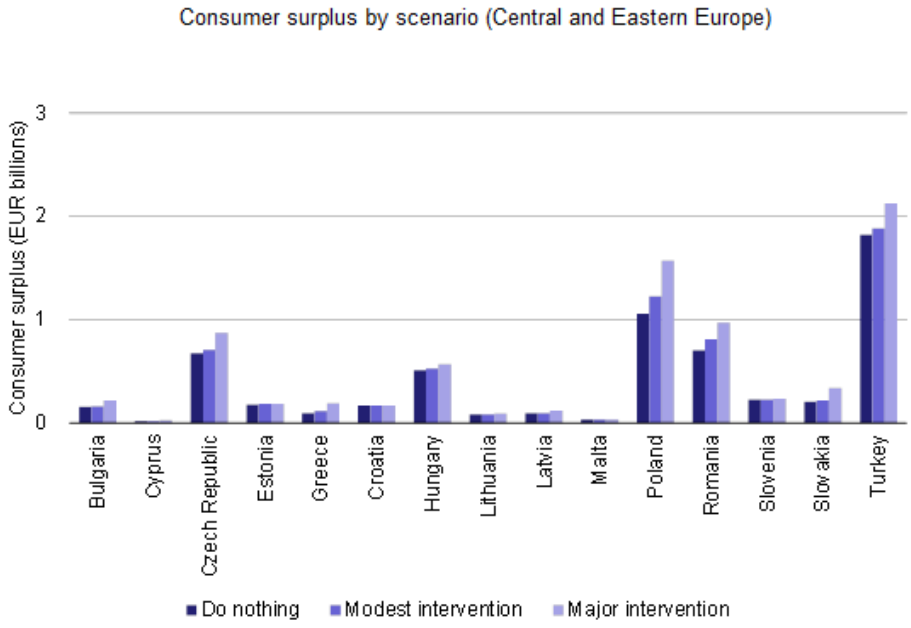
spirit of this Impact Assessment[87]. Figure 20 below shows the estimated consumer surplus from high-speed broadband for the period 2011-2020 by country.

Figure 20 – Consumer Surplus by Scenario (Western Europe)



Source: Analysys Mason, 2012

Figure 21 – Consumer Surplus by Scenario (Central and Eastern Europe)



Source: Analysys Mason, 2012

[87] The scenario also includes €7bn.for infrastructure investment, in particular FTTP, allocated to the countries in proportion to the gap in the NGA coverage left by the market. After the budget cut to the Connecting Europe Facility, this estimate is probably over-optimistic as only Structural Funds will provide public money for broadband deployment.

8.2.6 Administrative impacts

The measures in the proposed Regulation are self-executing and do not thus require any transposition by Member States. The NRAs will have to ensure the compliance by market players with the proposed measures. However, harmonised rules across the EU will facilitate and simplify enforcement activities. BEREC's tasks are increased from the current situation but the proposed measures do not imply the increase of the BEREC Office budget. Given the current under-spending of the BEREC Office budget the proposed professional Chairman of the Board of Regulators can also be covered by the current level of the BEREC Office budget.

8.3 Evaluation of Policy Options

This section explores the three different options presented in Chapter 4 and presents a succinct assessment of their economic and social. Environmental impacts of ICT investments cannot be estimated but are generally presumed to be modest. The baseline scenario serves as reference and is deemed to have no or only neutral impacts (marked with 0). The impacts are rated as follows:

+++	Significant overall positive impacts
++	Moderate overall positive impact
+	Limited overall positive impacts
0	Neutral impacts

8.3.1 Impacts of Option 1

Gradual regulatory harmonisation fostering the integration of the Single Market

Economic impacts: +

Option 1 would allow tackling all of the bottlenecks to the Single Market for electronic communications. However, both in terms of timing and in terms of legal predictability and transparency, option 1 differs significantly from options 2 and 3.

Option 1 would essentially consist of individual measures under the form of issuing Recommendations (either non-binding recommendations foreseen under art TFEU 292 or Recommendations provided for under art 19 of the Framework Directive, of which national authorities need to take the "utmost account") and a set of individual revisions over the next few years of existing directives and the roaming Regulation. Options 2 and 3 would consist of a single Regulation addressing all the issues.

This would have consequences for:

- Timing: the experience of the revision of the previous review package of the legal framework for electronic communications, shows that on top of the time needed for the adoption of directives by the EU institutions, Member States typically require 18 months to transpose measures into national law. However, in the case of the latest revision of the framework (in 2009) this deadline was only met by 7 Member States resulting in the opening of infringement proceedings which usually take at least another 2 years to be resolved. Moreover, since revisions of the existing framework are spread over time it would take probably at least 5 years for the effects to be produced across the board, which is significantly longer than under options 2 or 3.

- The reduction of the fragmentation: under this option the risk of maintaining legal disparities between Member States remains high mainly for two reasons. Firstly because Member States remain free to adapt legislation to their national specificities and can furthermore "goldplate" resulting in further regulatory fragmentation for operators wishing to deploy their services across borders. Secondly, under this option many of the main bottlenecks could only be addressed by recommendations. Experience shows that even in the case of recommendations issued under art 19 of the framework directive, Member States (or national regulatory authorities) do not always take the necessary "utmost account" (art 19 FWD) of those recommendations. If such a situation would again occur the Commission has the possibility, but only in certain areas and only after two years, to issue a decision subject to comitology procedures.
- Legal predictability and the regulatory clarity and transparency: contrary to options 2 and 3 this option would offer less predictability not only, as explained above, because it would take longer to produce all of its effects,, but also because a longer period of uncertainty is likely to persist before all legislative measures enter into force.. Moreover, different instruments would be adopted and enter into force at a different moment in time. As the Single Market can only be achieved if a number of bottlenecks are removed a patchwork of instruments would compromise the effectiveness of the individual measures which are mutually dependent, this would undermine legal predictability and could lead to a situation in which only some of the policy objectives would be met. The effects of possible delays or gaps in the approach are difficult to quantify but are highly relevant as the success in creating a true Single Market, as shown by the experience of the introduction of the EU Single Market in 1993 (see Cecchini report), critically depends on creating stable expectations on part of all market participants about future market conditions. As has been the case for the 1993 EU Single Market project, setting a clear target date at which measures kick in is essential in convincing the market that they should prepare for change.

Equally, whilst option 1 in theory allows for the achievement of all of the specific objectives, the tools foreseen under this option would in some respects lead to measures that materially differ from those that are envisaged under options 2 or 3. Contrary to options 2 and 3, for example, it would not bring the full benefits of a single notification system in the home Member State and heightened scrutiny of ex ante remedies by NRAs. Nor would it allow for effective coordination measures through a consultation mechanism of national spectrum assignment procedures. Even if it is difficult to quantify these differing impacts, they logically lead to a less effective Single Market. Option 1 falls short in achieving the objectives in consumer protection, roaming and international calls.

Based on these considerations, it is estimated that option 1 would take the longest of all options (likely 5 years or more) to implement fully. Supposing that implementation would be completed by 2020 according to the estimates of the Ecorys study this option would imply foregoing potential cumulative additional welfare of some 3.7% of 2010 GDP over the period 2015–2020 compared to measures that would deliver the full range of benefits from the beginning of 2015.

Furthermore, it is likely that only a part of the expected economic benefits as described under 8.2 above would be realised. Therefore, even if this option would constitute an improvement over the current situation, it can be considered to have only a 'moderate overall positive impact'.

Social impacts: +

In relation to the baseline scenario this option increases the consistency of the regulation and thereby contributes to the competitiveness of the sector. However the lack of legal

predictability and the long timeline for its implementation would not create a substantial 'stimulus effect'. Consequently its impact on employment can be considered to be 'overall limited'.

8.3.2 Impacts of Option 2

A single legislative instrument with a view to completing a Single Market for electronic communications supported by enhanced EU coordination.

This option would consist of a legislative instrument to establish the regulatory principles and detailed rules necessary to complete a European Single Market for electronic communications by tackling the entire set of the four main bottlenecks hindering the achievement of the Single Market. Such a measure would build on the principles of the existing regulatory framework, amending it only where necessary, in order to create the conditions for new cross-border electronic communications markets to develop at EU level.

The most appropriate instrument to achieve the specific objectives would be a Regulation. Using a soft law tool such as a Recommendation does not seem appropriate as a Recommendation, by its non-binding nature, would maintain the existing fragmentation of the rules. Moreover, Member States could 'cherry pick' the specific recommendations, leaving out those they do not regard easy to implement. A revision of the current framework via a Directive, on the other hand, could resolve the issue of the binding nature of the legal tool, however, the lengthy implementation process at national level may be regarded as a relevant obstacle given the need for swift EU action. Moreover, Member States' implementation of such a Directive could give rise to divergences which could reduce the impact of the measures. A Regulation, by its directly binding nature without the accompanying need for a transposition at national level, addresses the need for quick implementation. By virtue of its direct applicability, a Regulation also reduces the risk of national divergences and thus fragmentation.

Finally, a Regulation would by its nature produce immediate effects as of its entry into force date, foreseen for July 2014 and July 2016, respectively.

Economic impacts: +++

The economic impacts would be significantly positive. Once compounded over six years, the permanent one-off effect of the achievement of the Single Telecoms Market as early as possible could add up to 5.5% to the EU's GDP[88].

Among the three options this one is most suited to achieve the overall and specific objectives described in Chapter 6 above.

Moreover, the spill-overs on other sectors can be evaluated at tens of billions of potential gains p.a. as the examples of Machine-to-Machine and Business Communications Services demonstrate (cf 8.2.2.).

Under this scenario these gains would be harvested as of 2015.

Social impact: +++

[88] The compound effect is calculated through the usual formula for calculating compound indexes; $(1+i)^t$. In this case: $(1+0.09)^6$. It has to be noted that the effect is one-off for the six years and does not translate into a different growth rate for the economy

Under this option, impacts on employment and consumer welfare would be greater than under option 1. Furthermore, a higher degree of harmonisation of consumer protection would also produce positive social impacts by building trust and reducing regulatory burdens.

8.3.3 Impacts of Option 3

A single legislative instrument complementing the regulatory framework with a view to completing a Single Market for electronic communications with a single EU regulator ensuring full coordination

This option entails the most radical change compared to the baseline scenario. The substantive measures that would be implemented under Option 3 are the same as those listed for Option 2. However, the governance structure underpinning the mutual recognition principle would be replaced by a single EU regulator with responsibility for pan-EU services, consistent application of consumer protection rules, coordination of NRAs and with new powers in radio spectrum management replacing the current coordination system.

Option 3 has been widely discussed internally and externally as a possible scenario for the Single Telecoms Market. However, it will undoubtedly be questioned in terms of subsidiarity and proportionality. Furthermore, even in a scenario where this would not be the case, this option would still require more time to implement than Option 2. New governance structures require time to be put in place. As an example the BEREC Office, took 2 ½ years to be effectively established and start operations. The BEREC Office example is however for an agency of only 28 staff members whereas the Regulator foreseen under Option 3 would need significantly more staff members, particularly if competences such as consumer protection and spectrum management would be added. The BEREC Office has much more limited tasks and requires much less specific technical expertise than that required for an EU regulator, in particular one tasked with spectrum management. It can therefore be assumed, in an optimistic scenario, that it would take at least three years and a half before it would become fully operational i.e. mid 2018.

The extra time required for option 3 in comparison to option 2 amounts to foregoing potential additional GDP of some 2.3% over the period 2015 - 2020.

Moreover, the EU-level governance structure may not be fully efficient, in that it may not be as well able to take full account of national specificities as option 2. In certain cases (e.g. regulating access to local physical infrastructures; assigning spectrum where conditions differ from Member State to Member State for example in relation to spectrum assigned to defence and broadcasting; redistribution of spectrum revenue raised at EU level to Member States would also be complicated and open to legal challenges; consumer protection redress which should be conducted in national languages), an EU structure may have difficulties meeting legitimate demands from Member States and their citizens. The division of responsibilities between the Commission which currently scrutinises decisions by national regulatory authorities (under the so-called Art 7/7a procedure) and a single EU regulator would need to be carefully defined to ensure legal certainty and avoid duplication. As the Single Telecoms Market can be expected to enhance competitive intensity as barriers to entry are removed, over time there would likely be fewer SMP findings. In that case, it could be questioned why in the perspective of a gradual reduction of ex-ante regulation as competition intensifies, an EU regulator should be established?

Nonetheless, even if overall the general and specific objectives can be achieved through option 3, the introduction of a single regulator would take more time than option 2 to produce its impacts and could be less efficient or not entirely proportionate with the desired objectives.

Economic impact: ++

Social impact: ++

In conclusion, the different economic benefits of the three scenarios are summarised in the graph below.

Figure 22 – Impact of the Single Market on GDP by Option

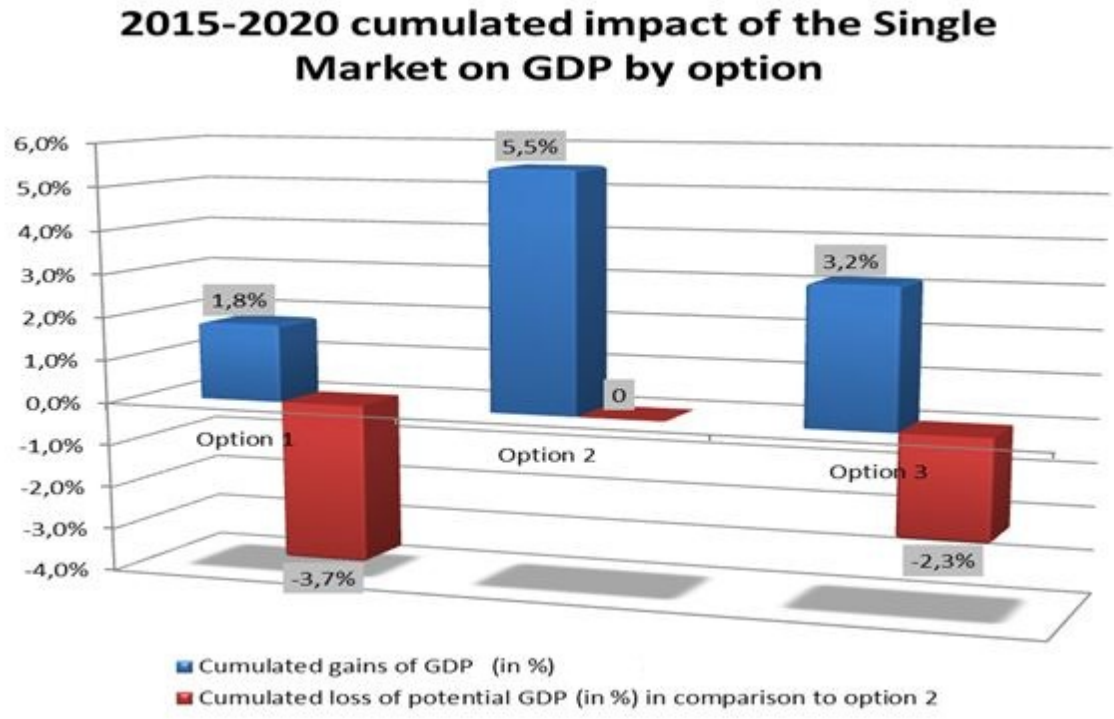


Table 7 – Summary of Impacts from Different Policy Options

Baseline	**0**	**0**
Option1	+	+
Option 2	+++	+++
Option 3	++	++

9. CHOICE OF THE PREFERRED OPTION

This chapter gives an overview of the main arguments leading to the selection of policy options, in view of the operational objectives described in Chapter 3.

9.1 Baseline Scenario

Under the baseline scenario, the current regulatory framework for electronic communications would not be modified. No new implementing measures would be introduced.

Essentially the current regulatory framework, after having successfully allowed for the liberalisation of telecom markets, is nevertheless conceived in such a way that it maintains 27 national markets for electronic communications services whilst putting in place broadly common rules on how these markets should operate. Furthermore its implementation results in further fragmentation as, on the one hand, transposition of EU law into national legislation inevitably leads to differing national rules to take account of national specificities, and, on the other hand, national regulatory authorities apply the rules in specific ways. The result is a patchwork of differing rules from one Member State to the next.

More worrying in view of the objective of arriving at a true Single Telecoms Market for electronic communications, is the absence of possibilities for operators to provide from their home country services to (some or all of the) other Member States. Equally, consumers (residential or businesses) are unable to buy the whole set of electronic communication services from operators residing in another Member State (except for the theoretical case of mobile subscriptions which is then however rendered extremely costly as it would involve facing roaming and international charges).

Moreover, it appears that the application of the current regulatory framework is not sufficient to trigger the level of investment needed for achieving the Digital Agenda for Europe targets as it has not created the adequate environment for such investments to take off, as demonstrated by Analysys Mason[89] (2012).

In conclusion, the current regulatory framework can be considered to contribute to the absence of a true Single Telecoms Market for electronic communications, as well as, because of this fragmentation – and the ensuing scale problems of certain national markets (on the supply side) and the inability of costumers to draw the benefits from a Single Market (on the demand side) - to be partly responsible for the absence of a dynamic telecoms market for electronic communications in Europe.

Hence the baseline scenario of not taking action will not lead to a Single Telecoms Market for electronic communications and therefore not deliver any of the expected economic or social benefits of such a Single Market.

9.2 Option 1

Gradual regulatory harmonisation fostering the integration of the Single Market.

Besides the general Treaty provisions on issuing non-binding recommendations (Art. 292 TFEU), the current regulatory framework for electronic communications provides for the possibility in certain areas to issue specific recommendations (Art. 19 of the Framework Directive) to harmonise the application of the provisions foreseen under that framework across the EU. It furthermore foresees that Member States shall ensure that national regulatory authorities take utmost account of those recommendations and that the Commission may ultimately, in some well-specified cases, and only after two years after it issued its recommendation, turn those into decisions.

The only mandate with regard to coordination of spectrum assignment conditions would be the mandate the existing Radio Spectrum Policy Programme (Art. 4.8) gives to the

[89] Analysys Mason Tech4i2 (2012) "The Socio-economic impact of bandwidth". Study performed for the European Commission.

Commission to "facilitate the identification and sharing of best practices on authorisation conditions and procedures". This tool is however considered insufficient, as it does not establish a formal procedure which requires Member States to take the Commission's views, and those of other Member States, into utmost account in particular with regard to consistency of assignments across the Single Market. The Commission would be limited to informal discussions, such as workshops, to try and convince Member States to follow consistent assignment approaches.

In principle, issuing Recommendations under the framework directive for electronic communications would provide Member States and NRAs with more guidance on how to apply the current regulatory framework. Such Recommendations could be complemented by a reinforcement of coordination and cooperation measures such as exchanges of best practices or voluntary commitments.

Issuing Recommendations under the Framework Directive for electronic communications do not require changing the existing legislation. However this does not mean that they produce immediate effects. Even if the adoption process of such Recommendations is shorter than that of legislation by the co-legislators, it usually still takes about a year.

Equally, whilst option 1 in theory allows for the achievement of all of the specific objectives, the tools foreseen under this option would in some respects lead to measures that materially differ from those that are envisaged under options 2 or 3. Contrary to options 2 and 3, for example, it would not bring the full benefits of a single notification system in the home Member State and heightened scrutiny of ex ante remedies by NRAs. Nor would it allow for effective coordination measures through a consultation mechanism of national spectrum assignment procedures. Even if it is difficult to quantify these differing impacts, they logically lead to a less effective Single Market.

Moreover, such Recommendations are not entirely binding which means that Member States (government, regulators and spectrum authorities) have wide discretion with respect to their implementation.

In conclusion, it is estimated that option 1 would take significantly longer, likely 5 years i.e.2020, to implement fully than the other options which according to the estimates of the Ecorys study would amount to foregoing potential additional GDP of some 3.7% compared to option 2 and 3 over the period 2015 - 2020. In the current economic context, foregoing such a boost to growth cannot be sustained.

Even if this option would constitute an improvement on the current situation and can be considered a 'moderate overall positive impact' only a part of the expected economic benefits as described under 7.2 above would be realised.

9.3 Option 2

A single legislative instrument completing the regulatory framework with a view to achieving a Single Market for electronic communications supported by enhanced EU coordination.

This option would consist of a single legislative instrument to introduce the EU market-level elements associated with a true Single Market, accompanied by targeted changes of the current regulatory framework. It would not imply a fully-fledged revision of that framework, and in particular would refrain from overhauling the overall governance aspects of EU regulation (in order to safeguard a regulatory mechanism which enables to take account of

national specificities where this is required, such as in access to physical networks and some areas of consumer protection or litigation in this area).

While the effects of other factors including economic, social and wider regulatory factors on the effective completion of the Single Market are acknowledged. Such measures, some derived from solutions successfully applied in creating a Single Market in other sectors such as banking, would tackle all of the of the four identified barriers to the Single Market in a single legislative instrument aimed at introducing a single EU authorisation, the provision of harmonised inputs for fixed networks, more consistent spectrum assignment and introducing a single telecoms' space for end-users (residential or businesses).

In conclusion, such measures would build on the principles of the existing regulatory framework, amending it only where necessary, in order to create the conditions for new cross-border electronic communications markets to develop at EU level. In doing so it would allow meeting the two-fold Single Market objective of freedom of provision and freedom of consumption of electronic communications services. At the same time, by leaving the existing regulatory framework largely untouched, including in the way that national regulatory authorities supervise markets, it allows for not disrupting operations of those providers that would opt for keeping a national (or sub-national) footprint.

Enabling the development of new cross-border markets – in particular if those are to operate under the 'better regulation' principle, i.e. by progressively decreasing regulatory pressure if markets are proven to be competitive – however still calls for some forms of supervision. This option would leave the competences of national regulatory authorities essentially unchanged while at the same time enhancing the European coordination mechanism. That is beneficial as they will also in a true Single Market be the best placed to take account of the national specificities when (i) regulating access to physical infrastructures that by their nature remain geographically national; and (ii) addressing consumer questions in a national context (notably in their language).

As described under section 7.3, this option has the distinct advantage of enhancing legal predictability and transparency in the most efficient manner. It is also the option that takes least time to produce its effects, which allows it to deliver the highest possible economic and social benefits of all the options that have been considered.

In conclusion, this option allows delivering on all of the specific objectives and generating the highest possible expected benefits in the most timely and effective manner. For these reasons it must therefore be considered the preferred option.

9.4 Option 3

A single legislative instrument complementing the regulatory framework with a view to completing a Single Market for electronic communications with a single EU regulator ensuring full coordination

The measures that would be implemented under Option 3 are broadly the same as those listed for Option 2. However under Option 3 the governance structure underpinning the mutual recognition principle would be replaced by a single EU regulator that would have responsibility for pan-EU services, coordinating the action of National regulators and would have new powers in radio spectrum management replacing the current system of coordination of radio-spectrum regulators. The single EU regulator would have competence in the consistent application of consumer protection rules together with the implementation of specific dispute resolution mechanisms.

In a 'greenfield' situation, this option could theoretically be considered to deliver the highest benefits. However the actual situation in the EU is such that national regulatory authorities have been put in place as a result of EU legislation in order to cater for national specificities. In the area of spectrum management the situation is even more complicated as those powers are in many Member States spread out over various bodies (in charge of telecoms, audio-visual, other civil or military spectrum usages). In proposing this option, the existing situation must therefore be considered. A previous Commission proposal in this sense, whilst highlighting in its Impact Assessment the potential gains of such a proposal, was abandoned in the inter-institutional negotiations in the face of the fierce opposition of Member States to a centralisation of competences at EU level.

In any event, this option would in comparison to option 2 take considerably more time to produce its full effects. The new body would need to be set up with the needed technical expertise for such a critical and broad subject, which as estimated under section 7.3 would require at least 3 ½ years and, as a result, delay and diminish the economic benefits.

In conclusion, even if this option would in principle enable delivery of all of the specific objectives and the expected benefits, it would be more complicated to implement, raising questions of proportionality, and would be less efficient and take much longer than Option 2.

9.5 Risk Assessment of the Preferred Option

As described in sections 9.3 and 6.4 the objectives of this measure, consisting of creating a Single Market for telecoms in which operators have the right to provide their services from their home country to the entire EU and for citizens and businesses to consume such services from wherever they are provided in the EU, requires a 'logical chain' approach. It is only if all necessary measures are taken that operators and consumers will be able to enjoy these rights. If some elements of such a package of measures were to be removed, the objective would not be met.

Therefore the major risk of the preferred option lies in some of the elements of this 'logical chain' being removed.

10. MONITORING AND EVALUATION

Monitoring of the progress on the basis of the preferred option will be required to assess the achievement towards the Single Market for electronic communications. This section presents the monitoring and evaluation mechanism and indicators set in place in relation to this initiative. In the spirit of better regulation, the choice was made for light reporting obligations for operators and NRAs, building on the tools that already exist.

The annual **Digital Agenda Scoreboard** and **progress report** on European electronic communications regulation and markets provide comprehensive data and analysis of market, regulatory and consumer developments in the sector, and indicators measured through these reporting tools will be adjusted in order better to measure cross-border activity and provision of electronic communication services.

The above-mentioned reports are based on information received from various sources including Commission missions carried out in Member States, analysis of notifications of national transposition and implementing measures, market data received from national regulatory authorities and surveys commissioned on price developments.

These reports cover a broad set of indicators such as prices, number of alternative providers, investment by telecoms' operators, market shares, broadband penetration, and development of new technologies and take-up of digital services.

Since the general objective of the proposed initiative is to create a Single Market for electronic communication services, with the aim of fostering growth, competition, investment, innovation, better services and greater choice for consumers, indicators used will measure the expected effect of the proposed measures on boosting investment in general, investment in the network by the electronic communications sector, and overall investment in networks as a percentage of total revenue.

The impacts of simplification of the general authorisation regime for providers of electronic communication services will be measured inter alia by the take-up of the EU passport, notably the number of operators providing services in more than one Member State and, with the assistance of BEREC, regular estimates concerning the evolution of administrative cost savings achieved.

In order to measure progress towards the possibility for consumers to enjoy electronic communication services seamlessly across the Union, indicators will include the emergence of a pan-European, or cross-border offers. Another suitable indicator in this respect will be the evolution of price differentials for comparable services.

The annual reports will therefore remain the main tool for monitoring and evaluating the implementation of the regulatory framework also after the current legislative changes to the directives have been implemented. This data collection and monitoring is also continuously being developed in order to better assess the effects of EU rules in the dynamic sector.

In addition to the annual reports and the Digital Agenda Scoreboard, BEREC will have a role in monitoring the progress of the proposed measures. Indeed, the Regulation setting up BEREC requires it to monitor and publish annual reports on developments in the sector.

Based on the information acquired through the Digital Agenda Scoreboard exercise, the annual reports and BEREC's reporting, the Commission should then evaluate, after three years, the impact of the proposed measures, with a view to proposing necessary adjustments, as appropriate.

As part of the Commission’s Better Regulation Agenda, DG CONNECT has put in place a specific monitoring tool, “metrics” to measure the impact of its activities. A wide public on-line consultation on this monitoring tool was conducted in 2012 to which more than 1800 stakeholders responded. The monitoring will be rendered public via the Europa-website.

Several metrics targets will serve as useful monitoring tools for the success of the planned initiative to establish a true Single Market for electronic communications.

In particular the following metrics benchmarks will be used as part of this monitoring:

10.1 Specific Objective 1

Enabling unrestricted EU-wide provision of service by removing obstacles to the authorisation regime and as regards rules applicable to service provision:

- ***Number of cases in which the Commission adopts decisions blocking SMP remedies imposed by NRAs on European operators:*** initially, there might be a slight increase in the number of “serious doubts” decisions (which currently concerns some 15% of notifications) but as NRAs adapt to the Single Market imperatives, the number of cases

should drop to some 5% or less, which is the share of cases which are subject to an Art 7 decision relating to market definition under the current framework.

10.2 Specific Objective 2

Ensuring greater consistency in spectrum assignment in order to allow mobile operators to access spectrum across the EU on the basis of predictable rules and coordinated conditions:

- Reduction of time period for authorization: with the entry into force of the Regulation the measures aimed at ensuring harmonization of conditions imposed on the use of spectrum should lead to a reduction of the time period in which all of the EU's Member States issue the licenses to a maximum of one to two years depending on the specificities of the particular band (the timeframe for opening up the 800 MHz band in all Member States by the time the last Member State has taken all necessary steps could be as long as 6 to 7 years).

10.3 Specific Objective 3

Ensure consistent European wholesale inputs to enable electronic communication service providers to offer their services across the Single Market.

- The Regulation would harmonise the parameters of virtual broadband access products that regulated operators offer to access seekers. SMP operators in fixed broadband markets would be required by NRAs to offer products corresponding to harmonised Union-wide parameters, subject to proportionality considerations. Such interoperable products should be available by (2016) in at least half of all Member States, and in all Member States by 2020.

10.4 Specific Objective 4

Enable consumers to freely enjoy electronic communication services seamlessly across the Union, and establish a common high level of protection to the benefit of both consumers and cross-border telecoms undertakings.

- By 2014, incoming roaming calls should no longer be charged. By 2016, consumers should no longer be faced with additional international roaming costs as "Roam Like at Home" would become the default as part of their national subscriptions. International call charges should not be higher than the Eurotariff (0.19 cents per minute) for mobile calls and not be higher than the charges for domestic long distance calls for fixed calls.
- BEREC in cooperation with NRAs will regularly monitor traffic management to ensure that the principles on net neutrality, as laid down in the Regulation, are respected. After a two year transitional period which should be used to adjust existing contracts and put in place measures to comply with the provisions of the Regulation, i.e. by 2016, the target value for blocking of websites and applications and throttling of traffic (except when applied in the specific cases foreseen by the Regulation) should be zero. BEREC should also regularly verify that there are no structural discrepancies between advertised Internet speeds and real speeds.
- As regards switching, at least 10% of consumers should make use of their right to switch to another provider by 2017.

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Glossary

ADSL: Asymmetric Digital Subscriber Line

ALDE: Alliance of Liberals and Democrats for Europe

ARPU: Average Revenue Per User

ARCEP: Autorité de régulation des communications électroniques et des postes

ASQ – Assured Service Quality

BCG: Boston Consulting Group

BEREC: Body of European Regulators

BEUC: Bureau européen des unions de consommateurs (The European Consumer Organisation)

CAP: Content and Applications Provider

CAPEX: Capital expenditure

CCIA: Computer & Communications Industry Association

CEO: Chief Executive Officer

COCOM: Communications Committee

DAE: Digital Agenda for Europe

DER: Distributed Energy Resources

DG CNECT: European Commission Directorate General for Communications Networks, Content and Technology

DG ECFIN: European Commission Directorate General for Economic and Financial Affairs

DG SANCO: European Commission Directorate General for Health & Consumers

DNS: Domain Name System

DSM: Digital Single Market

EBITDA: Equity Before Interest, Taxes, Depreciation and Amortisation

ECHR: European Charter of Human Rights

ECTA: European Competitive Telecommunications Association

EMF: Electromagnetic Field

EP: European Parliament

ERT: European Round Table for Industrialists

ETNO: European Telecommunications Network Operators' Association

EU: European Union

EUR: euro (currency)

FCC: Federal Communications Commission

FD: Framework Directive

FTTB: Fibre to the Building

FTTC: Fibre to the Cabinet

FTTH: Fibre to the Home

FTTx: Fibre to the x

GDP: Gross Domestic Product

GHz: Gigahertz

GPS: Global Positioning System

GPT: General Purpose Technology

GSM: Global System for Mobile Communications

IA: Impact Assessment

IASG: Impact Assessment Steering Group

ICT: Information and Communications Technology

IGF: Internet Governance Forum

IMCO: European Parliament Committee on Internal Market and Consumer Protection

INTUG: International Telecommunications Users Group

IP: Internet Protocol

IPR: Intellectual Property Rights

IPTV: Internet Protocol Television

ISP: Internet Service Provider

IT: Information Technology

ITRE: European Parliament Committee on Industry, Research and Energy

LTE: Long Term Evolution

M2M: Machine-to-Machine

MEP: Member of the European Parliament

MHz: Megahertz

MNO: Mobile Network Operators

MS: Member States

MSC/MNC: Multi-Site/Multi-National Corporations

MVNO: Mobile Virtual Network Operators

NGA: Next Generation Access

NRA: National Regulation Authority

OECD: Organisation for Economic Co-operation and Development

OTTs: Over The Top players

P2P: Peer-to-Peer

QoS: Quality of Service

R&D: Research & Development

RSPP: Radio Spectrum Policy Programme

RSPG: Radio Spectrum Policy Group

S&D: Socialists & Democrats

SIM: Subscriber Identity Module

SME: Small and Medium Enterprises

SMP: Significant Market Power

SMS: Short Message Service

TFEU: Treaty on the Functioning of the European Union

TTE Council: The Transport, Telecommunications and Energy Council

US: United States of America

USD: Universal Service Directive

VAT: Value Added Tax

VDSL: Very-high-bit-rate digital subscriber line

VoD: Video on Demand

VoIP: Voice over Internet Protocol

VP: Vice-President

WLR: Wholesale Line Rental

4G: fourth generation of mobile phone mobile communication technology standards

Annexes

Annex I – Detailed Overview of the Consultation of Stakeholders and other EU Institutions

This Annex provides an outline of the consultation process for the present Impact Assessment. Due to timing constraints, resulting from the request of the Spring European Council in March for concrete measures to achieve a Single Market for ICT as early as possible, a fully-fledged public consultation on the specific measures in accordance with the Commission's guidelines could not be organized. Nonetheless, the Commission services have taken a number of initiatives to ensure that stakeholders' inputs could be gathered. The outcomes of these initiatives complement the summary findings in Chapter 2. As set out in the IA, further inputs have been gathered as part of public consultations on specific elements of the proposal, for example on net neutrality and the Open Internet, on the definition of relevant markets or on Roaming

1. PUBLIC EVENTS ORGANISED BY THE COMMISSION

Two major public information events have been organised on the Single Telecoms Market for electronic communications in order to provide orientations and seek feedback from all interested stakeholders on the proposals envisaged by the Commission. In advance of these events, Commission services made available a non-paper containing a broad problem analysis and possible ways to address the identified obstacles. The first event took place on 17 June in Brussels and was attended by more than 300 stakeholders. A further event took place as part of the Annual Digital Agenda Assembly, held on 19 June in Dublin, and was attended by more than 600 stakeholders. Stakeholders attending these events represent all segments of the industry (from telecom operators to investors, content providers, devices manufacturers, and other industries). Civil society and consumer organisations also participated as well as representatives of national administrations, national regulatory authorities and other EU institutions. There was also active involvement of think tanks and the academic community.

The events allowed the Commission, represented by Vice-President Kroes and senior Commission officials, to present the political and economic context, provide an overview of the regulatory and other bottlenecks in the e-communications sector, and highlight the tangible benefits for growth and jobs for the economy and society as a whole as well as for the sector, if current fragmentation of the Single Market for electronic communication can be overcome. The Commission also presented possible ways of tackling remaining bottlenecks as part of forthcoming proposals. Several high-level key note speakers from industry and the regulators' community provided insights followed by a comprehensive panel discussion bringing together all the main representative organisations (notably industry, consumers and users, SMEs, investors, academia). The wider community of stakeholders expressed their opinions during the different sessions.

The events showed that a large majority of stakeholders share the problem analysis and recognise the urgency in taking action. Whilst many stakeholders would have preferred to be given more information about precise details in any of the envisaged measures, positions differed on the most effective solutions. Depending on their respective interests, industry stakeholders either supported a high level of integration of the Single Market or advocated a more cautious approach. Several industry representatives called for more ambitious measures than those contained in the Commission's orientations, in particular the setting up of a European regulator and wide ranging harmonisation of spectrum management. Consumers

and representatives of the wider economic eco-system (including SMEs), in particular those that are increasingly dependent on access to fast Internet connectivity, urged rapid measures that should lead to a truly integrated Single Market, in particular through the abolition of still high roaming charges in the EU, notably for data.

On the general objective to achieve the Single Market, stakeholders' reactions can be summarised as follows:

- **consumer organisations** (BEUC) underlined four imperatives: enhance transparency so that consumers can better exercise choice; ensure an open, neutral Internet (applying to both mobile and fixed networks) without ISPs unjustified blocking and throttling of traffic; an end to international roaming charges and better enforcement of consumer protection rules.

- **incumbent operators** (ETNO - European Telecommunications Network Operators) stressed the need for bold reforms but regretted the lack of clarity and insufficient level of ambition in the orientations provided by the Commission. Whilst agreeing on the diagnosis, individual companies (*inter alia* Telefonica, Orange, Deutsche Telekom, TeliaSonera) expressed a degree of caution on certain aspects of the initiative (e.g. international roaming, pan-European availability of a consistent wholesale virtual product, traffic management) and argued that the initiative should contribute to rolling back regulatory burdens, promoting much greater regulatory consistency across Member States and ensuring a level playing field, particularly vis-à-vis so-called "over the top" providers. The idea of a single passport was considered interesting if it contributed to this objective. The importance of quality of service differentiation was also highlighted. BT, in contrast to some of the other operators, underlined the importance of consistent access products across the EU in order to be able to provide quality services to large businesses operating in different Member States. Absent such products, the market would remain fragmented with little competition and major economic benefits lost.

- **new entrants/access seekers; mobile, cable operators and satellite industry** (ECTA – European Competitive Telecommunication Association) shared with Vodafone and CableEurope the analysis that the current regulatory framework continues to provide benefits. The main challenge was effective implementation and enforcement to drive competition. ECTA also highlighted the aspect of providing services to large businesses, and, to this end, the need to define a business-to-business market at European level. CableEurope also expressed support for consistent access products for business services. On the open Internet, CableEurope questioned the current approach aimed at banning blocking and throttling. ESOA (European Satellite Operators) highlighted the role that satellite can play in meeting the DAE targets. GSMA underlined the link between connectivity, infrastructure and investments (comparing with the US). The reform should be comprehensive, focusing on spectrum coordination, investment, innovation, consistent regulation and tackling impediments to consolidation.

- **digital consumer electronics manufacturers** (DigitalEurope) considered that the European Union needed a modern framework of rules which would drive growth and innovation throughout the economy. The current situation in Europe is unsatisfactory – Single Market rules need to work in sectors of the future, such as digital services, as much as they already do in goods. The status quo does not meet expectations of the digital industry, which is competing in fiercely competitive global markets and needs a strong domestic base (i.e. the Single Market) to be successful. CCIA, a **representative of IT and applications developers**, welcomed a bold and pro-competitive outline of the proposals.

- **other (connectivity-dependent) industries** (ERT – European Round Table of Industrialists) stressed the role of ICT as the main driver in many sectors – from manufacturing to energy

and retail/logistics. In the absence of rapid action at European level, there is a significant risk of missing out on a major boost for growth and jobs. Worse still, under great competitive pressure, companies would be forced increasingly to invest in other parts of the world where the environment would be more favourable.

- **business users** (INTUG – International Telecommunications Users Group) stressed the necessity to treat the business market (which represents 50% of the overall e-communications market) as a different segment from the residential market. It was recalled that in Europe, SMEs provide 90% of jobs and yet, they still face many hurdles due to the lack of a Single Market (licensing, taxation, barriers to entry etc.). The absence of consistent access products was a serious obstacle to serving the needs of multi-national companies within the Single Market.

- **investors** – stressed the disappointing performance of the sector over the last decade with declining revenue which stands in stark contrast to other parts of the world where there is growth and a virtuous cycle between supply and demand. Business models have not adjusted fast enough to decreasing importance of voice revenue and the rapid increase of data consumption. Margins have shrunk due to strong competition from new entrants which use the networks of incumbents on a nearly risk-free basis and which in several cases benefited from more favourable treatment (e.g. spectrum allocation). Whilst in the short term investors may prefer market fragmentation, which allows operators to segment the market and keep competitors at bay, a genuine Single Market with consistent rules and cross-border provision could make the pie larger. This should be combined with a greater consideration of dynamic rather than static efficiencies, particularly as regards the application of competition rules and the possibility of industry consolidation. However, the situation in the sector remains very problematic and measures are needed that produce positive effects quickly

2. OTHER PUBLIC EVENTS

Throughout the preparatory process the Commission (at political level or at service level) attended various public events organised by stakeholder organisations, such as inter alia ETNO and ECTA which both organised major conferences on the Single Market in telecoms. The issues were also discussed in a consultative meeting of the European Consumer Consultative Group, which brings together all national consumer organisations and BEUC, organised by DG SANCO on 11/12 June 2013. This Group welcomed the proposals and issued specific operational recommendations (Annex II) which in particular call for safeguarding the principle of net neutrality, improving transparency on the quality of service and facilitating switching, improving quality offers across the EU and abolishing roaming in the Single Market.

These events allowed the Commission to present the rationale behind and the main outline of its envisaged proposals as well as collecting stakeholders' views.

3. COMMENTS OF STAKEHOLDERS ON SPECIFIC ELEMENTS OF THE PACKAGE

The main concerns expressed relate primarily to some of the specific measures of the package and its implementation on which individual stakeholders positions differ depending on their particular interests. Whilst operators have been overall supportive of the European single authorisation and regulatory consistency (objective 1) and spectrum coordination measures (objective 2), less convergent support has been expressed as regards European wholesale inputs (objective 3) on which concerns as regards the European availability of a consistent wholesale virtual product have been raised by a number of operators (Telecom Italia,

Telefonica, Telia Sonera). The alternative operators association (ECTA) and several of its members generally support greater harmonization of wholesale virtual inputs. With regard to measures related to consumers (objective 4) the European Consumers' Organisation (BEUC) and national consumers' organisations have advocated for further measures on roaming although most operators and associations have been critical on a number of aspects, notably if measures would be mandatory and ensuring consistency with Roaming 3 and investments made to enable decoupling. Investors have also expressed some concerns in this regard. Net neutrality measures have been strongly supported by BEUC and consumers associations and by a number of operators and associations while a number of operators have expressed concerns, particularly as regards too strict traffic management rules to deal with network congestion. Most stakeholders have taken the opportunity of the meetings to advance their individual interests. For instance, the European Satellite Operators Association (ESOA) highlighted the role that satellite can play in meeting the DAE targets.

The following sections provide an overview of detailed information on stakeholders' positions structured by specific objectives described in section 6.2 of the IA and their related measures.

Objective 1 measures: Enabling unrestricted EU-wide provision of service by removing obstacles in the authorization regime and as regards rules applicable to service provision.

Operators and associations of providers have been overall supportive to the single European authorisation. A number of operators (Telecom Italia, Telefonica, Telia Sonera) have considered the single authorisation a positive measure, stressing that in particular that its value would be enhanced when linked to greater regulatory consistency across Member States and ensuring a level playing field, particularly vis-à-vis "over the top" providers. Associations (ETNO) have also stressed how fragmentation hinders the development of new services in the EU. Support for this and other specific measures as part of a comprehensive package has been expressed by a majority of the stakeholders (GSMA). Other stakeholders within the wider eco-system like the International Telecommunications Users Group (INTUG) have also pointed out that SMEs still face many hurdles due to the lack of a single market (licensing, taxation, barriers to entry). Associations like ECTA have also expressed support to the Single European authorisation.

Objective 2 measures: Ensuring greater consistency in spectrum assignment in order to allow mobile operators to access spectrum across the EU on the basis of predictable rules and coordinated conditions.

A substantial number of operators have been supportive of measures related to spectrum coordination (e.g. Deutsche Telecom, Orange, KPN, Vodafone). Associations of operators (ETNO, GSMA) have also been supportive in this regard. GSMA stressed that the reform should be comprehensive, focusing on spectrum coordination in connection with investment, innovation, consistent regulation and tackling impediments to consolidation, and underlined the link between connectivity, infrastructure and investments. No criticism as regards objective 2 measures has been expressed by non-institutional stakeholders.

Objective 3 measures: Ensure consistent European wholesale inputs to enable electronic communication service providers to offer their services across the single market.

ETNO has expressed support to the creation of pro-investment conditions on access regulation. Some operators (BT) have underlined the importance of consistent access products across the EU in order to be able to provide quality services to large businesses operating in different Member States. Absent such products, the market would remain fragmented with little competition and major economic benefits lost. Others (Telecom Italia, Telefonica, Telia

Sonera) have expressed concerns as regards the pan-European availability of a consistent wholesale virtual product. For certain operators, the main concern would be equivalence between virtual access product and physical unbundling (Iliad/Free). The association to alternative operators in the EU (ECTA) pointed out to the balance between physical access and virtual access in view of the fact that 40% of current fixed broadband lines are provided by alternative providers using LLU, thus constituting the basis for significant investment and innovation. ECTA advocated in favour of access to the sub-loop in order to avoid negative impact in their FTTC investment. INTUG pointed out that the absence of consistent access products was a serious obstacle to serving the needs of multi-national companies within the European single market.

Objective 4 measures: Enable consumers to freely enjoy electronic communication services seamlessly across the Union, and establish a common high level of protection to the benefit of both consumers and cross-border telecoms undertakings.

BEUC and national consumers associations have expressed strong support to roaming and net neutrality (applying to both mobile and fixed networks) measures. They also support concrete measures improving transparency so that consumers can better exercise choice. The need for better enforcement of consumer protection rules was also raised by these organisations. Contrary to this support expressed by the national consumer organisations and BEUC, measures related to roaming have been the most contested of the TSM package. Most operators (DT, France Telecom, Telecom Italia) and associations (ETNO, GSMA) have expressed concerns about the Roaming measures for a number of reasons, but in particular the potential negative impact in terms of sector revenues which would impact on network investment. Second, concerns have also been raised as regards the specific measures like wholesale roaming caps (Vodafone, DT, Orange and ETNO). Some argued that a reduction in the wholesale rates could give rise to domestic arbitrage and potential for elevated revenue loss. Investors (HSBC, Crédit Suisse, Barclays, Morgan Stanley) also expressed concerns as regards roaming caps. Against this background, some operators associations expressed support to roaming measures and reduction of wholesale caps (ECTA).

Net neutrality measures have been welcomed by BEUC and national consumer's organisations, which stressed amongst other that they should apply to both mobile and fixed networks. A number of associations (Digital Europe, ECTA) have also expressed support to these measures. Other operators (Deutsche Telecom, Telefonica) while agreeing on the principle of net neutrality have advocated for a balanced position allowing a margin of flexibility for the industry. ETNO for instance pointed out to the importance of enhanced quality internet services. Finally, other stakeholders have expressed concerns on how certain measures of the TSM package, like net neutrality, may not ensure a level-playing field between OTTs and traditional electronic communications services and network providers.

4. DISCUSSIONS WITH OTHER EU INSTITUTIONS

The Commission also engaged with other EU institutions on the envisaged proposals.

4.1. The Council of Ministers

A policy debate has been held in the TTE Council on 6 June on the Digital Agenda for Europe and Single ICT/Telecoms Market on the basis of a background paper prepared by the Presidency. This paper highlighted the Presidency's support to the Commission's seven transformative actions on the Digital Single Market for content and services. The Presidency also shared the Commission analysis on the role of the digital economy for stimulating

economic growth and creating new jobs and the need to complete the Digital Single Market, with a certain emphasis on mobile communications and improved spectrum management.

The Council debate (consisting of a full table round) focused on two questions set out in the Presidency's paper:

a) What are Member States' views on what might be the main characteristics of an EU Single Telecoms Market?

b) In view of the commitment contained in the Radio Spectrum Policy Programme for the Commission to report to Parliament and Council before 1 January 2015 what are Member States' views on the effectiveness or otherwise of spectrum harmonisation to-date and how best should we proceed in the future?

A considerable number of Delegations supported the objective of a Single Telecoms Market, highlighting different aspects thereof such as ensuring vigorous competition, promoting better choice for consumers, addressing net neutrality, tackling roaming in a way which would avoid companies having to incur major losses and possibly selling services below costs, ensuring greater regulatory consistency, the need to avoid regulatory arbitrage etc. As to the second question concerning spectrum management, whilst generally supporting the need for closer coordination of national spectrum approaches, several Delegations expressed concern if the Commission would consider a super-regulator and centralising spectrum competencies. The Presidency concluded that, by and large, Member States support efforts to achieve a Single Telecoms Market, even though on specific aspects, caution was expressed.

4.2. The European Parliament

The European Parliament held three meetings to discuss the forthcoming proposals: an informal meeting between VP Kroes and MEPs took place on 21 May, the formal IMCO structured dialogue which took place on 30 May, and a meeting between VP Kroes and ITRE Committee coordinators held on 11 June.

In general, MEPs present at these meetings gave strong support to the thrust of the Commission's forthcoming proposals. MEPs in particular highlighted the need as part of a true Single Market for electronic communications to eliminate roaming, to introduce clear and stringent rules on net neutrality and ensure a high level of consumer protection. Some MEPs stressed, however, that the timing set for adoption (by Easter 2014) may prove challenging.

In the 21 May meeting between VP Kroes and MEPs, the Commissioner presented the rationale behind and the main elements of the envisaged proposals (e.g. single European passport and a streamlined regulatory approach, spectrum coordination and provision of pan-European services on the basis of consistent virtual products, a single consumer space). MEPs shared the ambition but stressed the need for realism and for assessing new proposals in terms of expectations and time constraints.

During the IMCO structured dialogue, MEPs from S&D and ALDE welcomed the strong political message and called for a high level of ambition in the Commission's proposals. Action on roaming and net neutrality was called for by MEPs of all main groups.

In the ITRE Coordinators' meeting, MEPs took note of the Commissioner's call on the EP to act quickly on the forthcoming proposals. Some MEPs considered the outline of the envisaged Commission proposals a good starting point but called for more ambitious measures, whilst others considered the proposed approach struck the right balance in terms of political realism. Some MEPs stressed that the persistence of international roaming charges was unacceptable inside the EU.

Finally, the EP (rapporteur C. Trautmann) is preparing a report on the Telecoms package implementation which could cover also a significant part of the substance of the envisaged proposals.

5. RELEVANT PUBLIC CONSULTATIONS, EP RESOLUTIONS AND CITIZENS' INITIATIVES ON RELATED SUBJECTS/SPECIFIC MEASURES

Besides the consultation on the specific proposal, the Commission has over the last few years carried out several public consultations on a number of specific policy issues. Several of these aspects are relevant to the current initiative, for example public consultations on a structural solution addressing high roaming charges, on spectrum policy coordination and shared use, on the possible reduction of costs for infrastructure roll-out, on the consistent application of ex-ante remedies imposed on dominant (SMP) operators by national regulators, on issues surrounding the open internet and net neutrality, on a revision of the list of relevant markets susceptible to *ex ante* regulation. The Commission has also drawn on the results of a CEO Round Table dialogue, held in 2011, involving senior company representatives from the telecom, equipment manufacturers, over-the-top services and media sectors, which produced a set of concrete recommendations.

Responses to these consultations repeatedly drew attention to the problems resulting from a fragmentation of the Single Market for electronic communications. For instance, in the public consultation carried out with regards to proposals aimed at a reduction of the cost of roll out of high speed broadband[90], a majority of respondents pointed at existing inefficiencies and bottlenecks resulting from market fragmentation.[91]

As part of the wide public consultation held on net neutrality, many citizens who responded and all consumer organisations expressed the view that traffic management should not be applied in an anti-competitive way and expressed a preference for application-agnostic measures. The telecom industry highlighted the importance of traffic management in ensuring a secure and efficient functioning of their networks, in particular mobile ones. The telecoms industry also argued that quality of service differentiation was essential for developing innovative services and new business models.

The European Parliament (EP) adopted a resolution[92] in November 2011 that called on the Commission, Member States and the Body of European Regulators for Electronic Communications (BEREC) to ensure consistency in the approach to net neutrality and effective implementation of the EU telecoms regulatory framework. Additionally, on 11 December 2012 the European Parliament issued two resolutions asking that net neutrality be enshrined in the European Union law[93]. The EP reasserted its support to the principle of net

[90] Available at http://ec.europa.eu/digital-agenda/en/news/results-public-consultation-%E2%80%9Ceu-initiative-reduce-cost-rolling-out-high-speed-communication.

[91] See for example responses to Question 1: "Harmonisation of permit granting procedures was unanimously considered by the electronic communications sector as necessary in order to tackle their proliferation and lack of coordination. Standardisation, flexibility and streamlining, through a reduction of the number of the procedures, should cover permission requests, forms, deadlines, but also digging instructions. Uniform and transparent rules across each Member State were acclaimed by public authorities, local and central. The importance of eliminating divergence in the interpretation of rules was also acclaimed."

[92] European Parliament resolution of 17 November 2011 on the open Internet and net neutrality in Europe (paragraph 8),
http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0511&language=EN

[93] European Parliament resolution of 11 December 2012 on a Digital Freedom Strategy in EU Foreign Policy (2012/2094(INI)), resolution point 67

neutrality, "namely that Internet service providers do not block, discriminate against, impair or degrade, including through price, the ability of any person to use a service to access, use, send, post, receive or offer any content, application or service of their choice, irrespective of source or target"[94].

A citizens' initiative "Single Communication Tariff Act" **on roaming** is currently launched calling for a proposal for a regulation of the EP and of the Council on a single communications tariff within the EU. The proposed regulation forbids price discrimination between domestic and roaming services and proposes to introduce one unique all-inclusive, monthly flat-rate communication tariff within the boundaries of the European Union. Initiative registered on 3 December 2012 and it aims to collect the required 1 million signatures by 3 December 2013.

(http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2012-470) and European Parliament resolution of 11 December 2012 on completing the Digital Single Market (2012/2030(INI)), resolution point 81
(http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2012-468)

[94] European Parliament resolution of 11 December 2012 on a Digital Freedom Strategy in EU Foreign Policy (2012/2094(INI)), resolution point 56,
(http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2012-470)

Annex II – European Consumer Consultative Group (ECCG) Meeting 11-12 June 2013 (Sub-Group on the Provision of Internet Services) - Operational Recommendations

On the occasion of the Group's meeting on 11 June 2013, members discussed the outcomes of the European Commission's study on Internet service providers (ISPs), carried out by the Directorate General for Health and Consumers (DG SANCO). The discussion focused on identifying practices and issues in the Internet services sector that need to be addressed in the Member States. Issues identified were based on experiences with consumer complaints or what were perceived as structural problems in national markets, and do not cover more technical issues, which would require input from telecoms experts (not available at the time of the meeting).

The members of the Group were informed of Vice-President Kroes' announcement on 30 May 2013 that the Commission intends to put forward new legislation to complete the Single Market for electronic communications. Building on the results and recommendations of DG SANCO's study on the provision of Internet services and the national experiences of ECCG members, it was concluded that the following issues in the Internet services market ought to be addressed in the Commission's preparatory work for the Single Market for electronic communications' initiative.

1. Clarity and Understanding of the Information Provided to Consumers

ECCG members highlighted the difficulties consumers face in understanding the characteristics of an offer for Internet service provision. Given the technical terminology used, they proposed the idea of a glossary that should be made available to consumers to help them understand the characteristics of the offers on the market, although the priority should be to ensure simple language is used in the contract. Another idea was the provision of a standardised information leaflet explaining the offer's contents in a simple and understandable way to consumers.

A particularly problematic aspect underlined by ECCG members was the actual speed of the Internet connection at any given time. Many ISPs use "up to" claims when advertising their offers, which do not reflect the real speed of their service at all times. It is often the case that advertised speeds differ considerably from the actual speeds consumers receive. ISPs should, on the contrary, clearly inform consumers of the minimum speed and, potentially, of the average speed. Consumers should also be provided with "speedometers" to help them check their connection speed.

Information on coverage was also seen as particularly important by ECCG members: many members reported that consumers were not provided with information on the actual coverage of mobile internet offers or the actual speed at the consumers' home.

Some information provided was also seen as potentially misleading consumers. Terms such as "unlimited" or "reasonable usage" often hide specific conditions which are not clearly communicated to consumers.

With regard to the prices consumers are asked to pay for their subscriptions, consumers can also be misled if they are not provided with an average price over the length of the contract, as often special offers for the first introductory months of the contract hide higher charges

which will be added afterwards.

ECCG members mentioned how useful comparison tools can be for consumers in providing them with clear and simple information on the different offers available. However fee structures, especially when they apply to bundled services, may make it difficult to compare offers. In addition, particular effort needs to be made to ensure comparison tools are accessible to all consumers, particularly vulnerable ones; in this respect, reference was made to visually impaired consumers.

2. CONTRACT TERMS, USAGE AND SWITCHING

ECCG members raised the issue of bundling, whereby consumers are often offered a set of services which does not necessarily fit their usage needs. Consumers should have the possibility to cancel part of their access to a component of the bundle without having to pay a penalty.

It was also proposed that volume not used over the period of time of reference should be transferred to the next period.

Consumers should also receive clear information on usage; should they reach their usage cap before the end of the reference time, they should still be given the possibility to have access to the services, even if of a reduced quality.

To help consumers switch more easily and tackle unfair practices, ECCG members proposed to put in place strict rules with regard to the length of the contract and conditions for its termination. One-year contracts were seen as the best solution - they can be renewed provided the consumer is timely informed and gives its consent. Other options include introducing a break clause which can be activated after 6 months, as is the case in Belgium.

To further encourage switching, ECCG members suggested that it is necessary to ensure that consumers enjoy continuity of service during the switching process.

Another idea put forward was the possibility for consumers to enjoy a second cooling-off period of a few days once the provision of the service has already started: this may enable the consumer to actually test the quality of the connection and decide whether or not he/she wants to carry on with the service. ECCG members also suggested that invoices sent to consumers should remind them of the end date of their contracts.

ECCG members suggested that the ISP should only be allowed to unilaterally change some of its terms (e.g. increase of the fee, characteristic of the offer) if there is a valid reason for this change that has been specified already at the time of the conclusion of the contract. In relation to unfair commercial practices, the idea of putting in place a "black list" of unfair practices specific to the telecommunication sector was also mentioned by ECCG members.

3. QUALITY OF THE SERVICE - COMPLAINTS

ECCG members also mentioned that consumers are often provided with poor quality equipment to access the Internet (e.g. modem, routers) and the lack of choice in this respect. In addition, installation is often subcontracted by ISPs, making the complaint process even more cumbersome for consumers when an issue arises. ECCG members suggested that ISPs should take more responsibility in the quality of such services and be liable for them.

ECCG members highlighted that consumers often do not seek redress when their connection is not working for a certain amount of days because ADR bodies do not compensate them for the detriment created by the lack of connection. In addition, they suggested that even for outages of a 2-day period, consumers should be compensated by their provider in the next

bill.

Other problematic issues identified were access and high prices charged for internet in hotels as well as unexpected charges for premium services (e.g. text messages) charged by companies located in a different country from that of the provider.

Finally, members agreed that providers should determine metrics that will measure the performance of their complaints handling mechanisms.

4. ENFORCEMENT

ECCG members underlined that some of the problems that consumers face in the telecommunications market are related to a lack of enforcement of the existing sector-specific and general consumer protection legislative framework. More efficient enforcement is required. All National Regulatory Authorities should have sufficient resources and enforcement powers to ensure that if barriers to cross-border telecom services are brought down, companies do not engage in 'forum shopping' based upon the weakest regulatory authorities.

5. NET NEUTRALITY

ECCG members highlighted that safeguarding the principle of net neutrality was key for European consumers to enable them to reap the benefits of the online environment. Consumers should be able to have access to the content and applications of their choice and be clearly informed if their connection is somewhat blocked or slowed-down. It is important for them to address this issue in the forthcoming Commission initiative. ECCG members also recognised the crucial role of net neutrality in ensuring a vibrant and innovative Internet ecosystem.

6. ROAMING

Finally ECCG members called for the end of roaming within the European Union: there cannot be a real Single Market for Telecoms if consumers are reminded of national borders when they travel and have to pay higher fees in another Member State for the same service.

Annex III – Examples of Regulatory Divergence in the Electronic Communications Sector

1. GENERAL AUTHORISATION

In a number of Member States additional requirements beyond those provided for in the regulatory framework are imposed as part of the authorisation process, presuming that the notification, which is actually a requirement for any provision of electronic communications services, also entails the need to comply with permanent establishment of the company in the country or the set-up of a local proxy ensuring communication in the national language. While this existing practice has already triggered several complaints leading to investigation of the Commission and, in some cases, to the opening of infringement procedures, the indirect nature of such a requirement is not always easy to detect and tackle via *ex post* infringement procedures.

Moreover, in some Member States, authorisation has triggered the imposition of special telecoms taxes and/or models defining authorisation charges, with stark divergences among Member States. For example, Member States have taken very different approaches towards authorisation of mobile satellite services which entail the start-up of activities aiming at providing new services inherently pan- European; in particular 26 different initial notification requirements applied; eleven Member States apply either a license exemption or general authorisation for the MSS component; ten Member States require an individual right of use for the MSS component and six Member States require an individual right of use for a consolidated/integrated MSS and complementary ground components (CGC) network. The fee structures for MSS and CGC are extremely diverse, both in the applicability of de minimis exemptions as well as in the amount of fees and in their type. In 10 Member States there is no fee for the MSS component or a very small registration fee while other Member States apply an MSS application fee ranging from €300 to €3000 while others apply an annual administrative fee ranging from below €5000 to over €15000 covering the provision of service, based on either a set fee or proportion of revenues2.

2. ACCESS REGULATION

2.1. Regulated Markets

NRAs must analyse a number of telecom markets in their Member State that have been defined by the Commission in its Recommendation on Relevant Markets as likely to require regulatory intervention. NRAs can also define markets that have not been identified and regulate them for as long as they meet three soft-law criteria: (i) the market is characterised by high non-transitory barriers to entry, (ii) there is no tendency to effective competition within the relevant time horizon, and (iii) competition law alone is not sufficient to address the identified market failure.

However, on many occasions NRAs continue to regulate markets which in principle should no longer meet the three criteria test such as the broadcasting transmission services market in about half of the Member States, the international retail calls market in about one fifth of the Member States and the retail local and national calls markets in about one third of the Member States. Other NRAs deregulate markets that are no longer listed in the Recommendation on Relevant Markets despite very high market shares of the incumbent (e.g. retail calls market in EE).

Many NRAs also define markets differently from those listed in the Recommendation, e.g. on the inclusion of fixed broadband access (managed voice over broadband) in the market for retail access to the fixed public telephone network[95] (AT, BE, DE, EL, HU, IT, RO, SK), as well as on the inclusion of both retail access to and wholesale call origination on the fixed public telephone network in the same market (NL). The market for terminating segments is also defined differently across the EU as NRAs use different benchmarks to differentiate low speed from high speed leased lines (e.g.2 Mbps in AT, CZ, DE, EL, HU, RO, SK; 8Mbps in BU and UK; 20 Mbps in NL; IT also defines a market for mobile operators).

2.2. Access Obligations

NRAs use a variety of approaches to next generation access network regulation, depending often on the type of network roll-out. This can be Fibre-to-the-Cabinet (FTTC)/VDSL (e.g. BE), FTTH/Fibre-to-the-Building (FTTB) (e.g. DK, FR, ES and PT), or respectively FTTH and Fibre-to-the-Office (NL). In LUX fibre is not regulated at all (due to a delay in market analyses). Where regulated operators have deployed a point to point fibre access network, the NRA has mandated physical unbundled access to the fibre loop (SW, NL). In the case of deployment of another network architecture (GPON), regulators have imposed the right to have an alternative fibre deployed (IT) or mandated virtual unbundled local access (VULA) in the wholesale network infrastructure access market. As to the latter, the UK NRA included the virtually unbundled product in the market definition and regulated it on the basis of an equivalence of input obligation and no price regulation. AU, DK and SK instead imposed VULA as a price regulated (ancillary) remedy in areas where the copper network is upgraded to (include) fibre. The German NRA, however, has defined the wholesale broadband access market differently, focusing instead on so-called bitstream products with different parameters.

Therefore, the degree of choice faced by operators wishing to provide cross-border services is quite often constrained by different approaches to market definition and the uneven availability and lack of common specifications of wholesale broadband access products in Europe.

2.3. Non-Discrimination Obligations in Key Wholesale Broadband Markets

National regulatory authorities increasingly attribute a key role to non-discrimination obligations to address potential market failures, yet there are significant emerging divergences among NRAs with regard to the scope and exact application as well as the compliance monitoring and enforcement of the non-discrimination obligation.

In many cases, NRAs impose a non-discrimination obligation without specifying the exact scope or the practical implementation of the obligation (e.g., LT). Then there are NRAs, which provide detailed clarifications regarding the scope of the imposed non-discrimination obligation (e.g., HU, CZ), albeit sometimes under the reference offer obligation in the transparency remedy (e.g., SE). An increasing number of national regulators (e.g., IE, BE, DK, EE, IT, PL and FR) require the use of Key Performance Indicators, although the regulatory provisions do not always contain a reference as to how these are made available and how their compliance is ensured (e.g., DK, FR). Only a few NRAs have adopted an indicative list of such indicators (e.g., IE, CY), usually covering the main phases of the process necessary to access SMP products and services.

[95] Market 1 in the Recommendation on Relevant Markets

In addition, some NRAs have also imposed measures regarding pricing practices (e.g. a margin squeeze test) within the non-discrimination obligation or in relation to such an obligation (e.g. NL, CY, and IE). Finally, the number of NRAs, which have notified a more complex system to ensure a certain degree of equivalence of access remains limited and the forms of separation chosen vary significantly (e.g., IT, PL, UK, IE, and NL).

2.4. Costing Methodologies in the Key Wholesale Broadband Markets

NRAs also apply divergent approaches to costing methodologies to calculate the regulated prices for key access products across the EU. With regard to wholesale physical infrastructure copper-based network access for example, up to six different costing methodologies are being used which, unsurprisingly, produce different outcomes.

Within these models, NRAs value their assets on the basis of historic cost accounting (HCA) or of current cost accounting (CCA). Some NRAs have reverted to HCA from using CCA (UK) or have reconstructed the incumbent's historic costs (FR) and apply "coûts courants économiques" (CCE). It is however noteworthy that the implementation of HCA or CCA asset valuation is not always carried out in the same way. NRAs may for example differ in terms of asset lifetimes and the depreciation methods chosen.

For wholesale physical infrastructure fibre-based network access, the pattern is even patchier. In several Member States, FTTH or FTTX are not included in the market definition; in other Member States the same assets are included in the market definition but not regulated. In some cases only the civil engineering and/or dark fibre was proposed to be regulated on the basis of either long-run incremental costs (or LRIC, IT) or fully distributed costs (or FDC, LT) while in other cases, fibre access is based on a discounted cash flow (DCF) methodology (NL), on a LRIC methodology which uses modified tilted annuities and a DCF methodology which would grant the SMP operator flexibility in setting access prices that would incentivise investment in FTTH (MT).

In one Member State a virtual unbundled access product has been made available on an equivalence of input basis (UK), while in another Member State fibre costs are set on the basis of a LRIC methodology but prices are differentiated according to geo types (SE). In yet other Member States, FTTH and FTTC (HU) or fibre and dark fibre (SI) are regulated on the basis of a top down methodology. One NRA sets cost oriented prices for fibre based access products but proposes no cost orientation for FTTH (DE).

These divergent approaches as to the calculation of regulated prices for key access products translate into important obstacles for service providers established in the EU to benefit from Single Market freedoms and exploit economies of scale.

3. AUTHORISATION AND SPECTRUM MANAGEMENT - HARMONISED BANDS FOR WIRELESS BROADBAND

Overall, the implementation of EU decisions has led to the harmonisation of 1025 MHz of spectrum. Yet, to date only about two thirds of this harmonised spectrum has been effectively assigned by Member States for wireless broadband.

Under the RSPP Decision 243/2012/EU, as adopted in March 2012, Member States are obliged to carry out the authorisation process for harmonised bands, namely 3,4-3,8 GHz[96],

[96] Decision 2008/411/EC.

2,5- 2,69 GHz[97], and 900-1800 MHz[98] by 31 December 2012. This commitment has not been fully delivered, with only SE, EE, DE, LV and LT having nearly completed the assignment process for all frequency bands harmonised in the EU for wireless broadband[99]. Among the other Member States PT and IE are the most advanced in completing the assignment process in terms of the total amount assigned spectrum comprising all EU harmonised bands. 11 Member States carried out in 2012/1Q2013 selection procedures for assignment of at least one harmonised band, whereas in three Member States (CZ, HU, SK) the launched procedures had to be postponed to 2013.

The allocation of the 800 MHz band to wireless broadband is crucial for the introduction of the 4th generation mobile broadband technology (LTE in particular) and thus to enable the Union to catch up in wireless electronic communication broadband services with other regions (notably, the US and Asia). Despite the commitment set out in the RSPP (Art. 6(4)) "*to carry out the authorisation process in order to allow the use of the 800 MHz band for electronic communications services*", to date only 12 Member States have effectively awarded the 800 MHz frequency band to operators, which is essential for extending broadband coverage into the rural areas of Europe and ensuring capacity for wireless data traffic.

14 Member States have applied for derogations from this obligation in terms of the RSPP decision justifying the need for such derogation by persisting interferences with neighbouring countries, both within and outside the EU. In a few cases derogations have been requested, among others, on the grounds of problems with the analogue switch-off. According to the derogation requests, the time perspective for a harmonised allocation of the 800 MHz band in Europe could be extended even until 2015 (CY and LV). 6 Member States indicated that they should be able to complete the process only in 2014 (EL, HU, MT, PL, RO and SI) whereas 6 other Member States have indicated that they will complete the process by the end of this year (AT, CZ, FI, LT, SK, ES). Two Member States neither submitted a request for derogation nor have been able to demonstrate when the authorization process will be completed.

With the completion of the analogue switch off in the vast majority of Member States some Member States (e.g. FR, PL, DE, UK, SW) have started discussions on possible use of the 700 MHz band for wireless broadband which is commonly used for broadcasting at the moment. A possible direction has been already defined in Finland, where, according to the Finnish Communications Policy Program for Electronic Media presented to the Parliament in autumn 2012, Finland will be prepared to allocate the 700 MHz band for broadband use from 2017 onwards. However, given the varied level of advancement across the EU, there is a risk that there will be little consistency in the allocation of this band across Europe, repeating the negative experience of the release of the 800MHz band.

The objective of ensuring a consistent application across the EU of the principle of neutral use of specific spectrum bands, which is important from the perspective of innovative and efficient use of spectrum, has not been entirely attained. Apart from ensuring modification of the frequency tables in line with harmonisation decisions, there has been little consistency in promoting service neutrality in the rights of use of spectrum, as required by the RSPP decision (Art. 3(f)). The refarming process, i.e., the process of changing the allowed uses of specific rights of use of frequencies, remains driven by Member-State specific factors and as such progressed in only a few Members States (e.g., IT, EE, NL). With few exceptions (e.g. FI in general and FR with regard to 1800MHz), NRAs have not clearly defined the conditions

[97] Decision 2008/477/EC.
[98] Decision 2009/766/EC
[99] State of play: early 2013.

applicable to refarming of existing rights of use. Auctions remain the most used assignment procedure. Past auctions demonstrate that revenues generated by assignment procedures can vary significantly from one Member State to another and sometimes reach very high levels. For example, the assignment process of 240 MHz of the 800 MHz and 1800 MHz bands[100] in Denmark generated €137mn, whereas in Italy the cost of the same amount of spectrum in these two bands was €3,945bn. In terms of the price per MHz per population the result for Denmark with regard to the 800 MHz band was almost three times lower (0,3) than for Italy (0,82), whereas in case of the 1800 MHz band this difference was even bigger with the price/MHz/population indicator in Denmark amounting to 0,0049 and in Italy to 0,26. In 2012 the Multi Band Spectrum Award process in Ireland, which made 140 MHz of paired spectrum available on a liberalised basis across the three bands 800 MHz, 900 MHz and 1800 MHz, secured €855mn for the spectrum rights of use across these three bands, through to the year 2030.

4. NET NEUTRALITY AND CONSUMER ISSUES

Some Member States have begun to adopt different approaches to ensuring net neutrality, ranging from non-binding instruments to specific legislation. The Netherlands and Slovenia have already adopted legislation, prohibiting operators from restricting broadband access on the basis of services and applications used by the end users. In several other Member States, national governments and/or parliaments have been considering legislation on net neutrality, notably in France, Belgium and, more recently, Germany.

Denmark and the UK have adopted measures aimed at self-regulation. In Denmark, a Net Neutrality forum has been established and adopted a Code of Practice to keep the Internet open and non-discriminatory. In the UK the "Voluntary industry code of practice on traffic management transparency for broadband services" was published in March 2011, followed in July 2012 by the "Open Internet Code of Practice: Voluntary Code of Practice Supporting Access to Legal Services and Safeguarding Against Negative Discrimination on the Open Internet". Additionally, in November 2011 the UK NRA published a Statement setting out its approach to Net Neutrality and providing guidance to ISPs. In France, in 2010, the NRA published ten proposals on Internet and network neutrality which establishes a framework for market players' actions. Also in Cyprus, the NRA is undertaking a project with the objective to publish guidelines on net neutrality. In Malta, the NRA has launched work with the objective of publishing a set of guidelines on net neutrality.

Although several Member States have started measuring certain quality of service parameters in order to better inform consumers and possibly to impose minimum quality of service requirements (including on Internet speeds) for broadband access, there is no consistency among Member States in the approach to such measurement and in the transparency requirements. The initiatives range from applications or internet-based tools with which users can measure their speed at any time, to (pilot) systems for measuring broadband speeds or systems for measuring the quality of certain broadband services.

Significant differences among the Member States persist on how to address issues of transparency as to the service that operators offer to users. Most NRAs have undertaken activities aimed at enhancing transparency and making available to the public the essential information about the services offered by operators. Some of them are running comparison tools or websites (e.g., in Belgium, Hungary, Portugal, Slovakia) or have set up an

[100] Licensing process in the period of 2008-2011

accreditation scheme so that trusted or audited third parties can provide those comparison websites to the public (e.g., in Czech Republic and the UK). Guidance has also been adopted by several NRAs on various subjects linked to transparency.

Number portability is a key facilitator of consumer choice and effective competition in competitive markets for electronic communications in the Single Market. The analysis of the national implementation of the provisions for switching and number portability shows substantial divergences amongst the Member States. Various reports and assessments made by European bodies pointed out the concerns regarding the effective implementation of the revised portability rules across the EU and the need of consistency[101] as well as the viability of harmonising switching processes[102] or how the porting implementing procedures differ substantially from country to country in the EU. Related implementation issues on abuse, delay and the need to reinforce the compensation mechanisms in number portability have also been identified. With regard to number portability from a consumer perspective, the 2009 Eurobarometer on consumers' views on switching service providers in different sectors already reported electronic communications services like internet, fixed telephony and mobile telephony are amongst the categories having some of the highest percentages of consumers facing porting difficulties. Consumers aspects related to these markets are also analysed in the consumers market monitoring surveys[103] and scoreboards[104].

Concerning, the implementation measures adopted by Member States and NRAs, although a number of Member States have adopted new implementing rules on porting, the overall situation in the EU is very fragmented in terms of timing, procedures and protection of consumers throughout the process. Contractual conditions and procedures are also reported as being a disincentive for the change of provider thus hindering the exercise of consumers' rights. National transposition measures establishing limitations to the full right of consumers to number portability are reported in a number of Member States (e.g. EL) and implementing measures which undermine the effective right of consumers to number portability are reported in others (e.g. SW, CY, ES).

[101] See the 2012 EU Report on Telecommunications Market and Regulatory Developments https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/Telecom_Horizontal_Chapter.pdf.
[102] http://berec.europa.eu/doc/berec/bor_10_34_rev1.pdf.
[103] http://ec.europa.eu/consumers/consumer_research/consumer_market_monitoring_survey_en.htm.
[104] http://ec.europa.eu/consumers/consumer_research/editions/docs/monitoring_consumer_markets_eu_2012_en.pdf.

Annex IV - Overview of the Market for Electronic Communication Services, 2013

1. DEVELOPMENTS IN THE ELECTRONIC COMMUNICATIONS SECTOR

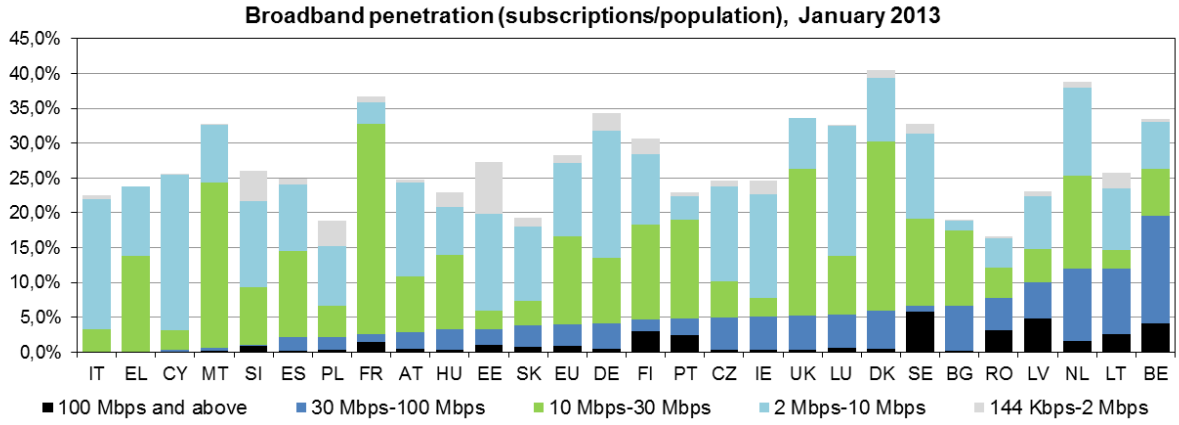
1.1 Deployment of Broadband

In terms of broadband coverage, broadband of at least very basic quality (speeds of 144 Kbps and higher) is available to over 99,9% of all EU households, via one or more of the available technologies (including fixed, wireless, mobile and satellite).

The Digital Agenda for Europe sets the targets that, by 2020, all EU households should have access to at least 30 Mbps and that 50 % of subscriptions should be at least 100 Mbps. High speed broadband lines (capable of download speeds of 30 Mbps and higher) cover 54 % of EU households in 2012 as opposed to 50% in 2011. In Member States with extensive cable networks, the cable upgrade to the DOCSIS 3.0 standard is an important source of high speed lines. Speeds of 30 Mbps and higher are mostly available in urban areas and the vast majority of rural homes are not able to benefit from the advantages of fixed high speed Internet.

The actual take-up – measured in the chart below as the number of subscribed lines per 100 inhabitants – of high speed broadband and ultra fast broadband in the EU is rather modest: only 4.0 subscribed lines per 100 inhabitants (i.e., under 10 % of all homes) have advertised maximum download speeds of at least 30 Mbps and out of these, only 0,9 lines per 100 inhabitants (i.e, around 2 % of homes) have advertised maximum download speeds of 100 Mbps and higher.

Figure 23 – Broadband Penetration (Subscriptions/Population), January 2013



Source: Communications Committee, February 2013. Countries are in order of advertised maximum downstream speeds of 30 Mbps and higher.

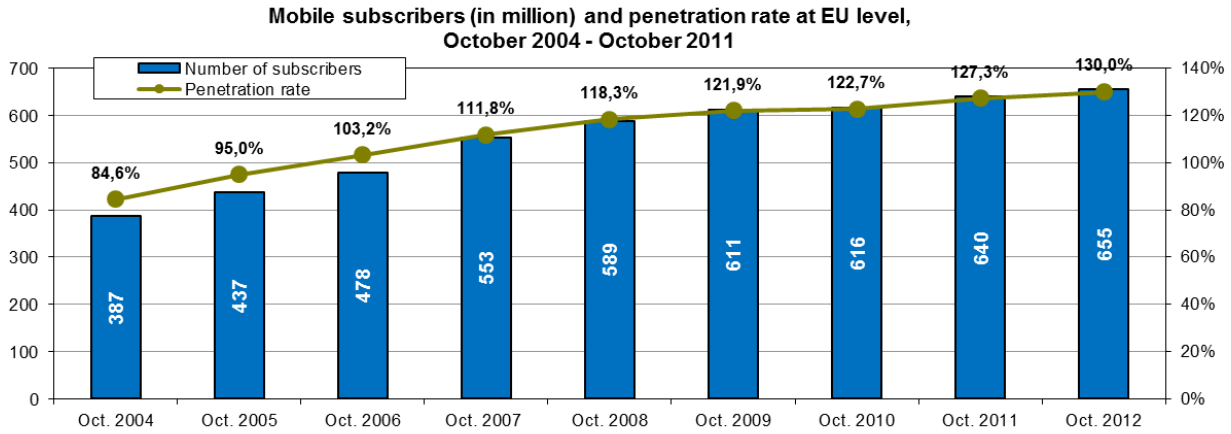
1.2 Mobile Services

Over the last five years, in terms of actors in the market, the structure of the EU mobile market has not substantially changed. There are around 100 mobile network licences granted in 27 Member States. Half of these operators are subsidiaries of or have co-operation

agreements with the four main market players. While almost 80% of EU customers subscribe to one of the four main mobile groups (460 million subscribers), mobile services are run and marketed at the national level.

European consumers and businesses increasingly use mobile communication services. This is illustrated by the mobile penetration rate, which further increased in 2012 throughout the EU from 127% to 130%, despite the deactivation of inactive pre-paid SIM cards in some Member States.

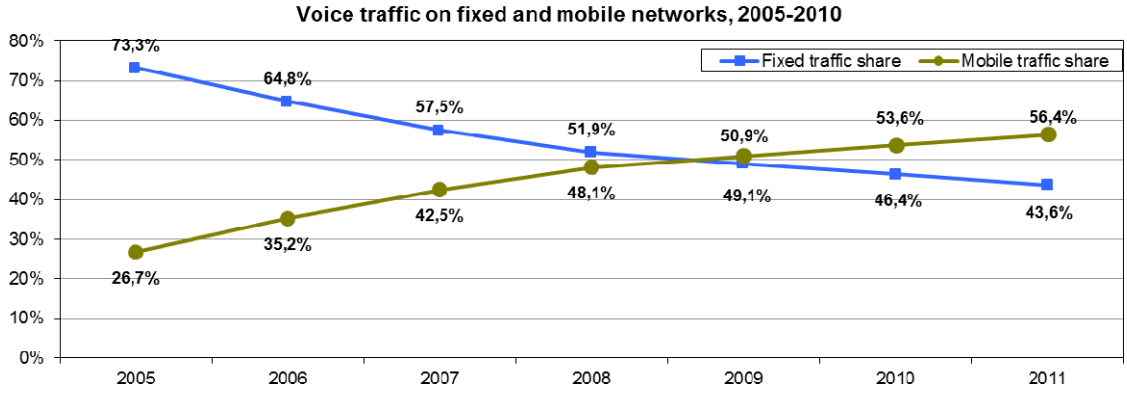
Figure 24 – Mobile Subscribers & Penetration Rate at EU Level, Oct. 2004 – Oct. 2011



Source: Communications Committee

A shift from fixed to mobile voice traffic is a continuous trend:

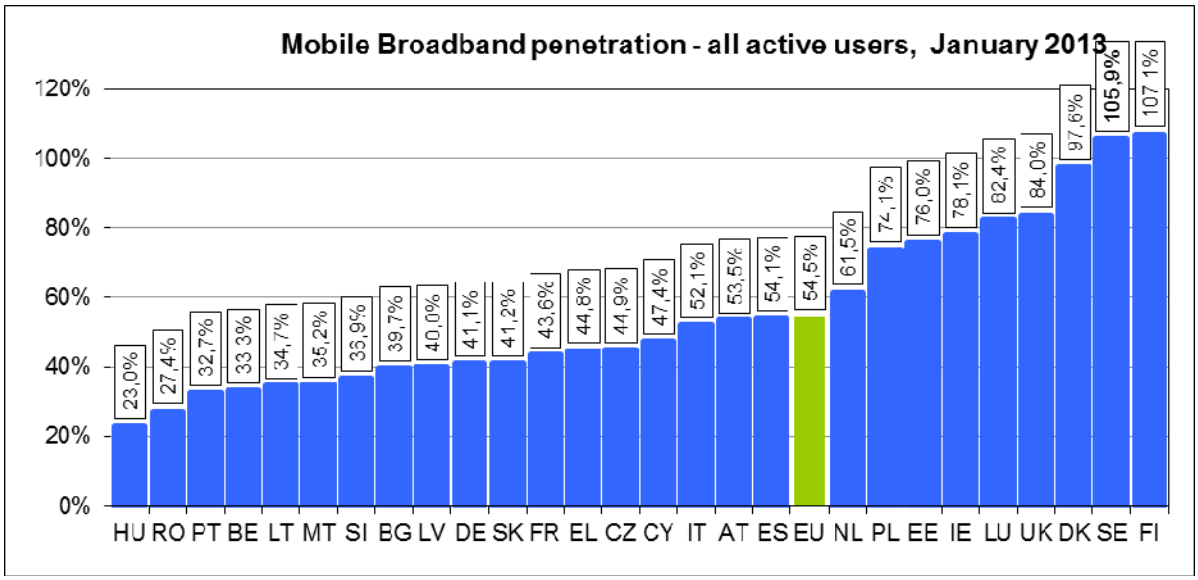
Figure 25 – Voice Traffic on Fixed and Mobile Networks, 2005-2010



Source: Communications Committee

The mobile broadband penetration rate – measured as number of active subscriptions per 100 inhabitants – is 54.5% for the EU. In some Member States, the penetration rate is over 100%, reflecting that increasingly consumers opt for using multiple mobile broadband devices (smart phones, tablet computers, notebook computers with a mobile data card).

Figure 26 – Mobile Broadband Penetration – All Active Users, January 2013

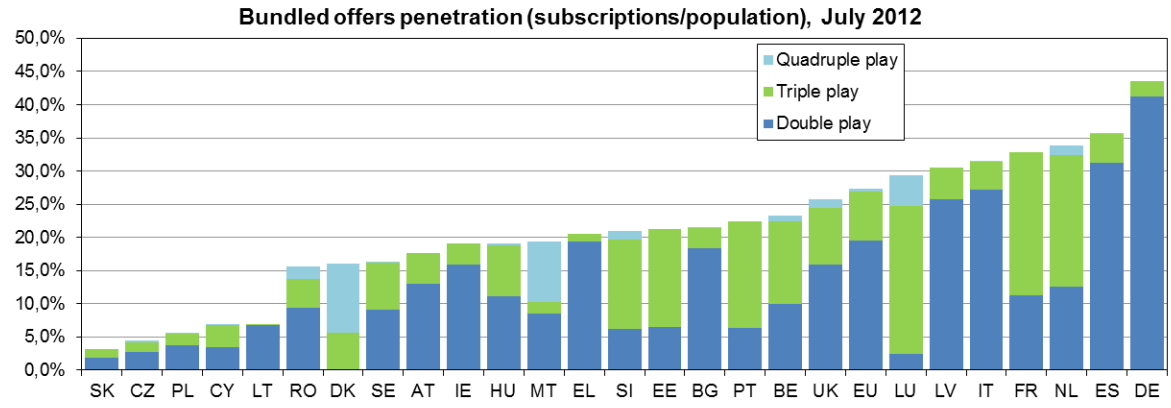


Source: Communications Committee

1.3 Marketing Strategies and Broadband Pricing

In order to reduce their churn rate (i.e., retain existing customers), many operators are offering bundled services. Bundled offers are combinations of broadband, fixed voice, TV, and mobile services. A bundle with two out of the first three is called "double play", and one with all of the first three "triple play". More recently, bundles with additional mobile services have become available called "quadruple play" The popularity of bundles is increasing. By contrast, broadband standalone services are becoming less popular. The penetration of double play and triple play offers stood at 19,5% and 7,4% respectively in the EU. In several instances, operators that do not offer mobile services are aligning themselves with ones that do, in order to be able to offer quadruple play.

Figure 27 – Bundled Offers Penetration (Subscriptions/Population), July 2012

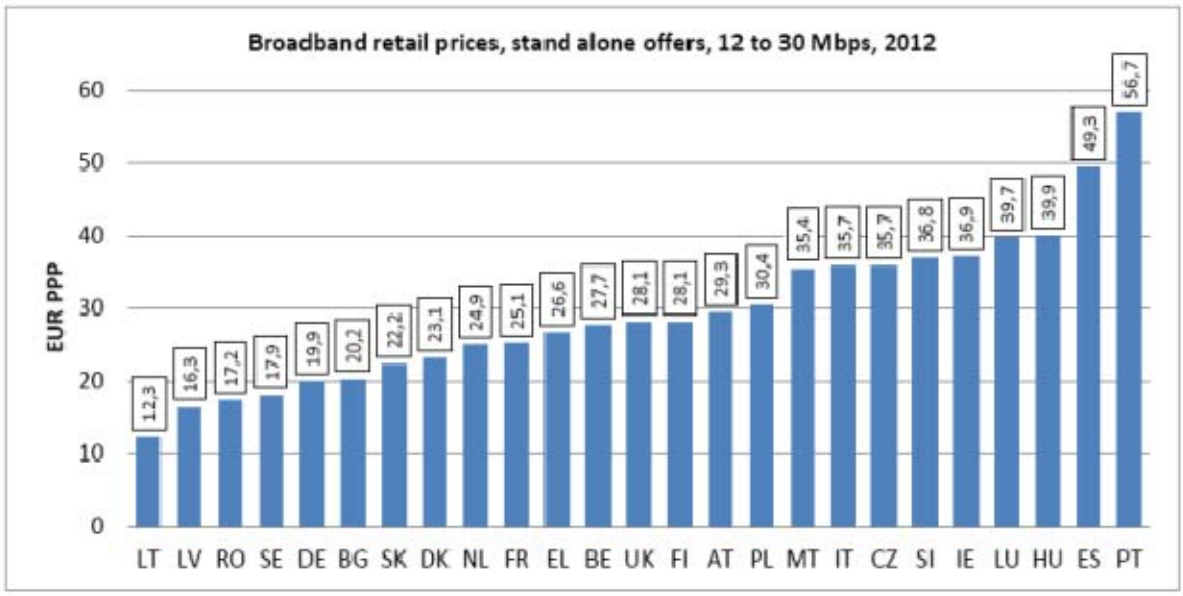


Source: Communications Committee

The prevalence of bundled offers makes it more difficult to analyse the price of fixed broadband. The following information and tables are based on broadband stand-alone offers. In the EU, in 2012, the price of the median offer for internet access only was €32,50 for advertised maximum download speeds of 30Mbps and higher, €28,10 for advertised

maximum download speeds of 12-30Mbps, and €24,70 for advertised maximum download speeds of 4-8Mbps. There has been a steady decline over the last 5 years in broadband prices, but it seems that now a plateau has been reached: 5 years ago, the prices were on average 70% higher, but compared to last year, the prices are only 0,70% lower. There is a wide variety in prices across the EU.

Figure 28 – Broadband Retail Prices, Stand Alone Offers, 12 to 30 Mbps, 2012



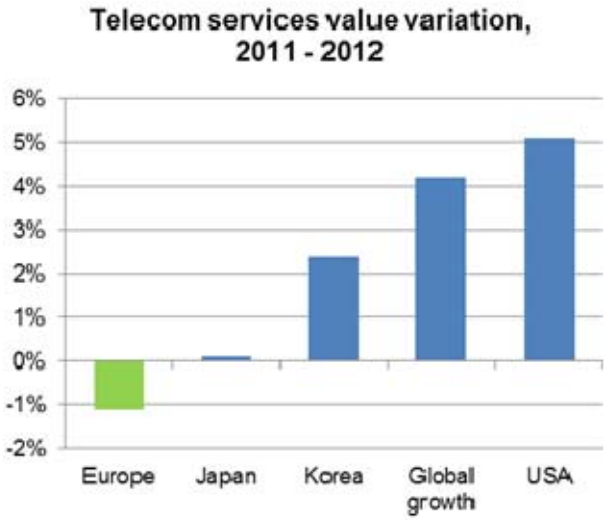
Source: EC services based on Van Dijk

2. COMPETITIVENESS IN THE SECTOR

2.1 Revenues

In 2012, the European telecoms sector experienced a decline in revenues of -1.1%. This contrasts with the trends in other regions such as the US and the rest of the world, where revenues for telecoms services experienced 5.1% and 5.8% year-on-year increases respectively.

Figure 29 – Telecom Services Value Variation, 2011 – 2012

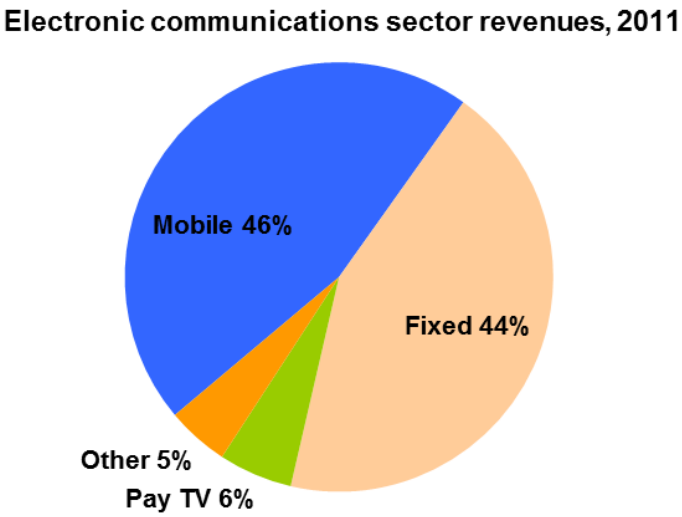


Source: Commission Services based on EITO 2012/13

In 2012, carrier services revenues were estimated at €234.6bn, which is a decrease by €2.6bn from a year before. The voice services sector (fixed and mobile) registered most of the revenue decrease, while mobile data services and internet access registered an increase at EU level.

In 2011, revenues were divided as follows between the different services: 46% mobile, 44% fixed, 6% Pay TV and around 5% for other services.

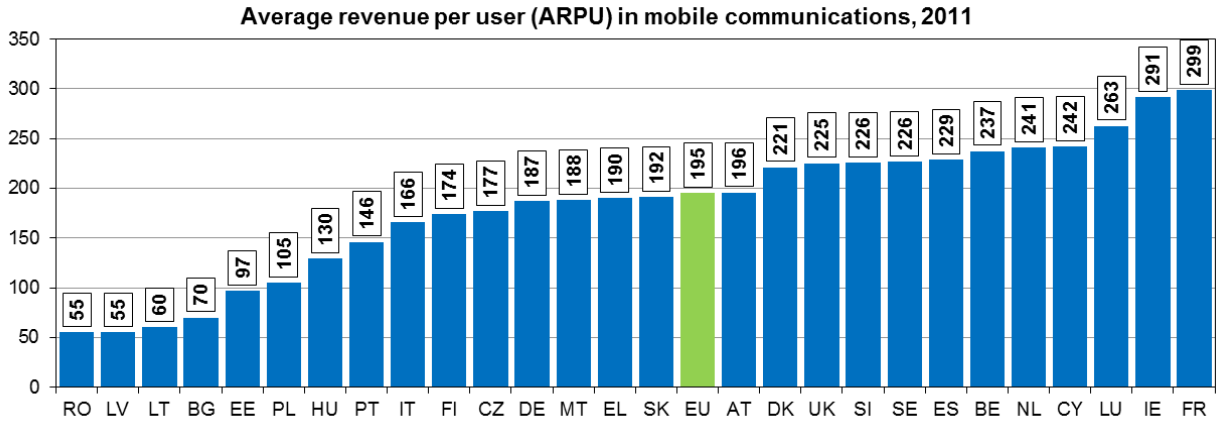
Figure 30 – Electronic communications sector revenues, 2011



2.2 Average Revenues in the Mobile Services Sector

Average revenue per user (ARPU) decreased to €195 per year in 2011, down from €211 a year before. This represents a continuing trend of slow but steady decline of ARPU that has lasted more than 10 years.

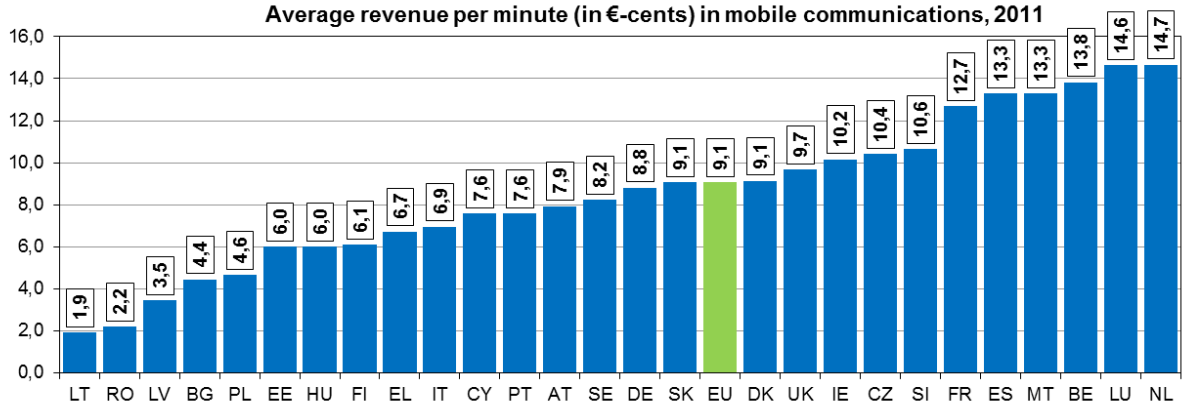
Figure 31 – Average Revenue per User (ARPU) in Mobile Communications, 2011



Source: Communications Committee

The disparity of ARPU across the EU is high. France has by far the highest ARPU, caused in part by the low mobile penetration rate (it is uncommon in France to have more than one subscription per person). The ARPU is driven in particular by the voice prices: in the Member States with the highest ARPU, voice prices are high, and vice versa. The average revenue per minute in mobile communications in the EU was of 9.1 (in €-cents) in 2011.

Figure 32 – Average Revenue per Minute (in €-cents) in Mobile Communications, 2011



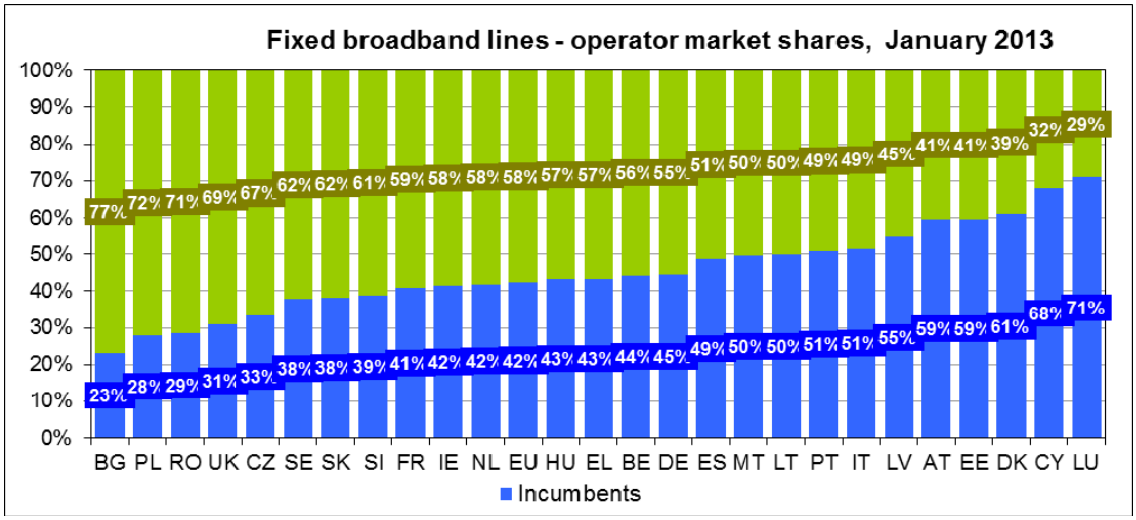
Source: Communications Committee

2.3 Market Share

In the broadband markets, competition has led to the overall market share of the incumbents in fixed broadband to decrease in the EU, from 50.3% in January 2006 to 42.3% in January 2013. In 2012, new entrant operators increased their market share by 0.8p.p. Fixed

incumbents remain the leading operators in most MS, although there is considerable variety in their market share.

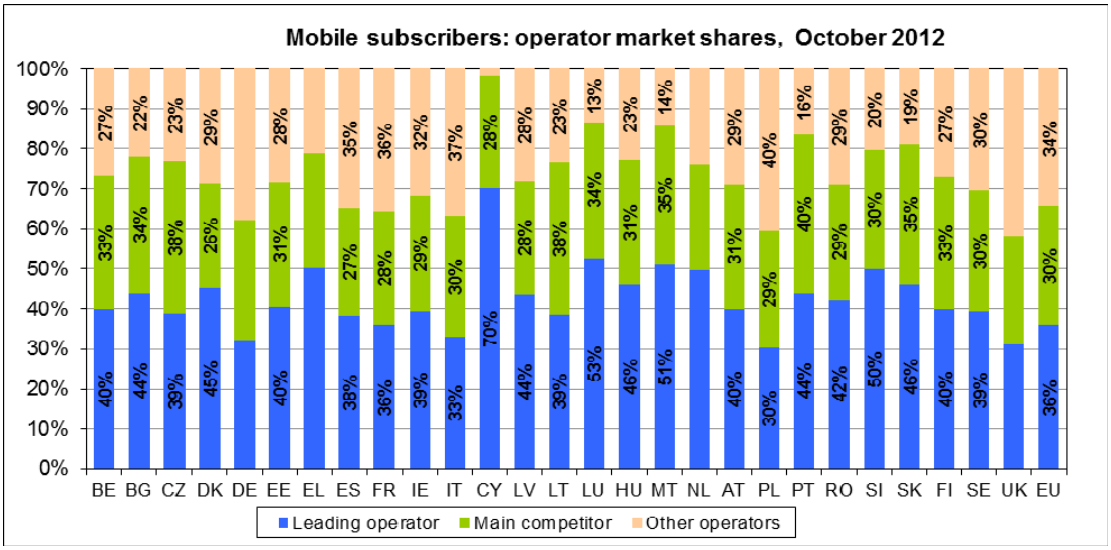
Figure 33 – Fixed Broadband Lines – Operator Market Shares, January 2013



Source: Communications Committee

In the mobile services market, the market share of the leading operator in each Member State continued to decline slightly and stood at 35.9% in October 2012. Their main competitors (the second largest operators) also slightly declined, while the alternative providers slightly strengthened their positions.

Figure 34 – Mobile Subscribers: Operator Market Shares, October 2012



Source: Communications Committee

Despite these trends, the mobile market remained highly concentrated with still around two thirds of subscribers belonging to the top two operators.

Annex V – Methodological Annex

This Annex provides a description of the methodological assumptions that underlie the two key studies quoted in the present Impact Assessment:

- The study *Steps towards a truly internal market for e-communication* performed by Ecorys and TU Delft for the European Commission and also known as the cost non-Europe study;
- The study *The Socio-economic impact of bandwidth* performed by Analysys Mason and Tech4i2 for the European Commission.

1. STEPS TOWARDS A TRULY INTERNAL MARKET FOR E-COMMUNICATION

The study on 'Steps towards a truly Internal Market for e-communications' by Ecorys assesses the state of progress of the EU's Single Market for electronic communications networks and services and its economic potential. The main assumptions of the study are:

- The term 'electronic communications networks and services' includes the roll-out and exploitation of infrastructures for electronic communications. It does not include the development and exploitation of content and applications that are marketed via the Internet.

- The analysis includes the extent to which current barriers for the Internal Market at the level of infrastructure affect the development and roll-out of new products and services at the application level[105].

- (Semi-) natural barriers are barriers cannot be levelled. They determine the boundaries for the Internal Market of e-communications in terms of convergence of performance. As regions differ with respect to these structural characteristics, **the Internal Market for e-communications (as for other non-tradable goods) is thus <u>not</u> defined by full convergence of prices and investment levels**.
- The assumption that European economies of scale can fully be exploited implies that at the level of both IT and telecom infrastructure, the necessary extent of standardisation has taken place as to allow for the full exploitation of EU economies of scale.

In terms of **methodology** for the calculation of the effects on a Single Market the study makes a distinction between mobile and fixed network infrastructure. To determine the starting positions, it uses the observed values of each explanatory variable for the years 2007 and 2009 (for fixed and mobile respectively). The study calculates the weighted average HHI or market shares in the EU in the respective base year (weighted against population). Next it determines the weighted average values of the other variables in the regression functions. Using the regression functions it calculates the average level of performance in the EU (in terms of ARPU and investments). It then assumes that all Member States (and thus the EU

[105] For instance, this includes differences in Quality of Service (QoS) levels across Europe at bitstream level that may negatively affect the (pan European) roll-out of services such as Video on Demand (VOD) or cloud computing.

average) move towards the best performing country in terms of HHI or market share of new entrants.

The study analyses the regression between indicators for the intensity of competition and prices and investments. On the basis of this regression the study determines how much the EU average prices and investment levels would change if the EU would be as competitive as the current best practice. On the basis of educated assumptions a model was developed to translate these changes into Euros.

2. THE SOCIO-ECONOMIC IMPACT OF BANDWIDTH

Analysys Mason and Tech4i2 (2013) have estimated the socio-economic benefits of high-speed broadband using two complementary methodologies: input-output analysis and consumer surplus calculations.

This study is not directly concerned with the measures proposed under this package, but it provides the best known estimates of spill-overs and impacts generated by the higher bandwidth. The measures proposed in this package will have an indirect effect on the deployment of better infrastructure.

In terms of the methodologies in use, Input-output analysis is based on the premise that investment in one sector of an economy causes growth in the other sectors of the economy through so-called multiplier effects. For example, the roll out of high-speed broadband creates jobs in the construction and telecoms industries. However, the people employed in these jobs also spend money on food, clothing, housing, transport and leisure activities, thus the total impact of the investment is significantly larger than the investment itself. Standard tables are available for the majority of countries covered by this study allowing the multiplier effects for broadband investments to be calculated.

Consumer surplus is a measure of the difference between what consumers would be willing to pay for a good or service and what they actually have to pay: for example, if someone is willing to pay up to EUR50 per month for high-speed broadband but the retail price is only €30 per month then then that person has a surplus of €20 per month. The difference between what someone would be willing to pay for broadband service and what they actually pay varies from person to person. The total consumer surplus is the sum of all of these individual values.

The scenarios envisaged in the study are "do nothing", modest intervention and large scale intervention. For this Impact Assessment the estimates will rely on the simulation in the modest intervention scenario which encompasses regulatory measures but does not foresee – unlike the major intervention scenario – any large scale public investment in infrastructure deployment. The modest intervention scenario factors in "*a conservative estimate of the impact of some of the softer policy measures being considered by the Commission (e.g. broadband mapping, infrastructure registration and sharing, co-investment measures, streamlined admin and standards development)*".

Although the study does not refer to the options in this package of measures, the modest intervention scenario fits better the context of the Digital Single Market initiative, which is regulatory in nature and does not fund deployment directly. Finally, the estimates of the study, looking at the scope of this Impact Assessment, can be considered conservative, as the study did not assume the existence of a fully-fledged TSM and relates only to the impact of high-speed broadband.

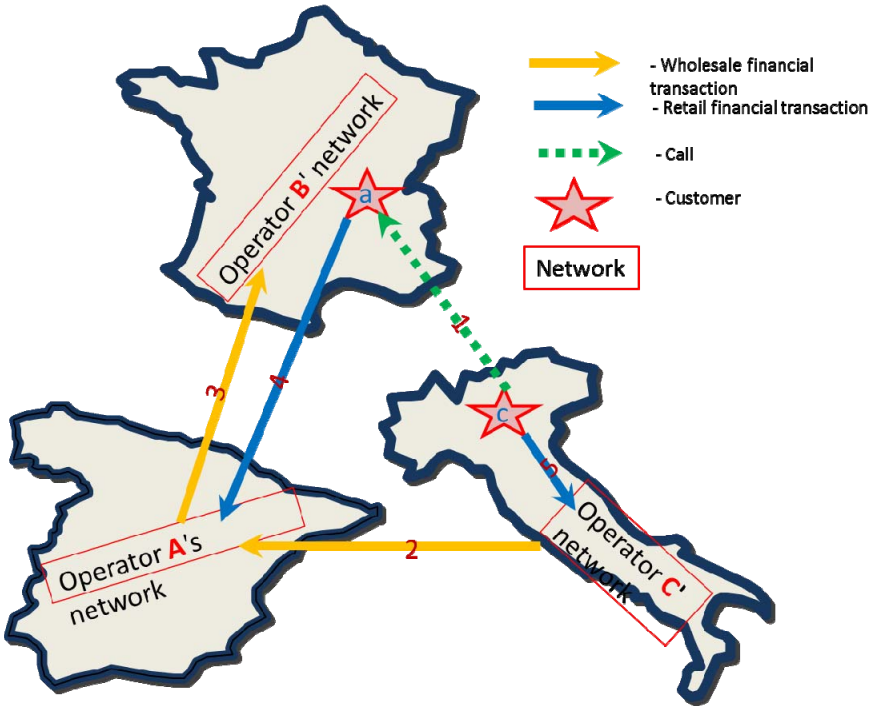
Annex VI - Incoming roaming calls

No charging for the incoming roaming calls replicate situation currently present in domestic mobile markets – calling party pays. As there is no regulated wholesale charge for incoming calls, this reduces the necessity for regulated retail charge for incoming roaming calls, since costs of providing this service is accounted for in the mobile termination rate. As European mobile termination rates are converging as a consequence of implementation of the Commission recommendation on mobile termination rates, the risk of transfers between operators for paying higher termination rates is minimal.

The diagram shows:

- Customer (a) is domestic operator (A)'s customer
- Customer (a) roams on visited operator (B)'s network
- Customer (c) is on operator (C)'s network

Figure 35 – Wholesale & Retail roaming financial transaction



- 1 – customer (a) receives a call from customer (c)
- 2 – calling operator (C) pays a mobile termination fee to called operator (A)
- 3 – domestic operator (A) pays an international mobile termination fee to visited operator (B)
- 4 – customer (a) pays regulated retail fee to domestic operator (A)
- 5 – customer (c) pays domestic retail fee to operator (C)

As financial transfers at wholesale level for incoming calls are outside the scope of the roaming regulation, Payment number "2" is strictly equivalent to what would happen if the called party were not roaming outside its home network: calling party (network) pays termination to the called party. Payment number "3" is an additional interaction generated by the roaming situation, which in practice corresponds to a termination payment.
While financial transfers at wholesale level for incoming voice roaming services are outside the scope of the roaming regulation, financial transfers at retail level fall so far inside this scope. In practice, operators do not apply different termination rates for incoming roaming calls and other incoming calls (international or national). The cost actually incurred at wholesale level for incoming voice roaming services will then correspond to the difference between the MTR received from the calling party's operator (C), that is MTR of operator (A) and the MTR paid by home operator (A) to visited operator (B), that is MTR of (B).

Annex VII - Input from RSPG concerning spectrum for wireless broadband

The Radio Spectrum Policy group is a high level advisory group to the Commission composed of high-level Member State officials. It provides Opinions on strategic issues with regard to spectrum policy. In the process of preparing its Opinion the RSPG systematically holds public consultations on the topic in question. Therefore the RSPG Opinions can be regarded as input from Member States. They are also containing broad public input as the Opinions are reflecting and summarising the public input received.

In the following, the input on spectrum policy for wireless broadband that is of relevance to the proposed measures to complete the Single Market for Electronic Communications is summarised.

Table 8 – Input on spectrum policy for wireless broadband

Name of RSPG Opinion (Public Consultation Period)	Relevant input
Licensed Shared Access (19 June - 23 August 2013)	Member States state in the draft Opinion that Licensed Shared Access (LSA) could provide new sharing opportunities **on a European scale** under a licensing regime. To handle the growth in wireless traffic, the **industry and administrations are challenged to introduce new technologies and regulatory mechanisms** to optimise the use of the finite radio spectrum resource. Consequently, **general sharing conditions should be agreed at European level**, taking into account national particularities in bands designated for LSA at EU level, thus offering new opportunities for **providing services with a good Quality of Service in spectrum within Europe.** Finally the RSPG mentions in its draft conclusions that **harmonised measures under an LSA framework** focusing on a particular frequency band, where the combined net socio-economic benefits of multiple applications sharing the band is greater than the net socio-economic benefit of a single application, **will support the EU internal market.** Industry (e.g. GSMA) supported these statements by concluding in the public consultation that the LSA concept could give MNOs the possibility to gain access to new spectrum, which may be impossible otherwise (at least in the short term) on an exclusive basis.

Wireless Broadband (7 March - 3 May 2013)	The RSPG states that trends show a **tremendous increase in the volume of data traffic** which was not foreseen before WRC-07 for delivery of broadband services over both wired and wireless infrastructures at large and **for wireless broadband in particular.** Therefore, the RSPG recommends that a strategic plan should be developed by the Commission **to make sufficient and appropriate spectrum available** to meet the increasing demand for wireless broadband services in the time frame 2013-2020. **Most respondents to the public consultation agreed to the need for this strategic plan.**
Preparation of Radio Spectrum Policy Programme (31 March - 30 April 2012)	The Opinion stated that an improved cooperation between competent national authorities, the European Commission, CEPT and ETSI as well as the joint formulation and efficient representation of European spectrum interests in international fora are necessary. The RSPG believes that increasing **economies of scope and scale** is also necessary at EU level through **enhanced coordination and harmonisation** of technical parameters **for use of spectrum and availability of spectrum**, as appropriate. The **utilisation** of the digital dividend shall be a key objective. The RSPG acknowledges that spectrum is a national resource which, where appropriate, should be **managed in a coordinated manner by EU Member States in conjunction with the European Commission** within the international regulatory context. In addition to these considerations public input on spectrum governance included the request by industry that development of compatibility standards and **EMC-limits** needs to be given more attention by the Commission and by regulators.

Annex VIII – International calls

Table 9 – Illustrative tariffs for international calls in the EU

		Operator in UK	Operator in BE
Mobile	Operator in LT	€ 1.15 UK → LT; € 0.58 LT → UK;	€ 1 BE → LT; € 0.58 LT → BE;
	Operator in FI	€ 1.15 UK → FI; € 0.56 FI → UK;	€ 0.65 BE → FI; €0.56 FI → BE;
	Domestic price: € 0.07 in LT, € 0.08 in FI, € 0.20 in BE and € 0.40 in UK*		
Fixed	Operator in LT	€ 0.7 UK → LT; € 0.35 LT → UK;	€ 0.36 BE → LT; € 0.35 LT → BE;
	Operator in FI	€0.38 UK → FI; € 0.51 FI → UK;	€ 0.36 BE → FI; € 0.31 FI → BE;
	Domestic price: € 0.03 in LT, € 0.08 in FI, € 0.5 in BE and € 0.11 in UK*		

* Standard tariff outside bundles