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Evaluation of the regulatory framework for electronic communications

Accompanying the document

**Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE
COUNCIL**

**establishing the European Electronic Communications Code
(Recast)**

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Table of contents

1. EXECUTIVE SUMMARY	4
2. INTRODUCTION.....	7
2.1. Purpose	7
2.2. Scope	7
3. BACKGROUND TO THE INITIATIVE	8
3.1. General description of the regulatory framework and its objectives	8
3.2. Baseline	17
4. EVALUATION QUESTIONS	18
5. METHOD.....	20
6. STATE OF PLAY: IMPLEMENTATION & EVOLUTION OF THE SECTOR	23
6.1. Implementation of the regulatory framework	23
6.2. Evolution of the Sector.....	24
7. ANSWERS TO THE EVALUATION QUESTIONS	31
7.1. Relevance	31
7.1.1. Relevance of the current objectives of the regulatory framework	31
7.1.2. Relevance of regulation areas.....	35
7.1.3. Continued relevance of the current objectives against new needs	41
7.2. Effectiveness	42
7.2.1. Achievement of the general objective of the regulatory framework.....	42
7.2.2. Achievement of the specific objectives of the regulatory framework...	44
7.2.3. Contribution of specific regulation areas to the objectives of the regulatory framework	51
7.3. Efficiency	91
7.3.1. General remarks	91
7.3.2. Efficiency of regulatory areas	94
7.4. EU added value	105
7.5. Coherence.....	108
7.5.1. Internal coherence	108
7.5.2. External coherence	110
8. CONCLUSIONS.....	113
9. LIST OF ANNEXES	117
9.1. Annex I Procedural information.....	118
9.2. Annex II Results of the public consultation	121
9.3. Annex III Methodology of the support studies	145
9.4. Annex IV Legislation covered and correspondence tables	156
9.5. Annex V Screening of the Directives	160
Screening of the Framework Directive (2002/21/EC)	160
Screening of the Authorisation Directive [(2002/20/EC)]	166
Screening of the Access Directive (2002/19/EC).....	174
Screening of the Universal Service Directive [(2002/22/EC)].....	180
9.6. Annex VI Screening of the BEREC Regulation	191
9.7. Annex VII The implementation of the RSPP & of the RSD.....	199

Table of Figures:

Figure 1 Intervention logic summary	11
Figure 2 Fixed broadband subscriptions – operator market shares at EU level, January 2006 – July 2015	25
Figure 3 Fixed broadband subscriptions – operator market shares, July 2015	25
Figure 4 Mobile broadband penetration at EU level, January 2009-July 2015.....	27
Figure 5 Broadband retail prices, standalone offers.....	28
Figure 6 Broadband retail prices – bundles including broadband, fixed telephony and tv.....	29
Figure 7 Decrease of fixed broadband market share of incumbent operators.....	34
Figure 8 OECD wireless broadband take-up (subscriptions/100 people).....	42
Figure 9 NGA performance global comparisons end 2014.....	42
Figure 10 Fixed broadband subscriptions – technology market shares at EU level, January 2009-July 2015.....	44
Figure 11 Fixed broadband subscriptions – technology market shares at EU level, July 2015.....	45
Figure 12 Share of different NGA technologies in total NGA subscriptions at EU level, July 2015	45
Figure 13 Fixed broadband subscriptions - operator market shares at EU level (% of subscriptions), January 2006 to July 2015	46
Figure 14 Local Loop Unbundling monthly average total cost (EUR) at EU level, 2005-2015	46
Figure 15 Household penetration of Cable TV, July 2014	48
Figure 16 Next generation access (FTTP, VDSL and Docsis 3.0 cable) coverage, June 2015.....	52
Figure 17 Fibre to the premises (FTTP) coverage, June 2015	53
Figure 18 Fixed broadband subscriptions by headline speed, July 2015	53
Figure 19 Average spectrum assigned for wireless broadband in EU28	60
Figure 20 Timing of 800MHz spectrum awards	60
Figure 21 Summary of tasks: access regimes for network investment	145
Figure 22 Types of business model in relation to regulatory approach	146
Figure 23 Assessing regulatory models – analytical steps.....	147
Figure 24 Sequence and structure of tasks in the project.....	147
Figure 25 Assigned spectrum in harmonised EU band per Member State	201

Table of Tables:

Table 1 - Assignment and derogations of the 800 MHz harmonised band	203
Table 2 — General spectrum policy (programme, definition and inventory).....	205
Table 3 — Electronic communications services (including wireless broadband)	205
Table 4 - Devices and equipment (including machine to machine).....	207
Table 5 - Derogations under Art. 6(4) of the RSPP Decision regarding the 800 MHz band.	208

1. EXECUTIVE SUMMARY

The purpose of this staff working document is to assess the regulatory fitness of the current rules that make up the regulatory framework for electronic communications and to assess whether they have contributed to the achievement of the framework's main objectives. It is also to identify possible redundancies, inconsistencies and potential for simplification. The regulatory framework consists of a set of complementary instruments covering both sector-specific economic regulation and end-user protection rules. It aims to promote competition — mainly through regulated access to the incumbent's networks and provisions ensuring market entry and efficient access to key resources such as spectrum — in order to maximise end-user benefits.

This evaluation, announced in the Commission's Work Programme, is warranted for two reasons. The first is the legal obligation to periodically review the functioning of the regulatory framework. The second is that there have been a number of structural changes in the sector since the last review in 2009. It draws on the results of a wide-ranging stakeholder consultation, Commission monitoring (e.g. implementation reports, Digital Agenda Scoreboards) and various studies, including those that focus on the evaluation and review of the regulatory framework. The main findings are summarised below.

Relevance — Generally speaking, the evaluation has shown that the specific objectives of the framework — promoting competition, realising the single market and protecting consumer interests — remain as valid as before. The single market objective is even more relevant than before. Effective and sustainable competition drives efficient investment and fuels the development of the single market. It ultimately serves the interests of end-users, by encouraging innovation and providing maximum benefit in terms of choice, price and quality.

At the same time, connectivity has emerged as the underlying driving force for digital society and the digital economy, underpinned by technological changes and evolving consumer and market demands. It is a key aspect of the Juncker Commission's political commitment to deliver the digital single market. It is therefore necessary to consider adjusting the current policy objectives and regulatory tools to further support the deployment of infrastructure and wide-spread take-up of corresponding connectivity services in line with future needs.

Most regulatory areas remain as relevant as in 2009, if not more so. In particular, this applies to spectrum management, given the role of spectrum as an essential but scarce input for the deployment of current and next generation mobile and fixed wireless networks. This goes hand in hand with access regulation as a way of tackling the problem of the persisting entry barriers in the networks. For instance, market developments are calling into question the relevance of certain specific components of the universal service regulation. However, the concept of a safety net ensuring that all citizens are included in a fully developed digital society is even gaining in importance in relation to the digital single market. Similarly, while specific provisions under the consumer protection objective might have to be adjusted in view of technological, market or legislative changes, the basic end-user protection needs the provisions meet remain relevant, as do their specific objectives.

Effectiveness — It is widely recognised that the regulatory framework has been effective in delivering a competitive sector overall. This has generated significant end-user benefits, such as widely available (basic) broadband, a significant decrease in prices and more choice.

Access and spectrum regulation in particular, but also market entry provisions, have increased competition. Nevertheless, access regulation has delivered competition more at service than at network level. Also, while investments in very-high-capacity networks have advanced, they have not taken place across all Member States at the pace envisaged in the public policy agendas and corresponding to expected future needs. A significant amount of spectrum has been released for wireless broadband, but progress in spectrum management has not been as good as wished for in the last review. This has resulted in delayed and fragmented network roll-out and take-up.

Results in terms of achieving the single market objective are not very impressive. Regulatory consistency has been achieved only to a limited extent, affecting the operations of cross-border providers and reducing predictability for all operators and their investors. The cooperation and consistency tools available have led to a situation in which the best regulatory solutions have not always been chosen, with impacts on end-user outcomes. EU-level consistency checks contribute to the predictability of access regulation throughout the EU, but their influence is significantly restricted with regard to draft regulatory remedies. The lack of consistency in spectrum management has also had negative consequences for end-users, such as delayed 4G deployment in most parts of the EU.

The achievements of the framework in protecting end-users and in ensuring a safety net (universal service) are significant, although progress in consumer satisfaction is relatively slow. It is also clear that not all sector-specific end-user protection provisions are still fit for purpose given technological, market and legislative developments.

Efficiency — It has not been possible to do a precise cost calculation, but the evaluation has shown that the benefits of the framework — for most operators, end-users and society as a whole — greatly outweigh the costs of implementing it. A certain level of complexity might be necessary to ensure a well judged intervention (e.g. appropriate access regulation). However, several areas have been identified in which the administrative burden could be reduced without making the provisions less effective — in some cases even making them more effective: e.g. longer *ex ante* market regulation cycles, simplified procedures for analysing very stable markets, streamlining certain overlapping consumer protection provisions.

EU added value — The regulatory framework has been instrumental in delivering competition in the single market that, to an extent, would not have been possible or likely at national level. It has brought national regulatory practice in the sector into line with the best models across the EU, with varying success for specific regulation areas. EU action has also contributed to more comprehensive, if not homogeneous, consumer protection than would otherwise be the case.

Coherence — Generally speaking, the various instruments making up the regulatory framework have reinforced each other. Two issues would, however, merit specific attention in the review process. They are the coherence between regulation aimed at incentivising competitive network roll-out and the EU financing and State aid rules in the sector, as well as the potential overlaps between certain sector specific provisions and horizontal consumer interest legislation.

In **conclusion**, the regulatory framework has broadly achieved its general objective of ensuring a competitive sector that provides significant end-user benefits. Nevertheless, while its main specific objectives — promoting competition, developing the internal market and

promoting the interests of end-users — remain relevant, a review is needed to address the growing need for increased connectivity of the digital single market and to streamline provisions taking into account market and technological developments.

2. INTRODUCTION

2.1. Purpose

The Commission's Communication of 6 May 2015 on a Digital Single Market for Europe¹ (DSM) is built on three pillars: (i) Better access for consumers and businesses to online goods and services across Europe; (ii) Creating the right conditions for digital networks and services to flourish; and (iii) Maximising the growth potential of our European Digital Economy. The review of the regulatory framework for electronic communications is one of the key actions under the second pillar.

The present evaluation is a comprehensive policy evaluation of the current regulatory framework for electronic communications. It has been announced under the Commission's work programme for 2015² as a REFIT item, i.e. as belonging under the Regulatory Fitness and Performance programme and is warranted not only because of the legal obligation to periodically review the functioning of the regulatory framework³, but also because since the last review of 2009⁴, electronic communications networks and services have undergone a number of structural changes.

Its purpose is to assess the regulatory fitness of the current rules composing the regulatory framework for electronic communications and to examine whether they have contributed to the achievement of their main objectives, as well as to identify possible redundancies, inconsistencies and simplification potential.

The evaluation follows the guidelines of the Better Regulation Package and assesses the relevance, effectiveness, efficiency, EU added value, and coherence of the Telecoms Package.

It follows a Fitness Check model, that is, an evaluation of most of the measures of the 2009 Telecom Package, aiming to identify the cumulative impact of the interventions covered on the three objectives of the framework: promoting competition, the internal market and end-user interests.

This evaluation will form a basis for potential legislative and/or non-legislative initiatives addressing the identified gaps and the ambition set out in the Digital Single Market Strategy.

2.2. Scope

The evaluation covers the following instruments: the Framework Directive 2002/21/EC as amended, the Authorisation Directive 2002/20/EC as amended, the Access Directive 2002/19/EC as amended, the Universal Service Directive 2002/22/EC as amended, the BEREC Regulation 1211/2009, the Radio Spectrum Decision 676/2002/EC, the Radio

¹ COM(2015) 192

² COM(2014) 910

³ See the evaluation and/or review provisions in the respective instruments see Article 25 Framework Directive, Article 16 Authorisation Directive, Article 17 Access Directive, Articles 15 and 36 Universal Service Directive, Article 15 of the Radio Spectrum Policy Programme, Article 9 Radio Spectrum Decision.

⁴ <https://ec.europa.eu/digital-single-market/en/telecoms-rules>

Spectrum Policy Group Decision 2002/622/EC, Decision 243/2012/EU establishing a multiannual radio spectrum policy programme (RSPP)⁵.

The evaluation does not cover Directive 2002/58/EC on privacy and electronic communications, since the evaluation and review of this Directive is linked to the ongoing legislative process of the general data protection regulation (see COM(2012)11 final). A specific evaluation is referred to in the Commission 2015 work programme.

The evaluation of the Roaming Regulation 531/2012 is not covered, as the Roaming Regulation is addressed in the recently adopted Regulation (EU) 2015/2120 and is subject to a specific review process provided therein⁶. Regulation (EU) 2015/2120 also amended rules concerning open Internet access which are not part of this evaluation.

The Broadband Cost Reduction Directive 2014/61 is not covered either, as it is currently in the process of being transposed by Member States (date of application of most provisions: 1 July 2016).

The timeframe of the evaluation covers in principle the period from the entry into force of the revised regulatory framework i.e. from May 2011 till end of May 2016. Wherever longer datasets are available and where they can be useful in showing impacts (i.e. in those regulatory areas with little or no modifications during the 2009 review), 2004 is the starting point – the year when the 2002 package entered into force establishing a distinct set of rules and regulatory principles. Indeed, while the last revision of the package of instruments took place as of 2009, it would be difficult to judge the overall functioning of the framework without looking at the entire package as adopted in 2002. The geographic focus is on the European territory of the Member States to which the Treaty applies.

3. BACKGROUND TO THE INITIATIVE

3.1. General description of the regulatory framework and its objectives

The framework was set up in 2002, consisting of five directives: the Framework Directive (2002/21/EC), the Authorisation Directive (2002/20/EC), the Access Directive (2002/19/EC), the Universal Service Directive (2002/22/EC) and the Directive on privacy and electronic communications (2002/58/EC). The framework comprised (i) sector-specific economic regulation and (ii) rules safeguarding end-user interests, and had the general objective to promote competition via regulated access to incumbents' networks and market entry as a means to make markets contestable, to achieve efficient market outcomes and, in particular, to maximise consumer benefits. Economic regulation was based on the principles of competition law and aimed to take into account the convergence of technologies.

⁵ See in Annex IV the list of legislation evaluated, legislation not evaluated (and corresponding justifications).

⁶ Regulation (EU) 2015 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union, O.J L 310/1, 26.11.2015.

The regulatory framework is composed of a set of complementary instruments. The **Framework Directive** establishes a harmonised framework for the regulation of electronic communications networks and services, associated facilities and associated services, outlining the general principles, objectives and procedures governing this policy area. It also, together with the **BEREC Regulation**, lays down the overall institutional set up by establishing independent national regulatory authorities (NRAs) responsible for regulation at national level and defines the role of BEREC, composed of NRAs, in advancing a consistent regulatory approach at the EU-level. The Framework Directive is complemented by four directives and several more specific regulations. In particular, the **Authorisation Directive** harmonises and simplifies the authorisation rules and conditions in order to facilitate their provision throughout the EU, in particular by replacing individual licenses by general authorisations to provide communications services. The **Access Directive** grants telecom operators rights and obligations to negotiate interconnection of their networks with the view to ensure interoperability of services throughout the EU in the interest of end-users. It also empowers NRAs, among others, to impose adequate regulatory obligations in the areas of access and interconnection in order to ensure competition in the market and contribute to the achievement of the single market. The **Universal Service Directive** guarantees basic rights for consumers and minimum levels of availability and affordability. On the one hand, it ensures that consumers can fully reap the benefits on a competitive market. On the other hand, it provides a safety net for end-users which are not catered for by the competition on the single market. Finally, the **e-Privacy Directive** (not included in the scope of this evaluation) covers protection of privacy and personal data communicated over public networks.

Prior to 2002 the principal aim of telecom regulation had been to break down monopolies. In 2002, the **needs** had evolved: the markets were becoming progressively competitive, their contribution to the overall economy moderately recognised, while at the same time technologies (e.g. cable and telephony providers) were converging. Thus the need to move to a case-by-case, competition law based approach as far as access regulation is concerned, to cover within one framework networks and transmission services (but not content), and to complement economic regulation with end-user protection rules. The framework provided also for the progressive removal of regulation as and when competition becomes effective.

In the first review of the 2002 package, two Directives – the **Better Regulation Directive 2009/140/EC** and the **Citizens' Rights Directive 2009/136/EC** – have provided additional tools to respond to the need to ensure more effective competition, consolidate the internal market and strengthen end-user's rights. As laid down in the review Communication (COM/2006/0334 final)⁷, several changes were needed despite significant achievements of the framework in terms of prices, choice, high mobile penetration and growing broadband penetration, etc. In particular there was a need to render spectrum management more effective, to simplify the market review processes, to reinforce end-users' interest and to improve security. There was also a particular need to increase the consistency of regulatory approaches in Member State.

A number of regulatory principles how to pursue the objectives of competition, internal market, and citizens' interests have also been added, not least in relation to the promotion of

⁷ Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on the review of the EU Regulatory Framework for electronic communications networks and services (COM/2006/0334 final) accompanied by the evaluation and impact assessment documents (SEC(2006) 816 and SEC(2006) 817)

investment and innovation in new and enhanced infrastructures. Particular attention was devoted to the need to apply the principles of the regulatory framework to spectrum management.

As referred to above, the Body of European Regulators for Electronic Communications (BEREC) was also established by the 2009 BEREC Regulation to contribute to a more consistent regulatory practice among national regulatory authorities and to advise EU institutions. BEREC started operations in January 2010 and became fully functional in 2011.

The **intervention logic**, setting out the rationale and approach for the working of the package is summarised in Figure 1, below. This includes the general and specific objectives, the activities and inputs required to achieve these objectives, and the outputs, results and impacts that should be achieved through their implementation.

Both the **general objective** and the **specific objectives** remained unchanged in the 2009 review. In response to the needs identified above, the overarching objective of the regulatory framework for electronic communications was to create a competitive sector, with a view to maximising end-user outcomes/benefits. Competition on the Single Market has indeed been considered to be the main engine delivering diverse, innovative, and affordable services to consumers and businesses⁸. Provisions were also put in place to enable end-users to fully take advantage of the competition created.

The general objective was further broken down in three **specific objectives**: promoting competition, improving the functioning of the Internal Market and protecting the interests of European citizens. The specific objectives of the intervention were furthermore broken down by the legislator into **sub-objectives**:⁹

- **Promoting competition** means (1) ensuring that users derive maximum benefit in terms of choice, price and quality, (2) ensuring that there is no distortion or restriction of competition, and (3) by encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources;
- **Developing the internal market** implies (1) removing remaining obstacles at EU level, (2) encouraging the establishment and development of trans-European networks and the interoperability of pan-European services, and end-to-end connectivity, and (3) cooperating with each other, with the Commission and BEREC;
- Finally, **promoting the interests of EU end-users** means (1) ensuring all citizens have access to a universal service, (2) ensuring a high level of consumer protection, (3) promoting the provision of clear information, (4) addressing the needs of specific social

⁸ As explained in COM/2006/0334 "regulatory holidays" were suggested by certain stakeholders during the 2009 review but not proposed by the Commission as it was believed that investments would typically not occur in absence of competitive pressure. To the contrary evidence suggested that competition would continue to bring most benefits including network investment.

⁹ This is a non-exhaustive list. See Article 8 of the Framework Directive. Note that the last two sub-objectives have been added during the 2009 reform of the regulatory framework. A number of regulatory principles how to pursue those specific objectives have also been added in 2009 (see Article 8(5) Framework Directive), including the promotion of efficient investment and innovation in new and enhanced infrastructures. Note also that the sub-objective of protection of personal data and privacy is not covered here as it is part of the REFIT exercise concerning the ePrivacy Directive.

groups, and (5) ensuring that the integrity and security of public communications networks are maintained¹⁰.

The first two sub-objectives are inter-related: competition needs to be understood in a Single Market context. As such, provisions aimed at enabling competition (e.g. ensuring access for new entrants to essential inputs, lowering barriers to market entry, etc.) can be seen as serving both the competition and the internal market objectives. At the same time, provisions considered under the Single Market objective have competition as the ultimate objective, too.

However, in view of the clarity of the analysis, provisions were grouped under the objective they most serve. This implies that a choice was made for each provision, and that a regulation area is often broken down into provisions which are split between more than one objective. The colour codes in the intervention logic graph above reflect these splits. Throughout most of the text, the provisions are evaluated per regulation area, with the exception of the effectiveness analysis, where beyond regulation area, the evaluation looks at how specific provisions contributed to each objective. Annex V furthermore summarises the evaluation findings per instrument.

The choice to conduct the evaluation per regulation area rather than per instrument (or provision by provision) reflects the Fitness Check evaluation model. In addition, provisions belonging to one regulation area are often covered in more than one legislative instrument, therefore an evaluation per area and against the overall objectives of the framework was the preferred option in view of delivering a readable product, reflecting the intervention logic rather than the successive legislative changes.

¹⁰ Two sub-objectives are not included in the list as they are covered in different evaluation exercises: ensuring a high level of protection of personal data and privacy and promoting the ability of end-user/end-users to access and distribute information or run applications of their choice.

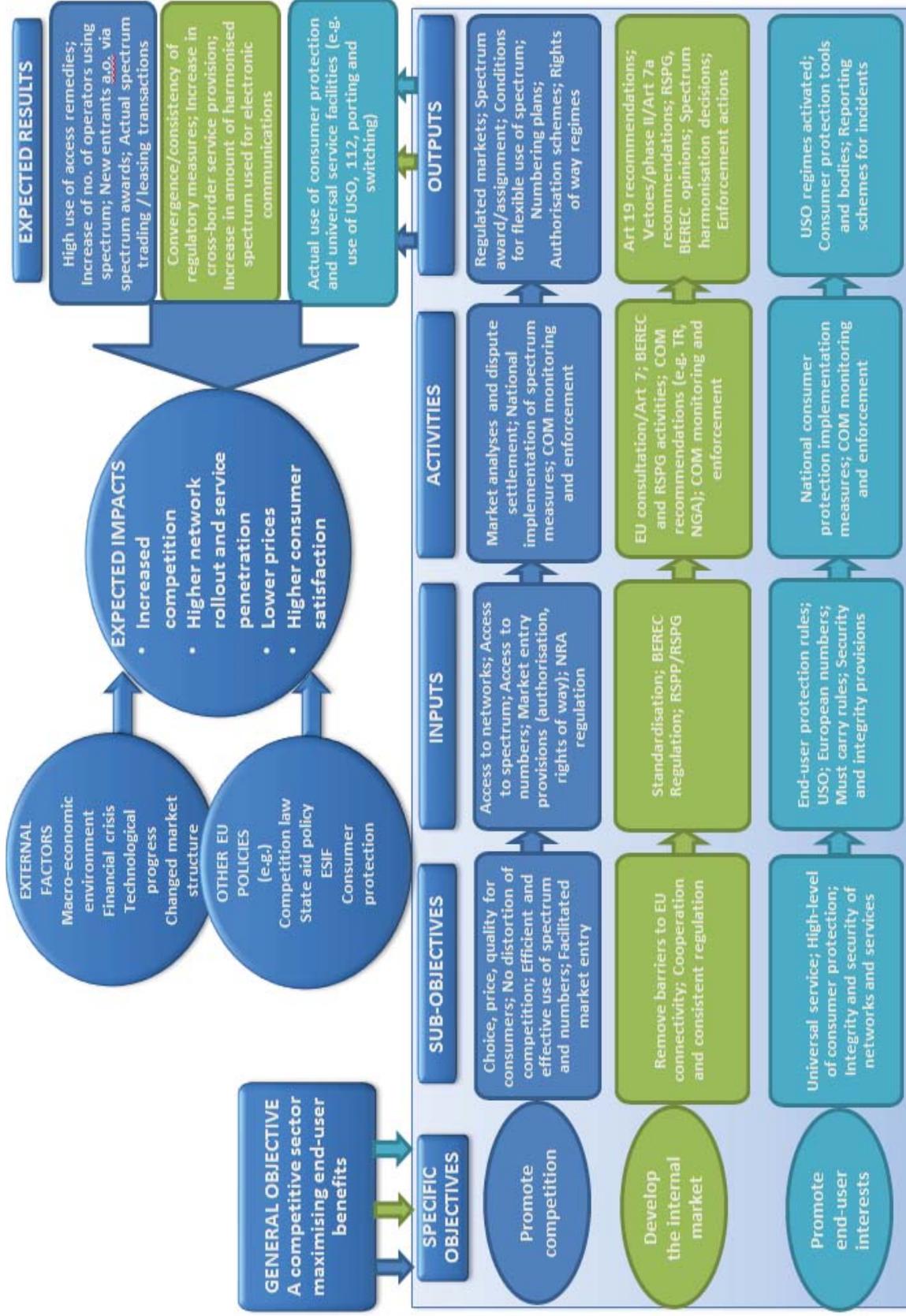


Figure 1 Intervention logic summary

The paragraphs below present shortly the **main regulation areas, which constitute the inputs to the intervention logic**, together with their corresponding **activities**.

Access regulation: The main tool by which national regulators (NRAs) promote competition and investment in next generation networks under the framework is the system of ex ante regulation, under which NRAs conduct market analyses at regular intervals and apply appropriate remedies (such as access obligations and cost controls) on operators found to have significant market power (SMP). Following the 2009 review of the framework, NRAs were given the additional option of mandating facility sharing in the final (terminating) segment of the network (symmetric regulation). The 2009 review also introduced the potential for NRAs to mandate ‘functional separation’ of SMP operators, i.e. to place activities related to the wholesale provision of relevant access products in an independently operating business entity, in cases where other remedies had failed.

The overall flexibility given to NRAs in choosing appropriate regulatory remedies from the available toolbox referred to in the paragraph above required the introduction of co-ordination mechanisms to ensure regulatory consistency on the Single Market. Indeed, the 2002 framework set up an EU consultation mechanism ("Article 7 procedure") to ensure consistent application of the market analysis procedure across the Member States. The consultation mechanism introduced an EU level check on the draft national regulatory measures and entailed a potential veto from the Commission on market definition and the designation of SMP but not on remedies. The consultation mechanism was accompanied with associated guidance (e.g. Recommendation on Relevant Markets susceptible to ex ante Regulation and guidelines for market analysis and the assessment of significant market power¹¹) and included a possibility for the Commission to issue Recommendations in order to enhance harmonised application or remedies, subject to consultation with national experts from the Member States. (Under these powers the Commission has issued Recommendations on Next Generation Access¹², on Costing and Non Discrimination¹³, and on Termination Rates¹⁴.)

The 2009 review further reinforced the mechanism to ensure consistent application of remedies by establishing a mechanism for seeking an opinion of BEREC in case of serious doubts on the remedies proposed by an NRA and empowering the Commission to issue a recommendation to the individual NRAs concerned. Furthermore, the power of the Commission to issue general Recommendations on the harmonised application of remedies was reinforced by empowering the the Commission to issue general Decisions

¹¹ Commission Recommendation of 9 October 2014 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 (2014/710/EU), OJ L 295, 11.10.2014, p. 79;

¹² Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU) OJ L, 25.09.2010, p. 35;

¹³ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU) OJ L 251, 21.9.2013, p. 13;

¹⁴ Commission Recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC), OJ L 124, 20.05.2009, p. 67

(subject to comitology) if Recommendations were not followed. The important role played by NRAs collectively in these mechanisms also drove the creation of BEREC as an EU body formalising their cooperation.

Spectrum regulation: The 2002 framework, developed at a time when mobile telephony was still in the growth phase (and mobile data virtually unknown) gave significant flexibility to Member States in the management of radio frequencies and procedures for the transfer of rights, subject to general principles set out in the legislation. Two bodies were established at the same time to support the co-ordination of spectrum policy: (1) the Radio Spectrum Decision of 2002 established the Radio Spectrum Committee (RSC) which has responsibility for technical measures required to implement the broader Radio Spectrum Policy¹⁵ and (2) the Radio Spectrum Policy Group (RSPG) established under Commission Decision [2002/622/EC](#) consisting of Member State and Commission representatives was established as an advisory group to the Commission. The RSPG issues opinions and reports on Radio Spectrum Policy at the request of the Commission and more recently under an expanded remit also the European Parliament or the Council¹⁶. The 2009 revision to the electronic communications framework provided significant new guidance on spectrum management, as mobile communications were gaining prominence and spectrum was more and more seen as essential input to compete on the electronic communications market. Importantly, it also paved the way for the 2012 Radio Spectrum Policy Programme (RSPP), which now serves as a roadmap for the development of the internal market for a wide range of wireless technologies and services (i.e. not just for electronic communications), taking into account both Europe 2020¹⁷ and the Digital Agenda for Europe¹⁸. However, unlike access regulation, which is subject to the ‘Article 7’ process, there are currently no measures for the EU-level assessment of draft national measures in the field of spectrum policy, and in particular the assignment of rights of use of spectrum.

Numbering regulation: The availability of adequate numbering resources is a crucial pre-requisite for the development and growth of telecommunication markets and services. Under the current regulatory framework, Member States shall ensure that adequate numbers and numbering ranges are provided for all publicly available electronic communication services, via objective, transparent and non-discriminatory procedures. The framework also includes provisions requiring Member States to support the harmonisation of specific numbers or numbering ranges within the Community where it promotes both the functioning of the internal market and the development of pan-European services. The Commission may take appropriate technical implementation measures on this matter. The use of numbers is coordinated at the global level by the International Telecommunications Union – Telecommunications Sector (ITU-T). In addition, CEPT (European Conference of Postal and Telecommunications Administrations) is an international organisation, affiliated to ITU, that coordinates the activities of 48 European countries.

¹⁵ See <https://ec.europa.eu/digital-agenda/radio-spectrum-committee-rsc>

¹⁶ See <https://ec.europa.eu/digital-agenda/radio-spectrum-policy-group-rspg>

¹⁷ EUROPE 2020 A strategy for smart, sustainable and inclusive growth /* COM/2010/2020 final */

¹⁸ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A Digital Agenda for Europe /* COM/2010/0245 final */

Market entry provisions (authorisation, rights of way): The conditions governing authorisation for providing electronic communications networks and services are aimed at the harmonisation and simplification of authorisation rules. In particular, the conditions attached to general authorisations are restricted by the framework. The types of obligations that could be covered in a general authorisation, applying to all operators regardless of their position on the market include provisions concerning administrative charges and contributions to a universal service fund if appropriate, provisions regarding interconnection and interoperability, consumer protection rules, data and privacy protection, enabling of lawful intercept, requirements to provide information to the NRA, restrictions concerning the transmission of illegal content; and environmental and planning requirements.

To encourage infrastructure deployments, granting rights of way or access to sites is essential. The framework foresees that competent authorities of Member States, on application, are to grant rights to install facilities on, over or under public or private property to an undertaking authorised to provide public communications networks. The granting mechanism should be simple, efficient, transparent and publicly available procedures, applied without discrimination and without delay (normally within six months of the application).

Standardisation: Under the regulatory framework, the Commission is required to establish a list of non-compulsory standards in order to encourage the harmonised provision of electronic communications networks and services and associated facilities and services. Such a list was set up under Decision 2007/176 as amended by Decision 2008/286/EC. The Commission can also ask standardisation bodies (CEN, CENELEC or ETSI) to draw up standards. Member States are furthermore encouraged to use those standards. If compliance with specified standards at EU level is encouraged, this would be done to ensure interoperability in the single market. The Commission is also given the power to adopt implementing measures in order to render specifications and standards compulsory.

End-user protection provisions include: obligations to facilitate switching including one-day number portability obligations, sectorial contractual obligations, provisions concerning transparency on tariffs and other conditions, provisions concerning transparency on Quality of Service and potential minimum Quality of Service requirements, the potential for Member States to mandate ‘must-carry’ obligations, etc. Electronic communications services are also subject to obligations concerning security and integrity, while privacy is subject to a separate review.¹⁹

Universal service provisions allow Member States to put in place obligations serving as safety net ensuring that the most vulnerable in society as well as those in more remote areas can receive basic services. At the time of the introduction of the provisions in 2002, phone boxes and physical directories were still in widespread use and the need to have access to telephony services at a *fixed* location was considered a vital objective, alongside the more forward-looking concern that users needed access to a connection that permitted ‘functional Internet access’. Today’s universal service covers both

¹⁹ See <https://ec.europa.eu/digital-single-market/en/news/public-consultation-evaluation-and-review-eprivacy-directive>

connectivity and service aspects, as well as the affordability of tariffs and accessibility for disabled users. The provisions permit financing of any ‘net cost’ of universal service obligations either through a levy on operators or through public funds, where such a net cost would otherwise constitute an unfair burden to the designated Universal Service Obligation (USO) operator.

Finally, a separate set of provisions is dedicated to the functioning of the *national regulatory authorities (NRAs)*, aimed mainly at ensuring effective and impartial regulatory decisions vis-à-vis market players. Member States should indeed ensure that well-functioning NRAs are in place as they are entrusted all the objectives of the framework and most of the tasks under the framework. The legislation distinguishes, however, between the *independent* NRA, which must be competent for ex ante market regulation and the settlement of disputes between undertakings, and the NRA in a more generic sense, which can be any national authority (including but not confined to the independent NRA) which is entrusted with one or more of the other tasks under the various Directives.

Further to the activities described above under each regulation area, the framework entails also national implementation measures, Commission monitoring and enforcement, etc.

The direct **results or outputs** of the actions specific to the regulation areas described above are: access regulation and remedies (e.g. access products that alternative operators can use to compete with incumbents), spectrum award procedures (e.g. where operators acquire spectrum and band can be reorganised efficiently), rules for flexible use of spectrum (e.g. allowing operators to trade or lease spectrum), numbering assignment plans, authorisation schemes on the ground, out of court dispute bodies, universal service regimes in place, etc. Such outputs are measured, throughout the evaluation, as much as possible quantitatively and/or qualitatively.

A set of indicators – result indicators – help understanding the intermediate results, referring to the specific objectives of the regulatory framework – the growth in number of competitors, progress on the single market, and better mechanisms for consumer protection: the actual take-up of access remedies by competitors, the decrease in the number of regulated markets, the number of new entrants resulting from spectrum auctions, the spectrum used in harmonised bands, the consistency of regulatory approaches applied across Member States, the number of cross-border operators, the actual use of services covered under universal service obligations, the use of the European emergency number 112, the number of actual switching and porting transactions, etc.

At a higher level, the **impact** on the sector's competitiveness as well as the overall consumer outcome indicators (innovation, choice, affordability) are measured by another set of indicators, such as: the market share of incumbents, Next Generation Access (NGA) rollout, price and performance available. While investment in enhanced networks is not a primary objective of the framework, network rollout is considered an important element for consumer outcomes.

1.1. Baseline

The European Electronic Communications Regulation and Markets 11th Report²⁰ offers a good overview of the situation across Member States at the end of 2005, before the last review of the regulatory framework was carried out. The main findings can be summarised as follows: the take-up of broadband stood at 11.5% in 2005²¹, with new entrants having a combined market share of roughly 50% of those subscriptions. Mobile penetration had reached 92.8%, growing faster in the "new Member States" which joined in 2004. In 2005 it was estimated that there were around 15 million subscribers to 3G services. Prices were in general falling rapidly, except for the prices for calling from fixed to mobile networks and prices for roaming, which remained high. Mobile number porting (retaining the number, which stimulates competition) had doubled during 2005 (a total of 24.5 million customers had retained their number while changing provider until then). The fixed markets, despite already decreasing revenues were at the time still an attractive market for new entrants, with a value of 85.8 billion EUR in 2005. Among the 18 markets susceptible of ex ante access regulation, the markets for international fixed telephony and access and call origination on mobile networks were slowly becoming more competitive (regulation had been lifted for those markets in over six Member States). In total, 29 markets from the total of 450 (18 markets x 25 Member States) were deregulated. Network competition was still rather limited, with only 8.3% of subscribers using direct access from a new entrant (a cable line, an unbundled line, etc.). Overall, the market showed how the framework had started to deliver its objectives. However, it is also important to note that competition mainly came from cable infrastructure, which was not regulated. Indeed, the countries where direct access from new entrants was significantly higher were those with strong cable presence (UK, Denmark, etc.).

As noted in the impact assessment carried out in view of the 2009 review²² since markets were fully opened up to competition in 1998, users and consumers had benefited from more choice, lower prices and innovative products and services. Overall growth in revenue terms in the sector had continued to be strong, outpacing the growth of the EU economy. On average, for the same telecoms services, consumers spent almost 24% less in 2005 than in 1996, and as prices had gone down about 35% in the same period²³, this implied an increase in use of electronic communications services.

Despite these positive developments, several changes were called upon in 2005. In particular there was room for significant improvement in the way that spectrum was managed, in that a mismatch could be observed between spectrum regulation and market requirements in wireless communication services impairing the efficient use of spectrum. Changes in spectrum regulation were necessary so that the full potential of spectrum to contribute to innovative, diverse and affordable services to the European citizen and to strengthen the competitiveness of European ICT industries could be realised.

²⁰ See http://europa.eu/rapid/press-release_MEMO-06-84_en.htm?locale=en

²¹ If measured per household, then broadband take-up stood at 24.9%.

²² Commission Staff Working Document on the Review of the EU Regulatory Framework for electronic communications networks and services (SEC (2006) 817)

²³ When taking into account the general evolution of prices in the economy as relative prices (i.e. corrected for the evolution of the harmonized consumer price index).

As regards other areas, and in particular access regulation, the 2009 review discussed potential changes in view of further stimulating investments and concluded that the principles and flexible tools in the regulatory framework, when applied fully and effectively, offer the most appropriate means of encouraging investment, innovation and market development. In 2005, aggregate investment – measured in terms of capital expenditure - rose to more than € 45 billion, representing an increase of 6% over 2004. It was the third consecutive year of increased year-over-year investment levels since 2003. The steady nature of this overall increase suggested that the investment cycle had improved and that the sector was considered a more attractive growth opportunity because of its broader structural characteristics. Moreover renewed emphasis on investment was accompanied by rising capital market valuations of the sector over time. There was nevertheless a need for the Commission and NRAs to provide guidance on how the rules should be applied, so as to increase predictability for stakeholders. There was also a concern about the administrative burden related with market analyses and notification procedures (Article 7).

The Commission had identified furthermore several detailed areas where consumer protection could be improved, as well as needed updates to the universal service regime. Notably, the need to ensure security of services and networks (preferably through dedicated legal provisions) had become prominent not only for the sector itself as for all the part of the economy which relied on ICT.

The major technological and market changes anticipated for the next ten years were: migration to ‘all Internet Protocol (IP)’ networks, growing use of wireless communications and wireless access platforms (e.g. 3G, Wi-Fi, WiMAX and satellite), deployment of fiber in the local access network, and the transition to digital TV. Far-reaching impacts on existing network architectures, services and consumer devices were expected, leading to new and innovative services for users, starting with ‘triple play’²⁴ services.

4. EVALUATION QUESTIONS

The following questions were set out under the five different evaluation criteria and form the main basis for the evaluation:

Relevance

- Are the original (general and specific) objectives of this regulatory framework still relevant? To what extent do the original objectives of the regulatory framework - to promote competition, to develop the internal market, and to protect the interests of EU citizens still correspond to the needs and problems within the EU and in relation to the emerging needs of the sector?

²⁴ Triple play refers to bundled offers/ to subscriptions to e.g. television, telephony and internet services.

- Looking at the global objectives and the structural changes in the sector, are there new objectives that the framework should pursue?
- How relevant is the regulatory framework to stakeholders and to EU citizens?
- Are all the regulation areas still relevant in reaching the objectives identified as being still relevant?

Effectiveness

- To what extent can these high level results and evolutions be attributed to the working of the framework? How do these trends compare internationally?
- Have the objectives of the framework been met? Looking at the electronic communications sector, how have competition, the internal market and consumer interest evolved?
- What are the main outputs and results per regulatory area? How has each regulation area contributed to the attainment of the objectives of the framework?
- What have been the major constraints on the effectiveness of each regulation area? Are there any areas that are more or less effective than others, and, if so what lessons can be drawn from this?

Efficiency

- Do the provisions of the framework allow for an efficient implementation by Member States?
- Do the provisions create overly burdensome obligations for operators or regulators, as main stakeholders of the framework?
- How do the results compare to the costs at a general level/for the main stakeholders?

EU added value

- Could similar results have been achieved at national/regional level, or did EU action provide clear added value?

Coherence

- Is the regulatory framework internally coherent? Do certain regulation areas complement and reinforce each other?
- Have any contradictions, overlaps, or conflict been detected?
- How is coordination ensured between the various regulation areas of the framework?
- To what extent is this framework coherent with other EU policies which have similar objectives?
- Have any potential conflicts or gaps been detected?
- What are the other policy areas with which coordination and complementarity are particularly important?

5. METHOD

The evaluation was coordinated by the EC's Directorate-General Communications Networks, Content and Technology with the support of a Steering Group (with representatives of Commission Directorate-Generals Agriculture and Rural Development; Competition; Informatics; Economic and Financial Affairs; Education and Culture; Employment, Social Affairs and Inclusion; Energy; Environment; Eurostat; European Political Strategy Centre; Financial Stability, Financial Services and Capital Markets Union; Internal Market, Industry, Entrepreneurship and SMEs; Legal Service; Migration and Home Affairs; Joint Research Centre; Neighbourhood and Enlargement Negotiations; Justice and Consumers; Mobility and Transport; Regional and Urban Policy; Research and Innovation; Health and Food Safety; Secretariat-General; Taxation and Customs Union; and Trade).

The Group steered and monitored the progress of the exercise, ensuring the necessary quality, independence and usefulness of the evaluation.

The evaluation took place between March 2015 and June 2016 and drew from the following main data sources and methods.

Evidence gathering

- *Dedicated studies*

Three dedicated, independent studies support the findings of this fitness check:

- *Support for the preparation of the impact assessment accompanying the review of the regulatory framework for e-communications*²⁵
- *Regulatory, in particular access, regimes for network investment models in Europe*²⁶
- *Substantive issues for review in the areas of market entry, management of scarce resources and general consumer issues*²⁷

- *Literature review*

Several studies related to the specific regulation areas²⁸ were reviewed and an extensive literature review was carried out. A list of the studies used is included in Annex III.

- *Stakeholder consultations*

The main stakeholders of the regulatory framework are electronic communications providers (of which incumbent operators and alternative operators²⁹ often have different

²⁵ SMART 2015/0005

²⁶ SMART 2015/0002

²⁷ SMART 2015/0003

²⁸ Review of the scope of universal service (SMART 2014/0011), Study on future trends and business models in communications services and their regulatory impact (SMART2013/0019) etc.

²⁹ While the traditional boundaries between types of operators are disappearing (i.e. incumbents in one member state are alternative providers in another member states and operators are increasingly combining

views and interests when specific competition related policy areas are concerned), national governments (including Spectrum Management Authorities) and National Regulatory Authorities. Citizens and businesses including SMEs are grouped together under the "end-user" category. Other industries connected to electronic communications are affected by the framework while not being subject to it: Over-the-Top players, equipment manufacturers, broadcasters, etc.

The stakeholder consultation was designed to reach a wider range of stakeholders including both those who have been engaged in implementing the Directives and those who have experience of requirements to comply with the Directives at different geographical levels. It included:

- Targeted consultation - addressing selected stakeholders in all Member States through specific evidence gathering visits to the Member States dedicated to the evaluation and review of the framework have been conducted during 2015-2016.
- A wide range of stakeholders have been invited to submit written contributions – within and outside the public consultation (see below). All Member States have provided contributions, with National Regulatory Authorities having submitted a detailed analysis of the current provisions of the framework. These submissions have fed the evaluation findings (not just the main conclusions but also the provision by provision screening of the directives presented in Annex V) and are briefly presented in Annex II.
- Public consultation: In accordance with Better Regulation Guidance a 12 week on-line public consultation covering all policy areas and evaluation questions was undertaken on the EU Survey website between September and December 2015. The questionnaire was only available in English but replies in all EU languages were accepted. It gathered a total of 244 replies from stakeholders in all Member States as well as from outside the Union. An initial summary report of the findings³⁰ was published in 3 March 2016 and the full report³¹ of the public consultation was published on 20 April 2016 (Annex II). The consultation elicited both consolidated contributions from umbrella organisations and individual contributions from various stakeholders. The analysis of the responses was done using stakeholder mapping rather than statistics-only, in order to avoid bias and given that operators formed the majority of respondents. Its results were fed throughout the document. The summary can be found in Annex II.

The variety of views collected thanks to those consultations contributed to the independence of the evaluation.

mobile and fixed operations), differences between "incumbents" and "alternatives" points of view remain well articulated.

³⁰ <https://ec.europa.eu/digital-single-market/en/news/summary-report-public-consultation-evaluation-and-review-regulatory-framework-electronic>

³¹ <https://ec.europa.eu/digital-single-market/en/news/full-synopsis-report-public-consultation-evaluation-and-review-regulatory-framework-electronic>

- *Implementation reports*

The findings of this evaluation also build on the implementation, monitoring and screening exercises run by the EC's Directorate-General Communications Networks, Content and Technology (DG CONNECT) on a regular basis. Annual reports are issued by DG CONNECT covering market and regulatory developments in electronic communications – Electronic Communications Implementation Reports, Digital Agenda Scoreboard, Digital Economy and Society Index. Beyond the data which is published in these reports, DG CONNECT databases were used – partly collected via Communication Committee surveys. Further data collection drew on exercises ran by other EC Directorate Generals, e.g. DG Justice Scoreboard, Consumer Markets Scoreboard, Eurobarometer and other dedicated studies.

Collation/Triangulation of evidence

As explained above, the evaluation was done per regulation area rather than per Directive, while a separate exercise covered the Directives provision per provision. A summary of the findings of the screening of the Directives is presented in Annex V.

In the absence of an extensive macro-economic model, the overall contribution of the regulatory framework was estimated mainly via international benchmarking. A full quantification in order to produce a meaningful model would have implied an extensive ex post data collection exercise – including detailed information on topology, demographics, legacy infrastructure, etc. – which seemed unjustified and disproportionate vis-à-vis the efforts which would have had to be required from various stakeholders (Member States and operators mainly). Moreover, a credible counterfactual situation would have been hard to establish, with the exception of few regulation areas, which on the other hand are linked to impacts which are difficult to quantify.

The evaluation of the specific regulation areas, including their contribution to high level outputs was supported by the dedicated studies and done mostly based on qualitative analysis (case studies, panels, interviews), with quantitative analysis for key policy areas such as access and spectrum regulation. The methods used depended to a large extent on the nature and aim of the provisions/regulation area analysed: while for certain policy areas the interest is to maximise (measurable) outputs such as the level of competition or the rollout of high performance networks, for other policy areas the focus is to measure relevance in order to sustain a necessary level of consumer protection, for which in depth qualitative analysis was required.

The robustness of the findings depends on the sources available per regulatory area. Whereas all regulation areas were covered by the dedicated studies, the depth of the analysis per area is variable. In any case evidence could be triangulated, thanks to the various implementation reports and pre-existing specific studies per area. Attention was paid also to what extent the evidence corresponds to the response obtained in the public consultation, as mapped per category of stakeholder. Moreover, the findings of the evaluation are building on the experience (and data sets) formed throughout the Commission internal monitoring and enforcement exercises. This triangulation is contributing to the robustness and the independence of the findings provided in this evaluation.

Limitations

The evaluation faced some limitations in the collection of data, whose impact was mitigated to a maximum possible extent:

- A limitation in the evaluation was the relatively limited set of quantitative analysis and modelling – linking outputs, results and impacts, and the lack of complete datasets, in some areas of regulation. For instance, given the multiplicity of factors influencing NGA rollout (e.g. topography, population density, legacy factors, etc.) few of the correlations yielded positive results. Moreover, in spite of the abundance of outcome indicators monitored throughout the years, due to factors such as changing technologies, changing market structures, it has been difficult to obtain comparable data sets covering the entire period evaluated.
- In the absence of reporting requirements imposed by the regulatory framework on Member States and operators regarding administrative costs and burdens, the efficiency conclusions are qualitative, rather than based on actual calculations.
- The evaluation takes into account the inherent limitations of the findings of public consultations. Firstly, as in all surveys, the answers received reflect the views of a self-selecting sample of relevant stakeholders and not those of the entire population who has a stake in this domain. Secondly, stakeholders' views convey an individual rather than a holistic perspective. This limitation was partly mitigated by stakeholder mapping.
- The wide area of regulation concerned, and the diverse nature of the rules in question, make it challenging to assess the various instruments making up the regulatory framework in the same exercise. An overall model aggregating the impacts into an overall contribution of the framework could not be delivered given resource constraints as well as lack of appropriate datasets.

Based on the elements above, the evaluation has been carried out on the basis of the best available data. Whenever reliable quantitative data is lacking, this is indicated as appropriate and possibly counter-balanced with qualitative data and considerations.

6. STATE OF PLAY: IMPLEMENTATION & EVOLUTION OF THE SECTOR

This section summarises the current situation on the state of implementation of the 2009 regulatory framework for electronic communications as well as the monitoring arrangements that are in place.

6.1. Implementation of the regulatory framework

The successful implementation of the 2009 revised regulatory framework (in force as of May 2011) has suffered to a certain extent from delays in its transposition across Member States. Non-communication infringement cases had to be opened against 20 Member States despite bilateral exchanges and sharing of best practice in the Communications Committee (COCOM), which gathers the representatives of authorities responsible for electronic communication. While no case led to a judgment of the Court, this has undoubtedly delayed the materialisation of benefits stemming from those reforms.

Generally speaking, once transposition measures had been put in place, implementation has been relatively less problematic. Priorities defined by the Commission for enforcement have included in particular structural issues. The functioning and the independence of the national regulatory authorities, as well as the EU consultation procedure involving national regulatory authorities and the Commission, which aims to consolidate the internal market for electronic communications (the Article 7 procedure) as well as the revised consumer protection rules have received particular attention. The defined priority areas often correspond to the requirements strengthened in the 2009 framework, such as independence and timeliness of market reviews. Spectrum enforcement has also gained in importance over the years, not least in view of delays in the implementation of Commission spectrum harmonisation or, more recently, of the 2012 Radio Spectrum Policy Programme.

Issues around the authorisation and establishment requirements imposed more or less explicitly by national authorities continue to raise issues of conformity with the regulatory framework or, indeed, the TFEU. An area of concern for some years had been the imposition of specific 'telecom taxes' on providers of electronic communications, deemed by the Commission in contradiction with the EU rules on administrative charges. The Court of Justice³² has however not accepted the interpretation of the Commission in this area.

Exchanges via the 'EU Pilot' system³³ have often been successful in preventing infringements in a number of cases, for instance. Roughly three quarters of the cases on which investigations are launched are successfully resolved at that stage. However, implementation issues have not decreased over the years.

The Commission monitors the correct application of the provisions contained in the EU regulatory framework, also via contacts with stakeholders and complaints received from EU citizens. The most important evolutions in the sector – both in terms of market and regulatory developments – are presented in annual implementation reports³⁴. Due to limited monitoring arrangements with Member States, monitoring and data collection is challenging in areas such as network deployment or the scope of services and bundles available in the Member States.

6.2. Evolution of the Sector³⁵

The high level developments of the sector, as presented by the latest annual implementation reports available – the 19th monitoring report on the electronic

³² Case C-485/11 Judgment - 27/06/2013 - Commission v France

³³ "EU Pilot" is an online platform which Member States and Commission's services use to communicate and clarify the factual and legal background of problems arising in relation to the conformity of national law with EU law or the correct application of EU law. As a general rule, EU Pilot is used as a first step to try to resolve problems, so that, if possible, formal infringement proceedings are avoided. Currently all 28 Member States are participating in EU Pilot.

³⁴ See <https://ec.europa.eu/digital-single-market/en/news/implementation-eu-regulatory-framework-electronic-communications-2015>

³⁵ Unless explicit references are made to different sources, the data in this section draws from the annual reports issued by the Commission, referred to in the text.

communications market and regulations as well as the Digital Economy & Society Index³⁶ – are summarised below.

It is important to read them against the main technological changes and trends which took place. The expectations formulated at the last review have been largely met by the evolutions during the past ten years: the migration to "all IP" has progressed throughout (although it is completed in only one Member State), the wireless developments have exceeded expectations with 4G as the main current technology, transition to digital TV completed in all Member States but one, fiber to the local loop has been deployed across the EU, triple-play (fixed-line telephony, internet, TV) and even quadruple-play (triple-play plus mobile) services are across several Member States, the norm.

The successive reports also note that bundled offers have become increasingly popular throughout the EU, though at very different paces. During the last reporting period (one and a half years), the average penetration of bundled offers (subscriptions/population) in the EU has increased by five percentage points from 36 % to 41 % (July 2014). The most common bundle combination was fixed voice with broadband services, although in some countries a significant number of end-users tended to bundle more services together, including mobile and/or internet protocol TV (IPTV).

Other trends which have become visible during the past (more recent) years are: (1) the remarkable growth of online (Over-the-Top) services, including challengers to traditional communications services, e-commerce, e-government, digital (video) content, cloud services, and the emergence of the Internet of Things / Machine-to-Machine services, all leading to a rapidly increasing demand for bandwidth in both fixed and mobile networks; (2) the convergence of fixed and mobile networks at supply level, i.e. the increased reliance of mobile services on fixed networks, in particular through the backhauling of mobile networks, WiFi access points and low-power wide area networks solutions³⁷.

Concerning the evolution of competition, the **market share of the incumbents** in the fixed broadband market stood at 41% in 2014 (a drop from 56% in 2004). In the fixed voice telephony market the market share of incumbents dropped from 65.8% in 2004 to 51.5% in 2013.

³⁶ See <https://ec.europa.eu/digital-single-market/en/desi>

³⁷ LoRa, Sigfox or Zigbee, for instance.

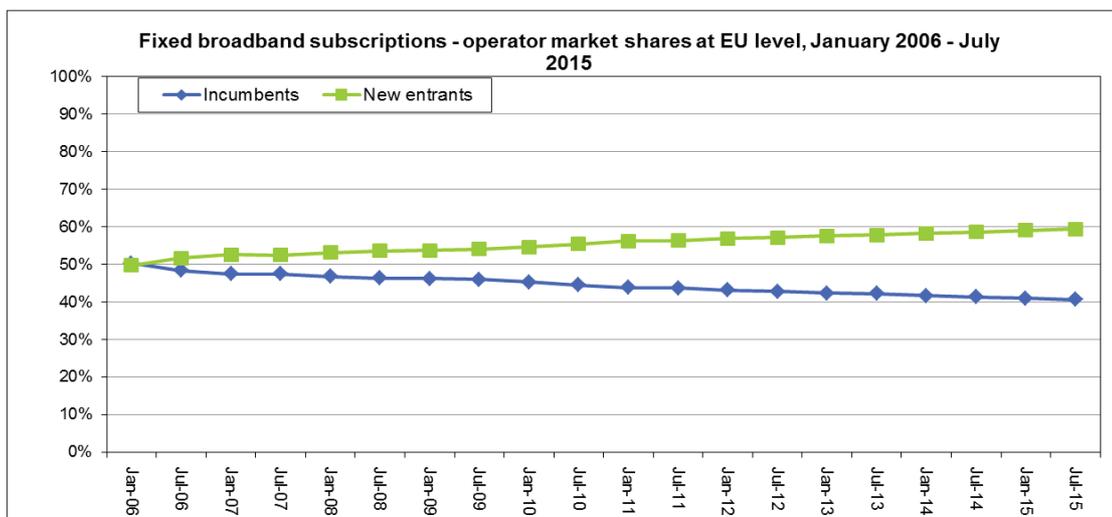


Figure 2 Fixed broadband subscriptions – operator market shares at EU level, January 2006 – July 2015

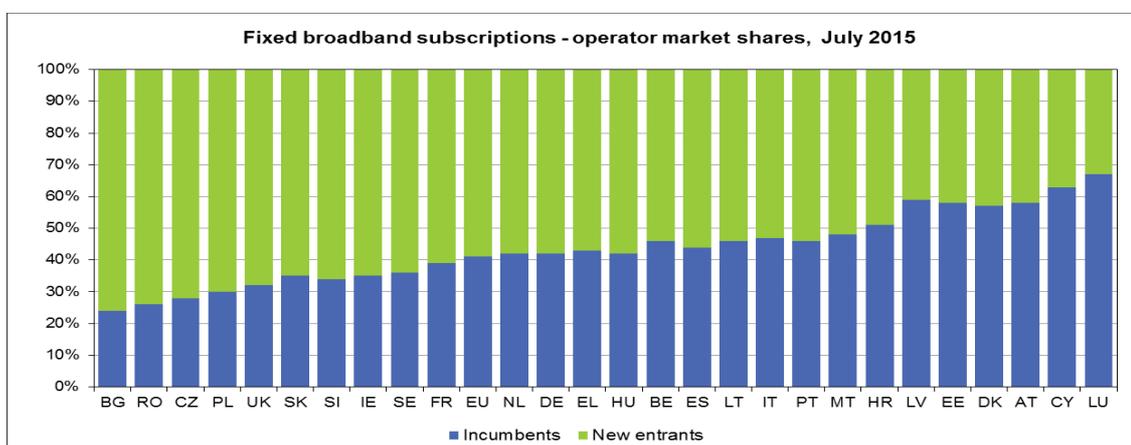


Figure 3 Fixed broadband subscriptions – operator market shares, July 2015

The above results are in line with main goals of the regulatory framework, namely the safeguarding of competition and promotion of efficient investments in new and enhanced infrastructures (Article 8 of Framework Directive).

Reasons for this decline of the market share of incumbents vary. In some Member States, such as Romania, there has been substantial infrastructure new-build; in several others, this decline is attributable to a large extent to the rise of cable; in yet others, it reflects the strong influence of regulated wholesale access.

However, the decrease in incumbents' market share has slowed down significantly over the past few years and significant differences persist among the Member States with the incumbent's market share ranging from 23% in Bulgaria to 69% in Luxembourg as can be seen in the table above.

Telecom network **CAPEX** in Europe was 43 bn EUR in 2013. CAPEX figures have remained relatively stable over the last four years despite the fact that in the same period

NGA coverage increased from 29% to 68%. Mobile CAPEX spending represented 59% of total spending³⁸.

However, the capital expenditure/revenue ratio is a better measure of assessment of capital expenditure. In a context of declining revenues in the sector, there has been an increase in this ratio, from 11.7% in 2009 to 14% in 2013. In other words, telecom operators increased the proportion of their investment through the period.

During the past years, telecom **revenues** in the EU have gone down: from 246 billion euro in 2010 to 230 billion euro in 2014, a decrease of 6%. At the same time the US progressed from 220 billion euro to 266 billion euro - surpassing Europe despite the lower population in the USA. There have been large increases in emerging markets such as China and India, which are in a significant growth phase due to the still relatively low take up of telecom services.

In Europe, while the effect of regulated reduction of termination rates cannot be ignored, decreasing revenues probably show how voice services have continued to lose importance, while the growth in mobile data services was remarkable (36% from 2010 to 2014), though however not monetised in a similar proportion. Other factors might explain the decreasing revenues in the past years, for instance the rise of Over-the-Top players (online and free communications services) or external factors such as a stagnant macro-economic environment. A study on future trends and business models in communications services³⁹ shows that there is a significant difference between their impact on decreasing revenues on fixed revenues as opposed to their impact on mobile revenues. The rising popularity of online providers has had no statistically significant impact on fixed revenues. However mobile revenues, which are currently the largest share in the telecom revenue mix, are largely influenced by the popularity of OTT communication platforms, as well as by the level of mobile termination rates, and the average GDP per capita. Other sources provide even higher figures, estimating that in 2014 alone instant messaging services on mobile phones would have carried more than twice the volume (50 billion versus 21 billion per day) of messages sent via a short messaging service (SMS)⁴⁰. Average revenue per user of the top seven mobile operators in the EU would have gone down 34.8% between 2006 and 2013, with a 5% decrease in investment⁴¹. It is expected that OTT messaging will dominate messaging towards 2020 approaching 90% of the total messaging market, and that OTT Voice and Messaging will continue to affect revenues from traditional telecommunication services⁴².

In terms of network rollout **fixed broadband coverage** in the EU stands at 97% of homes (from 86.9% in 2005), with an average take-up rate of 72%⁴³ (from 24.9% in

³⁸ Digital Agenda Scoreboard 2015

³⁹ SMART 2013/0019

⁴⁰ Deloitte: Short messaging services versus instant messaging: value versus volume <http://www2.deloitte.com/content/dam/Deloitte/au/Documents/technology-media-telecommunications/deloitte-au-tmt-short-messaging-services-versus-instant-messaging-011014.pdf>

⁴¹ Mazars - Etude Télécom mai 2015

⁴² Over-the-Top players (OTTs), Study for the IMCO Committee, WIK, 20015

⁴³ Source: European Commission, draft 2016 Digital Progress Report (measurement representing the percentage of households with broadband subscriptions).

2005). NGA coverage (at least 30 Mbps) is at 71% of homes, with a take-up rate of 30% of homes passed with an active subscription.

However, NGA deployments still focus mainly on urban areas, **with only 27.8% of rural homes covered** (overall fixed-line broadband coverage in rural areas is 90.6%). NGA deployments differ greatly also among Member States: from 36 to 44% in Greece and Italy to 100% in Malta and over 95% in Lithuania, the Netherlands and Belgium. In terms of uptake, the spread is even broader with penetration rates of 2.6% in Croatia, 4.2% in Greece, to 57% in Malta, 51.3% in Belgium, and above 40% in the Netherlands, Bulgaria and Lithuania. Substantial gaps can be noticed within most Member States also between rural and urban NGA penetration rates.

Regarding ultrafast broadband, i.e. above 100 MB/s, the figures are more conservative, with only 25% of EU homes having access to networks offering such download capacity, and only 10.8% of EU homes having an active subscription. Moreover, according to recent estimates conducted by WIK and IDATE⁴⁴, it seems that several Member States will miss the Digital Agenda for Europe (DAE) broadband target of 50% of homes with a subscription of at least 100 MB/s.

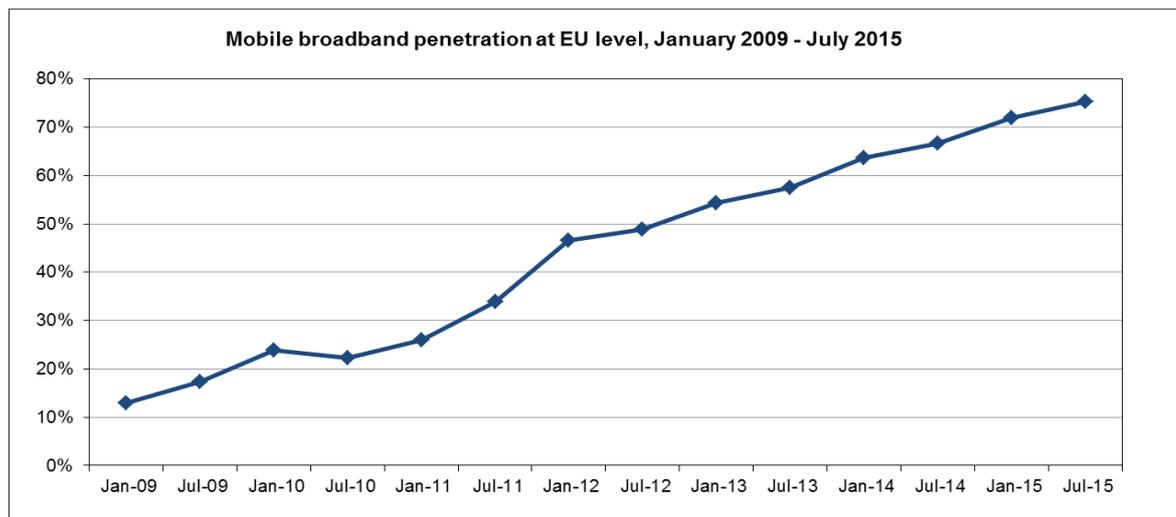


Figure 4 Mobile broadband penetration at EU level, January 2009-July 2015

As regards **mobile broadband, household coverage** was 97.6% in 2015⁴⁵ and the take-up rate is 75% of the population (from 13% in December 2008, see figure above). After a late start, LTE⁴⁶ is running now at full scale and its coverage is increasing – from 8.3% in 2011 to 85.9% in 2015 with ten Member States reaching more than 90% of the homes. 4G services have been launched in all Member States. LTE deployments too have focused so far on urban areas, as **only 36.3% of rural homes are covered**.

⁴⁴ Source: Study on "Regulatory, in particular access, regimes for network investment models in Europe, interim results, March 2016, by WIK, IDATE and Deloitte

⁴⁵ 3G coverage was 74.4% in December 2008 (DAE indicators).

⁴⁶ LTE stands for Long Term Evolution and is a more recent standard for the wireless data communications technology, a development of the GSM/UMTS standards.

The **prices** of electronic communications services, including broadband prices, dropped significantly in the EU. Despite a stabilisation in prices between 2013 and 2014, broadband prices in the EU28 have fallen significantly between 2012 and 2015, especially in the 30-100 Mbps speed category. The prices of offers with speeds over 100 Mbps declined in recent years, closing the price-gap to the 12-30 Mbps offers.

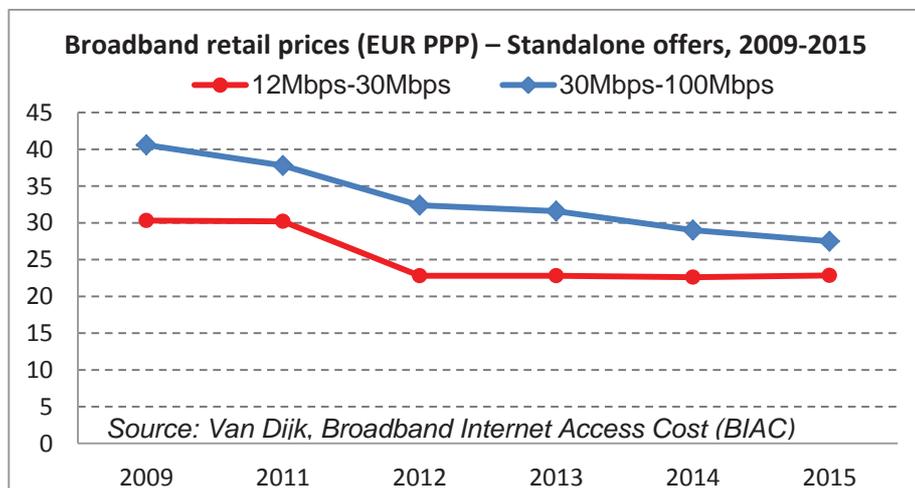


Figure 5 Broadband retail prices, standalone offers

However, broadband access prices remained dispersed across Europe: the minimum prices (calculated on Purchasing Power Parity) vary between €11 and €69 for a standalone offer with a download speed between 30 and 100 Mbps. The minimum prices were the lowest in Lithuania (€11), Bulgaria (€13) and Romania (€13) and the highest in Cyprus (€69), Luxembourg (45€) and Malta (€42). In Italy, Greece, Cyprus, Slovenia and Croatia, fast broadband (at least 30Mbps) is still rare, representing less than 10% of all subscriptions. The average minimum price of standalone offers of 30 to 100Mbps decreased from €41 in 2009 to €28 in 2015⁴⁷.

This trend can also be seen when assessing the price data for bundled offers, typically comprising broadband, fixed telephony and TV services.

⁴⁷ Source; digital agenda scoreboard, connectivity pillar, broadband market developments 2015 <https://ec.europa.eu/digital-single-market/en/connectivity>

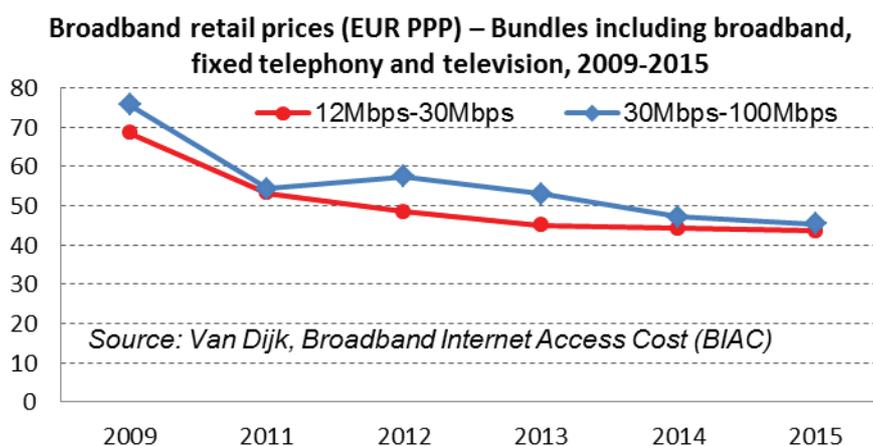


Figure 6 Broadband retail prices – bundles including broadband, fixed telephony and tv

In 2015, the minimum prices of triple play bundles including broadband access (with a download speed between 30 and 100 Mbps), fixed telephony and television vary between €24 and €66 in the EU. The minimum price was the lowest in France (€24), Bulgaria (€26) and Finland (€27) and the highest in Cyprus (€66), Malta (€62) and Croatia (€61). Prices have decreased over time, with the average minimum going down from €76 in 2009 to €45 in 2014. High-speed triple play offers have very low price premium over 12-30Mbps services

These differences create inequalities across the EU: the correlation between fixed broadband take-up and the relative price of broadband access is negative, so broadband take-up tends to be lower in countries where the cost of broadband access represents a higher share of the income. Moreover, the Digital Agenda Scoreboard data show how only 49% of homes in the lowest income quartile have a fixed broadband subscription as opposed to 89% in the highest income quartile, and the overall average of 70%.

Overall, communications represented 2.5% of the final consumption expenditure of EU households in 2014, down from 2.9% in 2002, while for instance the share of expenditure devoted to housing, water, electricity, gas and other fuels has increased from 20.8% to 24.4% in the same period. Prices for communications services decreased every year between 2006 and 2015 at an average rate of 1.44%⁴⁸.

The above figures on prices have to be seen along with the growth in consumption of telecoms services and digital services, which has significantly increased over the last few years. For instance, the percentage of individuals using the internet frequently, i.e. every day or almost every day jumped from 22.6% in 2004 to 67.4% in 2015; 29.2% of individuals used the internet to make phone or video calls, up from only 2.9% in 2004.

The various regulatory developments captured by the implementation reports will be discussed below, under the assessment of each regulation area.

⁴⁸ HICP for communications (CP08, Communications, includes Postal services, Telephone and telefax equipment and services and telephone and telefax equipment).

7. ANSWERS TO THE EVALUATION QUESTIONS

This section summarises the main findings in relation to the analysis of each of the questions set out in section 4. Most questions are dealt with individually, although a few have been combined, where there are significant overlaps in information justifying a unified approach. Where appropriate, the views of stakeholder groups collected during the stakeholder consultation are presented below. Annex II presents a more systematic overview of the responses, per stakeholder group, to the evaluation questions raised in the public consultation.

7.1. Relevance

The section below evaluates to what extent the general specific objectives of the regulatory framework for electronic communications and its regulation areas (its main blocks of provisions) are still relevant and/or if new objectives have developed that should be pursued.

7.1.1. Relevance of the current objectives of the regulatory framework

In a post-liberalisation era, the general objective of the 2002 regulatory framework for electronic communications was to promote a competitive internal market, aiming at delivering diverse, innovative, and affordable electronic communications to consumers and businesses. The 2009 review provided additional tools to respond to the need to ensure more effective competition, consolidate the internal market and strengthen consumer rights and therefore did not change the three main specific objectives of the framework.

To what extent are the original specific objectives of the framework - to promote competition, to develop the internal market, and to protect the interests of EU citizens - still relevant? To what extent do they still correspond to the needs and problems within the EU and in relation to the emerging needs of the sector?

The competition objective

Where conditions⁴⁹ exist for the creation of a competitive market, this is the best option to deliver end-user benefits, including connectivity. Effective and sustainable competition drives efficient investment and fuels the development of the internal market. It ultimately serves the interests of end-users, by inducing innovation and providing maximum benefit in terms of choice, price and quality. As shown in the stakeholder consultation, the regulatory community shares that view, based on their experience with implementing the regulatory framework so far⁵⁰.

⁴⁹ Demographic, socio-economic, geographic, etc.

⁵⁰ See BEREC opinion and individual replies by the national regulatory authorities to the public consultation on the review: http://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/5577-berec-opinion-on-the-review-of-the-eu-electronic-communications-regulatory-framework

While the achievements of the framework in terms of service - but also to some extent infrastructure competition are undeniable, as discussed below in section 7.2.2., a lot remains to be done to improve consumer choice, in particular with regard to access to high-speed connectivity throughout the entire European Union. The figures presented in section 6.2 show that investment has been uneven across the EU and clear gaps have begun to emerge between and within different countries in the path to upgrading broadband networks to provide ultrafast speeds and meet increasingly demanding quality parameters. At the same time, it is essential that consumers have attractive service offers, and wherever possible, choice so that take-up follows investments and that the digital society is actually realised.

The public consultation showed that some Member States, the European Telecommunications Network Operators' Association (ETNO) and the large majority of the incumbents go as far as suggesting, via the public consultation conducted in light of the review, that investment should be made an explicit objective, next to competition, given the significant network rollout and upgrade needs in the coming years. This would imply amending the regulatory framework, among others access regulation, to favour dynamic efficiency gains over static ones. In areas where infrastructure competition is not viable, competition would be "for the market" rather than "in the market". Many other stakeholders including alternative operators and consumer associations stress, on the other hand that competition would not survive outside the regulatory framework and that the latter should not favour investment at the expense of competition (and thereby also at the expense of the consumer outcomes that go along with competition).

Furthermore, pursuing the competition objective should take into account the new internet based services or Over-The-Top (OTT) players which are currently outside the scope of intervention of the regulatory framework (though there are divergences of approach as to the dividing line) and which would have partly disrupted the business models of "traditional" electronic communication providers. For many stakeholders who participated in the public consultation (virtually all traditional operators and some authorities) all competition should occur within a level playing field between "traditional" and "new" service providers.

Regardless of these nuances and with the necessary modulations to achieve fit-for-purpose and sustainable outcomes, pursuing the competition objective remains as relevant as ever.

The single market objective

The single market objective is becoming even more relevant in the Commission's priority concerning the Digital Single Market⁵¹. The regulatory framework is expected to help deliver connectivity in support of the Digital Single Market. Indeed, as modern economies increasingly depend on electronic communications for their daily operations in a digital single market, seamless provision of connectivity across borders is becoming a prerequisite. In other words, the further pursuit of the Single Market is necessary to ensure that the entire EU is "levelled up" in terms of connectivity.

⁵¹ See http://ec.europa.eu/priorities/digital-single-market_en

Many services cannot flourish or can even not be provided at all across the EU unless the connectivity conditions are sufficiently harmonised everywhere. The extraordinary growth potential of the so-called Internet of Things services on a potential market of 500 million consumers depends on a rapid and coordinated rollout of 5G networks, which in turn depends on coordinated spectrum release and on consistent policy on license free spectrum⁵². As an illustration, the relevance of ubiquitous connectivity in the single market further increases as a consequence of the evolution of mobile connected ‘things’ including cars, which presents additional challenges for roaming and the cross-border use of numbers.

Moreover, many online businesses such as e-commerce, e-trading the profitability of which is largely scale-based, cannot develop unless there is high quality, widespread connectivity in place across the EU. Electronic communications is a strategic sector which directly contributes €168.62 bn of European value added and 1.06 million jobs (around 1.3% GDP and 0.47% of total employment in 2012), with a labour productivity per person of more than 144 thousand euros (the highest rate within the ICT sector)⁵³ and supports a wide range of other high-tech manufacturing and digital services (the ICT sector constitutes 4% GDP and 2.76% of EU jobs, with a labour productivity rate 44.45% higher than total labour productivity) as well as the economy as a whole.⁵⁴ Poor connectivity would thus imply a GDP loss.

Similarly, providing online services of public value (e-government, e-health, e-learning etc.) in a situation where some parts of the EU do not benefit from sufficient connectivity and up to date electronic communications services, would result in an increasing digital and social divide.

However, significant bottlenecks remain in the provision of electronic communications services across the EU, as discussed below in section 7.2.2. As the public consultation shows, while for some stakeholders, such as the European Consumer Organisation BEUC or operators focused on national markets, the lack of an internal market in the electronic communications sector as such may not be a central concern, business end-users seeking to procure telecom services across multiple sites and countries have perceived the considerable relevance of this issue. In short for business end-users and particularly multi-national corporations, the current ‘spiders-web’ of networks and services presents significant challenges. Amongst other issues, business users cite long and unpredictable provisioning times, patchy availability of high bandwidth (Ethernet) connectivity outside cities, as well as a lack of transparency and consistency in ‘quality of service’ measures as key issues affecting their ability to support their respective core businesses⁵⁵.

⁵² See for example the Ericsson Mobility Report (June 2016), <https://www.ericsson.com/res/docs/2016/ericsson-mobility-report-2016.pdf>

⁵³ <http://is.jrc.ec.europa.eu/pages/ISG/PREDICT/documents/PREDICT2015.pdf>

⁵⁴ There is a wide range of literature linking broadband diffusion to GDP growth.

⁵⁵ See interviews with members of the end-user organisation INTUG in the 2015 study "Access and Interoperability Standards for the Promotion of the Internal Market for Electronic Communications", December 2015, available at <https://ec.europa.eu/digital-single-market/en/news/investigation-access-and-interoperability-standards-promotion-internal-market-electronic>

As expressed in the public consultation, a lack of an effective internal market also affects equipment manufacturers and multi-national telecom providers, which seek to replicate business models in multiple markets. Some cross-border providers also highlight that the impact of fragmentation does not only affect business services, but also impedes their ability to make consistent offerings in residential broadband markets and delays the ‘time to market’⁵⁶.

Most importantly, a lack of effective internal market eventually affects businesses at large (irrespective of their size) and citizens too. The consistency exercises and exchange of best practice enabled by the various institutional provisions introduced by the 2009 review⁵⁷ have, to a certain extent, resulted in the promotion and proliferation of "best in class" regulatory models and examples concerning the access regime that would yield the best possible outcomes in terms of competition and NGA. However, lacking binding power, they have failed to ensure harmonisation of certain regulatory solutions/remedies, to the detriment of the achievement of the single market but also limiting the effect of promoting best practice regulatory models⁵⁸. The case of the termination rates is an illustrative example of the strengths and limits of the procedure aimed at ensuring consistency. The implementation of the Commission's 2009 Termination Rates Recommendation has led to significantly lower termination rates across the EU followed in most cases by lower prices for end-users, as confirmed by internal monitoring exercises. However, a small number of deviations from the recommended approach remain (for mobile termination: Germany, the Netherlands, Finland; for fixed: Belgium, Cyprus, Germany, Finland, the Netherlands, Poland). Other examples of areas where the need for greater consistency was recognised relates to the imposition of non-discrimination remedies and price controls (costing methodologies), where the Commission issued a recommendation⁵⁹. Similarly, BEREC issues its guidelines and common positions in view to achieve greater consistency of measures implemented by European NRAs.⁶⁰ These recommendations and guidelines remain however non-binding, and albeit contributing to increased consistency (as revealed by the analysis of the measures in place in Member States), they are not an instrument to ensure it.

It follows that further simplification and effective harmonisation, with the necessary built-in flexibility, appears necessary to ensure that the most appropriate remedies are applied leading to a quicker realisation of the overall objective of seamless, affordable connectivity across the EU.

⁵⁶ The impact of fragmentation on mass-market broadband services is discussed in the 2015 study ‘Access and Interoperability standards’, which highlights that multiple parallel processes for the definition of VULA (a substitute to physical unbundling of the copper local loop in at least some types of NGA networks) may have contributed to increased costs, and delayed the effective introduction of this product as a means to promote competition in NGA networks.⁵⁶

⁵⁷ Survey organised by BEREC among its NRA members in view of the current review exercise

⁵⁸ As confirmed by the study "Regulatory, in particular access, regimes for network investment models in Europe" (SMART 2015/0002)

⁵⁹ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment, 2013/466/EU, OJ L 251/13.

⁶⁰ See for example Revised BEREC common position on best practice in remedies on the market for wholesale broadband access, BoR(12)128.

The objective of promoting the interests of end-users

As electronic communications services and connectivity as the basis for all e-services are becoming so important in modern societies, ensuring access for all, as well as allowing end-users to benefit from the intensified competition in the sector, is increasingly essential. For this reason, the objective of promoting the interests of end-users, including by ensuring universal access to connectivity or by other forms of safety nets, remains highly relevant, with certain components becoming even more central.

However, while the objective of protecting end-users remains relevant, the relevance of the specific provisions which are aimed at achieving it should be examined in view of market, technological and regulatory developments. For instance, certain elements which form part of the current universal service arrangements might have become redundant (e.g. payphones). The relevance of each regulation area is discussed below. Finally, it cannot be ignored that despite improvements in market performance registered through the Consumer Market Scoreboards from 2010 to 2016, consumers evaluate the sector still below the average of the services markets covered by the Scoreboard, as discussed below. It should however be noted that the market performance indicators are relative to the many (29) services covered in the Scoreboard, including, not only utility and network industries but also recreational services. At the same time, successive Special Eurobarometer surveys more specifically dedicated to electronic communications services evaluate the sector as average. In any event, it remains relevant to pursue consumer interests explicitly, not only as a matter of outcome of competition on the Single Market.

7.1.2. Relevance of regulation areas

Are all the regulation areas still relevant in reaching the objectives identified as being still relevant? How do the main stakeholders perceive this relevance?

The section below discusses the relevance of the regulation areas evaluated, linking them to the objectives of the framework (competition, single market, end-user protection).

The relevance of **access regulation** is to be seen in relation to its importance to ensure competition on the market. The rationale behind the imposition of access regulation relies on the presence of bottlenecks in the networks that cannot be easily replicated by access seekers to an incumbent's network. In the EU, many NRAs have found that incumbent operators have still Significant Market Power in the provision of 'wholesale local access's services and typically also access used for the provision of business services. This is even more important in areas where no second infrastructure is present (no infrastructure competition), such as rural areas where due to lower density, the business case is not strong enough to support more than one network and where telecom networks are effectively natural monopolies.

	2011	2012	2013	2014	2015
Incumbent market share fixed broadband (% of subscriptions)	43 %	42 %	42 %	41 %	41%

Figure 7 Decrease of fixed broadband market share of incumbent operators

Access regulation is imposed by national regulators in each of the 28 EU Member States and key fixed access markets are regulated in accordance with EU principles, to different degrees, in each of the 28 EU Member States. In many EU markets, access seekers relying on access regulation make electronic communication markets more competitive. The importance of access regulation for entry and competitiveness of access seekers can be demonstrated by excluding the share of cable providers (which typically have their own exclusive infrastructures and do not rely on access to the incumbents networks) from the market share of new entrants. While the EU average market share of cable providers has been growing steadily (currently standing between 18 and 19%, with a few Member States like Belgium, the Netherlands and Malta where cable presence is more important), it still represents less than a third of the combined market share of new entrants, the vast majority of which rely to various degrees on access to the networks of incumbents. Similarly, the importance of access regulation is even augmented, if the above market share calculation would not take into account Member States such as Bulgaria, Romania, the Czech Republic, and the Baltic states, where the competition comes from newly built "leapfrog" infrastructures, and is not based on Local Loop Unbundling.

It follows that **access regulation** remains one very relevant regulation area of the regulatory framework - of high relevance to both the competition and the Single Market objectives. A vast majority of stakeholders in all Member States and over 70% of the respondents to the public consultation confirm that access regulation remains a sine qua non condition for ensuring competition on the market.

Spectrum management is as relevant as network access regulation to the extent that spectrum is an essential input for electronic communications services. Spectrum is a core enabler for the deployment and development of current and next generation mobile and fixed wireless networks (e.g. 4G) across the EU. The demand for powerful mobile technology has grown over time in the EU. While 3G networks in 2005 covered 40% of the EU population, they reached 77% in 2008, 95% in 2011 and 98% in 2015. Mobile Internet use over 3G rose from 12% in 2011 to 43% in 2015. 4G technology, with its vastly improved data rates, reached only 31% of the EU population in 2011 (when 3G provided for 96% population coverage), before climbing to 77% in 2014, and reaching 84% coverage in 2015. In addition to affecting deployment, the manner in which spectrum is allocated and the conditions attached to spectrum assignment and usage, are also major determinants of mobile competition, which in turn influence quality of service, prices, speed of roll-out and take-up of mobile broadband.

With the deployment of 3G and 4G, spectrum has been exploited much more intensely, as illustrated by the increase in the use of mobile broadband services in the EU. As a European Parliament report points out, "the tremendous expected increase of mobile data traffic in Europe - from 0.98 Exabytes per month in 2015 to 7.23 Exabytes per month in 2020, with a CAGR 2015-2020 of 49.2 percent (Cisco, 2016) - represents a substantial challenge to the current spectrum allocation and assignment that must be addressed through better spectrum management and governance policies".⁶¹ This point has also been strongly supported by the respondents to the public consultation.

⁶¹ European Parliament, Reforming EU telecoms rules to create a Digital Union, 2016

Responses to the public consultation acknowledge the importance of wireless connectivity and wireless broadband, and its link and complementarity to a very high capacity fixed connectivity. Industry is supportive of a more co-ordinated approach and looks for additional certainty in investment and possibilities to develop throughout the EU new wireless and mobile communications including 5G. Member States generally underline the achievements in the field of technical harmonisation, and the need for additional coordination to be bottom-up and voluntary; some of them call for a better balance between harmonisation and flexibility. There is widespread recognition of the importance of more flexible access and use of spectrum in the future from both operators and public authorities, although disagreeing about how to realise this.

The importance of spectrum management is therefore increasing together with the rise of the mobile connectivity demands – for both "core" electronic communications services and services belonging to the so-called "internet of things" (machine-to-machine communications, M2M). The need to tackle spectrum management at EU level is thus directly linked to the need to support the Digital Single Market. There is also a need to support a European lead in 5G roll-out, by spectrum rules which are fit for purpose. 85% of the respondents to the review public consultation confirmed that the regulatory framework is particularly necessary in the area of management of scarce resources, and there is large consensus amongst incumbents and alternatives, large and small, and BEUC that further harmonisation at EU level would be beneficial. Spectrum regulation continues to have a significant impact on competition and the Single Market.

The need for provisions concerning the management of **numbers** is increasing with the rise of M2M services which are expected to drastically increase the demand for numbers, often for cross-border use. Number management impacts competition as well as, increasingly, the Single Market. The public consultation showed a high level of consensus that to cope with the numbering needs of M2M in the future, a clear framework for extra-territorial use of numbers is necessary to ensure sufficient numbering resources. As far as the relevance of market entry provisions is concerned, the situation is uneven. The provisions on rights of way have been quite relevant in the period of transition from state monopoly to competition in the electronic communications markets, i.e. in the aftermath of the abolition of the special rights of the state owned incumbents. It ensured that alternative operators may deploy their networks under the same transparent conditions as former monopolists and in a timely manner, and put an end to discrimination in favour of state owned incumbents. In view of the transition to high-speed networks, and notably mobile services provisioning via the latest technologies requiring more granular network topologies, these provisions today fully retain their relevance.

The relevance of the provisions concerning **authorisation** remains unchanged, as confirmed by the respondents to the public consultation (61% of those who responded to the relevant question consider that regulation is important in the area of authorisation, in particular in view of simplifying the current rules). Market entry provisions are key elements to support competition and the Single Market.

As far as the **functioning of the national regulatory authorities (NRAs)** is concerned, the need for impartial, transparent and timely regulation was essential in the context of liberalisation. The need for an impartial and independent referee remains as relevant on liberalised markets as it has been in the past. This role is not questioned in the public

consultation; on the contrary, the public consultation showed overall support for strengthening NRAs' independence. The relatively high number of issues which arose in the implementation of the provisions – matched by an intensive monitoring and enforcement activity by the Commission – shows their persisting relevance and importance, both preserving and advancing competition on the Single Market and for ensuring that consumers fully reap the benefits of market developments.

As far as the role and functioning of other important institutional players is concerned, **BEREC** must, in accordance to the provisions in force, pursue the objectives of the framework and in particular ensure a consistent application of the framework in order to contribute to the development and better functioning of the internal market. Against this objective and its increasing number of tasks⁶², BEREC's relevance is increasing, even though there was no consensus in the public consultation on the way to reflect this increase in regulatory terms.

Similarly, the capability of the **Radio Spectrum Policy Group (RSPG)** to deliver high-level strategic advice at the right point in the process to support forward-looking decision making of the Commission and of the other EU institutions will be increasingly important, against a background where spectrum policy's relevance is increasing. The public consultation showed that a common EU approach to governing spectrum access is welcomed by respondents in order to enable technologies to be used seamlessly, but that respect for spectrum as a national asset is required. Some respondents promoted a stronger role of the Commission. Some respondents disagreed and stressed the national character of spectrum policy.

Standardisation is aimed at ensuring interoperability of services (including emerging services) and to improve freedom of choice for users. The voluntary and market-driven approach to standardisation has been supported by most stakeholders in the public consultation. It remains therefore of crucial importance for both effective competition and the functioning of the Single Market as well as to promote the interest of end-users. It can be argued that the relevance of standardisation efforts is increasing with the diversification of new services.

The concept of **universal service** as a safety net is a tool to ensure that all citizens (including low-income and disabled or elderly users, for instance) are included in the digital society. While the objective of the provisions/regulatory area is just as relevant as ever, some of its components have lost relevance in the context of market and technological developments (e.g. the non-use of 88% across the EU28 regarding public payphones⁶³). Moreover, the need to impose certain services has disappeared as they are provided by the market (e.g. every country without a universal service obligation regarding comprehensive directories or directory enquiry services noted the availability

⁶² As part of the recently adopted Regulation 2015/2120, BEREC has been assigned additional tasks in particular in relation to net neutrality and roaming, which are very relevant for market players and end-users.

⁶³ Special Eurobarometer Report 414,2014, p.153. However, it should be noted that unlike public pay phones, mobile telephony is not regulated for accessibility. To tackle such issues and in order to improve the functioning of the internal market for accessible products and services by removing barriers created by divergent legislation, the Commission proposed the European Accessibility Act, which will facilitate the work of companies and will bring benefits for disabled and older people in the EU.

of commercial competitors in the market⁶⁴). This is clearly reflected in the public consultation.

The relevance of sector-specific **end-user protection rules** has been looked at in the light of the development of EU horizontal consumer legislation and of the technological and market developments which implies that the definition of electronic communications services as a triggering factor for regulation may have become irrelevant. Moreover, horizontal rules might render some of the sector specific rules unnecessary, as discussed further in the coherence section. For example, some contract provisions (Art. 20 Universal Service Directive) are overlapping with information requirements in contracts in Article 5 of the Consumer Rights Directive⁶⁵ covering aspects such as characteristics of services, identity of trader, tariffs or contract duration; additionally general contract rules are also set out in the Services Directive⁶⁶; the provisions on "Out-of-court dispute resolution" (Art. 34 Universal Service Directive) are partially overlapping with out-of-court complaint and redress mechanisms provided for under the Directive on alternative dispute resolution for consumer disputes (Directive on consumer ADR)⁶⁷ and under the Regulation on online dispute resolution for consumer disputes (Regulation on consumer ODR⁶⁸). However, other (sector-specific) rules remain relevant as they are specific to how traditional communication services are provided (e.g. relying on the use of public resources, such as numbers). Therefore, certain rules, such as those on switching or portability of numbers are still warranted. Over 60% of the respondents to the public consultation, including industry and users' associations, share the view that regulation is still necessary in the area of consumer protection.

The relevance of the European emergency number **112**, which is linked to ensuring access to emergency services to all citizens across the EU, is still very much valid. The Commission yearly monitoring of the implementation of 112 reveals the implementation of a reliable access to emergency services by the electronic communications providers. However caller location solutions, access for disabled end-users implemented in Member States⁶⁹ seem to be below what is technically feasible to ensure quick and accurate relief. A large majority of respondents to the public consultation agree with the significant relevance of the scope and requirements of the current regulation of access to emergency services. It remains therefore necessary to further pursue the provisions regarding 112.

⁶⁴ According to Tech4i2 et al. (2016) "Review of the scope of universal service, SMART 2014/0011", several countries that disseminate paper directories noted a drop in their demand due to competition from electronic equivalents. Regarding directory enquiry services, it is worth noting that at least some usage is reported in each country, ranging from 36% of citizens in Poland to 94% in the Netherlands. This is remarkable given that only 11 Member States have designated an operator with a USO. Also, there is no correlation between designation and use: 6 countries with a designated universal service provider score lower in use than the EU average, whereas 6 others score higher than EU average).

⁶⁵ Directive 2011/83/EU

⁶⁶ Directive 2006/123/EC

⁶⁷ Directive 2013/11/EU

⁶⁸ Regulation (EU) No 524/2013

⁶⁹ For equivalent access persons with disabilities need voice, real-time text and video, and these solutions need to be interoperable across the EU, and not only in a particular region or by using a particular technology.

As regards the relevance of **116** services, i.e. harmonised services of social value, their importance is recognised in principle, as confirmed also by the public consultation organised in the framework of the review. This is in spite of a limited effectiveness, in particular a slow take up with only two of the five short numbers reserved in wider use 8 years after the entry into force of the provisions⁷⁰ and a low level of awareness revealed by Eurobarometer studies carried out in 2011⁷¹ and 2012⁷². The relatively modest take-up of the scheme suggests that the scope of the scheme should be limited to already assigned numbers.

Over 75% of the respondents to the public consultation support the relevance of the provisions concerning **security and integrity of networks and services**, which is increasing as networks and services are gaining prominence in the economy and the society as a whole. The digitalisation of services, including commercial and public services is leading to a situation where breaches have more impact on both companies and individuals. For instance in 2014 (the last year for which statistics are available), Member States reported to ENISA under Article 13a (3), last subparagraph, a total of 137 "major incidents"⁷³, i.e. incidents meeting the minimum thresholds in terms of either duration or percentage of users affected⁷⁴. Such incidents significantly affected in comparable percentages fixed telephony, mobile telephony, fixed Internet and mobile Internet. Mobile Internet outages affected most user connections compared to the other services, with an average of 1.7 million user connections affected per reported incident, i.e. on average about 13% of the user base.

The current provisions regarding **must-carry and access to electronic programme guides** form part of a set of measures intended to protect general interest objectives such as media pluralism, freedom of speech and cultural diversity in the process of liberalisation of electronic communications markets. These general interest (or end-user protection) objectives remain relevant in an increasingly digital society in which linear digital television is still the predominant means for citizens to receive and enjoy audio-visual content and space for policy intervention might be further justified to foster the findability of content of general interest. This is shared by most respondents to the public consultation, even though there is no consensus as to how rules should be adapted to new market and technological realities.

⁷⁰ Statistics on take are available on the Commission's 116 web page (<https://ec.europa.eu/digital-single-market/en/eu-rules-116#the-implementation-of-the-116-numbers>), the latest COCOM Working Document on the implementation on the reserved '116' numbers – as of 1 November 2015 was published in November 2015 and the next report COCOM16-05 is due to be published by end of May.

⁷¹ For Special Eurobarometer 367 on Harmonised numbers for services of social value -116 please see: http://ec.europa.eu/public_opinion/archives/eb_special_379_360_en.htm#367

⁷² For Special Eurobarometer 387 on harmonised numbers for services of social value – 116, please see: http://ec.europa.eu/public_opinion/archives/ebs/ebs_387_en.pdf

⁷³ <https://www.enisa.europa.eu/publications/annual-incident-reports-2014>.

⁷⁴ An incident should be reported if it meets the following minimum thresholds: 1) lasts more than an hour, and the percentage of users affected is higher than 15 %, 2) lasts more than 2 hours, and the percentage of users affected is higher than 10 %; 3) lasts more than 4 hours, and the percentage of users affected is higher than 5 %, 4) lasts more than 6 hours, and the percentage of users affected is higher than 2 %, or if it 5) lasts more than 8 hours, and the percentage of users affected is higher than 1 %.

7.1.3. Continued relevance of the current objectives against new needs

Looking at the global objectives and the structural changes in the sector, are there new objectives that the framework should pursue?

It follows from the above analysis that, in general, the specific objectives of the regulatory framework still correspond to the needs and problems within the EU as well as to the needs of the sector. The question arises however whether the current objectives provide regulators with sufficient guidance in the environment where the role of the sector as provider of connectivity services and enabler of wider digital economy is continuously increasing.

The mandate of the Juncker Commission includes the creation of a Digital Single Market, "*expected to deliver up to EUR 250 billion of additional growth in Europe, to create hundreds of thousands of new jobs, notably for younger job-seekers and a vibrant knowledge based economy*"⁷⁵. The electronic communications sector has evolved and its role as an enabler of the online economy has grown so that the telecoms sector is now affecting most sectors of the general economy. ICT is no longer seen as a specific sector but rather as the foundation of modern, innovative economic systems and as well as of certain societal services, such as e-transport, e-government, e-health care, e-learning, etc. This can only be possible if appropriate ICT networks are rolled out at a sufficient scale, if the services are accessible and affordable to all citizens.

This view is shared by stakeholders. In the public consultation organised on the review of the regulatory framework, as well as in other targeted stakeholder consultations, connectivity was broadly recognised as the underlying driving force for the digital society and economy, underpinned by technological changes and evolving consumer and market demands.

Many contributions to the public consultation, across different stakeholder groups, suggested that it should be a more prominent focal point in the revised framework. Many respondents pointed to the need for policy measures and possible adjustments to current policy and regulatory tools to support the deployment of infrastructure in line with future needs. More precisely, the use of Internet services and applications is expected to increase for both fixed and mobile connectivity and there is a need to prepare now for higher speed (upload and download) and better quality (latency, resilience etc.) beyond 2020. The future success of virtually all digital policy initiatives (e.g. cloud strategy, Big Data, industry 4.0, 5G) is linked to the capacity to deliver a "high-class" connectivity. At a higher level, a significant part of innovation in the economy - for commercial services and services of public value alike - is ICT-based. Inadequate connectivity is considered a risk or a high risk for employment, education and learning, research and data driven activities, consumer welfare, and accessibility.

The results of the public consultation on the needs for Internet speed and quality beyond 2020 are clear concerning the expected needs in terms of quality of services of fixed connectivity by 2025 - especially improving download speed: expected needs to increase above 1 Gbps and latency: expected to decrease below 10 ms but also in relation to

⁷⁵ COM(2015) 192 final – A Digital Single Market Strategy for Europe

upload speeds (e.g. for cloud services, connected devices etc.). While they are more nuanced as far as mobile connectivity in 2025 is concerned, they still reflect a need for upgrade, e.g. to download speed above 100 Mbps and to latency below 10 ms⁷⁶.

While users perceive download speed as the most important feature of fixed connectivity today (considered as important or very important today by 73% of the respondents), other fixed connectivity features will gain significant importance in the future - notably upload speed (considered as important or very important in 2025 by 81% of the respondents), reliability (86%) and uninterrupted access (86%).

7.2. Effectiveness

To assess the effectiveness of the regulatory framework in achieving the general objective, namely to promote a competitive sector delivering end-user benefits, the section below looks at how the high-level evolutions compare internationally. Then, the achievement of the specific objectives of the framework is evaluated. Finally, achievements per regulation area are presented. Wherever possible, links and effects are analysed and discussed: from outputs and results per policy area to achievement per specific objectives, and to possible contribution to high level achievements. Finally, where relevant, distinctions are made between how the various policy areas affected the different stakeholders.

7.2.1. Achievement of the general objective of the regulatory framework

The evolution of broadband rollout and penetration – both fixed and mobile – and the evolution of prices have been selected as key indicators for high-level end-user outputs of the sector. To assess whether the regulatory framework has contributed to these outcomes, an exercise of international benchmarking was made.

The comparison with digital world leaders (Japan, South Korea and USA) shows, as far as network rollout and take up are concerned, that there are both similar trends and significant divergences. The development in fixed broadband subscriptions in Japan, South Korea and the USA is not very different from the situation in the EU⁷⁷. The penetration of mobile broadband, and in particular of 4G services, on the contrary, seems far more advanced in these selected countries than it is in the EU as a whole, even if there are some encouraging outcomes in a few European countries⁷⁸.

⁷⁶ According to the Sam Knows study, the average latency for fixed connectivity across Europe was 27.01ms. This figure is largely dictated by the technology in use, with xDSL averaging 37.36ms and cable 19.22ms and FTTx 20.16ms. Today fibre is the only technology that allows for latency below 10 ms (usually around 4 ms). For mobile connectivity 2G allows for latency between 300 and 1000 ms; 3G 100–500 ms, and 4G 100 ms. 5G should allow for latency below 10 ms (the goal is between 1 and 10 ms).

⁷⁷ The number of fixed broadband subscriptions is slowly but steadily increasing although the market seems to be reaching saturation. In June 2014, Japan saw 28.2 fixed broadband connections per 100 inhabitants. In South Korea this number was 37.9 and in the USA it was 30.2, the average in the OECD countries stands at 29.2%.

⁷⁸ GSMA Mobile Economy 2015

As regards prices of electronic communications services, when subject to international comparison, the EU average is the least expensive for 12-30 Mbps broadband, and the third least expensive for 30-100 Mbps broadband, after South Korea and Japan⁷⁹.

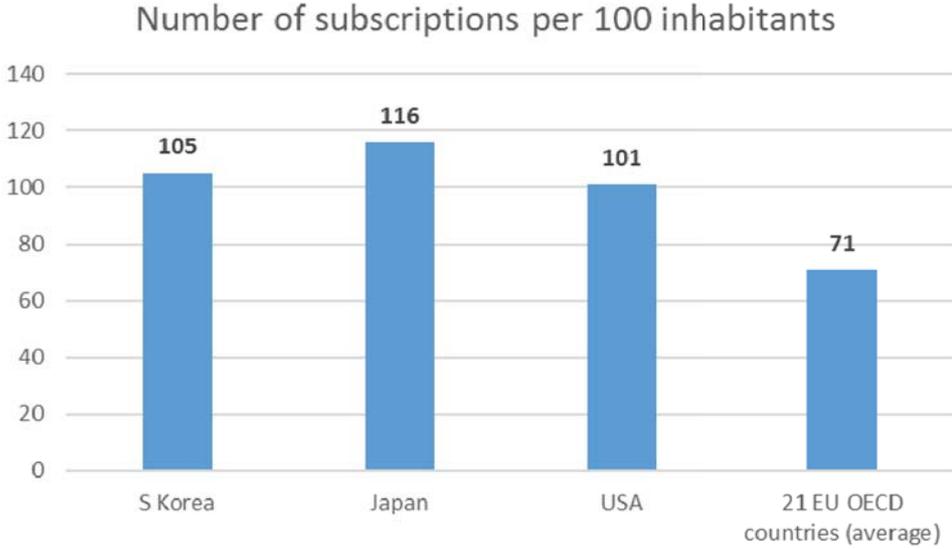


Figure 8 OECD wireless broadband take-up (subscriptions/100 people)

Country	NGA coverage % HH	NGA take-up % homes passed	Average download speed Mbit/s	Price telephony, TV Internet 30-100Mbit/s	Mean rating	Average ranking
Austria	7	14	10	13	11	13
Belgium	1	4	8	12	6	4
Czech	12	16	4	6	10	9
France	14	10	14	2	10	11
Germany	8	13	11	10	11	12
Italy	15	15	16	7	13	15
NL	2	5	3	14	6	3
Poland	13	12	11	11	12	14
Romania	11	7	5	3	7	5
Spain	10	8	13	9	10	11
Sweden	9	2	2	4	4	2
UK	6	9	7	8	8	7
Australia	16	11	15		14	16
Canada	4	1	9	16	8	7
Japan	3	3	1	5	3	1
US	4	6	6	15	8	8

Source EC IDATE Akamai EC/Van dijk

Figure 9 NGA performance global comparisons end 2014

⁷⁹ BIAC 2015, Van Dijk, SMART 2013/0055

It appears from the above that the regulatory framework may have contributed to the delivery of consumer benefits, in particular basic broadband, lower prices, and increased choice and quality of service. In order to assess the extent of the impacts, it should be recalled that end-users include businesses (including SMEs) and citizens. This very general assessment is confirmed by the conclusions of the review studies, although econometric analysis could not show a direct impact due to the difficulty of isolating external factors (see Annex IV). It is moreover reflected in the views expressed by a vast majority of stakeholders in the review public consultation (between 60 and 80% depending on the benefits attributed to the working of the framework).

High level outcomes or impacts have clearly also been influenced by factors outside the remit of the regulatory framework. For instance, the global financial crisis may have delayed certain NGA investments, in Europe and elsewhere. Market saturation and the rise of the OTTs may have contributed to shrinking revenues. Technological progress, alongside competition, may have contributed to decreasing consumer prices. No sound methodology is available to identify or measure the discrete impacts of these influences on high level outcomes or impacts, just as none exists to measure the influence of the regulatory framework.

The following sections will describe possible links and contributions from regulation area to achievement per objective and to high level outcomes, without however establishing definitive causal relationships.

7.2.2. Achievement of the specific objectives of the regulatory framework

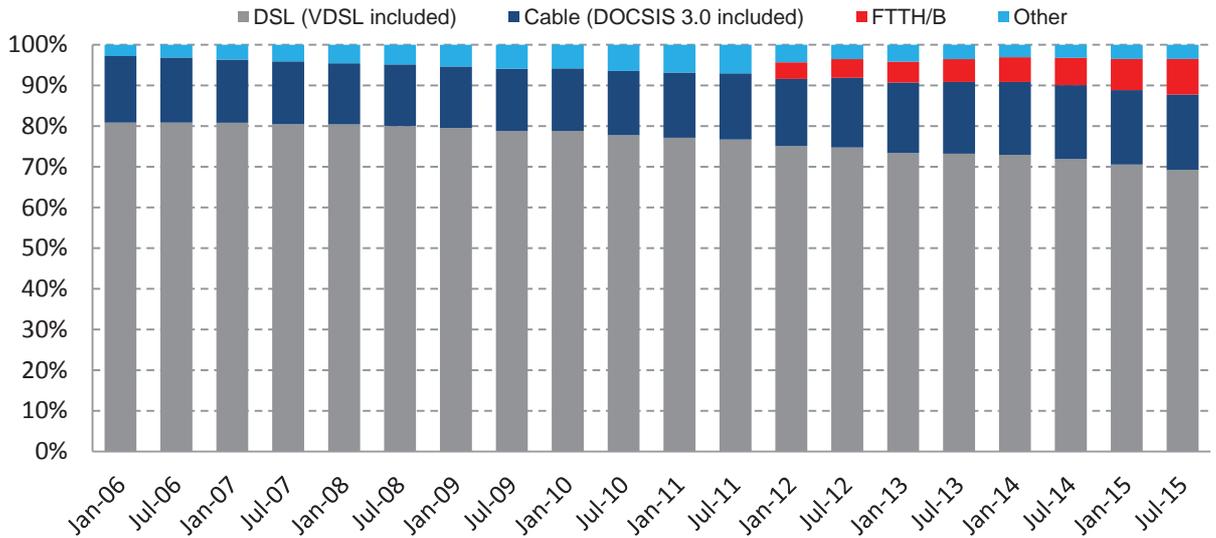
As discussed above in the section concerning the evolution of the sector and its state of play, the progress in terms of competition is undeniable.

The framework - mainly through access regulation, but also with the support of spectrum policy and market entry provisions - has on the one hand made possible the provision of competitive electronic communications services and on the other hand enabled alternative operators to make significant steps up the ladder of investment and duplicate part of the legacy networks.

The results achieved are however different among and within Member States: not all citizens throughout the entire EU benefit from the same level of competition. Beyond the number of offers available at a given location, studies show that not all competition is equally sustainable, referring to the degree to which a competitor can function independently of regulated access to the incumbents' networks, the extent to which it can adapt its offers regardless of its own access conditions.

At EU level, 69% of total fixed broadband subscriptions are xDSL and this technology continues to be predominant, and its market share can be strengthened given the increasing VDSL coverage.

Fixed broadband subscriptions — technology market shares at EU level, January 2006 to July 2015



Source: Communications Committee

Figure 10 Fixed broadband subscriptions – technology market shares at EU level, January 2009-July 2015

At Member State level, xDSL is particularly important in Greece and Italy, and has the lowest market share in Bulgaria, Lithuania and Romania. Cable has a very high market share in Belgium, Hungary, Malta and the Netherlands. FTTH/B is the most widely used technology in Lithuania, Latvia, Romania, Bulgaria and Sweden. The share of xDSL ranges from 14 % in Bulgaria to 100 % in Greece. DSL is generally less dominant in eastern Europe. Looking at alternative technologies, cable is present in all but two Member States and it is the major technological competitor of DSL in the majority of the Member States. Fibre technologies (FTTH and FTTB) represent 9 % of EU broadband subscriptions up from 7 % a year ago. In these technologies, Europe is still very much lagging behind South Korea and Japan⁸⁰.

⁸⁰ Source: Communications Committee (COCOM) and OECD.

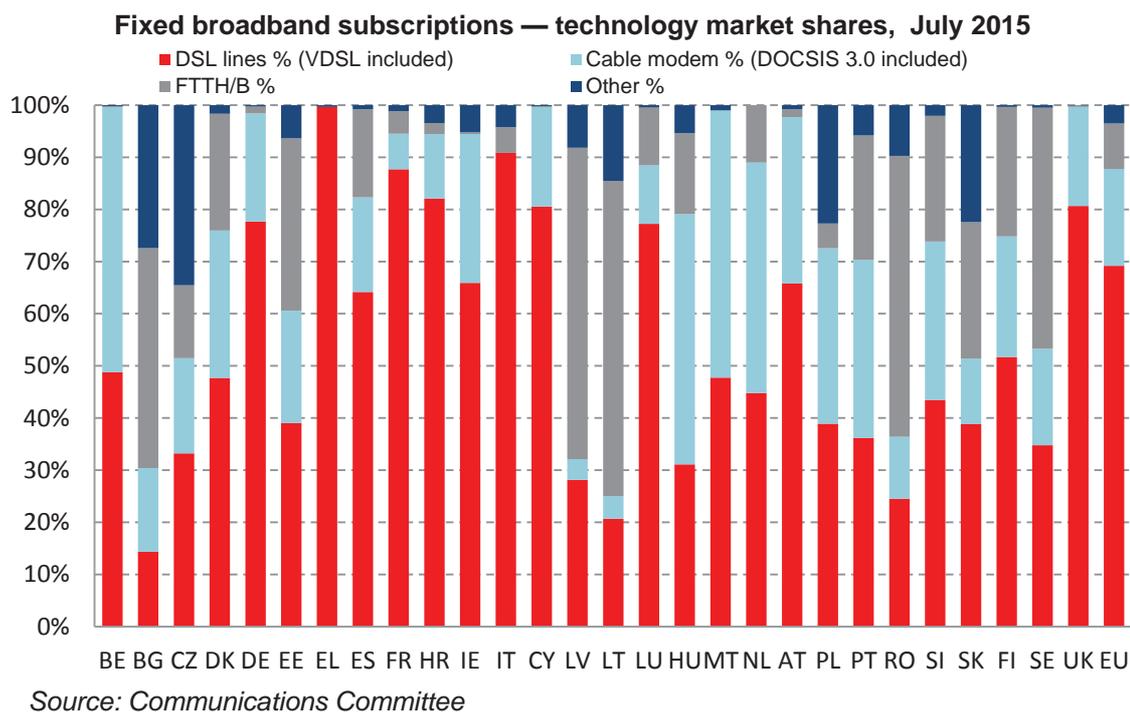


Figure 11 Fixed broadband subscriptions – technology market shares at EU level, July 2015

However, regarding Next Generation Access (NGA), the share of different technologies out of total NGA subscriptions shows that cable is currently the most widespread NGA technology in the EU. 45 % of NGA subscriptions are Cable (Docsis 3.0), which is remarkable since cable broadband in total represents only 19 % of all EU fixed broadband subscriptions (see previous graph).

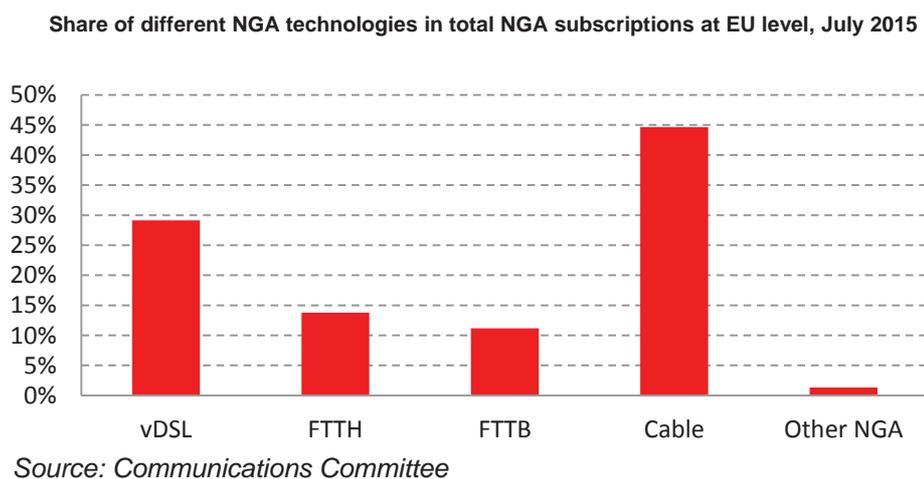


Figure 12 Share of different NGA technologies in total NGA subscriptions at EU level, July 2015

The competition fostered by the framework has promoted entry of new operators (with 59% of market share) and resulted in a significant reduction of prices for traditional telecommunication services. It has contributed to driving down prices not only at the retail level, but also at the wholesale level – as new entrants have progressively also entered the wholesale market. At EU level, affordability indicator on Digital economy

and society index shows that, at European level, access to internet represents 1.3% of their income⁸¹.

Fixed broadband subscriptions - operator market shares at EU level (% of subscriptions), January 2006 to July 2015

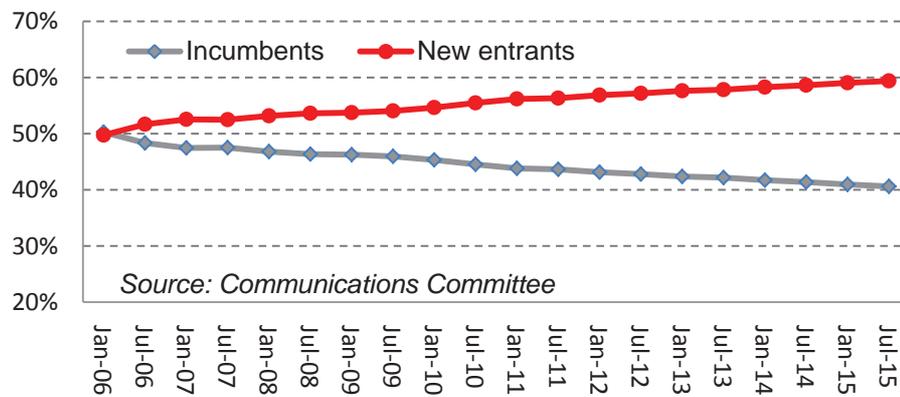


Figure 13 Fixed broadband subscriptions - operator market shares at EU level (% of subscriptions), January 2006 to July 2015

Beyond the general consumer prices discussed above, the regulated wholesale charges giving access for new entrants to the local loop are important to effective competition in the xDSL market. The monthly average total cost (calculated as the monthly rental + the one time connection charge distributed over a three year period) stood at €9.52 for full access (provision of both voice and broadband) and at €2.59 for shared access (provision of broadband only) in October 2015.⁸²

Local Loop Unbundling monthly average total cost (EUR) at EU level, 2005-2015

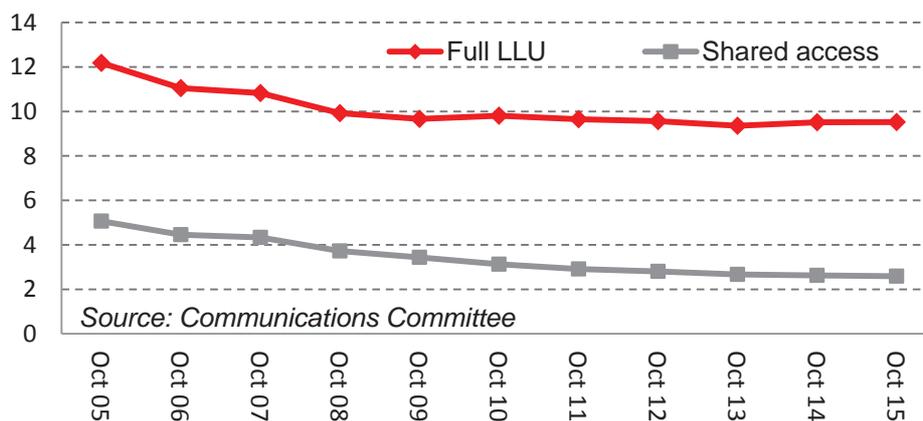


Figure 14 Local Loop Unbundling monthly average total cost (EUR) at EU level, 2005-2015

⁸¹ Percentage of individual gross income spent for the cheapest standalone Fixed Broadband subscription. Source: DESI - Affordability sub- indicator on Connectivity dimension: <https://ec.europa.eu/digital-single-market/en/desi>

⁸² Communications Committee (COCOM)

These findings correspond broadly to the results of the public consultation. Quite understandably, large players (incumbents and certain mobile operators) will generally consider that the framework has favoured short term economic gains over long term investment and innovation, and that competition is unsustainable when regulation does not provide incentives to invest. The same large players point also to the fact that "real competitors", such as cable, grew to a certain extent outside the framework (i.e. as they were not subject to access obligations and did not rely on regulated inputs) and criticise the framework for putting high pressure on revenues and thereby hampering the growth of large pan-European operators. Alternative operators stress moreover that conditions for efficient investment and innovation have already been created in Europe.

There are a number of causes for investment in connectivity being suboptimal. Some are macroeconomic factors, such as the financial crisis and its impact on CAPEX.. Moreover, investment might paradoxically tend to be directed to less performing technologies, which are cheaper to develop (e.g., FTTx rather than more performing ones such as FTTH/B.) as operators are then subject to a lower risk while not currently having the right regulatory incentives to be more ambitious. These causes have in part been explored in the access study⁸³.

Regarding the role of the framework in delivering competition and investment as reflected in the position of cable players, the following should be noted. As discussed below, under access regulation, cable presence is indeed a predictor of NGA coverage. However at least 80% of the fixed subscriptions in the EU are delivered by operators other than cable and the role of cable in affecting the market dynamics varies dramatically across Member States. In some countries like Italy or Greece no cable operator is present, while others such as Luxembourg, the Netherlands or Belgium have almost ubiquitous cable coverage, as is shown in the figure below. While the cable TV networks were built for a different purpose than the provision of telephony/internet services and hence not in competition to telephone networks, the reasons for the observed divergences in their coverage across Member States can be explained by factors such as geography (population density, urban development), legal and licencing conditions (town planning, permits), availability of other platforms (terrestrial, satellite), and regulation. It would therefore be inaccurate to attribute a too large contribution of cable players to competition and consumer outcomes across the entire EU. Similarly, existing divergences between MS in the level of the local loop unbundling are mainly related to regulatory conditions attached to LLU, such as pricing, delivery times, provisioning methods, stricter enforcement of non-discrimination, and by different starting points (in time) of the liberalisation process. To certain degree it is also explained by objective, exogenous factors such as population density, urban/rural split, network architecture and penetration.

⁸³ Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002)

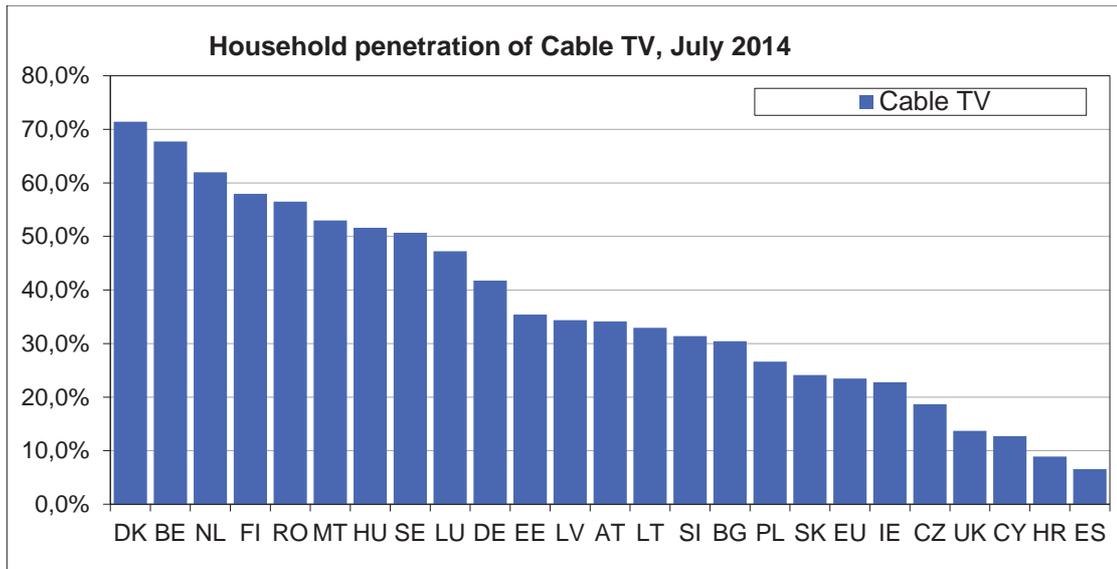


Figure 15 Household penetration of Cable TV, July 2014

Source: Communications Committee, July 2014

Overall, the contribution of the framework to **competition** (and consumer outcomes) is clear, although not easy to measure. In the public consultation, the competition objective has been considered achieved by 59% of the respondents (of which 32% consider that it was "significantly achieved"). Moreover the regulation areas have had different degrees of contribution, as discussed below in section 7.2.3. Further discussion on access regulation for example shows that certain access strategies have been better than others at delivering "best outcomes", i.e. not just retail competition but also infrastructure competition and investment in NGAs. Similarly, the discussion on spectrum policy will highlight a positive contribution to competition on the market, but also possible links with delays in mobile investments.

As regards the contribution of the framework to the **Single Market objective**, the results are harder to substantiate. Roughly 46% of the respondents to the public consultation consider the single market objective achieved (of which 39% only "moderately" achieved). Some advances are beyond doubt in the areas of trans-EU connectivity and interoperability (as discussed below), and in the cooperation between NRAs. However most stakeholders⁸⁴ consider that this is the least accomplished objective of the framework, referring to the lack of regulatory consistency and to the persisting barriers to operating across borders.

In particular, cross-border providers deplore the lack of consistent access products (in particular when it comes to the wholesale inputs needed to serve the high end business market), the lack of harmonisation related to the actual access to spectrum by market players, the multiplicity and great diversity of market entry provisions (e.g.

⁸⁴ Roughly 46% of the respondents to the public consultation consider the single market objective achieved (of which 39% only "moderately" achieved), while the competition objective is considered achieved by 59% of the respondents (of which 32% consider that it was "significantly achieved") and the citizen interest objective is considered achieved by 54% of the respondents.

authorisations, rights of ways) and the very different implementing rules across the EU designed in view of consumer protection. Furthermore, as will be discussed in detail under their respective regulation areas, the experience of implementing the framework has revealed clear difficulties in obtaining consistent access regulation and market entry conditions, in securing end-to-end trans-EU connectivity, in solving cross-border spectrum interference issues in some cases, in solving disputes across borders, etc.

From an end-user perspective, the lack of single market is also visible not only through roaming (problem tackled recently via a different legislative instrument) but also through the differing end-user rights and through the lack of cross border remedies. The current minimum harmonisation approach has resulted in a high degree of heterogeneity in the implementation and governance of consumer protection. For example, some Member States define specifications on contract terms for all types of users while in other Member States these provisions do not apply to business users; in about half of the Member States operators are obliged to publish information on fixed/mobile broadband and mobile voice; also differences exist in terms of requirements on contract duration and termination and out-of-court settlement resolution.

As regards the **consumer interest objective**, it is considered achieved by 54% of the respondents to the public consultation. As a matter of fact, consumer surveys based on a proven methodology and time series, show that there have been certain advances in **consumer satisfaction**, advances which can be linked to areas covered by sector specific consumer legislation.

Indeed while the results of the EU Consumer Markets Scoreboard 2016 and the Market Performance Indicator⁸⁵ suggest for all telecom markets (fixed, mobile, internet, TV subscription) a below average performance compared with the 29 services markets included in the Scoreboard, improvements were noted in comparability, trust, expectations, and switching. In particular, the levels of switching compared to other industries are higher, while the consumers still perceive switching as difficult and/or encounter obstacles when attempting to switch, as discussed below in section 7.2.3.9.

It can be concluded from the above that the current framework has not served equally well the three policy objectives it pursues: it has been successful in promoting competition, but less successful in the development of the internal market, in particular in achieving a consistent EU-wide regulatory approach to market regulation, spectrum assignment and market entry conditions. While advances in consumer protection are undeniable, they are not translated in increased consumer satisfaction. A more detailed description is provided below in the respective regulatory areas.

⁸⁵ This is a composite index taking into account comparability of offers, trust in businesses, the extent to which markets live up to what consumers expect, consumers' satisfaction with the number of retailers/suppliers and the degree to which problems experienced in the market cause detriment.

7.2.3. Contribution of specific regulation areas to the objectives of the regulatory framework

7.2.3.1. Access regulation

Ex ante access regulation is essential for the achievement of the first specific objective of the framework, competition, but also aids the functioning of the single market as it is expected that similar competition issues are met with similar regulatory solutions in individual Member States, thus enhancing regulatory consistency and levelling up regulatory practice across the Union. Moreover, the consistency of access regulation is of central importance to cross-border providers. As such, the effectiveness of access regulation is evaluated against the first two specific objectives of the framework.

Access regulation and competition

Access regulation has been built on the assumption that addressing competition problems in wholesale markets leads to effectively competitive retail markets on a gradual yet sustainable basis, and will produce short and long term benefits for end-users - both consumers and businesses. It is expected that national regulatory authorities are gradually able to find retail markets to be competitive based on appropriate wholesale access regulation and that then eventually, based on market developments (alternative providers becoming stronger) but also innovations and technological development, they will also be able to deregulate wholesale markets. The *ex-ante* access regulation was indeed designed with the aim to be progressively reduced and for market supervision to be handed over to the application of general competition law. Given that a deregulation exercise is subject to detailed analysis of the competitive situation on the market, a decreasing number of regulated markets is therefore a good indicator of an improved competitive situation in the delivery of electronic communications services and networks.

At a general level, the number of markets recommended by the Commission for regulation has been decreasing constantly since the adoption of the 2002 framework (from 18, including 7 retail markets, to currently only 4 wholesale markets). The third revision of the Commission Recommendation on relevant markets in 2014 continued the deregulatory trend already witnessed at its previous overhaul in 2007. The markets now considered in principle to still need *ex ante* regulation are: the (wholesale) fixed and mobile termination markets and the two wholesale broadband access markets – one of which is high quality access.

The situation on the ground in terms of regulation imposed by national regulators follows this deregulatory trend, albeit still with significant differences between Member States.⁸⁶ Save for few exceptions, a majority of markets considered for *ex ante* regulation in the 2003 Recommendation on relevant markets are now fully deregulated. Similarly, markets removed from the Recommendation in 2014 are progressively considered competitive: in ten Member States the retail market for access to telephone network, and, in four, the market for wholesale call origination, are deregulated. More importantly, in

⁸⁶ Overview of currently regulated and de-regulated markets: http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=14430

view of developing infrastructure competition, seven Member States already partially or fully deregulated wholesale central access (which is a key product for the provision of retail broadband), although this is still included in the 2014 Recommendation. However, some Member States still consider it necessary to regulate markets outside the Recommendation, including retail markets (e.g. broadcasting services, or retail markets for access to telephone network, although the latter is progressively being considered as competitive). In such cases a national regulatory authority must establish that a given market is susceptible to ex ante regulation, through a so called three-criterion test (existence of non-transitory high entry barriers, no tendency towards effective competition and insufficiency of competition law instruments to address the identified market failure).

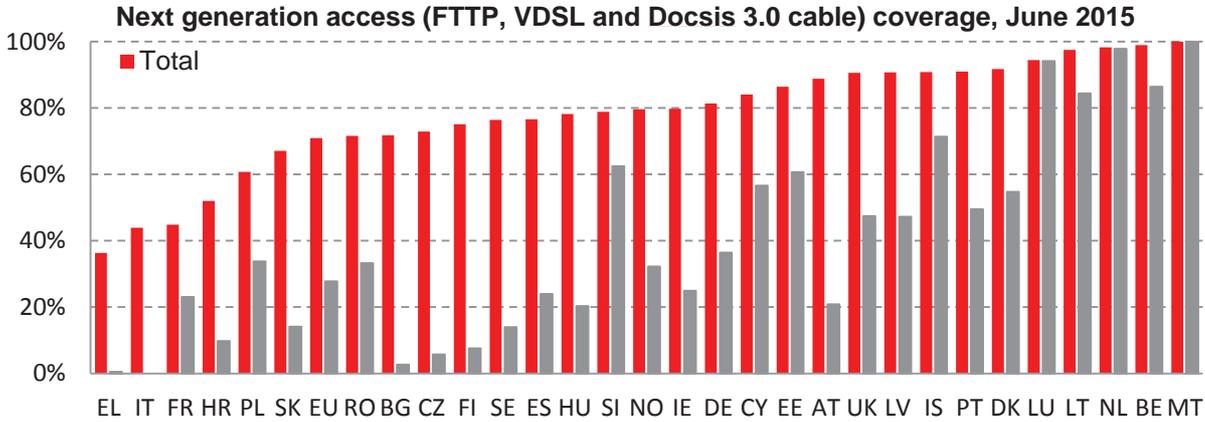
An indication of the fact that access regulation has generally been effective can be found both in the decreasing number of regulated markets, which testifies that incumbents are found to have significant market power in an ever decreasing number of markets, as well as in the decreasing market shares of incumbents (see figures above). Regulated access to incumbents' infrastructure has enabled market entry - most alternative operators function based on access products with the notable exception of cable providers and some alternative fibre operators, allowing them to compete on services and as consequence drive down the retail prices.

However the position of incumbent operators should not be under-estimated, as they usually control the only ubiquitous national network, including a civil engineering infrastructure, which is unlikely to be duplicated by any single competitor. Incumbents are usually obliged to provide wholesale access to their networks, and therefore are responsible for a significant part of the overall value chain. For that reason the trend towards progressively competitive retail markets might not necessarily reflect the full situation at the upstream, infrastructure level (usually less competitive). In other words, as noted above, the competition achieved is not necessarily sustainable, infrastructure based competition.

Moreover, a discussion exists concerning the end-user outcomes and sector impacts which can be associated with ex ante access regulation – and more precisely with the effect on network investment, as the price decreases are beyond doubt. Many large operators (most incumbents) consider that current access regulation, oriented towards service competition, has lowered prices but in general has led to limited infrastructure investments both by alternative operators (who can rely on regulated access without having to build their own access networks) and by incumbents (obliged to grant access to others who bear inferior investment risks). According to several respondents (incumbents but also large mobile operators), cost-oriented access regulation, combined with a stagnant macro-economic framework has also lowered revenue growth in Europe. This view is contrasted by alternative operators, who view competition as necessary to incentivise investments. It must be considered that there are many other factors that contribute to explain revenue and investment trends in the market, but that regulation may also play a part.

A recent analysis⁸⁷ has shown that the outcome of access regulation is not straightforward as Member States have pursued various strategies and some provide promising results. Econometrics tends to confirm the role of cable (i.e. infrastructure competition) as a key driver of NGA deployment – yet the influence of cable is only truly important in a few Member States. Other factors influencing the NGA roll out may include ownership structure (in Denmark the same entity owned the regulated telecoms network and unregulated cable, incentivising investments in the unregulated part of the business), vertical/structural separation, and technology choices (path dependency, leap-frogging). High GDP, (low) rural populations and low NGA prices contribute to fast broadband penetration. In turn NGA prices may have been influenced by standard broadband competition on the basis of local loop unbundling ("copper anchor" effect). The often limited take-up and lack of data on NGA-based wholesale access makes it difficult to gauge the precise effects of NGA wholesale regulation.

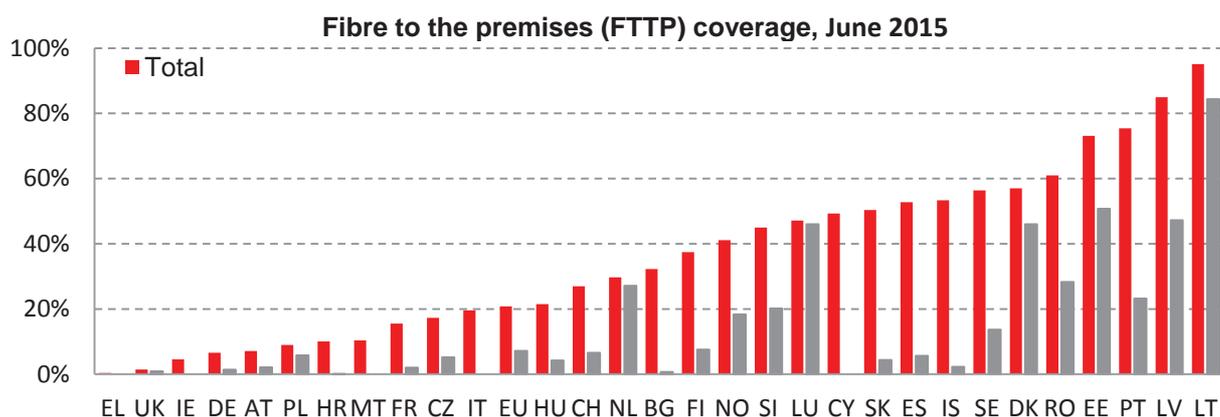
Different business models adopted by operators when deploying networks in the different Member States have resulted in a very diverse EU-wide picture in terms of the availability of connectivity and quality and speed of the network upgrades. This is visible for example when looking at the differences between Member States in the coverage of NGA networks or of Fibre to the Premises (capable of delivering at least 100Mbps), as shown in the tables below. National circumstances, such as geography, GDP per capita or the cost of labour, cannot explain the wide differences between Member States, which must be due to other factors including regulation and the commercial choices of the operators active in the national territory, which in turn are also influenced by regulation.



Source: IHS and VVA

Figure 16 Next generation access (FTTP, VDSL and Docsis 3.0 cable) coverage, June 2015

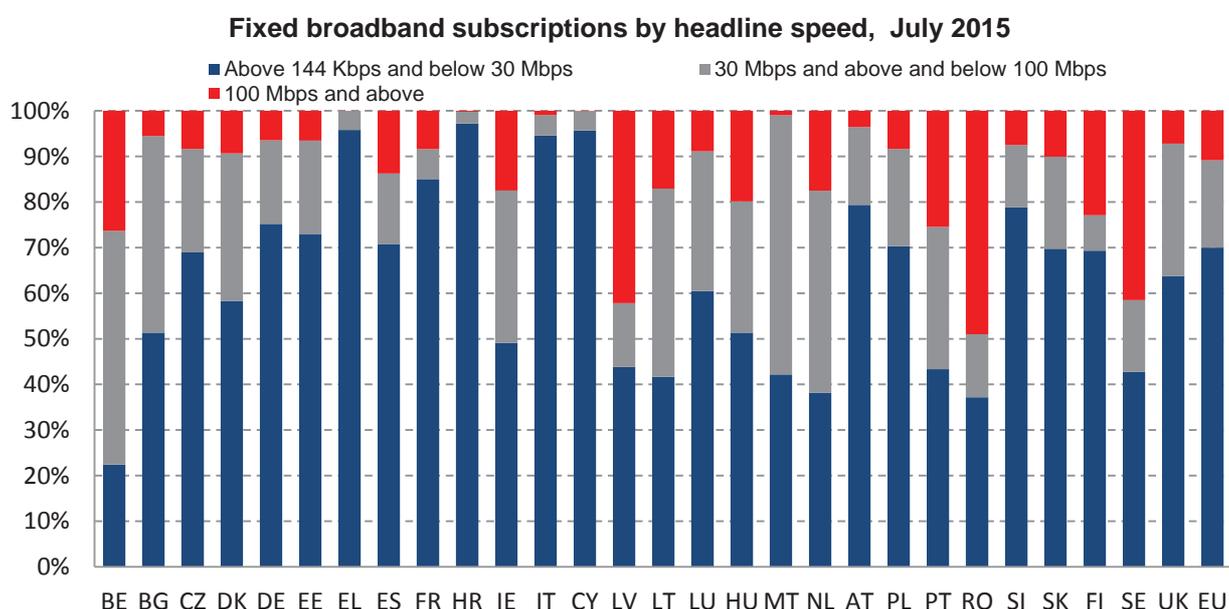
⁸⁷ Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002)



Source: IHS and VVA

Figure 17 Fibre to the premises (FTTP) coverage, June 2015

The figures in relation to take up of high-speed broadband of at least 100 Mbps are also reflective of these differences in approaches.



Source: Communications Committee

Figure 18 Fixed broadband subscriptions by headline speed, July 2015

While the variety of external factors such as topology, population density and legacy networks, coupled with lack of specific data have made it impossible to show clear statistical relationships between access regulation and end-user outcomes, case studies have revealed that certain types of ex ante regimes scored better in terms of consumer

outcomes, in particular as far as the availability of high quality services at reasonable prices.

Indeed, work conducted for the Commission⁸⁸ in support of the evaluation and review of the framework illustrates the impact that national regulatory choices can have on the deployment and upgrade of higher performance networks. The study presents how Spain, France and Portugal's NRAs have focused on stimulating entrants to 'climb the ladder' to FTTH through a focus on duct access and in-building wiring in the absence of downstream remedies as well as by promoting co-investment models. These countries have seen developments in FTTH infrastructure competition, but these are largely limited to very dense areas. Market structures in these countries have tended to consolidate towards fewer fixed mobile integrated players. FTTH coverage has grown strongly in Spain and Portugal, but more hesitantly until recently in France. The feasibility of this model has depended on the characteristics of the existing networks, including the availability of ducts.

In contrast, the UK, Austria and Germany NRAs have focused more on regulating access to the incumbents' network from the outset, but with pricing flexibility. There is limited additional infrastructure-based competition in these countries (beyond cable), and the primary technology is FTTC. Coverage of NGA has extended well beyond cable in the UK (90%) and Austria (89%), but is more limited in Germany (81%). There is some service-based competition on NGA in these countries, but the impact on outcomes appears less than was the case for standard broadband competition – this may be due to the tying of wholesale offers to incumbent speed and pricing plans. Good quality legacy copper networks might have been one of the reasons for choosing this model, at least in some countries (Germany).

It appears from the above that regulatory regimes promoting access to passive infrastructure - which greatly reduces network deployment costs - results in more competition and faster and higher quality deployment of NGA.

An additional point concerns the effectiveness of ex ante SMP regulation in areas which have already become highly competitive, in particular in situations of tight oligopolies. The public consultation revealed that many access seekers consider that the current rules are effective in addressing single dominance, but might fall short of being capable of tackling joint dominance or "tight oligopoly" market structures – markets where at retail level the incumbent no longer is dominant but remains nevertheless the sole provider of relevant wholesale access. Some Member States expressed this concern in the public consultation, as well as NRA, who however indicate that an adjustment of their toolbox would be sufficient in addressing the problem. It should, however, be kept in mind that oligopolistic market structures in network industries are likely, and in certain cases efficient, market outcomes. They are also the result of the market liberalisation over the past twenty years. As criteria for such a new intervention threshold are difficult to establish, the risk of overregulation and further regulatory fragmentation would not be negligible, with consequential effects on predictability for investors.

⁸⁸ Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002)

These developments, however, underline the importance of facilitating infrastructure-based completion wherever it would be economically efficient. In this context, it should also be noted that access regulation already provides for other regulatory remedies besides SMP regulation. In particular it is possible under a set of (limited) circumstances to impose symmetric regulation (obligations imposed regardless of the market position of the concerned operators). These provisions are foreseen as an exceptional tool (whereas SMP regulation remains the norm) which has been nevertheless used by a few Member States with different degrees of effectiveness. Therefore, it appears opportune to clarify under which circumstances symmetric access to non-replicable network assets could be imposed. Currently such measures are not subject to the European consultation procedure which is used for SMP regulation and operators have pleaded within the stakeholder consultations for higher clarity regarding the boundaries between symmetric and asymmetric regulation.

Access regulation and the Single Market

The regulatory framework has set out a flexible mechanism in order to allow national regulators to take account of national circumstances. As a result, NRAs are given a certain degree of discretion to choose the regulatory remedies to a competitive problem most appropriate to their national markets. At the same time, the regulatory framework sets out procedures to ensure that the regulatory outcomes for similar market conditions are dealt with consistently across the EU in order to ensure the functioning of the single market.

In general it can be considered that the current regulatory framework has delivered greater consistency, in particular in areas where the Commission was given greater competences, for example of determining market definition and designating operator with Significant Market Power (SMP). As a result, markets are usually defined in a relatively consistent way, in terms of products scope (i.e. approach to inclusion or exclusion of various technologies such as mobile internet or cable TV). Similarly, NRAs' approaches in determining whether SMP exists (e.g. self-supply, indirect constraints) have become rather consistent.

On the other hand greater discrepancies can be observed with regard to (important) details of the imposed remedies which cannot all be sufficiently explained by varying national circumstances⁸⁹. The discrepancy in regulatory approaches concerning remedies can be explained on the one hand by relatively weak tools for the EU-level consistency check (limited to non-binding instruments), and on the other by the nature of the remedies (which are more detailed and network/ Member State specific). Moreover, specifically with regard to the scope of imposed remedies, the NRAs exercise their discretion to a greater degree and are influenced by their own policy choices in particular as regards investment incentives. This however translates into divergent approaches towards the regulation of fibre networks, symmetric regulation (ex ante access regulation

⁸⁹ See, in particular, the Commission Staff Working Document "A Digital Single Market Strategy for Europe - Analysis and Evidence"; of 6 May 2015, SWD(2015) 100 final, p. 34 ff.

which is not based on SMP), pricing methodologies, the imposition of Virtual Unbundled Local Access (VULA) remedies⁹⁰, etc.

It has also become apparent over the past years, that the lack of consistency in the regulatory approaches taken at national level is results to a certain degree from the institutional set-up⁹¹ and the way the various institutional players (i.e. mainly the national regulators, BEREC and the European Commission) interact and can influence the regulatory outcome. The inconsistency witnessed is exacerbated by the fact that the procedural and institutional set-up currently in place appears to be ill equipped to ensure a more consistent approach in similar circumstances⁹². A recent study for the European Parliament⁹³ assessing the achievements and failures of the current framework has shown that, in particular with regards to the application and design of remedies, Europe's telecoms sector remains fragmented along national lines⁹⁴.

To illustrate these mixed results, since 26 May 2011 (the deadline for the transposition of the review package and until 29 April 2015) NRAs have notified about 620 draft measures to the Commission. Most of these notifications either did not raise any issues, or resulted in a comment from the Commission, but did not raise serious doubts as to compatibility with the Framework. During this time, the Commission has issued four binding veto decisions in relation to market definition of SMP designation proposals, which the NRAs were legally bound to implement, and 25 recommendations on remedies according to Article 7a. Moreover, during the same period, NRAs have withdrawn 45 notifications. Withdrawals typically occur as a result of initial discussions in the EU consultation process, whereby the NRA chooses to withdraw the measure and make certain modifications ahead of re-notifying a modified draft measure. In four cases, the Commission withdrew its serious doubts at the end of the procedure.

In terms of compliance with the Commission's Recommendations, the 2015 Implementation Report shows that while considerable progress has been made to date in the implementation of the Commission's 2009 Termination Rates Recommendation, with the vast majority of NRAs now applying a costing methodology in line with the

⁹⁰ Ofcom defined and implemented the concept of Virtual Unbundled Local Access (VULA), which was intended to replicate as far as possible the functionality of unbundling over an active access connection, in a 2010 market review of 'wholesale local access'.

⁹¹ Study on How to Build a Ubiquitous EU Digital Society, November 2013, IP/A/ITRE/ST/2012-09; see for example p. 180.

⁹² In particular, with regards to imposing remedies, the balance between achieving harmonisation in a flexible framework appears to be tilted in favour of flexibility neglecting needs for consistency. For example, whilst remedies are imposed on operators by NRAs at the national level, the Commission and BEREC almost exclusively input through non-binding instruments in order to attempt to achieve EU-wide regulatory consistency on this level. In the past, this "soft law" approach has led to significant differences in some areas, clearly proving to be an obstacle for the development of a Single Market. In addition, BEREC, as one of the key stakeholders at European level, has been faced with criticism, that it – in its current governance structure is primarily motivated by a desire for self-determination, and that it delivers verdicts based on a 'lowest common denominator', or prioritises flexibility over consistency in the Single Market (see the section 3.7.1 in the study on How to Build a Ubiquitous EU Digital Society).

⁹³ Study on [How to Build a Ubiquitous EU Digital Society](#), November 2013, IP/A/ITRE/ST/2012-09; see for example p. 29

⁹⁴ In particular with regards to the provision of business services and mobile markets, providers face multiple obstacles in offering effective trans-European services, such as different designs in access products, different pricing structures, which cannot be explained solely by underlying different cost structures.

Commission's recommended approach both regarding fixed and mobile termination rates, leading to significantly lower termination rates across the EU, deviations from the recommended approach still remain (for mobile termination: DE, NL, FI; for fixed: BE, CY, DE, FI, NL, PL). Concerning regulation of the broadband markets, while a trend can nevertheless be detected that an increasing number of NRAs recently adopted regulatory approaches for the broadband markets (in particular NGA/fibre regulation) broadly in line with the Commission's 2013 Recommendation on consistent non-discrimination obligations and costing methodologies, not all NRAs yet follow the recommended approach.

Diverging regulatory practices in the individual national markets can have a profound effect on cross-border trade and, thus, on the development of a Single Market in electronic communications and may seriously distort competition across the EU by "levelling" the EU-wide playing-field⁹⁵. Diverging practices also affect predictability and the attractiveness of the telecom sector to institutional investors who are willing to invest in a common European market; even relatively smaller operators and project companies interested in network roll-out tend to rely on a pan-European or even global capital market in order to obtain funding.

While no methodology exists yet to measure the exact impact of the lack of consistency on regulatory outcomes, market players and end-users, a lack of consistency in regulatory responses to similar problems appears to affect not just cross-border operators, which thereby face greater internal market barriers, but also seems to result in different levels of effectiveness of national regulatory regimes in fostering the best possible connectivity at affordable prices for end-users. In other words, regulatory choices such as those regarding access obligations and the pricing of legacy networks have an impact on the investment decisions of operators. In this way, end-users pay the consequences of inconsistent and potentially sub-optimal regulatory decisions, affecting retail markets. An example is the regulation of voice termination rates, where the Commission, BEREC and most national regulators agree that a particular approach to the imposition of price caps has the best effect on competition and on end-users, without constraining investment. The fact that certain national regulators do not follow that common approach has a detrimental effect on end-users within those jurisdictions, which cannot enjoy the benefits of the full application of the framework's principles according to accepted regulatory practices (in this case, prices better aligned to underlying costs).

The negative impact of fragmentation on business users provides an example of the enduring nature of these problems and difficulties in using current tools to address them. Concerns over fragmentation in the market for business communications were first

⁹⁵ Significant divergences in the pursuit of existing regulatory principles and of how the objectives of the regulatory framework are implemented across the EU can create considerable obstacles to cross-border trade and market entry. For example, on the fixed side, only a few operators have become specialised in offering pan-European services to multi-national corporations; almost exclusively in the business sector. However, these operators claim to experience difficulties in effectively meeting customer needs due to the fragmentation of conditions in the local markets in which they procure access links. At the same time, such differences create diverging competitive and technical conditions which hamper the development of the internal market. Similarly, a 2012 study claims that diverging regulatory approaches to NGA, which have a dampening effect on market entry, appear to contribute to a reduced level of access based competition in NGA. This trend, in turn, seems to have had a negative impact on take-up of very high speed broadband connections.

raised in a survey conducted by the predecessor to BEREC, the European Regulators Group (ERG) in 2009,⁹⁶ validated in a further survey published in 2013,⁹⁷ and have subsequently been reaffirmed by business end-users in the context of studies for the European Commission in 2011⁹⁸, 2015⁹⁹ and 2016.¹⁰⁰ Yet in an interview conducted in 2016 for study SMART 2015/0002, INTUG observed that it still had concerns over the ability of business issues to be effectively addressed under the existing institutional set-up.

A 2011 Commission study on the cost of non-Europe in telecoms¹⁰¹ estimated the cost of regulatory policy divergences between MS to 55 billion euro at EU level. Further evidence on the implications of a lack of consistency in the regulatory approach to business communications can be found in a 2013 study conducted for INTUG and ECTA¹⁰². As part of that work, it has been estimated that the patchy regulatory situation leads to an untapped economic potential of 90bn euro for the EU.

In accordance with the results of the public consultation, large operators (incumbents and alternatives) attach more importance to the contribution of access regulation to the Single market. They refer to the higher than necessary costs and burden of providing services in multiple countries or on a cross-border basis but have not provided specific quantification. More importantly, they refer to the lack of legal certainty brought about by the fact that the consistency procedures in place do not grant binding enforcement powers to the Commission and that the consistency rules are based on soft law instruments, such as Recommendations. Operators also point to the failure to facilitate the consistent treatment of business connectivity used to serve multi-national corporations. Indeed large (non telecom) businesses refer to issues in obtaining fit for purpose and competitively provided services. Issues associated with roaming were quoted by consumer associations and national authorities (though these are ultimately settled through alternative instruments like the Roaming Regulation and as amended by the TSM Regulation, and subsequent wholesale roaming review¹⁰³).

BEREC's role in supporting consistent outcomes has received mixed feedback, as discussed below in the dedicated sections. BEREC's current institutional set-up results in it often opting for greater flexibility or the lowest common denominator instead of focusing on a harmonised approach for the single market.

⁹⁶ ERG report on the regulation of access products necessary to deliver business connectivity services ERG (09) 51 http://berec.europa.eu/doc/publications/2009/erg_09_51_business_services_paper_final.pdf

⁹⁷ WIK (2013) Business Communications, economic growth and the competitive challenge

⁹⁸ Ecorys, TNO, TU Delft study on the cost of non-Europe in telecoms, "steps towards a truly internal market for electronic communications", November 2011.

⁹⁹ SMART 2014/0023 Access and Interoperability standards for the promotion of the internal market for electronic communications

¹⁰⁰ Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002)

¹⁰¹ Ecorys, TNO, TU Delft study on the cost of non-Europe in telecoms, "steps towards a truly internal market for electronic communications", November 2011.

¹⁰² WIK (2013) "Business Communications, economic growth and the competitive challenge", study for INTUG and ECTA

¹⁰³ See also http://europa.eu/rapid/press-release_IP-15-5265_en.htm

7.2.3.2. Effectiveness of spectrum regulation area

Promoting competition

A first area to assess the effectiveness of the framework provisions regarding spectrum is that of its contribution to make spectrum available for electronic communications services, and in particular to wireless broadband. The 2012 Radio Spectrum Policy Programme (RSPP) setting out the ambitious target of identifying no less than 1,200 MHz for wireless broadband by 2015 was adopted for this purpose under the framework¹⁰⁴.

Today, 990 MHz have been harmonised for wireless broadband through technical implementation decisions that lay down conditions for an efficient use of spectrum. If the technical harmonisation that has not yet been fully enacted at Member State level is included, then the corresponding figure is 1,268 MHz. This means that the framework as the underpinning basis on which the programme was built, has enabled the EU to identify more spectrum for wireless broadband than other world regions such as Australia, South Korea, Japan and the United States.¹⁰⁵ Of this range of harmonised frequencies, Member States had in 2015 on average actually assigned only 708 MHz for wireless broadband, still far below the RSPP target, although this amount represents an increase by 77% since 2010, the last year before the entry into application of the 2009 revision of the framework.

This effort has been underpinned by 14 harmonisation decisions adopted between February 2007 and May 2015 pursuant to Decision 676/2002/EC and in line with the framework foreseen by Article 9(2) Framework Directive. These have enabled the provision of electronic communications services without the imposition of the use of specific technological solutions, through EU technology neutral spectrum harmonisation and management by Member States in line with Article 8(3) of the Framework Directive.

¹⁰⁴ See also Annex V for more details on evaluation of the Radio Spectrum Decision and the Radio Spectrum Policy Programme.

¹⁰⁵ RSPG16-001 – RSPG Opinion on DSM and Framework Review, 15.12.2015, Table 1, p. 5.

Average spectrum assigned for wireless broadband in EU28 (in EU harmonised bands)

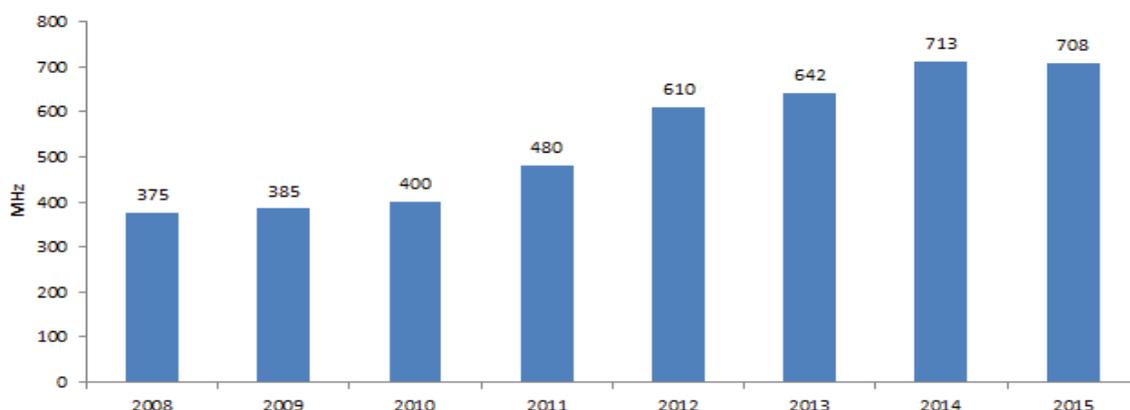


Figure 19 Average spectrum assigned for wireless broadband in EU28

At the same time, the process from the issuance of EU harmonisation decisions until the effective assignment of spectrum resources by each Member State for use by market actors lasts on average almost two years (22.2 months). This is an obstacle to the effective delivery of spectrum to the market in the EU. Although this sometimes includes a variable period necessary for Member States to amend their national frequency allocation plans, which normally lasts six months, this shows a delay of one to 1.5 years before spectrum can actually be used by service providers.

Moreover, the duration of national assignment processes for harmonised spectrum is not consistent among Member States. For both the 800 MHz and the 2.6 GHz band, for example, the time between EU harmonisation and actual assignment varied from one month to more than four years, and for the 1.8 GHz band, from two months to almost 3.5 years.¹⁰⁶

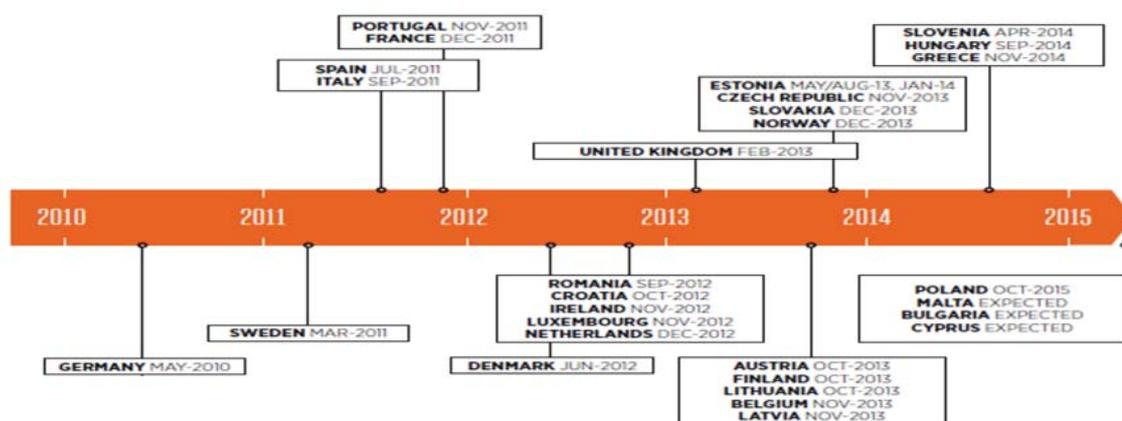


Figure 20 Timing of 800MHz spectrum awards

¹⁰⁶ These statistics exclude countries having assigned the band prior to an EU harmonisation decision having been taken.

Timing of 800MHz spectrum awards¹⁰⁷

Assignment deadlines, also, are not subject to any coordination at EU level. In general, technical harmonisation decisions only specify target dates by which the harmonised technical norms have to be implemented in the Member States, without this involving assignment of rights of use. Only in some instances have specific decisions by the European Parliament and the Council established common assignment deadlines¹⁰⁸, although, even in these cases Member States also sometimes fail to meet the deadlines.

Finally, delays have also occurred between the granting of spectrum usage rights and the date when spectrum can actually be used by operators¹⁰⁹, as the framework cannot ensure that assigned spectrum be effectively put into use within a certain deadline from the date of award.

As to the need to ensure that spectrum is effectively used by the usage right holders, there is no consistent approach among Member States to allow the withdrawal of rights if conditions attached thereto are not met in a timely fashion (although a few do it). This situation threatens the effective and efficient spectrum use and the promotion of competition in the EU.

In conclusion, the ability of the framework to deliver on technical harmonisation has been more pronounced than its capacity to ensure timely, effective and consistent release of the spectrum thus harmonised, a point affirmed by stakeholders responding to the public consultation, in particular by operators who were the first stakeholders affected. Statistical analysis confirms that delays in releasing spectrum and in particular in assigning spectrum are associated with delays in network rollout (in this case: 4G rollout) and subsequent delays in the availability and take-up of services by consumers and businesses¹¹⁰.

It is however also important to underline that the award of usage rights does not by itself guarantee effective exploitation of the spectrum assigned. First, the market impact and related end-user benefits will be produced, in the majority of cases, only sometime after assignment. Second, other factors, such as investment conditions, capital availability, technological progress, demand development and competitive context, equipment availability¹¹¹, level of cross-border interference and the conditions attached to the

¹⁰⁷ Please note that 800MHz band was assigned early 2016 in Poland.

¹⁰⁸ With the adoption of the 2012 Radio Spectrum Policy Programme (RSPP) common deadlines were set for carrying out the authorisation process by 31.12.2012 in the 3.4-3.8 MHz, 2.5-2.69 MHz and 900-1800 MHz bands (article 6.2) and by 1.1.2013 in the 800 MHz band (article 6.4). These decisions account for four out of the 11 bands (36.4%) covered by the 14 technical harmonisation decisions. More recently, the Commission has proposed a common assignment date of 30.6.2020 in its proposal for a decision concerning the 700 MHz band.

¹⁰⁹ For instance in the case of Spain, the authorisation process regarding the 800 MHz band was carried out in 2011 and the spectrum made effectively available to operators in 2015.

¹¹⁰ [GSMA's report The socio-economic benefits of greater spectrum policy harmonisation in the EU](#) (2015) shows positive correlations between the auction award dates, the launch of LTE services and the 4G penetration rates.

¹¹¹ The availability of equipment is partly dependent on the scale of network deployment which in turn depends heavily on the spectrum assignment process. The more aligned the timing of assignment across several countries is, the more scope there is for equipment manufacturers to benefit from economies of scale.

spectrum usage rights, play an important role in shaping network roll-out, service delivery and the possibility for uptake. Delivery of spectrum to market can thus only facilitate, not guarantee attainment of all the objectives of spectrum regulation and adjacent policies.

Besides factors related to the general business environment and the specific situation in which the recipients of rights of usage find themselves at the time of assignment, the conditions attached to the use of spectrum play a critical role in determining how the spectrum concerned can be used and further accessed.

The framework circumscribes the kind/type of conditions that can be attached to rights of use for electronic communications services, while leaving to Member States the flexibility to identify one or more conditions within the closed list provided for in the Annex to the Authorisation Directive. In general, their specification in the framework has proven to be appropriately comprehensive and functionally adequate, in particular with regard to more technical conditions, as neither authorities nor concerned parties have indicated problems in this respect.

However, the general terms in which the framework states these conditions leave significant leeway for Member States to detail them in ways capable in some cases of influencing the effectiveness of how EU general objectives are pursued. In respect of individual rights of use, this is particularly well illustrated by the possibility for undertakings to make voluntary commitments in the context of an assignment procedure. In practice, such conditions are embedded, often already at legislative level, in the pre-requisites for participation in the assignment procedure leaving no or limited margin of manoeuvre for the operators to genuinely decide whether and to what extent to commit to certain additional conditions.

When conditions are added as pre-requisites for participation in competitive auction procedures (where assignments should be based only on one quantitative criterion) are attributed appreciable weight as qualitative criteria in comparative bidding procedures, the applicant has only limited scope to decide whether and to what extent to commit to these conditions, since the only alternative would be not to participate in the selection procedure. While this would not necessarily run against the current wording of the Regulatory Framework (and may sometimes be necessary to pursue objectives in line with EU law), this has nevertheless opened the door for any kind of additional condition at national level, which may have significant impacts on the effective costs for the use of the spectrum and/or on the competitive structure of the market, with little or no scrutiny available, unlike for access-related regulatory obligations which are subject to EU-level consistency check under Article 7/7a procedures.. The regulatory framework is also not clear on the question whether such prerequisite commitments of a non-voluntary nature form part of the authorisation conditions as such as allowed under Annex B of the Authorisation Directive. Should they not be considered part of the authorisation conditions, a transfer of the right of use would leave the commitment with the initial holder.

The following pre-requisites have been applied to major assignment procedures: minimum capital requirements, to be maintained for the whole duration of the rights of use; obligation for incumbent operators to provide any new entrant with site-sharing or national roaming reference offers for some/all services for determined/undetermined periods of time; holding spectrum holding caps, applicable for the whole duration of the rights of use and often also involving spectrum holdings not subject to assignment;

hosting MVNOs at regulated price; provision of specific retail tariff plans; release of other spectrum holdings; compensation to previous holders or third parties affected by potential interferences¹¹².

While it is not excluded that these additional commitments may promote the achievement of the general objectives of the regulatory framework along with more national objectives, they often represent a large regulatory layer which is subject only to very generally described requirements of proportionality, non-discrimination, transparency and objectivity, in contrast with the imposition of similar obligations in the context of *ex ante* market regulation. This might therefore go against the general principles in the regulatory framework of limiting overregulation and ensuring regulatory predictability and consistent regulatory approaches.

In the same way, the auction reserve prices and/or imposition of spectrum fees are subject to the specific requirements of Article 13 of the Authorisation Directive aimed at ensuring consistency with the objectives of the framework. This is however often contested in practice. due to the lack of transparency in the identification of the initial reserve pricing value or to the lack of proportionality and justification of the different criteria applied to ensure the optimal use of spectrum¹¹³, which is often already defined by national legislation.

The modification of spectrum right conditions may also have a significant impact on the regulatory conditions faced by the operator as well as on the overall market competitive structure, even more so where different conditions apply to different assignees.¹¹⁴ While Article 14 of the Authorisation Directive makes amendments subject to certain harmonised procedural requirements, the substance and extent of possible amendments are again only minimally harmonised, unlike amendments of often equally relevant regulatory obligations which may be imposed in the context of *ex ante* market regulation, in spite of general regulatory objectives to limit overregulation and ensure legal predictability and consistency of policy approaches.

The *ex post* (only) enforcement of more general principles governing spectrum conditions (such as proportionality, non-discrimination, transparency, objective justification, in particular with regard to the harmonised policy objectives) has sometimes proven not to be the most effective way to address problems related to assignment conditions once these have been imposed and spectrum has effectively been made available to operators. For instance, such *ex post* intervention may have distorting impacts on the market competitive dynamics, on the efficient usage of spectrum and/or on legal certainty. This is especially the case in view of the strict link between the kind of commitments made and the assignment procedure, since infringements actions,

¹¹² For an overview of different participation/assessment criteria applied across EU see also Radio Spectrum Policy Group Report on Assignment and Pricing Methods, RSPG09-298, available at http://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg09_298_final_report_assignment_pricing_122009.pdf

¹¹³ Four infringement cases specifically concerning the application of Article 13 of the Authorisation Directive were brought since its entry into force in 2002. These cases only represent a fraction of the overall number of cases dealt with in pre-infringement proceedings, where Member State clarifications and/or leave sufficient doubt as to the existence of a breach of the regulatory framework that the opening of an infringement procedure does not appear justified.

¹¹⁴ This does not necessarily imply a breach of the non-discrimination principle, for instance in case of different timing of amendments requests, but is still likely to yield different impacts on competition.

including the actions preceding the launch of such infringements, may take significant time and risk to affect or even increase the legal uncertainty, the risk of litigation and the possibility to further efficiently use the spectrum resources at stake. Moreover, administrative and infringement proceedings would run the risk of slowing down the actual assignment of spectrum resources, running contrary to the ambition to ensure that sufficient spectral resources are made available to the market (which in respect of certain bands, such as those identified in the RSPP, is also a legal requirement by certain dates). An *ex ante* mechanism, which enables to check the consistency of the choice and definition of certain license conditions with established regulatory and competition based principles, could possibly avoid this problem.¹¹⁵

In conclusion, the harmonisation approach of the current framework has not achieved sufficient convergence of the actual conditions attached to individual licences or of the underlying motivations to impose such conditions, thereby creating regulatory uncertainty and possibly impacting effective access and use of spectrum and market investment incentives. Moreover, the lack of consistency is a problem for the internal market not just in terms of providing predictable and comparable market entry conditions across Member States to cross-border operators (as well as predictable conditions for multi-national providers of finance for purely national / local operators) but also in terms of drawing on experience to identify the best possible results across the Union. In this sense, ensuring that all Member States foster the best spectrum solutions for the delivery of high performance broadband and connectivity across the EU is an internal market imperative.

The public consultation revealed a widespread sentiment among respondents that a lack of coordination of assignment conditions has created obstacles to or difficulties for the development of electronic communications, even though this did not yield any specific quantification. The framework does not contain measures or a mechanism for ensuring consistency in the choice and delineation of the license conditions with the objectives set out in the Framework and across Member States. Also the objectives as currently defined are rather general and hence difficult for the Commission to enforce as illustrated above.

Similarly, many stakeholders – including operators, OTTs, equipment manufacturers - consider that the absence of coordination among selection methods has impeded the development of electronic communications, without however providing for precise measurement thereof. The choice and definition of selection methods is often contested and subject to national litigation and has triggered several pilot and infringements procedures¹¹⁶. As mentioned above, however, experience shows that intervening only *ex*

¹¹⁵ There is no accepted methodology to analyse these aspects in quantitative terms. It must be underlined that notions such as legal certainty and proportionality have an inherently legal function that is justificatory in nature. Their persuasive weight is based on a totality of considerations that extends beyond any simple one-dimensional quantitative measure. Moreover, any economic impact posited to derive from their application is specific to the award process and must therefore be analysed in this context.

¹¹⁶ Since the entry into force of Directive 2002/20/EC (including the original version that was only marginally modified in 2009, in particular with regard to spectrum assignments), a total of 13 NIF cases have been opened, concerning in particular the application of Article 5 and/or 7 of the Authorisation Directive governing spectrum assignment procedures and criteria. These cases are only a fraction of overall problematic cases dealt in the context of the pre-infringement procedure at service level, where clarifications and/or amendments by national authorities may already address the concern raised by the services and prevent the opening of an infringement procedure.

post is difficult and sometimes counterproductive (for instance when it risks further delaying the actual availability of spectrum to the market or can affect assignments already operational). Finally, as confirmed in the public consultation and as mentioned above with regard to conditions linked to commitments made in selection procedures, some elements used in the design of selection process such as spectrum caps and reservation of spectrum are likely to influence the conditions for entry to national mobile markets and their competitive structure as, unlike for *ex ante* market regulation, their use is not always the result of a thorough analysis of the competitive market situation but based on other national policy considerations which risk leading to inefficient outcomes, sometimes at odds with regulatory objectives of the framework such as avoiding overregulation and ensuring legal consistency and predictability.

While the precise nature of the negative impacts that this has caused has been less easy to identify, it accentuates the fact that most of the current rules of the framework only specify too general requirements as to how selection processes are to be designed (for instance regarding what selection process a Member State may choose and what conditions may govern it) and enacted in operational terms. Respondents to the public consultation have also generally expressed that Member State decisions lack transparency and justification when selecting and designing the selection process for awarding spectrum which may stifle network investment decisions and thereby delay the production of tangible benefits for end-users especially in terms of quality of service and adoption of innovative wireless technologies.

Given the importance of spectrum for entry and position on the market, the lack of transparent criteria and sound pro-competitive safeguards can lead to a situation where a market player which failed to ensure a sufficient amount of spectrum in a spectrum auction may no longer effectively compete on the market; while an operator which seeks to differentiate by quality on the market may be constrained from acquiring the assets / running the business model that it seeks. In order to mitigate such risks, the operators may feel obliged to offer relatively high prices for spectrum and to accept other onerous conditions, which in turn may impact subsequent investments in the network. Such uncertainty can also make market players more reluctant to devise long-term investment plans.

As a result, there seems to be room for improving pro-competitive safeguards and coordination mechanisms at the level of the framework to enhance consistency with framework objectives and regulatory principles across the EU. Such intervention would also allow addressing the abovementioned perception among market actors of a lack of coordination that may also reduce their competitive zeal in devising strategies and their willingness to compete outside of their home market.

Development of the Internal Market

The framework has set out a mechanism, established in Radio Spectrum Decision, for the coordination of policy approaches and of harmonised conditions for the availability and efficient use of radio spectrum necessary for the functioning of the Internal Market. Its effective application has led to the adoption of harmonised technical conditions for

the use of spectrum for wireless broadband and for other uses in support of various EU policies¹¹⁷.

As it has been pointed out above, Member States have made significant contributions to this end by cooperating with the Commission on the harmonisation of technical usage conditions for frequency bands dedicated to electronic communications, and subsequently implementing them domestically, which has guaranteed interference-free operation within their respective territories.¹¹⁸ Another important element in this respect is the operational coordination of efforts to free bands by migrating incumbent users to alternative frequency bands. Without cooperation on this matter, the concerned bands may be exposed to cross-border interference, which may disturb the concerned services to the extent of them becoming in fact unusable. Discounting such problems in relation to third countries to which the framework does not apply, the experience thus far has attested to the effectiveness of the framework in ensuring Member State cooperation on this subject matter in most cases, both on a bilateral basis as well as through the RSPG ad hoc working group advising the Commission on these issues ("RSPG good offices working group"). In one particular case, the RSPG good offices has been engaged more intensively to address persistent cross-border interferences impeding the use of harmonised spectrum for electronic communications. In all other cases, technical harmonisation and coordination have worked relatively effectively to ensure the availability of spectrum resources. Thus, while the RSPG good offices have successfully identified the problem and its possible solutions, the lack of any path towards enforcement has shown the limits of the effectiveness of their work, which suggests that some means of making more clearly enforceable in EU law the outcomes of such coordination would be advantageous. Barriers to the further development of the internal market have thus originated more in issues of timing and coordination of procedures and conditions attached to the rights of use in respect of ongoing market developments than in allocation problems. The negative impact that has been attributed thereto as regards operators' competitive strategies for instance in terms of their incentives to enter new markets has likely also impaired the internal market development, although it is has not been measured by how much.

The harmonisation of technical usage conditions enables the interoperability of service delivery across borders. In practical terms, this interoperability may, however, be limited, if operators and service providers in adjacent territories choose different technical standards, unless adequate and cost-efficient means for signal conversion are available. There is no direct evidence to suggest that operators' technological choices are based on a strategy of excluding competitors, notably from cross-border entry. Yet neither have there been any noteworthy examples of integrated cross-border service offerings emerging, even where one or several operators are active on both sides of the frontier.

¹¹⁷ See Annex V on evaluation of the Radio Spectrum Decision and the Radio Spectrum Policy Programme for more details.

¹¹⁸ This has also produced, as recognised by responses to the public consultation, another important contribution to developing the Internal Market for equipment manufacturers and users, allowing for the realisation of scale economies in production and cross-border tradability of equipment.

Article 8(3) of the Framework Directive calls on regulatory authorities to take specific measures to support interoperable services and end-to-end connectivity at a scale extending beyond their national regulatory domains. Yet, no explicit policy or regulatory measures have been generally taken by Member States for the promotion of the Internal Market in the spectrum domain, such as the facilitation of the establishment and development of trans-European networks. For instance, with regard to conditions of spectrum use and related authorisation procedures, Article 8 of the Authorisation Directive relating to the harmonised assignment of spectrum is an example as it has not been applied so far; this might illustrate the difficulty in meeting the particularly demanding criteria set for its use.

The lack of Member State initiatives supporting spectrum usage opportunities across borders, going beyond technical harmonisation aspects, that could bolster new business models in electronic communications may also reflect institutional limitations. The framework currently does not foresee any decision-making mechanism at EU level to buttress and provide legal certainty to such initiatives which would foster the internal market. More generally, the development of mechanisms in favour of the Internal Market has received little attention in the work of the RSPG notwithstanding its competence to support measures 'necessary for the establishment and functioning of the internal market'¹¹⁹. Whilst insisting on the principle of subsidiarity¹²⁰, which provides an appropriate scrutiny mechanism to ensure that EU level action is merited, the Group has not to date fully exploited the opportunity to offer effective means of action for issues beyond Member State reach. There have been some positive contributions in the RSPG Opinion on strategic challenges in addressing growing demand for wireless broadband¹²¹ and on that regarding the long term strategy on the future use of the UHF band¹²², the latter also including detailed recommendations on what is needed to facilitate cross-border coordination of migration from one bandwidth to another. Another example of RSPG work beyond the remits of individual Member States is that undertaken by the RSPG good offices. More recently, the Group has moved into the spectrum assignment area in its Report on Efficient awards and efficient use of spectrum¹²³ and is considering a more active role in exchanging best practices and in setting up a peer advice mechanism as indicated in its Opinion on DSM and Framework Review¹²⁴. However, whilst the exchange of information and best practices can contribute to improve the spectrum authorities' expertise in spectrum assignment design and practical implementation (which can be particularly useful for less resourced authorities), it alone does not have the capacity of removing barriers to the development of the single market if they do not result both in explicit collaboration and greater operational consistency. Both these elements have, as the sometimes significant disparities in allocating and awarding even harmonised spectrum illustrate, not received the required attention to ensure the development of the Internal Market in line with principles of regulatory predictability and promotion of efficient investment and innovation. These limits to

¹¹⁹ Art. 2(1) of Commission Decision 2002/622/EC of 26 July 2002 establishing a Radio Spectrum Policy Group, OJ L 198, 27.7.2002, p. 49, as amended by Commission Decision 2009/978/EU, OJ L 336, 18.12.2009, p. 50.

¹²⁰ RSPG16-006, p. 30.

¹²¹ Which can be found at <http://rspg-spectrum.eu/rspg-opinions-main-deliverables/>

¹²² http://rspg-spectrum.eu/wp-content/uploads/2013/05/RSPG15-595_final-RSPG_opinion_UHF.pdf

¹²³ Which can be found at <http://rspg-spectrum.eu/rspg-opinions-main-deliverables/>

¹²⁴ http://rspg-spectrum.eu/wp-content/uploads/2013/05/RSPG16-001-DSM_opinion.pdf.

RSPG's action have in addition impeded the Groups' contribution to a strategic approach to European spectrum policy, which would require uniformly raising the participation level to Member State representatives with that level of responsibilities.

It follows from the analysis above that while progress has been made in particular in relation to harmonising spectrum for wireless broadband, the provisions concerning spectrum management do not sufficiently or consistently support either the single market objective, or the competition objective.

7.2.3.3. Effectiveness of numbering regulation area

The availability of adequate numbering resources is a crucial pre-requisite for the development and growth of electronic communications markets and services. NRAs are responsible for structuring the national numbering space, setting the conditions for allocating and using numbers, and processing applications for numbers and number blocks. Their aim is to ensure an efficient management of numbering resources, to support competition on the electronic communications market, therefore the effectiveness of the provisions should mainly be discussed in relation to the first objective of the framework. The impact on the functioning of the single market should however also be assessed, as competition should be able to develop at the level of the single market.

No significant problems were detected with the implementation of numbering provisions at national level, as confirmed also by the study SMART 2015/003. At the same time, the numbering provisions to support the development of the internal market for electronic communications have not resulted in intended application, which puts the relevance of some of them in current form in question. In particular, the provision regarding European Telephone Numbering Space (ETNS) has failed to materialise. This has been partly due to the lack of demand which was confirmed by the public consultation on the matter in 2011¹²⁵ and in the most recent public consultation on the review. Cross-border issues clearly linked to the objectives of the framework, such as end-to-end connectivity or access to non-geographical numbers in another Member State or the extra-territorial use of numbers have progressed with significant difficulties, affecting in particular end-users. Notably, national measures to regulate wholesale or retail charges for premium rate numbers were subject to judgments of the Court¹²⁶. BEREC also adopted reports in the area¹²⁷.

Furthermore, the effectiveness of the numbering provisions must also be evaluated against ongoing technological and market developments. New business models, such as machine to machine (M2M) services e.g., connected cars and smart meters, change the pattern and intensity of demand for numbering resources. M2M growth rates are expected to be many times higher than those of the pure voice communications. In this new context, scarcity of numbers might become an issue and other competition and

¹²⁵ <https://ec.europa.eu/digital-single-market/en/news/results-public-consultation-future-harmonisation-numbering-resources-provision-business>

¹²⁶ See: judgment of the Court of 17 September 2015 in Case C-85/14 KPN v ACM, OJ C 371, 9.11.2015, p. 9 and Judgment of the Court of 14 April 2016 in Case C-397/14.Polkomtel v UKE.

¹²⁷ See BEREC Report BoR (12) 55 of 24 May 2012 on Special Rate Services

single market issues might arise. These are issues of concern arising due to the increasing use of cross border services, and are now subject to increasing regulatory attention at EU and international fora such as CEPT and ETSI, as well as BEREC.

In November 2015, CEPT published a draft ECC recommendation (16)02 to limit extra-territorial use of numbers. At the same time however, some of the Member States already explicitly allow extraterritorial use, while others apply a more restrictive approach. The BEREC Report BoR (16) 39 of 12 February 2016 on enabling the Internet of Things highlighted the areas of roaming, switching and number portability, where special consideration for M2M is necessary. Concerning switching and M2M operator lock-in, preparatory work in ETSI and by GSMA aims to mitigate competition issues by creating standards for embedded (programmable) SIMs.

The public consultation indicates that national numbers and global numbers are seen as likely to be sufficient and appropriate to cope with the numbering needs of M2M in the future, provided that extraterritorial use of numbers¹²⁸ is allowed for M2M. Country codes are assigned by ITU to countries, and under existing rules, Member States adopt their own rules for the use of numbers within their numbering plan, in line with general requirements laid down in the framework. As rules regarding extraterritorial usage are not governed by the regulatory framework, rules differ per Member State. Currently, European countries are developing guidelines enshrined in a decision adopted by the CEPT proposing to ban extraterritorial usage as a general rule, with a fastidious procedure to grant exceptions in individual cases. Thus, the current EU rules do not provide for a common approach on conditions for allowing extraterritorial use of numbers, and existing coordination efforts in CEPT to prevent regulatory fragmentation may not prove sufficient to comply with the requirements of the Single Market. In particular, the current draft decision¹²⁹ of CEPT raises concerns with regard to compliance with EU Law notably the requirements Article 56 of the Treaty on the Functioning of the EU concerning the freedom to provide services. Moreover, the risks of national number scarcity cannot be excluded if numbers-based M2M services become massively prevalent.

7.2.3.4. Effectiveness of the authorisation regulation area

The rationale of the authorisation provisions is to facilitate (cross-border) market entry, and therefore competition on the internal market. The provisions should therefore be evaluated in terms of their contribution to the first two specific objectives of the framework.

¹²⁸ i.e. the use of E.164 numbers of one country in another country on a permanent basis. An example is the use of SIMs for the eCall emergency service to be installed by the car manufacturer in one country, while the car owner may have residence in another country. This results in a (potentially massive) demand for extraterritorial use of numbers.

¹²⁹ <http://www.cept.org/ecc/groups/ecc/wg-nan/pt-fni/news/wg-nan-approves-draft-ecc-recommendation-on-extra-territorial-use-of-e164-numbers/>

It can be stated that the current authorisation provisions have had a positive impact on competition, given that certain difficulties¹³⁰ of entering the market have been eliminated, although the results are different per Member State and also depend on the way the rules are applied in practice.

The revised authorisation provisions aimed at harmonising the sector-specific procedures and conditions applicable to operators willing to provide electronic communications networks and services in a given Member State. The rules, while defining a closed list of sector-specific notification requirements and generally applicable sector-specific conditions, left some margin of discretion to Member States in defining the specific requirements and conditions applicable for the provision of electronic communications services and networks or specific categories of services, among those allowed by the Directive. As a result, notification systems - in place in almost all Member States - differ in terms of modalities and information requirements.

Moreover, in recent years there was some uncertainty in the application of the national notification requirements and their impact on the general authorisation systems and sector specific conditions applied in several Member States. The Commission's monitoring and enforcement action has resulted in almost all of the concerned Member States removing certain explicit establishment and guarantee/proxy requirements or abolishing additional notification requirements.

Similarly, the scope for imposing additional financial burden on electronic communications operators under the general authorisation regime has been often questioned¹³¹. With specific regard to administrative charges, EU law, as also interpreted by the ECJ¹³², limits the amount of charges that can be levied as a part of the general authorisation regime. Moreover, an analysis carried out by BEREC following input from stakeholders on obstacles in the administrative regimes for market entry and general conditions for cross-border provision of electronic communications services to businesses identified certain operational constraints affecting the authorisation regime¹³³. The results of the study SMART 2015/003 also confirm that authorisation fees may be

¹³⁰ For instance, the explicit requirement to establish or reside in a Member State of provision of services has been addressed with the current Regulatory Framework (see [Case C-475/12 UPC](#)). There have been infringement cases based on the Framework tackling the high administrative charges imposed on small undertakings which could be considered as barrier to market entry for those undertaking.

¹³¹ Six infringement cases were registered in NIF specifically concerning the application of Article 12 Authorisation Directive since its entry into force in 2002. These cases are only a fraction of overall problematic cases dealt in the context of the pre-infringement procedure at service level, where clarifications and/or amendments by national authorities may already address the concern raised by the services and prevent the opening of an infringement procedure.

¹³² Judgment - 27/06/2013 - [Commission v France Case C-485/11](#)

¹³³ BoR(11)56, including: the obligation to set-up a legal entity or to identify a contact person/address in the country of provision of service, the number and kind of supporting official documents, the kind and level of detail of supporting information to be provided concerning the company, the service and/or the network provided, the absence of on-line notification systems, the number and inconsistency of notification categories across countries, the language barriers. Other identified barriers going beyond the notification (but still relevant in setting the sector-specific conditions) concerned the lack of standardised access products for B2B needs as well as the lack of harmonisation for numbering resources/conditions, number portability, emergency numbers, legal interception and data retention requirements, data protection, customer protection rules.

inappropriately high in some Member States especially for small enterprises or new entrants.

The majority of respondents to the public consultation have indicated a need to revise several aspects of the general authorisation conditions in order to adapt to market developments (among others, level playing field with OTTs) and to reduce administrative burden and cross-border obstacles. Some respondents suggested a specific lighter regime for some categories of services (best efforts OTT, business services, small cross-border providers), while several underline that established and non-established operators should be subject to the same rules in the country of provision of services.

In view of the above, while authorisation provisions have had a positive impact on competition, at the same time the provisions have had a rather limited positive impact on the functioning of the single market. Within the limits defined by EU law, the identification and specification of notification requirements and above all of sector-specific conditions has developed along national lines and as such does not sufficiently take into account the specificities of pan-European electronic communications service providers (for example those addressing business-to-business needs) or otherwise of cross-border / multi-territorial providers that have to comply with very different requirements in each Member State.

7.2.3.5. Effectiveness of rights of way regulation

The rationale of the provisions on **rights of way** is to support (in a non-discriminatory and reasonable way) network rollout and competition across borders. Therefore, they should be evaluated in terms of their contribution to the first two specific objectives of the framework, i.e. competition and single market.

The deployment of alternative fixed and mobile networks has been made possible thanks to the provisions on rights of way on, over or under public or private land. Procedures are in place in Member States and are being streamlined with the view to reducing the timing and the administrative burden. The maximum time limit for rights of way is generally respected for the deployment of fixed networks, but the overall permit granting procedure for mobile networks generally lasts longer than 6 months. The Commission has successfully enforced the provision where competent authorities discriminated between providers (cf. C-125/09).

The actual conditions for acquiring rights of way remains however extremely variable, not only across Member States but also inside Member States, as this is in most cases a competence of local authorities.¹³⁴

7.2.3.6. Effectiveness of NRAs' regulation area

Regulatory tasks under the framework are entrusted to independent national regulatory authorities with the aim of ensuring impartial, transparent and timely decisions. NRAs are responsible for ex ante regulation and dispute settlement between undertakings, but

¹³⁴ See also the Impact Assessment conducted in view of the proposal for measures to reduce the cost of broadband rollout <https://ec.europa.eu/digital-single-market/en/cost-reduction-measures>.

also in some Member States with spectrum and numbers management and consumer issues.

Overall the provisions concerning the NRAs are considered to have been effective as far as the goal of impartial regulation is concerned. Following the 2009 review, enhanced political independence requirements apply for bodies responsible for ex ante market regulation and dispute settlement between undertakings (i.e. prohibition of instructions, protection from arbitrary dismissal, budgetary separation, and sufficient human and financial resources).

However, the provisions regarding the independence of NRAs from political interference have been rather difficult to enforce, in particular in the context of mergers between sector specific regulators and/or competition authorities pursued in some Member States in the past three years. Nevertheless, in only 2014, regulation allowing ministerial or legislative interference with NRA activity has been removed in a number of cases, and the safeguards for protection of the regulator against arbitrary dismissal have been reinforced, following enforcement action by the Commission. These developments confirm two recurring trends regarding the independence and regulatory capacity of NRAs. The first concerns the restructuring or modification of the competences of NRAs, experienced in no less than 11 Member States in the past five years, often ostensibly motivated by the pursuit of economies. The second expresses the propensity of Member States to keep or regain control of regulatory issues by either transferring back competences to Ministries (Spain) or trying to ensure a power to review (Belgium, the Netherlands) or influence the decisions of the NRA, by exercising control over its work programme (Belgium, Portugal, Slovenia) or giving it policy directions (Ireland).

The overall perception as regards the political independence of NRAs remains generally positive, according to the results of the public consultation. The notable exceptions come from Member States where the Government retains a certain ownership in the electronic communications market, where stakeholders generally plead for even stronger separation and independence requirements.

At the same time, possibly in the context of overall national budgetary constraints and consolidation, a pressure has been observed on the NRAs financial and human resources, although the NRAs' budgets are to a large extent exclusively financed by the sector in accordance with the provisions in force. Difficulties were reported in implementing the provisions regarding the adequate human and financial resources and the budgetary autonomy of NRAs. Member States have often claimed that accountability cannot be guaranteed without effective budgetary control by Member States, and that this principle is valid regardless of the financing source of NRAs.

In accordance with the principle of institutional autonomy, there is no harmonisation of tasks and attributions under the framework. While some Member States notified four to five institutions functioning as NRAs (e.g. Estonia, Denmark, Belgium, Austria) others entrusted all regulatory functions under the framework, including spectrum assignment and some end-users provisions, to one single independent NRA (e.g. Lithuania, Croatia, Germany, etc.). This leads to a situation where some NRAs are essentially only entrusted with ex ante regulation and dispute settlement, while others have much more tools to intervene in the market, especially in areas with high impact on the market outcomes. The lack of harmonisation of the NRAs competences creates inconsistent regulatory

outcomes, as well as an internal coherence issue discussed below (i.e. BEREC is expected to issue opinions on topics for which not all of its members have jurisdiction).

Finally, an element which affects the effectiveness of the provisions concerning the NRA's functioning – and also the effectiveness of NRAs regulation - is that some NRAs lack direct enforcement powers, e.g. the ability to impose dissuasive fines.

The outcome of the provisions regarding NRAs - their performance and impact on the market – is rather difficult to measure. Data exists on the number of appeals to the NRA decisions¹³⁵, but it is not considered an appropriate indicator for the quality of the NRA's decisions, among others because it rather reflects the perceived utility of the judicial review mechanism, while the performance of the latter is very different per Member State (the length of an appeal procedure ranges from 2.5 to 42 months on average¹³⁶). As regards the timeliness of NRAs' decisions, which is an important element in ensuring legal certainty, the Commission has had to investigate market review delays in a number of Member States, delays which were possibly due in part to their limited resources.

Nevertheless, the overall assessment on the NRAs performance remains positive. The public consultation revealed that most market players were satisfied with the performance of the NRAs in market regulation, with the expected divide between incumbent operators and alternative operators. The same applies to dispute resolution (regulation by litigation), which many operators prefer to ex ante regulation, although the four month deadline imposed by EU law is often not respected. The preference for dispute resolution is stronger with SMP operators who plead for a simplified version of access regulation, based on negotiations and dispute resolution.

Based on the assessment of the provisions governing the functioning of the NRAs as well as the assessment of the achievement of the objectives of the framework above, it can be stated that the NRA provisions (including their tasks, objectives and respective tools per policy area) have been supportive to the competition and consumer protection objective, yet not very supportive to the Single Market objective. It can indeed be argued that the degree of success was mainly a function of the extent to which their competences have allowed NRAs to reach the respective objectives as well as of the harmonization procedures in place (relatively more on access to networks, less on spectrum management). Finally, certain tools or mechanisms foreseen in the framework have encountered clear implementation/enforcement difficulties, e.g. cross-border dispute resolution, BEREC issuing opinions on which not all its Members are competent, etc. The respondents to public consultations have identified a number of regulatory areas in which no sufficient consistency in NRAs' activities has been achieved such as universal service, consumer protection, spectrum regulation, numbering, wholesale termination rates, wholesale access inputs for pan European business consumers, regulation of cable networks. Indeed, the EU minimum harmonisation approach towards consumer protection may be a source of inconsistencies, where some

¹³⁵ According to the Study on an inventory of case-law in electronic communications, SMART 2013/0018, only 4.87% of all decisions of the NRAs are appealed, *cf. pages 52-53. However, half of the judgments issued concern universal service rights and obligations, market regulation and procedural issues (rights of defence etc.).*

¹³⁶ Cf. Page 39 and figure 1 of the above study.

of the Member States have gone beyond the EU minimum protection. In the area of spectrum and numbering, Member States have broad leeway as to assignment conditions. While the current framework provides for certain tools to ensure consistency, the non-binding nature of Commission recommendations and the long and cumbersome harmonisation procedures are leading to inconsistencies with regard to the areas of access regulation identified above.

7.2.3.7. Effectiveness of other institutional provisions: BEREC and RSPG

BEREC

The effectiveness of BEREC's role in supporting consistent outcomes has received mixed feedback during the public consultation on the telecoms review. On the one hand many stakeholders praise BEREC's independent technical advice such as that given to the net neutrality and roaming in the context of the negotiations of Regulation 2015/2120. Some also praise BEREC's role in Article 7 process. On the other hand, BEREC's own initiative "best practice" guidelines have been considered less effective. BEREC's structure as a group of NRAs without legal personality¹³⁷ is perceived to undermine BEREC's incentives to pursue the internal market objectives as opposed to the individual or collective objectives of its national members.

Furthermore, a study for the European Parliament suggests that BEREC has fallen short of achieving its main objective of furthering the Single Market, facing criticism that "BEREC delivers verdicts based on the "lowest common denominator" or prioritizes flexibility over consistency"¹³⁸. BEREC on the other hand considers that it has significantly contributed to enhancing regulatory harmonisation in Europe, mainly via its commitment to identify regulatory best practices and monitoring their implementation by NRAs, as well as through advisory function within the market notification procedure.

The outputs of BEREC are mainly drafted by Expert Working Groups (EWG)¹³⁹ where the experts of NRAs participate in order to prepare the work foreseen in the annual BEREC Work Programme, which in the case of the Opinions issued on draft market analysis is subject to tight deadlines. The draft documents (opinions, reports...) are then discussed at the level of the Contact Network (CN), which is a group not established in the BEREC Regulation but by BEREC's own Rules of Procedure that aims at preparing the meetings of the Board of Regulators of BEREC (BoR) and of the Management Committee of the BEREC Office, and later on adopted during Plenary meetings. This process, together with the current voting rules (in most cases two-thirds majority) has enabled a good level of on-the-ground regulatory knowledge and has resulted in good level of technical advice. However, it should be noted that according to its mandate BEREC should also adopt an EU-wide approach towards the issues addressed and could thus be more focused on addressing obstacles to the internal market.

¹³⁷ BEREC Office has legal personality, the Board of Regulators does not have legal personality.

¹³⁸ Study on How to Build a Ubiquitous EU Digital Society, November 2013, IP/A/ITRE/ST/2012-09; see for example p. 100.

¹³⁹ See Art.4(7) of the BEREC Regulation.

This was indeed one of the results of the evaluation of BEREC and the BEREC Office which was carried out in 2012-2013¹⁴⁰. The evaluation study stated that BEREC tends to follow a bottom-up approach where EWGs raise issues and propose documents to the CN and the BoR and recommended that BEREC also needs a top-down approach based on discussion and prioritisation done at the BoR level. Since the first evaluation, BEREC has further developed its capacity to focus on strategic issues, e.g. by revising BEREC's strategy paper¹⁴¹ which identifies priority areas for BEREC's work and organising workshops on key regulatory challenges. However, this does not seem to be fully achieved as respondents to the public consultation have signalled the need for more proactiveness from BEREC on key topics as well as the fact that BEREC's current institutional set-up results in it often opting for greater flexibility or the lowest common denominator instead of focusing on a harmonised approach for the single market. The evaluation study also pointed out to the fact that some functions of BEREC could be better defined (for example, the advisory role).

When considering its current tasks in view of the Opinion on the Review of the EU Electronic Communications Regulatory Framework¹⁴², BEREC has identified some areas where it could play a greater role, such as through a broader scope of BEREC Opinions under Article 7 and 7a, issues of a cross-border nature (such as international roaming), benchmarking the quality of Internet Access Services at European level, notifications from operators active in more than one Member State and developing technical guidelines¹⁴³. Moreover, it should be noted that there are currently some tasks specified in the BEREC Regulation which are activated on the request of NRAs and have not been exercised (for example, the provision of assistance to NRAs in the context of the analysis of the relevant market despite the delays in carrying out market analyses/revisions by several NRAs).

The outcomes of BEREC are also to a great extent influenced by the non-binding character of its tasks, which makes it strongly dependent on the NRAs willingness to take on board the recommendations provided by BEREC. One example is the case of the termination rates which is described in section 7.1.1 and shows the limitations of the current setting and the distortions and impact in the market derived from that.

Within the context of the evaluation of the BEREC Regulation, it is also necessary to assess the alignment of the goals of the BEREC Office as an EU agency with the current EU priorities. Through its support to BEREC, the current functions of the BEREC Office should ultimately contribute to the development of the single market and the consistent

¹⁴⁰ This evaluation carried out in accordance with the requirement established in Article 15 of the BEREC Regulation: 'Study on the evaluation of BEREC and the BEREC Office' by PwC of September 2012, Commission Staff Working Document of April 2013 (SWD(2013) 152 final), which were followed by EP Report of November 2013 (2013/2053(INI), A7-0378/2013). It should be noted that the outcome of that evaluation should be treated with caution as some of the tasks of BEREC had not been carried out at that time and, moreover, the evaluation could not reflect on the aspects related to the Common Approach on decentralised agencies, which was adopted by Joint Statement of the European Parliament, the Council and the Commission in July 2012.

¹⁴¹

See http://berec.europa.eu/eng/document_register/subject_matter/berec/annual_work_programmes/4785-berec-strategy-2015-2017

¹⁴² BoR (15) 206, of 10 December 2015.

¹⁴³ BoR (15) 206, of 10 December 2015.

application of the rules. It is however quite a unique situation where an agency – the BEREC Office - was established to exclusively perform a support function for another regulatory body – BEREC - established by EU law.¹⁴⁴ Moreover, despite its relatively limited functions, the BEREC Office has to follow the same detailed set of rules that apply to all EU agencies (financial, staff/implementing rules, procurement, reporting, etc.).

In this regard, the 2013 evaluation study concluded that BEREC could make better use of the BEREC Office for both administrative and professional support purposes, especially when supporting EWGs, and that, to the extent that the regulatory framework limits the evolution of the BEREC Office, it should be considered to adapt the BEREC Regulation.

It should also be signalled that the current BEREC Regulation does not contain specific recurrent revision requirements as it is the case for other EU agencies, which would allow for a periodic check of the alignment of the agency's goals with EU priorities.

RSPG

The RSPG was established¹⁴⁵ by the Commission, following the adoption of the Radio Spectrum Decision by the Council and European Parliament, as a high-level advisory group composed of representatives of Member States - coming from NRAs and/or Ministries – and the Commission. It was set up to assist and advise the Commission on radio spectrum policy issues generally and to contribute to the development of radio spectrum policy in the Union taking into account not only technical parameters but also economic, political, cultural, strategic, health and social considerations. As part of the last review of the regulatory framework in 2009 the remit of the RSPG has been extended to cover issues such as the preparation of radio spectrum policy programmes in line with Article 8a(3) of the Framework Directive 2002/21/EC and to provide advice upon request to the Council and the European Parliament, in a strictly advisory role.

The Member States representatives in the RSPG are expected to provide technical and policy expertise coupled with a thorough knowledge of the national situation and a wider policy perspective. RSPG Opinions and Reports constitute important elements in the development and implementation of the EU spectrum policy. They also contribute to a strong basis for major legislative proposals¹⁴⁶, especially when they have addressed strategic issues upstream of spectrum assignment¹⁴⁷ and even of technical harmonisation of radio spectrum. However, the current RSPG lacks permanent senior participation from all the Member States and may therefore struggle to provide the expected high-level advice needed for the development of a common radio spectrum policy in the EU.

¹⁴⁴ This was not proposed by the Commission but was the outcome of the negotiation of the 2009 telecoms package.

¹⁴⁵ Commission Decision 2002/622/EC

¹⁴⁶ 2009 review of the Regulatory Framework, Radio Spectrum Policy Programme, 700 MHz Decision (under deliberation)

¹⁴⁷ WAPECS, digital switchover, secondary trading, substantive input on World Radiocommunication Conferences

The Reports issued by the Group include useful information about differences between Member States on the one hand and common problems and/or practices on the other necessary to develop EU approaches of spectrum usage and policy with regard to various sectors. The value of this information is at times tempered by the tendency, shown in a number of cases, for the RSPG to adopt an intergovernmental approach eager to protect national interests and resulting reluctance to address the EU internal market aspects of the topics under examination, rather focusing on national considerations (e.g. the spectrum awards mechanisms, the preparation of World Radiocommunication Conferences 2015) or to propose common or consistent solutions for Member States. There is also a trend to enter into technical details that is not appropriate for a piece of strategic advice. As a consequence, a defensive position risks prevailing over the necessary strategic technological, economic or policy choices that need to be made in relation to the establishment and functioning of the EU internal market in a period of major change in technology and of end-user needs.

The Group's outputs are often developed by only a small number of Member States with sufficient resources to invest in working group participation. As a result, these members exert a strong influence on advice provided by the RSPG. In addition, national positions regarding spectrum management may not always be fully coordinated nationally and, as a consequence, there is no guarantee that RSPG members always represent a position fully backed by their Member State.

7.2.3.8. Effectiveness of standardisation regulation area

The standardisation provisions consist mainly of promoting or indeed mandating the use of European standards, with a view to ensuring interoperability of services and improving freedom of choice for users. Therefore this policy area, primarily relevant to the development of the internal market, is also relevant for the promotion of competition and end-user rights.

The policy instruments provided by legislation have been used quite rarely by the Commission since the last amendment of the Framework Directive in 2009. There have been no changes to the list of voluntary standards and there have been no standards mandated. The Commission has only issued one mandate to ETSI, in the area of emergency call location, and it is foreseen that more standardisation effort will be needed in this area. Nevertheless it appears that the competence for the Commission to act if necessary per se might have helped promote voluntary industry consensus so far, in particular in areas with high relevance for innovation such as ultrahigh definition television, connected TV and access and interconnection products.

While it can hence be argued that this voluntary and market-driven approach to standardisation, supported by most stakeholders in the public consultation, has been effective, it is difficult to establish a definitive causal link between those provisions and the achievement of the objectives of the framework in this regulation area and therefore also to measure their impacts. Moreover, standardisation of regulated access products to fixed networks, wholesale Ethernet access product specifications for business services and reference offers for wholesale access inputs in the market for wholesale high quality access provided at a fixed location in the case of cross-border business service provision

were mentioned in the public consultation as examples of areas where a more explicit EU approach can add value.

7.2.3.9. Effectiveness of end-user protection regulation area

Sector-specific end-user protection rules complement general consumer protection and aim at a high level of consumer protection in the electronic communications sector, the third specific objective of the framework. Moreover, rules regarding contracts and switching are complementary to competition: they ensure that consumers derive maximum benefits from a competitive market: from making the right purchase, to ease of switching to other providers when desired.

Switching and number portability

The rules regarding **switching and number portability** are aimed at enabling consumers to take advantage of a competitive market.

Regarding number portability, while the implementation of the EU rules differs significantly per Member State, overall the amount of porting transactions has been increasing through the evaluation period, in particular in relation to mobile numbers, and the time needed to port numbers, as well as the associated charges, have been decreasing.

When it comes to switching more generally, the *Consumer Market Scoreboard 2016* indicates that the level of switching providers increased significantly during the past three years and is at an average of 15% of the total subscribers in mobile telephony, 13% in Internet provision and 10% for fixed telephony. These switching rates are above other subscription-based industries like electricity (10%) and gas (9%). Moreover, when measured at bundle level – considering that the majority of Internet access and fixed telephony services are bought as part of a bundle, a recent survey on electronic communications¹⁴⁸ reveals that the majority of EU households have changed bundle provider at least once¹⁴⁹ (57%, an increase of 12 percentage points compared to 2014). However, customers who did switch provider perceive ease of switching in the sector below the overall average for services in the EU. The data point to a discrepancy between ex ante expectations regarding switching mobile telephone provider and actual experience when switching provider. The market has the largest proportion of consumers among the surveyed markets who say they tried to switch provider but faced obstacles while attempting (7%). In particular, the Flash Eurobarometer 243¹⁵⁰ (*Consumers' views on switching service providers* from November 2015) indicates that from those customers who wanted to switch their internet service provider (42% of participants), 15.1% found it easy, 7.2% switched but found it difficult, 2.4% tried and gave up, and 3.6% did not even attempt to switch as they thought it might be too difficult.

¹⁴⁸ Eurobarometer Special 438 "E-communications and the Digital Single Market", fieldwork October 2015, published in May 2016

¹⁴⁹ By bundle, it is meant a service package including at least two communications services amongst fixed telephony, mobile telephony, Internet fixed and/or mobile, television channels.

¹⁵⁰ https://open-data.europa.eu/en/data/dataset/S730_243

As regards switching delays, in 2015, the average time mandated by regulations to port mobile numbers was 1,4 days while the actual time was 4,6 days. However, the delays are much higher in certain Member States. The average regulated time to port fixed numbers was 2,4 days, but this was not reflected in the actual implementation time of 10,1 days. The retail cost of porting is also different across Member States, with no charges in many Member States, and high charges in others (cf. eCommunications Report 2015).

A majority of respondents to the public consultation consider the number portability regime as working well and, more importantly, as being an effective tool to lower switching barriers for consumers through reduced lock-in effects and thus as being a crucial factor for consumer satisfaction and competition. However, operators criticised the diversity of approaches and of technical means put in place in the various Member States, pointing moreover to certain practical implementation difficulties which affect consumers (e.g. loss of service during switching).

Beyond this, to further improve the effectiveness of current number portability and switching provisions, it is essential to keep them up to date with technological and market developments. For instance, while the current porting rules only cover numbers, online content (for instance address books, chat history etc.) may also be relevant when switching services. Consumers consider it important to be able to keep phone numbers, emails *and* online content when switching providers (Special Eurobarometer 438, DATE): 89% say it would be important to keep their mobile number, 82% say this about their fixed line number, and 78% about their emails or other online content stored by their provider.

Transparency and contractual requirements

As regards transparency and contractual requirements, the Universal Service Directive provides for measures linked to transparency and publication of comparable information on prices and services by providers. As of 2015, most NRAs had adopted secondary rules to ensure transparency of information on services and prices by providers and some were operating online tools comparing prices and services. Some NRAs simply rely or accredit tariff calculators or online comparison tools available on the market. In addition, a few NRAs have implemented measures for the monitoring of expenditure and cost control by consumers.

The Universal Service Directive also provides that contracts between providers and consumers do not mandate an initial commitment period exceeding 24 months, while also ensuring that providers offer users the possibility to subscribe to a contract with a maximum duration of 12 months. These rules are correctly transposed (with one possible exception in Luxembourg), with some Member States going beyond minimum harmonisation (Denmark, Belgium, Netherlands) in imposing shorter commitment periods or in foreseeing the possibility for consumers to terminate the contract at any time subject to certain conditions. Moreover, some Member States have adopted detailed rules regarding consumer protection safeguards in case of unilateral changes to contract conditions (like Austria, Cyprus, Czech Republic, Sweden, and United Kingdom) – cf. eCommunications Report 2015.

Certain problems in implementation have been reported in some Member States with contractual conditions limiting the right to terminate a contract or entailing deactivation costs (for instance in the case of subsidised equipment or tacit renewals). Additionally, lengthy contract texts deter subscribers from reading the terms and conditions that they are signing. According to a recent Eurobarometer survey¹⁵¹, only 22% of the respondents read the terms and conditions entirely, while 40% read them in part. Notwithstanding these facts it appears that the rules on contracts and on price and service transparency have had a positive impact on those consumers who read their contracts in their entirety or in part (i.e. 62% of the respondents). More than eight in ten consumers agree that the contract had sufficient and clear information about the duration and renewal or roll over conditions, 83% of the respondents agree there was sufficient and clear information about the quality of services subscribed to and 79% agree there was sufficient and clear information about the termination of the contract. However, it should be noted that large proportions of consumers do not read the contract terms even in part.

As regards consumption control, the majority of respondents say it is easy to monitor and control their use of a range of communication services: mobile telephone (78%), fixed telephone (71%), mobile Internet (69%) and fixed Internet (67%). These percentages have evolved rapidly the past few years.

It seems therefore that the rules have been overall effective in supporting consumers to take advantage of the existing competitive situation, although the results differ per Member State.

This view is supported by the results of the public consultation, where however the majority of respondents are operators. While the overall effectiveness of the rules is acknowledged, certain providers argue against too stringent rules, pointing for example to the need for long contracts in order to secure service (and thus investments) in areas which are commercially less interesting. More importantly, the lack of full harmonisation is considered by several cross border operators and NRAs as problematic. Issues such as the cost of compliance, or cross border enforcement, are often mentioned in this respect. In contrast to this, consumer organizations think that horizontal consumer protection rules are not sufficient to address the specific issues that arise in the sector and that Member States and National Regulatory Authorities (NRAs) should keep the possibility to address country specific issues.

Moreover, market and technological developments might make it necessary to adjust rules e.g. on clarity of information in bundled offers. Indeed, services are increasingly being provided and purchased in bundled offers containing at least Internet access, voice and TV, occasionally also mobile services. The purchase of bundled communications services continues to increase – up from 38% in 2009 to 50% in 2015¹⁵².

Regarding bundles, although 69% of respondents to Special Eurobarometer 438 agree it is easy to compare services and prices offered by their current bundle with other bundled

¹⁵¹ Special Eurobarometer 438

¹⁵² Special Eurobarometer 438

offers, there are still 24% of consumers who do not yet think it is easy to do so. It should be noted that there has been no improvement in this area since the previous survey.

Quality of service

Quality of service has become almost as important as price for consumers when subscribing to communications services¹⁵³. With regard to internet access service, consumers increasingly value certain attributes related to quality of service, such as the maximum download and upload speeds and the amount of data that can be downloaded or uploaded.

Overall, despite the high adoption rate of internet fixed and mobile access service across the EU, evidence shows that European subscribers get about 75% of the advertised download speed and around a fourth of users experience difficulty in accessing content due to speed or capacity issues.

An evaluation of the performance of over 40 consumer markets still indicates that most problems and complaints are found in the telecom sector¹⁵⁴. Most end-users complaints on transparency and quality mostly relate to bandwidth restrictions experienced by customers who have subscribed to “unlimited” traffic plans, or to discrepancies between advertised and actual speeds, especially at peak hours¹⁵⁵. In at least seventeen Member States measurement tools for the quality of service are available to end-users or are being implemented, in addition to the monitoring activities of the NRAs.

While providers of traditional communication services have to comply with contract obligations on e.g. minimum quality of service levels, it should be noted that pure OTTs are not subject to sector-specific rights and obligations, even when their services are used by the end-users to cover the same or similar communications needs as the traditional electronic communications services.

The Universal Service Directive provides the possibility for Member States to adopt secondary rules aimed at ensuring a certain minimum quality of service and transparency in this respect. Minimum quality of service standards is set in 8 Member States and mostly for specific services (broadband speed, call centre services etc.)

Rules on internet access have been amended by the recently adopted Regulation (EU) 2015/2120 which lays down measures concerning open internet access, strengthens transparency requirements and empowers national regulatory authorities inter alia to impose minimum quality of service requirements with regard to internet access service. The effectiveness of the amended rules which entered into force as of 30 April 2016 only is not part of this evaluation.

Out-of-court dispute settlement

¹⁵³ Special Eurobarometer 438

¹⁵⁴ Consumer Markets Scoreboard 2016

¹⁵⁵ BEREC's ECODEM report, June 2015

Finally, as regards out-of-court dispute settlement, the majority of national regulatory authorities stated that Article 34 USD was useful in enabling end-users to resolve complaints in a quick and easy way and to avoid legal battles. However, several problems were mentioned regarding its implementation: the high number of complaints versus the limited dedicated resources available to solve them, the awareness raising regarding the existence of an alternative mechanism to resolve disputes with electronic communications providers, hesitation with respect to a system of reimbursement /compensation etc.

7.2.3.10. Effectiveness of provisions on universal service

With the opening of the telecommunications market to competition there was a need to provide safeguards for those circumstances where competitive market forces alone would not satisfactorily meet the needs of end-users.

The objective of the universal service rules under the EU regulatory framework [Universal Service Directive 2002/22/EC (USD)] is to make available a minimum set of electronic communications services at a specified quality to all users independently of their geographical location and, in the light of specific national conditions, at an affordable price, while minimising competition distortions. The three characteristics of the current universal service concept include availability (i.e. the services should be made available to all users in a territory, regardless of their geographical location), affordability (i.e. the services should be made available at an affordable price) and accessibility (i.e. disabled users should enjoy services which meet their needs and are of an equivalent standard to those enjoyed by other users). In that sense, universal service provisions are aimed at ensuring a minimum service or a safety net for those citizens/areas which will not be catered for by market forces alone and as such they should be assessed against the third objective of the framework, namely to ensure citizens' protection where needed.

Currently the Directive includes four elements within the scope of the universal service: access at a fixed location and publicly available telephone services ("PATS"), a comprehensive directory, a directory enquiry service, and public payphones. However the provisions leave significant flexibility to Member States as to which services should be included or excluded from the scope of universal service obligations as well as regarding the practical implementation mechanisms (including financing). Further measures can be adopted by Member States in view of achieving access for disabled users (discussed below) and affordability for low income users.

Universal service obligations have been imposed wherever national governments established that there was a risk of social exclusion, that the market alone was not providing basic electronic communications services to all. As no EU level data exists on the incremental increase of coverage or services use due to the universal service obligation (i.e. those citizens that would have been excluded by market forces and have access to minimum services due to universal service) the best proxy to measure effectiveness is to look at whether and how Member States have used the universal service provisions.

The results of the public consultation show that the majority of Member States and regulators agree that universal service has been effective in safeguarding end-users from

the risk of social exclusion while most of the operators see little or no impact, without having provided any quantification. Proponents of universal service argue that the availability of certain basic services increased and that services became affordable and accessible to all. Opponents claim that (1) the universal service regime has become rapidly out-of-date (2) the high level of competition for fixed and mobile services ensures the affordability of tariffs and not the regulatory obligation.

While the actual *use of the mechanism* by the Member States and of the services by the citizens points to the effectiveness of the provisions, the actual *use of the services* in practice depicts a different picture. A study on the review of the scope of universal service¹⁵⁶ shows that (1) access to a network at a fixed location and publicly available telephone services (PATS) are both widely used and available in general, **irrespective of any universal service obligation**; moreover citizens have increasingly moved to mobile telephony¹⁵⁷ and (to a lesser extent) to voice over IP in order to use PATS equivalent services. These are nearly universally available and affordable for most consumers; (2) directories and directory inquiry services are used regularly but their provision does not seem linked to a universal service obligation. Availability of the same information through the internet is a further competitive alternative¹⁵⁸; and (3) the use public payphones¹⁵⁹ is in a steep decline.

Therefore, while it can be concluded that the provisions have been effective in ensuring the availability of PATS, directories and payphones (though the relevance of the latter two seems diminishing in view of their low and declining use), it is important to note that the availability is to a large extent ensured by the market. The services are considered affordable for most of the consumers¹⁶⁰. As regards PATS, Member States can guarantee access for users with special needs via social tariffs. The most common criteria for social tariffs are those with low incomes (Austria, Croatia, Cyprus, France, Italy, and Slovenia) and people with disabilities (Bulgaria, Croatia, Cyprus, Denmark, France, Italy and Slovenia). A monthly social tariff varies between €5 and €12 per month.

For data communications at data rates that are sufficient to permit functional Internet access, fixed connections are nearly universally available and used by a majority of citizens across the EU¹⁶¹ and in all individual Member States. However there are still differences between Member States when examining availability and affordability of fixed broadband across urban and rural averages. Despite declining hardware costs for

¹⁵⁶ Review of the Scope of Universal Service, SMART 2014/0011

¹⁵⁷ According to Digital Scoreboard 2015, mobile penetration exceeds 100 subscriptions per 100 citizens in all Member States.

¹⁵⁸ Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011, pp. 38-42.

¹⁵⁹ A Eurobarometer survey in 2014 reported that 88 per cent of citizens across the EU reported that they had 'never used as public payphone'; comparison with earlier surveys showed that the number of non-users has increased year on year across the EU.

¹⁶⁰ As an indication of affordability, the study on the review of the scope of Universal Service (SMART 2014/0011) concludes that 2010 in EU27 Member States the cheapest annual telephone subscription constituted 1.95% of disposal income.

¹⁶¹ Digital Scoreboard (2015): Fixed broadband access to the network (i.e. incorporating XDSL, cable (basic and NGA), WIMAX and FTTP) is nearly universally (96,1 % across the EU). When expanding the definition to also include satellite, broadband availability is ubiquitous. Fixed broadband is also very widely used (70% of households across the EU, and above 50% in every Member State)

computers and tablets and decreasing costs for broadband subscriptions¹⁶² some users are still not able to afford a broadband package. On average in EU28 Member States, in 2015, 24% of households without an internet subscription, believed that subscription costs are too high to subscribe.¹⁶³ Furthermore, broadband take-up tends to be lower in Member States where the cost of broadband access accounts for a higher share of income.¹⁶⁴ The risk of social exclusion when affordable broadband internet is not available is increasingly real, considering the fundamental role of broadband internet in society as an enabler of communication, social interaction, participation in cultural events, and access to key services such as e-government, e-banking and health care.

On the other hand, a decreasing use of some of the provisions and of some of the services that fall within the Directive as illustrated above would point towards the decreasing relevance of some of them. Indeed, the concept of universal service was shaped in the early stages of liberalisation and since then market conditions have drastically evolved, with more competition and choice available to consumers. Technological changes have also changed the relevance of the elements under the scope of universal service obligations.

As regards the use of the universal service mechanism by the Member States, in the last decade, there have been 31 withdrawals of a universal service obligation in relation to an entire component of the universal service in a Member State, meaning that those Member States now rely entirely on the market to supply these components. Eleven of the 31 components concerned the comprehensive directory enquiry service, nine were comprehensive directories, eight were public payphones and three were the provision of access to a network at a fixed location and PATS. Looking at trends over time, 26 of the withdrawals took place after December 2010.

Today, only seven Member States have established a universal service obligation in their country for all four components falling within the scope of the Directive (Bulgaria, Croatia, Greece, Lithuania, Portugal, Slovenia and the UK). The remaining 21 Member States rely on the market spontaneously meeting demand for one or more components.

At this moment a universal service obligation in relation to the provision of access to a network at a fixed location and PATS exists in 22 Member States; the number is significantly lower for comprehensive directories (15 Member States), public payphones (13 Member States), and comprehensive directory enquiry services (10 Member States).

The Universal Service Directive requires that the connection to a network at a fixed location should enable 'data communications at data rates that are sufficient to permit functional internet access, taking into account prevailing technologies used by the majority of subscribers and technological feasibility'. Fifteen Member States have defined functional Internet access in terms of clear data rates (download and/or upload speeds); of which six met or exceeded a data rate of 1 Mbps (1Mbps in Belgium, Croatia, Finland, Spain and Sweden; and 4Mbps in Malta).

¹⁶² European Commission. 2014. Broadband Markets: Digital Agenda Scoreboard. Page 26

¹⁶³ Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011

¹⁶⁴ Europe's Digital Progress Report 2016 - Connectivity

As regards universal service obligations concerning accessibility measures¹⁶⁵ for disabled end-users, 23 Member States have specific requirements in place to respond to the needs of disabled users, only 5 Member States have not (Estonia, Latvia, Luxembourg, Romania and Sweden). In 11 Member States such requirements are implemented through the universal service obligations. It is worth noting that in four Member States all undertakings are obliged to provide special requirements to disabled end-users and that in the UK all fixed and mobile communications providers have to access to a text relay service approved by the NRA¹⁶⁶.

With respect to the results of those measures on the ground, the access for persons with disabilities remains however inadequate. The study *Assessing and Promoting e-Accessibility*¹⁶⁷ concluded that “the revised EU Directives seem to have provided a stimulus for [equal access and choice for persons with disabilities] in a number of the countries, (...) there remains much room for improvement of telecoms accessibility across Europe as a whole, in regard both to equivalence of access and equivalence of choice for users with disabilities”. One of the biggest problems in terms of efficiency is the great variation across Member States in terms of the measures put in place and the quality of those. According to one of the conclusions of the study mentioned above is that “better results seem generally to be achieved where there are specific obligations imposed in legislation and/or by the regulators”. According to the draft BEREC report “Update of the report on equivalent access and choice for disabled end-users”¹⁶⁸, only 14 out of 28 National Regulatory Authorities (NRAs) limit the actions concerning persons with disabilities to Universal Service Obligations, while 13 answered that additional measures¹⁶⁹ were adopted for other services and service providers. Relevant stakeholders suggest for instance that there are some measures that could be addressed by the EU legal framework in order to live up to the expectations and rights of persons with disabilities.¹⁷⁰ Consequently, in December 2015 the Commission adopted a Proposal for a Directive on the approximation of the laws, regulations and administrative provisions of the Member States as regards the accessibility requirements for products and services¹⁷¹.

¹⁶⁵ BEREC Questionnaire on implementation of universal service obligations (2014)

¹⁶⁶ However, there is no equivalent access available in Member States, in particular for emergency services. For a description of divergent solutions implemented across the Member States, please see the Impact Assessment accompanying Commission's proposal on the European Accessibility Act (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2015:0264:FIN>).

¹⁶⁷ The study is known as MeAC 3 (<http://ec.europa.eu/digital-agenda/en/news/study-assessing-and-promoting-e-accessibility>.) It was funded by the European Commission and published in November 2013.

¹⁶⁸ It was published by BEREC in October 2015 (http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/5418-update-of-the-report-on-equivalent-access_0.pdf)

¹⁶⁹ The most common actions address directory enquiry services and directories, equipment, public pay telephones, information, special tariffs, accessible billing, emergency services and relay services.

¹⁷⁰ Based on the response of the European Disability Forum to the public consultation on the regulatory framework.

¹⁷¹ Proposal for a Directive of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States as regards the accessibility requirements for products and services COM(2015) 615 final, 2.12.2015

7.2.3.11. Effectiveness of provisions on 112, 116

The European emergency number 112

The Universal Service Directive provides that access to emergency services through the European emergency number 112 must be ensured all over the EU. As regards access to 112, evidence collected throughout the work of the Communications Committee suggest generally effective implementation.

In addition to access, the framework also entails requirements as regards awareness-raising, caller location and accessibility.

In this regards, while awareness of the 112 number has increased slowly but constantly, there is still room for improvement. According to a recent Eurobarometer survey (Special 438, dated November 2015), 61% of the respondents would call 112 if they had an emergency in their country, while 46% correctly identified 112 as the single number to call throughout the EU.

Difficulties in implementation have been reported in relation to the lack of implementation of caller location accuracy and reliability requirements by Member States. The caller location accuracy criteria adopted by Member States are below the accuracy of the currently available technical solutions, leading to a situation where in spite of technical developments in this area, the effectiveness of the call remained the same in the past 10 years. The extent of this issue has however not been measured. Since the Directive entrusts the imposition of the caller location and accuracy criteria exclusively to Member States, enforcing more effective criteria under the current framework has not been possible.

Implementation of the obligations on equivalent access of disabled people to emergency services has also been less effective¹⁷². In terms of accessibility, equivalence of access is ensured with SMS communication. However, more evolved video and messaging systems (Web Real Time Communication) are currently available to ensure higher level of equivalence of access to emergency services.

In the public consultation, the telecom industry highlights the importance of reliable access to emergency services that, in view of the technical standards and legal arrangements in place today, can be provided today only through ECS. However, they argue that access to 112 obligations should be imposed on OTTs as well, if technically feasible. A large number of stakeholders consider that, although it would not be technically feasible to subject all OTT services to the obligation of providing access to emergency services, all the voice services perceived by the users as substitutive to the current PSTN voice service and which also give access to E.164 numbers (like Skype out, Viber out) should be subject to the same obligations regarding the access to emergency services. This suggests that the current 112 provisions need to be fitted for Internet-based voice communications services that give access to numbers.

The services of social value 116

¹⁷² COCOM 112 implementation report <https://ec.europa.eu/digital-agenda/en/eu-actions-112>

The main provisions governing 116 numbers are enshrined in the 116 Decision (2007/116/EC)¹⁷³. The 116 Decision laid down the rules on the scope and reservation of 116 numbers and their assignment to operators. An Annex to the Decision lists the numbers themselves. This annex was then replaced by two successive 2009 decisions. These decisions were based on telecom rules on the harmonisation of numbers to promote pan-European services (Article 10(4) of the Framework Directive).

In addition, Article 27(a) of the Universal Service Directive requires the EU Member States to promote the specific 116 numbers, ensure that disabled end-users are able to access the 116 numbers; ensure that citizens are adequately informed of 116 services, in particular targeting persons travelling in the EU and finally guarantee that citizens have access to a missing children hotline under the number 116000.

The Commission regularly publishes on its dedicated 116 Website¹⁷⁴ a report on the implementation of the 116 numbers. Currently some of the numbers are not taken up at all, while the total numbering range (consisting of five numbers) is used at about 50%. In June 2016, the last remaining Member State, Finland finally implemented 116000. Thus following bilateral exchanges with some Member States¹⁷⁵, a flagship promotion project coordinated by the Commission and funding provided directly by the Commission¹⁷⁶, the missing children hotline is now operational in all Member States throughout the EU. Nevertheless, despite these efforts, the Eurobarometer studies carried out in 2011¹⁷⁷ and 2012¹⁷⁸ revealed very low awareness, among citizens, despite the manifest interest about the services provided under the 116 number. These results suggest that the provision in Article 27a has not been very effective, which in turn either requires reinforcing the provision or alternatively raises the question for the need to maintain it.

7.2.3.12. Effectiveness of provisions on security and integrity of networks and services

The provisions on security and integrity of networks and services aim mainly at ensuring the continuity of supply of services provided over electronic communications networks and require operators to notify the competent national regulatory authority of breaches of security or loss of integrity that have had a significant impact on the operation of networks or services.

Before the introduction of rules on network and service security (covered in Art.13a and 13b of the Framework Directive) in 2009, the situation across Member States was highly divergent: some Member States had no relevant rules while others had advanced measures in place. In that sense, the overall situation in the EU has improved significantly as currently rules are implemented in all Member States, leading to a generally higher level of protection for European end-users.

¹⁷³ Commission Decision 2007/116/EC of 15 February 2007 on reserving the national numbering range beginning with 116 for harmonised numbers for harmonised services of social value, OJ L 49, 17.2.2007

¹⁷⁴ <https://ec.europa.eu/digital-single-market/en/116-your-country>

¹⁷⁵ http://europa.eu/rapid/press-release_MEMO-11-337_en.htm

¹⁷⁶ http://europa.eu/rapid/press-release_MEMO-13-453_en.htm

¹⁷⁷ For Special Eurobarometer 367 on Harmonised numbers for services of social value -116 please see: http://ec.europa.eu/public_opinion/archives/eb_special_379_360_en.htm#367

¹⁷⁸ For Special Eurobarometer 387 on harmonised numbers for services of social value – 116, please see: http://ec.europa.eu/public_opinion/archives/ebs/ebs_387_en.pdf

Indeed, an Impact evaluation on the implementation of Article 13a led by ENISA¹⁷⁹ (the European Union Agency For Network And Information Security) and published in 2015 shows that the rules brought a certain amount of uniformity in the approach taken regarding security of telecommunication services, but more importantly contributed to strengthening the European telecom infrastructure's resilience and services availability across the EU. According to the consulted parties Article 13a definitely helped reduce the risk related to infrastructure resilience through reporting and learning, the main benefits being noted in the areas of incident management, operation management, security of systems and facilities, business continuity management, and governance and risk management¹⁸⁰. A similar result emerged as well from another survey of opinions among ENISA and national regulatory authorities.

While quantitative data about the incidents reported may be interpreted in different ways (an increase in the number of incidents reported may be read as either a sign of greater responsiveness from operators or as a sign of lesser security), some qualitative elements appear to support the respondents' opinions. First, ENISA's State of Play document on the implementation of Article 13a¹⁸¹ shows that virtually all Member States have transposed Article 13a into national legislation and in several cases developed specific guidance on security measures where none existed before. Second, within the framework of Article 13a, national competent authorities met on a regular basis in the Art. 13a Expert Group, an information exchange group especially created in this context by ENISA. During these meetings, NRAs shared their point of view, experiences and thoughts about Art. 13a requirements. According to ENISA, this group had a critical role in federating NRAs during and after the implementation process. Third, ENISA issued, in cooperation with NRAs, a number of guidelines on the application of Article 13a (e.g. on security incident reporting, on security measures, on threats and assets), which greatly contributed to a consistent implementation of Article 13a requirements. While these documents are not binding they constitute an authoritative reference for NRAs and operators in implementing and applying Article 13a in practice.

The above cited ENISA report showed that over 80% of the surveyed NRAs declare that they are satisfied with the level of harmonization within the EU.¹⁸² However, significant differences in approaches of Member States have persisted even after the 2009 reform. More than a fifth of the respondents in the public consultation (mainly telecoms operators and equipment vendors) put forward that the rules have not brought about sufficient harmonisation across Member States. For example, although all Member States have implemented mandatory incident reporting for service disruptions on electronic communications providers, such reporting does not necessarily cover the same types of networks and services, implying that the incidents reported might differ according to the type of network or services concerned and cannot possibly be the same throughout all Member States.

Moreover, just over half of the respondents to the public consultation consider that the objectives of the rules have been achieved, and can be credited to the provisions. The

¹⁷⁹ <https://www.enisa.europa.eu/activities/Resilience-and-CIIP/Incidents-reporting/studies/impact-evaluation-article13a>

¹⁸⁰ <https://www.enisa.europa.eu/activities/Resilience-and-CIIP/Incidents-reporting/studies/impact-evaluation-article13a>, p. 18.

¹⁸¹ https://resilience.enisa.europa.eu/article-13/state-of-play/Art13aStateofPlay2015FinalDraftv_2.pdf

¹⁸² Ibidem, at p. 37.

lack of effectiveness of the provisions would mainly relate to the addressees of the security obligations, which currently cover only electronic communications providers. Other parties in the value chain such as equipment manufacturers, which have a key role in the resilience of the infrastructures, are not covered by the provisions. More than a third of the respondents (including many of those who consider the rules as efficient) underlined the need to involve the complete Internet value chain (including OTT services, software and hardware) in order to better achieve the objectives of the measures. It therefore seems that end-user interest may require applying those security obligations to all types of communications services regardless whether supplied by traditional providers or not.

Furthermore, in accordance with the ENISA survey document, more than a third of the NRAs have reported difficulties with monitoring and enforcing the rules, once transposed, also mentioning in some cases limited cooperation from operators. Moreover, reinforcing cross-border collaboration in the field appears to be necessary too, according to the impact evaluation results. However, it is difficult to say to what extent these difficulties have had an impact on the security of networks and in ultimately on the quality and continuity of the services provided. Providers deal with some external risks that cannot be controlled nor prevented by an increase of the security measures. Such risks mainly include environmental risks and malicious actions. As such it becomes difficult to measure direct benefits attributed to Art. 13a¹⁸³.

7.2.3.13. Effectiveness of provisions on must carry & findability

Must carry and findability rules aim at ensuring that channels of high public interest are broadcasted and receive sufficient prominence by electronic communications providers, while avoiding unreasonable burden on the latter.

Most Member States have adopted “must carry” regulations in their national legislation. In most cases, public service broadcasters and/or local/regional broadcasters are included under “must carry” rules. In a number of countries, additional requirements are also set so that all terrestrial free-to-air channels, including private non-public service broadcasting¹⁸⁴ channels are also covered.

At Member States level, there is considerable variation¹⁸⁵ in the regulation of arrangements between broadcasters and network operators in terms of who covers the costs of transmission of content. In many cases, zero payment (i.e. neither broadcasters, nor platforms receive payments) agreements have been reached between the involved parties, although significant variation exists. Although in some Member States (e.g. Ireland, Hungary), the number of channels covered by “must carry” rules continues to grow, elsewhere the trends are reversed. In most MS “must carry” refers to linear services.

A number of Member States have regulations on presentational aspects of electronic programme guides (EPGs). Typically, EPG regulation establishes general principles on

¹⁸³ Ibidem, at p. 16.

¹⁸⁴ This can include even shopping TV channels, see ECJ Case C-336/07

¹⁸⁵ As provided for in Art 31(2) of the Universal Service Directive 2002/22/EU

fairness and non-discrimination. These provide a backstop against low prominence of public service broadcasters, rather than to stipulate their specific position on the EPG. With the exception of Greece¹⁸⁶, Commission services are not aware of cases where Member States have imposed obligations on operators to provide access to EPGs under Article 5.1.b of the Access Directive. While it is difficult to measure directly the effectiveness of regulation against the general interest objectives of media pluralism, freedom of speech and cultural diversity both from a methodological point of view and in quantitative terms there are indirect indications as to the effectiveness of the measures in place.

Despite the wide use Member States have made of their competences¹⁸⁷, there have been no major complaints from stakeholders brought to the attention of Commission services since the last amendment of the relevant EU legislation in 2009. Also in the public consultation only a few cable and telephony network operators call for a complete removal of "must-carry" rules.

The effectiveness of the rules has nevertheless evolved as viewers increasingly use OTT services on smart TVs and smartphones/tablets and traditional TV channels represent a declining (while still dominant) share of audio-visual consumption patterns. At the same time, the mission of public service broadcasters increasingly extends into the online world and includes non-linear audio-visual services. It can be noted that OTT services are not covered by 'must-carry' obligations.

While there is a majority view that transmission obligations imposed on electronic network operators ('must-carry' rules) and rules related to electronic programme guides should be adapted to new market and technological realities, there is sharp disagreement how such adaptation should be conceived. Extension of current rules is supported by most broadcasters whereas most telecom operators are in favour of reducing the scope of the rules.

7.3. Efficiency

Do the provisions of the framework allow for an efficient implementation by Member States? Do they create overly burdensome obligations for the main stakeholders of the framework? How do the results compare with the costs?

7.3.1. General remarks

This section examines if the costs involved in implementation of the regulatory framework are reasonable and in proportion to the results (benefits) achieved. The evaluation of costs included examining evidence of any unnecessary administrative burden placed on businesses and citizens. The evaluation of benefits not only considered evidence about achieving the objectives of the framework but also the higher level

¹⁸⁶ The Greek NRA has imposed only very generic conditions requiring fair, reasonable and non-discriminatory terms.

¹⁸⁷ See study "Access to TV platforms: must-carry rules, and access to free-DTT" by the European Audiovisual Observatory, December 2015, available at [http://www.obs.coe.int/documents/205595/264629/Must+Carry+Report+\(Dec.+2015\)/bb229779-3fb2-488d-9c0e-d91e7d94b24d](http://www.obs.coe.int/documents/205595/264629/Must+Carry+Report+(Dec.+2015)/bb229779-3fb2-488d-9c0e-d91e7d94b24d), pp. 23 and individual country reports pp. 53

impacts – the benefits for people and the economy. As explained in Section 5, the evaluation faced some inherent limitations with regards to the quantification of costs and benefits at EU level.

As a preliminary remark, it should be noted upfront that analysing the efficiency of EU legislation implies assessing to what extent the resources consumed compare to the positive changes induced by it. Assessing costs and benefits with precision at EU level can be difficult since obtaining robust, good quality data to use in the evaluation of costs and benefits is a challenge, particularly across 28 Member States which may have implemented legislation in a variety of different manners and themselves either apply limited costs/benefit data collection or do so in different ways.

The regulatory framework for electronic communications is no exception. The regulatory framework is to a large extent consisting of minimum harmonization. It relies on the use of an ample and flexible toolbox that NRAs will apply to specific circumstances. While procedures aimed at ensuring consistent outcomes exist for certain policy areas, they each have different degrees of complexity and possible impact. Generally speaking, the result is that the actual administrative costs are dependent on the solutions adopted in each Member States. In principle, this flexibility may allow for cost optimization for national administrations (but also for adding up requirements and thereby costs). On the other hand, it makes a precise quantification of the burden induced by the EU regulatory framework particularly challenging.

While actual cost calculations are missing, it remains useful to briefly map the main types of costs, burdens and benefits that the regulatory framework creates, which have been considered in the assessment below.

Direct costs for operators include administrative charges, calculated by NRAs within the limits established by the framework, and compliance costs. Compliance costs in turn include the costs of managing regulatory proceedings e.g. responding to market analyses questionnaires, reacting to draft analyses, submitting tariff calculations, making reference offers, participating in spectrum auctions, putting in place and managing IT systems and administrative procedures in relation to data protection, number portability, reporting security incidents, etc. They also include costs such as the development and management of regulated products on wholesale and retail level (administration of contracts and billing, change in processes), regulatory accounting and regulatory reporting, compliance monitoring of regulatory obligations etc. It should however be noted that, for incumbent operators - some of these latter costs coincide with transaction costs, i.e. both the incumbent and some (well established) alternative operators earn profits from offering access to their networks.

It is also important to note that some of the compliance costs are borne by virtually all operators (e.g. number portability, roaming, consumer protection) others apply only to specific operators such as incumbents and universal service providers. Incumbent operators refer moreover to hassle costs, such as the loss of agility and the impossibility to make swift strategy changes due to regulation and to the impact of regulation (e.g. through the regulation of wholesale prices) on revenues and thus investment capacity.

To illustrate the difficulty of calculating the administrative burden, the following paragraph presents the inputs given by operators during the review public consultation as regards the direct costs of applying the regulatory framework. Absent a common methodology, the differences in figures are striking and therefore the results unreliable. At the lower end of the range, small alternative players estimate it at 2 000 euros per year, while medium-size operators at a few hundred thousand euros. Large international operators evoke few million euros covering regulatory staff and compliance costs, cost control system, separate wholesale access system, mandatory fees, quasi compulsory external expenditure, etc.¹⁸⁸ At the higher extreme, one cross-border operator quotes 51,2M € as compliance costs, while a large mobile operator quantifies the "regulatory impact" at -318M € on EBIDTA and at -916M € on revenues.

While it may seem at times that alternative operators are on the winning side of the cost-benefit ratio, as incumbent operators bear most of the costs, it is important to recall that incumbents are also the ones which benefit most from having a stable regulatory framework across the EU, as incumbents from one Member State often become alternative providers in other Member States. Conversely, many operators, in particular incumbents, indicated during the public consultation that the flexibility granted to Member States by the regulatory framework for electronic communications affects legal certainty/predictability of the regulatory outcomes, thus leading to high compliance costs and to a certain extent also deterring investments.

The costs for national administrations include the costs of monitoring and enforcing the provisions, translating in personnel costs, and in the case of specific obligations, costs for IT systems – while the latter is not required by the framework itself (e.g. costs of databases for number portability, tools for quality of service, systems for monitoring network and service security). It should also be recalled that the tasks which NRAs are attributed under the framework are financed to a large extent by the industry rather than by public budgets, via administrative charges, and that while operators suggest various distribution keys for administrative charges, they are in general supportive of a well-functioning regulator.

These costs are to be compared with benefits associated with the framework.

First, it should also be noted that the framework, while seeking to maximise consumer benefits, generally protects operators from over-regulation (see discussion per area below e.g. dominance of SMP-based regulation, administrative charges, must carry rules). Then, an important category of alternative providers depends on regulation to participate to the market (e.g. regulated access to networks).

As far as end-user benefits are concerned (which comprise a very large part of the society), the previous section underlined the advances in competition, single market and end-user protection, assumed to be to a large extent due to the framework. During the same period the sector, as regulated under the framework, generated important end-user

¹⁸⁸ Ecotel communications, OSC, etc. refer to 2 000 euro; Stokab to 300.000 euro, Eurofiber between 200.000 and 300.000 euro; Portugal Telecom between 2 and 8 million euro, TDC to 4 million euro, Colt to 4 million euro, Vodafone to 6 million euro.

benefits – an important growth in fixed and mobile broadband coverage and take-up¹⁸⁹ and a significant drop in prices, to name just a few.

About a third of the respondents to the public consultation and in particular alternative operators and consumer organisations underline that consumer choice and more affordable offers and other clear consumer benefits would not exist without the regulatory framework and that regulation, while at times burdensome, is necessary and proportionate.

Besides market efficiency and end-user benefits, the framework is considered to create important societal benefits, given the growing importance of ICT for the entire society and economy (e.g. productivity gains, reduced social divide, increased well-being through e-government, e-health, e-learning, etc.).

The section below assesses the efficiency of each regulation area.

7.3.2. Efficiency of regulatory areas

7.3.2.1. Efficiency of access regulation area

The market analysis process (completed by the procedures aimed at ensuring consistency on the internal market) is generally praised by NRAs and by alternative operators as producing results which are generally "fit for purpose". In particular, while not providing many concrete examples, all alternative operators responding to public consultation stated that the current system works well and provides appropriate regulatory tools. However, the incumbent operators have criticised the system, via the public consultation, for being complex, lacking predictability (and hence discouraging investment), or even being too intrusive, as well as by some alternative operators who highlighted high administrative costs, without however quantifying them. This makes the access regulation area one of the most "popular candidates", among respondents to the public consultation, for simplification, reduction of administrative burden and associated costs. At the same time, as has been discussed in section 4.2.2.1 above, the consistency of market access regulation, in particular with regards to remedies, can be enhanced by an improved governance structure.

As regards complexity, respondents unanimously agree that certain mature markets, such as the fixed and mobile voice call termination markets, do not require the current complex and lengthy market analysis process, which can often lead moreover to divergent results as to the level of rates across EU. Instead they propose a simple European instrument (Regulation or Decision) setting uniform rates for voice termination. The evaluation of the access regulation area shows that there might be some room for simplification in this respect, more precisely, that the costs of regulation for

¹⁸⁹ Fixed broadband coverage went up from 86.9% in 2005 to 97% in 2015. Fixed broadband take-up went from 24.9% in 2005 to 72% in 2015. NGA coverage started at the same time as elsewhere in the world and delivered coverage similar to that of digital world leaders. Mobile broadband coverage evolved from 74.4% in 2005 to 97.6% in 2015. Mobile broadband take-up went up from 13% in 2008 to 75.3% in 2015. Finally, and importantly, prices dropped considerably during the evaluated period: while the usage increased significantly, the share of telecom expenditure as percentage in the household expenditure went from 2.9% to 2.5%.

very stable markets could be reduced without endangering the associated benefits. However, as indicated by Member States, NRAs and most alternative operators, in many cases a certain level of complexity of market analysis procedures is necessary in order to obtain solutions which are effective, proportionate and appropriate to the problems identified.

A certain level of unpredictability is surely inherent to the system, in the form of some NRA discretion, in exercising economic judgments (market definition, market power) and in adjusting remedies to ensure that they are proportionate to the market circumstances. Such flexibility may jeopardise EU consistency hence the need for NRAs to exercise their discretion with care and the need for an EU-level consistency mechanism as a counterweight. Moreover, a certain level of uncertainty may be due to the periodicity of the market reviews. Indeed it is important to conduct a market analysis on a regular basis and within a reasonable and appropriate time-frame, so as to avoid any over- or under regulation not appropriate to any changed competitive conditions. However, compliance of NRAs with their obligation to review relevant markets in three-year intervals remains an issue in a large number of Member States, and while this has been closely followed up by the Commission with appropriate enforcement action where needed, it gives rise to reflection about the resource intensity of the current cycle. In March 2016 delays in market reviews were registered in 13 Member States, with nine of those considered to be severe delays. In that sense, when defining the appropriate level of complexity in access regulation, careful analysis must be made, taking into account the possible trade-off between efficiency (in the form of a stable and cost-effective regulatory regime) and effectiveness (an access regime which is fit for purpose). It appears therefore that there could be some room for simplification by way of simply prolonging the intervals at which market reviews should be conducted by NRAs.

Minimising the burden of regulation also implies that regulation is not put in place, or maintained, should it not be strictly necessary. As regards intrusiveness, incumbent operators consider, as argued in the public consultation, that the full set of access remedies is often imposed by NRAs mechanically, without cost/benefit assessment and without adjustments according to actual problems identified. They even claim that for some of the actual access products imposed there is actually no market demand. Incumbents are thus advocating a strong de-regulatory push in the name of changed market dynamics and the risks involved in future investment plans (e.g. one access product if at all necessary). Alternative operators argue, on the contrary, that a wider variety of access products is needed to preserve the competition gains achieved so far. While the arguments of the incumbents and alternative operators are understandably opposing, the proportionality of the imposed remedies is in practice always assessed by the NRAs, as well as it is scrutinised by the Commission in the process of consultations (so called Article 7 mechanism), and ultimately by the courts.

Finally, consistent access regulation on the single market is also an element with impact on the operational costs (compliance and monitoring of regulatory obligations, management of regulatory proceedings, etc.) for providers active across several Member States. Larger (especially alternative) operators underline the value of having a stable, predictable regulatory regime covering 28 Member States.

It should be concluded, following the European Parliament's Study 'How to Build a Ubiquitous Digital EU Society'¹⁹⁰, that while detailed requirements involved in analysing markets and applying remedies on the basis of SMP are comparatively complex and time-consuming for NRAs compared with more "mechanical" approaches (e.g. symmetric access regulation imposed on all operators), these complexities to a large degree result from the need to tailor regulatory intervention to specific national or sub-national markets and to avoid inappropriate regulation. Relatively high administrative burden may therefore to a significant degree be a result of the design of the access regime, which is concluded to be largely fit for purpose.

7.3.2.2. Efficiency of the spectrum regulation area

As regards efficiency in respect of bringing spectrum to market, the costs that operators face when seeking to obtain authorisation to use spectrum resources can be traced to three major components under the framework. The first and most evident cost element governing access to spectrum consists of the auction commitments or fees directly linked to the right of using the spectrum resource. The framework requires fees to be transparent, objectively justified, non-discriminatory and proportionate relative to their intended purpose, while taking account of the general framework objectives, and to ensure optimal use of the spectrum. While the imposition of fees is facultative in nature, they are generally applied in the spectrum domain. The need to guarantee optimal use together with the lack of framework-inherent valuation criteria or methods has given rise to substantial variation in the fees imposed. While such variations can be due to several factors, not always explained by different national circumstances, they do not prove helpful for efficiently achieving the framework objectives of promoting competition and developing the single market. Since the fee types are not harmonised either, some jurisdictions apply several fees in relation to the same spectrum usage rights and/or based on different criteria.

Second, as regards the institutional framework, technical harmonisation at EU level appears overall to work fairly efficiently. Some may consider the whole process to gain access to harmonised spectrum through CEPT and the Radio Spectrum Committee as overly long (for instance the time between the moment a prospective user first approaches its national authority about the need to harmonise spectrum until the spectrum is effectively harmonised and allowed for use, can range from 80 to 134 months depending upon the level of authorisation required), and more dedicated technical resources may help to accelerate the earlier stages of the process. On the other hand, once a final report on harmonisation candidate bands has been received, a technical harmonisation decision is usually adopted in a period of less than a year. Most process-related staffing costs are covered from administrations' budgets, which may limit effective participation by smaller administrations. There appears to be significantly less efficiency in respect of ensuring timely and consistent assignment of harmonised spectrum resources, which at the framework level, however, is explained by the low degree of operational and process harmonisation. The fact that goal attainment notably in respect of the promotion of the Internal Market appears sub-optimal in terms of when services become available to the end-users at this point may prompt further reflection on what mechanisms might best resolve these deficits.

¹⁹⁰ SMART 2014/0023

Finally, as regards the use of less invasive regulatory means to achieve the framework's objectives, it has to be noted that use of spectrum as a public resource is essentially contingent on management and oversight by public authorities to ensure that appropriate usage conditions be specified and enforced. Self-regulation is therefore not an option for managing the use of spectrum. Nevertheless, technical harmonisation measures are based on stakeholder involvement to ensure that the decisions taken ensure functionality and application in real-life usage contexts. With regard to other regulatory conditions attached to right of use, Annex B7 of the Authorisation Directive provides for some form of co-regulation, based on voluntary commitments by prospective assignees in selection procedures. As explained in the effectiveness section, in reality Member States rather unilaterally define the requirements to have access to spectrum resources, which is often a necessary input for operators to enter and, above all, to continue their business activity. This mechanism therefore does not ensure that regulatory conditions (and the corresponding national and EU objectives) are ensured with the least intrusive conditions and lowest costs.

7.3.2.3. Efficiency of the numbering regulation area

The flexibility of the numbering provisions have allowed a cost-efficient implementation and neither authorities nor operators have brought the issue of administrative burden related to numbering management.

7.3.2.4. Efficiency of the authorisation regulation area

The administrative cost and complexity of the notification regimes is very different across the Member States (starting from none or very simple notification systems to very cumbersome ones) and also depends on the administrative application of generally phrased provisions.

At the same time, the heterogeneity of notification requirements and general authorisation conditions as well as the additional requirements linked to the notification result in higher than necessary burden and increased cost of providing services in multiple countries. The potential administrative costs due to the need to comply with heterogeneous notification and general authorisation conditions can be substantial, in particular for smaller providers operating in several Member States.¹⁹¹ There appears to be room for simplification and burden reduction, for both (often smaller) new entrants, and for provider serving several Member States.

In this regard, the public consultation revealed that the majority of the stakeholders considered it necessary to review the national notification requirements to ensure cross-border provision of services. While stakeholders would see little value added in a single EU general authorisation regime, arguing that a centralised process would probably increase bureaucracy, they plead instead for standardisation and harmonisation of notification templates and conditions (such as on-line application, standard

¹⁹¹ See for instance benchmarks provided for with regard to the Extended Impact Assessment of a Proposal for a Directive on Services in the internal market, SEC(2004)21, ranging from 100,000 euro to 3,6 million euro to ensure on-going compliance of an operator with different national administrative regimes.

guidelines/categories of services for notification, common contact point) for all and/or specific categories of services, especially in view of provision of cross-border services.

Also with regard to the general authorisation conditions the public consultation showed that a majority of respondents consider it necessary to review (at least some) of the general authorisation conditions in order not to hinder the cross-border provision, with several suggestions aiming at deleting obsolete obligations¹⁹², reducing sector specific conditions (in addition to generally applicable rules, such as with regard to consumer protection), identifying lighter conditions for specific categories of services while ensuring level playing fields with OTTs, harmonising specific conditions (ranging from administrative charges to security and network integrity requirements).

7.3.2.5. Efficiency of the rights of way regulation area

The costs and burdens for administrations differ greatly given the ample procedural autonomy applicable to these provisions. They are significantly lower where the procedures are electronic.

The cost of acquiring rights of way for companies varies considerably between Member States, and even within different regions or cities of a Member State. It has however not been reported as a disproportionate part of the cost of network deployment, for instance.

The administrative cost appears to be higher when providers have to deal with multiple procedures in a Member State and significantly lower where there are electronic procedures, as shown in the Impact assessment accompanying the document proposal for a regulation on measures to reduce the cost of deploying high-speed electronic communications networks¹⁹³. Overall, the procedures are becoming simpler and more efficient.

7.3.2.6. Efficiency of the NRA regulation area

In accordance with the provisions of the framework, NRAs are to a large extent financed by operators via administrative charges and various transparency and accountability mechanisms are in place to control their expenditure.

While certain issues arose in relation to contributions to the budget (e.g. with operators contributing for a bigger share of the budget pleading for more transparent and fair, revenue-related fixing of charges), it is generally considered that NRAs function relatively efficiently. This view is generally shared by operators, which tend to accept to finance a well-performing NRA as long as its operator-financed activities are related to the regulation of the electronic communications market.

¹⁹² In particular conditions related to universal service, such as information on directories, as well as E-Privacy conditions overlapping with the General Data Protection Regulation.

¹⁹³ <https://ec.europa.eu/digital-single-market/en/news/impact-assessment-accompanying-document-proposal-regulation-european-parliament-and-council>

7.3.2.7. Efficiency of other institutional provisions – BEREC and RSPG

BEREC

It is difficult to carry out a comprehensive cost/benefit analysis in order to assess the efficiency of the BEREC Regulation as information is rather limited (costs incurred by NRAs, stakeholders' benefits from regulatory consistency derived from the work of BEREC, etc.)¹⁹⁴. A significant part of the costs of BEREC (including travelling expenses of one expert per NRA participating in BEREC meetings) are paid with the EU subsidy that is assigned to BEREC Office which amounted for € 4.02 million in 2015.

There are a number of issues identified by respondents to the public consultation and through experience, which have a simplification potential and could be streamlined. The BEREC Office¹⁹⁵ is not aligned in many aspects with the principles of the Common Approach for decentralised agencies. The fact that the Board of Regulators is in charge of the regulatory tasks (where the Commission has only an observer status) but is not an EU agency and the BEREC Office is an EU agency but only provides a support function resulted in most of the principles established in the Common Approach not being applicable (for example, as regards communication, international activities, etc.)

The limited tasks and size of the BEREC Office compared to other EU agencies also have certain implications as regards attraction and retention of staff as well as organisational challenges (for example certain functions, such as accounting officer or data protection officer, imply specific 'independence' requirements). In the last months, the BEREC Office has explored and implemented a number of actions to improve this situation, such as outsourcing of some functions to the Commission services and synergies with other EU agencies (such as ENISA).

Some respondents to the public consultation on the telecoms review pointed to some possible improvements, such as longer or extendable mandates for the Chair, majority voting rules, adequate resources, the streamlining of the Management Committee and longer consultation periods or a two-stage consultation process on key policy matters. Other aspects could also contribute to a more effective set-up, for example, the appointing authority powers are currently centralised by one of the BEREC Vice-Chairs of the Management Committee of the BEREC Office, which is a 1-year rotating post.

The current two-tier structure results also in certain inefficiencies which are difficult to quantify, for example two separate annual reports and two work programmes need to be adopted – one by the Board of Regulators for BEREC and one by the Management Committee for the BEREC Office. In addition, due to the new rules for EU agencies for annual and multiannual programming, the work programme for the BEREC Office is adopted 11 months earlier than the work programme for BEREC.

¹⁹⁴ We can provide some figures as regards EU subsidies and resources: in 2015 the EU subsidy to the BEREC Office amounted to € 4.02 million (€ 3.49 finally spent) and the Commission's costs for the monitoring and supervision were € 402 000.

¹⁹⁵ Article 11(5) of the BEREC Regulation establishes that the organisational and financial structure of the Office shall be reviewed five years after the date of establishment of the Office.

RSPG

The Group operates substantially on the Member States' own resources, with the Commission providing the secretariat and meeting facilities and reimbursing an airfare per Member State. Generally speaking, it can be said that RSPG meetings are efficiently run and take up a minimal time and resources.

RSPG Opinions and reports constitute advice to the Commission (or Council/Parliament as the case may be). Hence, Opinions form part of the inputs that the Commission has to consider in view of possible policy/legislative initiative, together with input from stakeholders (industry, civil society, associations) and directly from Member States.

Possible disagreement by one or several Member States is usually not clearly expressed in a dissenting Opinion to be attached to the adopted Opinions,¹⁹⁶ although allowed under current rules. This gives the impression that the RSPG always represents all Member States; moreover, Opinions, which are usually adopted by consensus, tend to represent the lowest common denominator among Member States (see for instance on Licensed Shared Access or on the Spectrum Inventory)¹⁹⁷. They therefore do not go far enough in ensuring added value from an internal market point of view.

7.3.2.8. Efficiency of the standardisation regulation area

Costs of the development of standards are typically incurred by intellectual property rights holders as part of their commercial activities. Since no significant intervention has taken place it can be assumed that EU policy on ECNS standardisation has not caused any relevant cost in this respect. The consistent high level of voluntary industry involvement in electronic communications standardisation, in particular in highly innovative technologies, and the financial importance of intellectual property rights portfolios of European companies tend to demonstrate, that overall standardisation is beneficial and thus an efficient sustainable activity outweighing the costs for the players involved, even if not every single standard which has been specified will turn out to be an economic success in the market.

While some stakeholders in the public consultation asked for financial support e.g. for industry participation in relevant industry fora, it should be mentioned that the EU Regulation on European standardisation¹⁹⁸ already provides for instruments in this respect.

7.3.2.9. Efficiency of the end-user protection regulation area

Efficiency of end-user provisions can be analysed in different ways. Given their respective degrees of flexibility based on the principle of procedural autonomy, the current provisions regarding number portability, switching, contracts, transparency and out-of-court dispute settlement allow for an efficient implementation. This view is

¹⁹⁶ In theory at least, such coordination may face the limit of the independence of NRAs where they are in charge with spectrum management issues.

¹⁹⁷ RSPG Opinion in Licensed Shared Access November 2013 (Document RSPG13-538); RSPG Response to the Commission Report on Inventory November 2014 (Document RSPG14-587).

¹⁹⁸ Regulation No 1025/2012 of 25 October 2012, OJ L 316, 14.11.2012

confirmed by the large majority of the respondents to the public consultation. At the same time, the actual efficiency of the rules in place depends on the transposition by Member States. In fact a large majority of operators (25 operators and 10 associations of electronic communications providers) which reacted to the public consultation believe that the provisions are administratively or operationally burdensome when providing services in several Member States, because of the minimum harmonisation nature of the consumer protection provisions in the regulatory framework, which lead to a different level of protection across Member States.

More worryingly, the various implementation models, often supplemented by national additional consumer protection requirements, also result in varying compliance costs for cross border providers. For example, when it comes to number portability, half of the Member States have compensation arrangements in case of delay or longer than expected service interruptions, whereas there are no rules on this in the remaining Member States. The existing rules, more specifically on penalties, vary greatly (from 1-3€ per day to lump sums of 60€).¹⁹⁹ Another example is the minimum quality of services' standards (Article 22.3 USD), which have been set in 8 EU Member States and mostly for widely varying specific services (broadband speed, call centre services etc.).²⁰⁰

Higher than necessary administrative costs may also be related to the different and overlapping sector specific and horizontal legal frameworks. Providers argue indeed that this overlap leads to over-regulation, too detailed provisions, and inconsistency of rules. For instance, the Consumer Rights Directive²⁰¹ contains general consumer law rules on *inter alia* information requirements in contracts covering aspects such as characteristics of services, identity of trader, tariffs or contract duration; or requirements for distance contracts. In the same vein, out-of-court complaint and redress mechanisms are provided for under Article 34 Universal Service Directive.

While the overlaps will be discussed in detail under the coherence section, there seems to be clear room for simplification, i.e. to reduce the sector specific rules to those areas where they are still warranted.

Furthermore, business providers consider the application of consumer protection rules to business customers as excessively burdensome. They point in particular to the fact that large companies have strong bargaining positions and as such do not need consumer protection rules.

Finally, traditional providers point out that they bear the costs of implementing their provisions (e.g. porting numbers), while their online competitors do not. This asymmetry both shows the impact on the competitive landscape and also the high level of regulation which applies to a category of services within a wider, increasingly competitive environment.²⁰²

¹⁹⁹ Source: Cullen International (SMART 2015/0003 study)

²⁰⁰ Source: Cullen International (SMART 2015/0003 study)

²⁰¹ The Directive on Consumer Rights (2011/83/EC)

²⁰² https://www.vodafone.com/content/dam/group/policy/downloads/01_12_2015_DSM_Framework_Review_Vodafone_submission.pdf

7.3.2.10. Efficiency of the universal service provisions

The efficiency of the provisions on universal service differs depending on the services. With regard to the connection at a fixed location, subscriptions for and use of fixed telephony have been dropping, in particular by comparison to mobile telephony²⁰³. Also, the use of payphones has been dropping consistently over the last few years while the estimated maintenance cost of payphones in the EU is estimated annually over 1 billion euro – a significant amount considering a rather infrequently facility use (e.g. the non-use of public payphones by 88% of the population across the EU28)²⁰⁴. With regard to the comprehensive directory and directory enquiry services, the provision cost is difficult to estimate, but available data suggests that the relation between the cost and demand is such as to enable commercial provision by the market²⁰⁵. Every country without a universal service obligation regarding directories and directory enquiry services, noted the availability of commercial competitors in the market. Availability of commercial services over an extended period of time, absent of any legal obligation, would suggest sufficient use to ensure continued availability in the market even in the absence of policy intervention.²⁰⁶ While these universal service provisions have proven to be effective in the past in addressing basic needs for citizens, the significant drop in their use relative to their cost as well as the changes in consumers' behaviour calls for a reflection on their maintenance for the future at the expense of the sector.

With regard to broadband subscription through connection at a fixed location, it has been constantly growing in general. The majority of households in EU Member states (70 per cent) subscribed to a fixed broadband connection in 2014²⁰⁷. Adequate access to internet seems to constitute a key tool for social inclusion²⁰⁸. Currently, Member States enjoy significant flexibility under the USD; they have the possibility to define functional internet access with basic broadband speeds. This flexible system enables to take account of the different national circumstances, but may also increase legal uncertainty and lack of transparency. However, the majority of NRA's claim that the provision of USO does not affect significantly market competition.²⁰⁹

Since the introduction of universal service, only few Member States have calculated the net costs and have done so only recently.²¹⁰ The final amount of the calculated USO net cost varies significantly from country to country, depending mainly of the country size and on the USO scope. In five countries, the USO net cost is less than 1 million euros. In four countries, the USO net cost is between 1 and 10 million euros. While, in 4 countries the USO the net cost exceeded 20 million euros.²¹¹ Current rules on compensation of the

²⁰³ Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011

²⁰⁴ Idem

²⁰⁵ Idem

²⁰⁶ idem

²⁰⁷ Idem

²⁰⁸ Idem

²⁰⁹ EC questionnaire on the implementation and application of the universal service provisions (2015)

²¹⁰ See Commission's Reports on the Implementation of the EU regulatory framework for electronic communications. The countries listed are those that were dealing with compensation of the net cost in 2015, see the respective Report, SWD(2015) 126 of 19.06.2015.

²¹¹ EC questionnaire on the implementation and application of the universal service provisions (2015)

net cost of the universal service provision are complicated, and designated providers cannot be sure what percentage of their bidding tender will be regarded as net cost and whether NRAs consider it an unfair burden. The current way of financing mainly by the industry is an administrative and financial burden for the sector, which can cause market distortions and uncertainty in the market.

The public consultation carried out illustrated that the vast majority of Member States agree that universal service has been significantly or moderately efficient in safeguarding end-users from the risk of social exclusion. On the contrary, most of the electronic communication service providers and other associations see little or no efficiency at all. They stress in particular that several elements have been fraught with challenges and appeals (such as the definition, the calculation of net costs and unfair burden, the introduction of social tariffs, etc.) and that the overall administrative burden²¹² and regulatory uncertainty have been very high, for a regime which has not produced major benefits. Several respondents also note that USO puts the burden of a social objective on the private sector and in particular on the electronic communications sector when the burden should be shared by society as a whole.

7.3.2.11. Efficiency of the 112 and 116 provisions

The obligations regarding access to 112, especially the provisions on caller location information are considered a public interest service accepted by network operators. However, to the extent that qualitative requirements are attached to the obligation (caller location, equivalent access) it is more burdensome for network operators. For this reason, several operators claim that the financial burden should lay on the public budget or be shared amongst all communications providers. On the other hand, end-users, Public Safety Answering Points and stakeholders (EENA) are deploring the lack of caller location accuracy in such an important operation like the emergency service. While the cost of reliable network based location technologies are deemed to be high, handset based technologies might provide cheaper alternatives to enhance the existing network based caller location. In terms of accessibility for disabled end-users, web based solutions could ensure a higher equivalence of access than the currently implemented SMS solutions.

While the 116 Decision explicitly waives Member States of the obligation to finance the 116 operators, Article 27a (1) entails an obligation to promote 116 numbers and to render operational the 116 000 missing children hotline. In practice, 116 services are implemented differently per Member States²¹³ and per service, either by a NGOs or by

²¹² Twelve European countries used competitive designation mechanisms to designate the US provider either for all or for part of the services encompassed within the Universal Service Obligations (USO) scope. Apart from some countries where there is no compensation fund in place, the most commonly found way to fund the USO net costs is via sectorial funding. In only a handful of countries all operators are obliged to contribute, whilst in the remaining countries where a compensation fund exists a minimum income/revenue/turnover is required regarding the operators capacity to contribute to that fund. Among the countries where operators are part of a funding mechanism, in three cases a ceiling was established for the operators' contributions which is related to operators' annual revenues. In a significant number of countries, the USO net costs were calculated at least once.

²¹³ The Commission regularly publishes a report on the state of implementation of 116 numbers in Europe in its dedicated 116 website (<https://ec.europa.eu/digital-single-market/en/116-helplines>). The report contains the evolution of statistics for the past years, and the concrete organisations to which the numbers

national authorities providing the hotline. On the basis of information provided by hotline operators, NGOs can also rely on a mix of funding from public (including the Commission's DAPHNE²¹⁴ grants) or private sources (charity donations and corporate social responsibility schemes) and in some cases hotline operators are granted waiver of call charges due to emergency number status.

Regarding 116 000 missing children hotline, some of the administrations and most of the operators argue that implementing the 116 provisions is costly and burdensome, and operators suggest that the obligation should be matched with the necessary public funding. At the same time, earlier Eurobarometer surveys conducted in 2011 and 2012 revealed low awareness, which might put in question the effectiveness of national promotional measures. In addition, some of the services are not taken up at all in most Member States (notably Helpline for victims of crime and non-emergency medical on-call services implemented in five and two Member States respectively).

7.3.2.12. Efficiency of the provisions on network and service security and integrity

The administrative costs for national administrations and companies following the introduction of the provisions differ significantly among Member States. Without giving precise estimates, the impact evaluation conducted by ENISA shows that some Member States already had advanced measures in place before 2009, therefore the costs to be borne by those Member States were incremental.

All in all, over 70% of the respondents to the review public consultation consider that in general the costs were proportionate vs. the benefits achieved, and consider the security and integrity provisions cost-effective. Similar results were obtained in other surveys, e.g. ENISA's Impact Evaluation paper. The latter report stressed that implementation of the Art. 13a requirements affected both NRAs and providers, in terms of resources needed. In particular, NRAs faced additional costs such as educational costs (for training the providers on the new regulations), costs for developing secondary legislation or other guidelines, follow-up and audit on the progress of the implementation. Providers faced implementation, maintenance and management costs. In their case, the size of the costs is largely depending on a variety of factors, such as for example, the level of maturity of the security measures already in place and the degree of cooperation with the, and guidance received from, NRAs.

Nevertheless, implementing the rules may be more challenging and burdensome to smaller (alternative) operators, who lack the appropriate budgets but also the necessary internal processes and methodology to implement the requirements.

7.3.2.13. Efficiency of the must carry and findability provisions

Regarding their efficiency, the provisions leave ample margin to national authorities to adapt the rules to their national circumstances, therefore the situation differs across Member States. Since EU level regulation does not impose regulatory obligations (it permits, but does not require the establishment of “must carry” and electronic

were assigned, based on information provided by Member States in COCOM. The next report COCOM16-05 is due to be published by end of May.

²¹⁴ http://ec.europa.eu/justice/grants1/calls/2015_action_grants/just_2015_rdap_ag_0116_en.htm

programme guide related rules by Member States), the status quo does not appear to create unavoidable enforcement costs for regulators or compliance costs for businesses.

The costs arising due to national regulation appear to be negligible. “Must carry” regulation does affect the outcomes of negotiations between platforms and broadcasters. However it is difficult to assess the direction and scale of transfers between platforms and broadcasters due to the variety of current arrangements, different market power of parties and nuances of existing national regulation. There is some, limited evidence that loss of “must carry” status can lead to an approximate small decline in audience share of respective channels, but the effects are expected to vary²¹⁵.

Channels given higher electronic programme guide prominence (due to national regulation) enjoy significant, albeit difficult to measure, advantages. The removal of such regulation would lead to a significant one-off transfer of value from broadcasters that currently enjoy higher prominence, to transmission providers that could auction the most prominent spots on electronic programme guides (and indirectly to other broadcasters, who would regard the value of a prominent slot as exceeding their bid)..²¹⁶

7.4. EU added value

Could similar results have been achieved at national/regional level or did EU action provide clear added value?

The evaluation of the regulatory framework points to better outcomes for EU citizens generated in part by EU legislation in the electronic communications sector: more choice and lower prices, the general availability of basic broadband, etc. This view is widely shared by the main stakeholders of the framework and confirmed by international benchmarking and by study results²¹⁷.

A vast majority of respondents to the public consultation agree also with the clear advances in consumer protection, while both large and even small operators recognise the benefit of a more consistent regulatory regime across 28 Member States, in spite of the limited achievement of the Single Market.

Indeed, before the introduction of (the respective provisions in) the framework, several Member States had little sector specific consumer protection legislation – including on end-user rights, security and integrity of network provisions, etc. EU action can thus be assumed to have contributed to a more comprehensive and homogeneous regulatory framework with regard to consumer protection than it would otherwise be the case.

²¹⁵ A decline of about two percent. (Source: Visionary Analytics, SQW Limited, and Ramboll MC (2016), “Survey and data gathering to support the Impact Assessment of a possible new legislative proposal concerning Directive 2010/13/EU (AVMSD) and in particular the provisions on media freedom, public interest and access for disabled people”, study for the European Commission, DG Connect.)

²¹⁶ An impact assessment carried out in the UK estimated that the total value of the top five slots across all traditional EPGs (including Sky, Virgin, BT, Freeview, etc.) is £250m (in 2012 prices). (Source: Department for Culture, Media and Sport, The balance of payments between TV platforms and Public Service Broadcasters and the future of Electronic Programme Guides, 2015, p. 19.)

²¹⁷ SMART 2015/002 and 003

On the other hand, the regulatory framework facilitated market entry across borders, leading to a level of competition on the single market which could have not been achieved by regulation at national level.

Moreover, the differing degrees of harmonisation in regulatory areas with high impact on the market structure and functioning, such as access regulation and spectrum, has had correspondingly varied effects on promotion of "best in class" models and examples across the European Union. As discussed in the section dedicated to the effectiveness of the access provision, the framework has allowed some Member States with older infrastructures and less competitive markets to sometimes front leap and compete with digital leaders in the EU (e.g. Lithuania, Romania). In spectrum assignment, on the other hand, while the framework has put in place some basic protections against arbitrary assignment practices, it has to date not been a significant motor for development of consistent assignment policies building on common experience.

Operators, however, do not perceive the value added as evenly distributed across the various regulation areas. For instance they insist on the importance of harmonisation of access and spectrum provisions (see examples of cost estimates under sections 7.2.3.1. and 7.2.3.2.). Even for other areas covered by EU legislation, operators stress that they should be dealt with by means of full harmonisation, since all these elements impact the cost of compliance and of any provider operating across several Member States.

Regarding the specific added value of each policy area, harmonisation of **access regulation** is central to the need to ensure fair competition on the internal market. Consolidation of access regulation (coupled with the necessary flexibility to adapt to local circumstances), even if limited to some aspects of market analyses, resulted in best practice examples being adopted and implemented throughout Europe to the benefit of EU citizens. It has allowed companies to decrease the costs of doing business across the EU.

Spectrum management – with the exception of allocation - has been singled out by stakeholders (in particular 88% of the operators that responded to the public consultation) as a regulatory area where further harmonisation is needed, given its high impact on the market structuring and on the operation/availability of services and given the increasing relevance of spectrum for the electronic communications sector and beyond that for the entire economy.

The value added of the **numbering** provisions is mainly related to ensure end-to-end connectivity across the EU for products and services which can be traded and freely circulate in the Single Market, in particular when the SM card is embedded in the product, e.g. for connected cars, as well as fair treatment of providers in the internal market. This value added can only increase in the context of the rise of M2M providers and of the related risks of fragmentation on the Digital Single Market. The provisions related to ETNS etc. have however not proven to add a lot of added value as no use has been made of it due to a lack of demand.

The value added of the **authorisation** provisions lies with the contribution they have made to making market entry overall easier throughout the EU, therefore supporting competition on the Internal Market. Moreover, the provisions ensuring the market entry

subject to the general authorisation can be considered as a main pillar of liberalisation of the sector.

Although the deployment of networks is a local issue, the existence of harmonised **rights of way** throughout the EU linked to the general authorisation for the provision of networks and/or services is a condition for the development of (cross-border) competition in the internal market for electronic communications. Overall, the conditions for obtaining rights of way have improved throughout the EU.

The EU value added of provisions related to **NRAs** is linked to the functioning of the single market for electronic communications and of the Digital Single Market, which would not be possible without independent regulators with the same objectives and (minimum) powers across the Member States, acting in cooperation with each other. RSPG and BEREC's advisory role to the EU institutions are in general positively perceived while their effectiveness is at times questioned. Increased effectiveness would increase their added value. The added value of the BEREC Office as an EU agency that provides support to BEREC is another relevant aspect which is already assessed in previous sections.

Voluntary market-driven **standardisation** has allowed manufacturers of network and consumer equipment to achieve economies of scale across the single market, as this has been the case for instance for Ethernet-based components and systems. However, as illustrated for instance in the area of Ethernet-based wholesale access products for businesses²¹⁸, the lack of regulatory coordination and guidance in the field at EU level and the subsequent patchy definition of regulated products is inhibiting network operators, service providers and business users alike to take advantage of the added value offered by the EU in this area, in the forms of easier access to markets, faster provisioning and economies of scale.

The value added of **EU sector-specific consumer protection rules** is two-fold. First, while some aspects may be covered by horizontal consumer protection legislation and hence would no longer justify sector specific regulation, it appears essential to continue to regulate certain key elements specific to the telecoms market (such as switching) so that consumers can profit from the existing competition. Second, consumer protection rules are part of the conditions that operators are obliged to comply with when authorised to provide electronic communications services and as such have a great impact on the conditions to do business and on the competition on the internal market. In this latter context, full harmonisation would generate additional value.

Having EU rules on **universal service, including on access for disabled users** is a matter of fair treatment of providers across borders, and also more importantly, making sure all EU citizens, including those with low income or disabilities, profit from the benefits of a digital society. While no aggregate data is available regarding measures with similar purpose prior to the adoption of the framework, in order to measure the exact impact of the framework, the use of the provisions proves their value, while at the

²¹⁸ Commission Study "Investigation into access and interoperability standards for the promotion of the internal market for electronic communications", WIK, TNO, December 2015.

same time safeguards regarding the non-discriminatory treatment of operators on the single market are maintained.

The value added of the **112 and 116 numbers** is linked to the free movement of people in the EU²¹⁹. A single European emergency number can ensure effective access to emergency services in a context of increasingly mobile Europeans, thereby meeting public safety and civil protection objectives. On the other hand, numbers for which there is little take-up or awareness are unlikely to generate appreciable EU added value.

EU rules in the area of **security and integrity and networks and services** are needed given that ICT based services are borderless. They ensure an (increasingly) similar level of protection for EU citizens and fair treatment of providers across borders. As argued above, their introduction led to a clear improvement of consumer protection in several Member States which had no rules in this area before 2009. EU rules in the field also reduce the compliance costs for any operators dealing with several Member States, given the costs of systems, processes and equipment that need to be put in place.

“Must carry” and findability rules at EU level harmonize the scope within which Member States are able to ensure that end-users have easy access to general interest channels and that they have a diverse number of programs to choose from. The rules contribute to preserve fundamental freedoms, cultural diversity and Member States' prerogatives in cultural matters. While these effects are difficult to measure directly, Member States are obliged to clearly define the relevant general interest objectives pursued by "must-carry" obligations and to impose such obligations where they are necessary.²²⁰ Furthermore, the rules facilitate cross border access by users to content and cross-border provision of content to viewers across the single market²²¹ and they facilitate and encourage the provision of content designed for a pan European audience²²².

7.5. Coherence

7.5.1. Internal coherence

Is the regulatory framework internally coherent? Have any contradictions, overlaps, or conflict been detected? How is coordination ensured between the various regulation areas of the framework?

As described above, the regulatory framework is composed of a set of complementary instruments. The Framework Directive establishes a harmonised framework for the regulation of electronic communications networks and services, associated facilities and associated services, outlining the general principles, objectives and procedures governing this policy area. The Framework Directive is complemented by four directives

²¹⁹ According to the Eurobarometer 414 of March 2014, almost two thirds (63%) of Europeans have already travelled to another EU country

²²⁰ See art 31(1) of the Universal Service Directive 2002/22/EC.

²²¹ For example, Flemish broadcasting channels are available in NL because of terrestrial must-carry obligations imposed in NL.

²²² For example, Euronews has must-carry status in Switzerland, see <http://suboptimalplanet.blogspot.be/2011/03/euronews.html>

and several more specific regulations²²³. Needless to say, consistency between the various instruments described above is essential if it is to deliver the desired outcomes for citizens and businesses.

The experience of monitoring the implementation of the framework, confirmed in particular by the responses of the NRAs to the public consultation, reveals that, generally speaking, the various instruments making up the regulatory framework for electronic communications have reinforced each other in the pursuit of its objectives. Similarly, the various regulation areas complete and reinforce each other. As an illustration, provisions on market entry (authorisation, rights of way) are completed by access regulation and spectrum and number management, which envisage access to key inputs based on which different operators can compete. Competition is then expected to produce consumer outcomes, which the end-users can make better use of given the consumer protection legislation. Finally, where the market alone does not deliver, universal service provisions come into play, while minding that such obligations are withdrawn as soon as (through technological progress or market evolution) the specific needs in question are catered for. Independent NRAs, which play the role of "referees" on competitive markets, and which are in practice entrusted with most of the objectives and tasks of the framework at national level in most Member States, are instrumental in ensuring coordination between the various instruments and regulation areas.

A large number of respondents – including Member States, NRAs and operators - have on the other hand referred to the existing tension between the objectives of the regulatory framework, which are not prioritised. This leads to a situation where NRAs make choices among - at times reportedly conflicting – objectives (e.g. consumer protection versus burden of universal service provider). However, while most respondents agree on the need to prioritise the objectives of the framework, there is not necessarily a consensus on what the order of the priorities should be.

A limited number of internal inconsistencies have however been identified during the evaluation. One illustration is the mismatch between the tasks of the independent NRAs and the tasks of BEREC, since BEREC is expected sometimes to issue opinions in areas for which not all its NRA members are competent. Moreover, the BEREC tasks, partly due to the non-binding character of BEREC action, might not always be adequate in order to ensure coherence with the national regulatory practice at national level. BEREC has called in its Opinion on the Review of the EU Electronic Communications Regulatory Framework²²⁴ for an alignment of the minimum competences of independent NRAs to those of BEREC. BEREC and the Commission are called to work together not only as regards national market analyses but in many other areas, such as net neutrality and roaming and it is, therefore, important that adequate coordination is ensured. In some occasions this coordination has proved challenging, for example as regards the provision of information to and from BEREC and the BEREC Office in the areas of termination rates and roaming, and there is scope for improvement in order to facilitate that each organisation can efficiently perform its tasks.

²²³ Only a part of these instruments are covered by this evaluation, as explained in the introductory chapter.

²²⁴ BEREC Opinion on the Review of the EU Electronic Communications Regulatory Framework BoR (15) 206, of 10 December 2015.

Another consistency challenge is the respective scope of asymmetric access regulation (covering operators holding SMP, including providers of associated facilities which are not Electronic Communications providers) versus symmetric access regulation (targeting all electronic communications network providers regardless of their market position and without applying economic principles). A few stakeholders referred to the relationship between SMP and symmetric regulation, present in the Framework Directive and in the Broadband Cost Reduction Directive (2014/61/EU), which is however solved with the explicit prevalence of the Framework.

Lastly, the current procedures envisaged under Article 13a 13b of the Access Directive could result in a hindrance to vertical separation proposals, with regard to the definition of the conditions required for the assessment of voluntary commitments.

Finally, with respect to the coherence between the regulatory framework (in particular access and spectrum regulation) and the Digital Agenda for Europe, it can be stated that the two are not contradictory while their objectives are not fully aligned either. In other words, although the DAE objectives have sparked debates on necessary levels of investment and connectivity, this is not fully reflected in the tasks entrusted to NRAs, which are defined by the objectives of the framework.

7.5.2. External coherence

To what extent is this framework coherent with other EU policies which have similar objectives? What are the other policy areas with which coordination and complementarity are particularly important? Have any potential conflicts or gaps been detected?

A number of external consistency issues have been requiring attention during the period evaluated and might still require attention in the upcoming review process, concerning various policy areas. One clear example is the continued need for consistency between access regulation, universal service, competition law, state aid policy and European Structural and Investment Funds.

Access regulation is based on the principles of EU competition law. Markets which are no longer subject to ax ante access regulation (based on a competition policy-based test), continue to remain subject to competition law.

Competition is also considered to be the main driving force behind investment in (high capacity) networks. Universal service is enforced only for very limited basic services. State aid comes in to ensure access to performing infrastructure in areas with no business case. State aid decisions are based on the mapping of the potential investments in the areas considered by the specific project, yet under the current framework NRAs have no competencies to run infrastructure or investment mapping exercises. Accurate mapping exercises remain essential for taking correct public funding decisions, which do not intervene in areas where in fact there would be a business case and which do not indirectly favour incumbent operators, and is also highly relevant to accurate ex ante market regulation given the variations in local investment trends and the proliferation in some Member States of more localised networks.

As regards EU funding, cohesion policy and European Structural and Investment Funds (ESIF) are important tools to fill the connectivity gaps in market failure areas and should be allocated in a way that allows maximising the resources available²²⁵. The experience of the past programming period shows that certain implementation models (e.g. the funding gap model) tend to inherently advantage the incumbent operators, which may not be in line with the pro-competitive approach of the regulatory framework.

Overlaps between sector specific and horizontal consumer protection legislation

An important issue of coherence consists in the overlap between sector specific and horizontal consumer protection legislation. For instance, the Consumer Rights Directive (CRD)²²⁶ contains general consumer law rules on pre-contractual information (Articles 5 and 6 CRD), which overlap with certain general provisions on contracts in Article 20 of the Universal Service Directive. At the same time, more communication-specific contract provisions, for instance on specific minimum service quality levels offered remain unique and therefore relevant. In the same vein, the provisions on "Out-of-court dispute resolution" (Art. 34 USD) partially overlap with the out-of-court complaint and redress mechanisms provided under the Directive on alternative dispute resolution for consumer disputes (Directive on consumer ADR)²²⁷ and under the Regulation on online dispute resolution for consumer disputes (Regulation on consumer ODR)²²⁸.

An analysis undertaken by study SMART 2015/003 revealed that the exact scope and protection level of each set of rules must be analysed in detail before any conclusions are drawn – in particular in view of making sure that the level of protection offered to consumers remains adequate and sector specific rules are still warranted. In particular, even in the case of protection rules with similar purposes and similar measures (e.g. transparency or dispute settlement) their exact scope and redress mechanisms might differ. In any case, a clear need appears to address the (small) inconsistencies identified (e.g. penalties, terminology, circular references, etc.). In terms of potential simplification, points to consider when addressing these overlaps are the administrative burden on companies and national administrations, and, more importantly, the expected effectiveness of a complex legal framework (with the risk that it is not fully respected).

²²⁵ Compared with the previous programming period (2007-2013), the European Structural and Investment Funds (ESI Funds) have stepped up efforts in the areas of ICT and digital networks roll-out. Overall, the ESI Funds are expected to programme around EUR 14.5 billion to "Enhancing access to and use and quality of ICT". The allocation of ESI funds for high speed broadband networks experienced a sharp increase from EUR 2.7 billion in 2007-2013 to around EUR 6.4 billion for 2014-2020 (about EUR 5 billion ERDF and an estimated EUR 1.5 billion EAFRD).

²²⁶ Directive 2011/83/EU

²²⁷ Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC

²²⁸ REGULATION (EU) No 524/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR)²²⁸ Regulation (EU) No 524/2013 of the European Parliament and of the Council of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer online dispute resolution)

Another element to consider is the relationship between the rules on security laid down in Article 13a and 13b of the Framework Directive and the corresponding security provisions of the data protection legislation, including the General Data Protection Regulation and the ePrivacy Directive (2002/58/EC). For instance, the General Data Protection Regulation²²⁹ obliges controllers to implement appropriate technical and organisational measures to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorised disclosure or access, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing. Article 4 of the ePrivacy Directive requires providers of electronic communications services, if necessary in conjunction with the provider of the public communications network with respect to network security, to take appropriate technical and organisational measures to ensure the security of their services. Article 4 also obliges operators to notify personal data breaches to the competent authorities.

Since neither the Framework Directive nor the data protection legislation defines the notion of security, the respective boundaries between the above mentioned provisions are not always clear-cut. In particular, a certain overlap has been noted between the operational scope of Article 13a of the Framework Directive and Article 4 of the ePrivacy Directive. ENISA reported that, although Article 13a appears to deal mostly with the availability of the service, as its main purpose is to “ensure the continuity of supply of services”, the text of the article allows a margin of interpretation with regard to the scope. While all NRAs have implemented Article 13a to cover the continuity/availability of the services, some countries have made a step further and covered in their national implementation other security concepts than availability, such as confidentiality²³⁰. This leads in practice to an overlap with the scope of Article 4 of the ePrivacy Directive and most likely to a duplication of regulatory requirements, including personal breach notification requirements, and, possibly, shared supervision by different national authorities (NRAs and DPAs).

Finally, coherence with existing rules dealing with content, such as the audiovisual media services Directive 2010/13/EU²³¹ and the eCommerce Directive 2000/21/EC²³² does not appear to have raised specific issues. At the same time, the AVMS Directive is also under review currently, which makes the issue of consistency quite relevant.

Coherence of institutional provisions with the EU approach

In relation to NRA regulation and in the context of the various restructuring and mergers of regulators which occurred in several Member States, an issue of conflicting requirements for regulators emerged under the various fields of EU law (e.g. different

²²⁹ REGULATIONS REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)²²⁹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

²³⁰ <https://www.enisa.europa.eu/publications/impact-evaluation-article13a>, p. 10.

²³¹ OJ No 95, 14.4.2010

²³² OJ No 178, 17.7.2000

independence standards under energy legislation, or the need to ensure budgetary separation for electronic communication related activities versus overall efficient financial management, etc.). More generally, the issue of consistency between the BEREC office agency and the Common Approach for EU agencies has also arisen, as discussed under the efficiency section.

8. CONCLUSIONS

Relevance

The analysis above has shown that the specific objectives of the framework - promoting competition, realising the single market and protecting consumers' interest – remain as valid as before, with an increased relevance for the single market objective.

Where conditions (e.g., demography, geography, socio-economic factors) exist for the creation of a sustainably competitive market based on infrastructures, promoting competition remains the best option to deliver end-user benefits, including connectivity. Effective and sustainable competition drives efficient investment and fuels the development of the internal market. Where infrastructure competition is not economically attainable, promotion of competition through access regulation can also deliver end user benefits in terms of prices and of innovative exploitation of network capacities. It ultimately serves the interests of end-users, by inducing innovation and providing maximum benefit in terms of choice, price and quality.

At the same time, connectivity has emerged as the underlying driving force for the digital society and economy, underpinned by technological changes and evolving consumer and market demands. There is therefore a widely recognised need to consider adjusting the current policy and regulatory tools to further support the deployment of infrastructure and take-up of corresponding services in line with future needs in view of the structural evolution of the sector, its importance within the larger economy, and the political commitment of the Juncker Commission to deliver the Digital Single Market.

Most regulation areas remain as relevant if not more relevant than in 2009 – in particular spectrum regulation along with access regulation. While the relevance of certain specific components of the universal service regulation is being put into question, the concept of a safety net ensuring that all citizens are included in a fully developed digital society is gaining relevance. Similarly, while the specific provisions under the consumer protection objective might have to be adjusted in view of technological market or legislative changes, the basic needs to which the provisions respond remain unchanged and their specific objectives remain relevant.

Effectiveness

While the specific objectives of the regulatory framework – competition, single market and consumer protection – have remained unchanged during the 2009 review, the specific aims of this last reform include aligning spectrum management with market demands so that its full potential to contribute to innovative and affordable services is

realised; making access regulation more predictable, while adding a certain emphasis on network investment and finally to ensure better consumer rights.

The regulatory framework has had an impact on the competitiveness of the sector, which in turn has delivered overall significant consumer benefits, in particular basic broadband, lower prices, and increased choice. The contribution of the framework - mainly through access and spectrum regulation, but also with the support of market entry provisions – to deliver competition is undeniable and widely recognised even if sometimes difficult to measure.

As regards the contribution of the framework to the Single Market objective, the results are rather modest. Regulatory consistency has been achieved only to a limited extent, affecting the operations of cross-border providers and reducing predictability for all operators and their investors. More importantly, the cooperation and consistency tools available have led to a situation where best regulatory solutions have not always been followed, with impact on end-user outcomes.

Finally, the achievements of the framework in promoting consumer interests are significant, in tackling certain sector-specific consumer protection issues and in ensuring a safety net so that all citizens can benefit from electronic communications services. However it is also clear that not all consumer interest rules are still fit for purpose, in the context of technological, market, and legislative developments, and that simplification can be achieved. At the same time, consumer surveys continue to report a relative dissatisfaction, which requires attention.

Turning to the contribution of specific regulation areas, access regulation has delivered competition, though more at service level than at network level. While investments in very high capacity networks have advanced, they have not taken place across all Member States at the pace envisaged by the public policy agendas and more importantly at the pace to meet the future connectivity needs for a fully-fledged Digital Single Market. Access regulation has also become more predictable throughout the EU, thanks to the reinforced EU-level consistency check, which however stops short of covering remedies, with the effect that significant regulatory inconsistency remains on the single market.

While clear advances have been made in the field of spectrum (e.g. the release of a significant amount of spectrum for wireless broadband), the progress has not been such as wished for at the occasion of the last review. In particular the impact of the current spectrum regulation on competition and single market outcomes - with direct consequences for consumers in terms of availability of innovative and affordable services - is put into question by the current evaluation, with the example of the delayed 4G deployment in most parts of the EU.

The regulation of numbers has proven generally unproblematic at national level. On the other hand the provisions have not been particularly supportive to the single market so far. The authorisation provisions have led to an improved market entry situation, but difficulties remain in place in particular in relation to conditions attached to authorisations and to the multiplicity and diversity of requirements across the Member States.

While universal service rules have been effective, reviewing its specific components appears however necessary in order for those to remain effective in future. Similarly, in order for the consumer protection rules to remain effective, they might need to be reshuffled, e.g. to ensure that certain key protections are extended to consumers of services offered by OTT players, or to make sure that the rise of the bundled offers does not create additional barriers to transparency and switching. As far as network and service security rules are concerned, while their adoption has contributed to an improved situation throughout the EU, their impact remains unequal throughout the Member States, not least due to the respective scope and definitions of national implementing provisions.

Efficiency

The regulatory framework often allows ample flexibility to national regulatory authorities to adapt their decisions to national circumstances, and the actual administrative costs and burdens implied by the regulatory framework are therefore dependent to a large extent on the solutions adopted in each Member State. This flexibility allows for cost optimisation for and by national administrations.

At the level of the operators, costs and burdens are not evenly spread across the stakeholders. Access regulation will be for instance considered burdensome by incumbent operators, yet nothing more than what is necessary to reach the competition objective by alternative operators. Access regulation has moreover contributed to the creation of new markets and business models. Most operators also refer to the many consumer protection rules as being overly burdensome especially in view of the differing implementation across member States and of the overlapping horizontal legislation. Traditional providers also point out that they bear the costs of implementing consumer protection provisions (e.g. porting numbers), while their online OTT competitors do not. While this pleads for some simplification and burden reduction in specific areas, consumer organisations, on their part, recall the value of certain sector-specific rules and of the discretion left to Member States to complement minimum harmonisation in a fast moving sector.

In line with the requirements of a REFIT evaluation, several areas have been identified where the administrative burden can be reduced while preserving the effectiveness of the provisions. While the area of access regulation is rather complex, this level of complexity is in most cases necessary in order to ensure that the regulation which affects operators directly is fit for purpose – and therefore not too burdensome on operators. Punctual exceptions do exist in the case of "stable" markets, where simplified procedures can be envisaged without affecting the quality of the regulation (e.g. the case of the termination markets). In a similar vein, it can be questioned, based on the actual implementation experience, whether the very short cycles of market reviews are truly necessary. Achieving more regulatory consistency in areas such as spectrum or authorisation requirements might in addition reduce the administrative burden of businesses operating across several Member States, while at the same time supporting the objectives of the framework.

It should however be noted that a precise calculation of costs versus benefits has not been possible. On the one hand, while there is an abundance of data concerning policy outcomes, there are few complete and comparable data sets available. On the other hand,

the framework does not impose any reporting requirements to the Commission concerning administrative costs. Even when regulators or operators do report on costs voluntarily, the lack of a categorisation/classification/definition of costs impedes their comparability and any further solid quantitative analysis.

EU added value

The regulatory framework has played a role in the broader development of national regulatory regimes and market developments that favour a pro-competitive offer of electronic communications services across Europe. It has contributed to major positive outcomes for consumers and businesses, across and within Member States.

Moreover, it has levelled up national regulation in the area of electronic communications, including in areas which were previously not even tackled by some Member States, such as consumer protection where there are too many overlapping or varying provisions and simplification can be achieved.

Coherence

Not many coherence issues have been identified during the evaluation work. Generally speaking, the various instruments making up the regulatory framework for electronic communications have reinforced each other in the pursuit of its objectives. As an illustration, provisions on authorisation enable pro-competitive market entry. Access regulation and spectrum management contribute to positive outcomes for consumers, to the point where commercial offers render regulated universal services redundant or obsolete in certain instances. Some issues of internal inconsistencies have been identified.

Two external consistency issues require however attention in the review process namely the coherence between regulation aimed at incentivising competitive network rollout and the EU financing and state aid rules in the field, as well as the potential overlaps between sector specific and horizontal consumer interest legislation. Provided that detailed analysis of the exact scope of the provision in place concludes that sector specific rules have become redundant, those particular provisions can be withdrawn, leaving sector specific rules only to address those areas where such rules are still warranted, in line with the REFIT principles.

9. LIST OF ANNEXES

Annex I - Procedural annex

Annex II – Summary of public consultation results

Annex III - Methods & sources annex

Annex IV – List of legislation evaluated

Annex V – Screening of the Directives

Annex VI – Screening of the BEREC Regulation

Annex VII - Evaluation of the RSPP

9.1. Annex I

Procedural Information

Identification

This Staff Working Paper was prepared by Directorate B 'Electronic Communications Networks and Services' of Directorate General 'Communications Networks, Content and Technology'. The RWP reference of this initiative CNECT/2015/ 007.

Organisation and chronology

Several other services of the Commission with a policy interest in the review of the electronic communications framework have been associated in the development of this analysis. The Telecoms Framework Inter-Service Steering Group met for the first time on 7 May 2015.

A second Telecoms Framework Inter-Service Steering Group meeting took place on 9 July 2015.

A third Telecoms Framework Inter-Service Steering Group took place on 26 January 2016.

A fourth Telecoms Framework Inter-Service Steering Group Impact Assessment Steering Group took place on 14 April 2016 to discuss a draft evaluation report and the problem definition of the IA. Comments were received by 21 April 2016.

A fifth Telecoms Framework Inter-Service Steering Group will take place on 30 May 2016 to discuss the draft Impact Assessment as well as remaining comments to the revised draft evaluation report.

In the ISSG, chaired by SG, DG CONNECT, was flanked by DG DIGIT, DG COMP, DG JUST, DG GROW, DG ECFIN, DG FISMA, DG TAXUD, DG TRADE, DG RTD, DG JRC, DG SANTE, DG EMPL, DG EAC, DG NEAR, DG ENV, LS, DG REGIO, DG HOME, DG ENER, DG AGRI, DG MOVE, EUROSTAT, EPSC.

Regulatory Scrutiny Board

This staff working document will be submitted, together with the Impact Assessment for the Review of the Regulatory Framework for Electronic Communications, for discussion at the regulatory scrutiny board meeting of 7 July 2016.

Evidence

This evaluation took into account the following main inputs:

- (i) the contributions to the public consultation on the evaluation and review of the regulatory framework for electronic communications,
- (ii) the BEREC input on the review of the regulatory framework released on 10 December 2015

It also builds on three studies dedicated to the evaluation and review of the regulatory framework for electronic communications :

- (iii) a study for the "*Support for the preparation of the impact assessment accompanying the review of the regulatory framework for e-communications*" (SMART 2015/0005)
- (iv) *Regulatory, in particular access, regimes for network investment models in Europe* (SMART 2015/0002)
- (v) *Substantive issues for review in the areas of market entry, management of scarce resources and general consumer issues* (SMART 2015/0003).

Other recent DG Connect studies in the area of electronic communication have been used where appropriate:

- *Review of the scope of universal service* (SMART 2014/11),
- *Study on future trends and business models in communications services and their regulatory impact* (SMART 2013/0019),
- *Identification and quantification of key socio-economic data for the strategic planning of 5G introduction in Europe* (SMART 2014/0008)
- *Economic and Social Impact of repurposing the 700MHz band for wireless broadband services in the European Union* (SMART 2015/0010)
- *Impact of Traffic Offloading and Technological Trends on the Demand for Wireless Broadband Spectrum* (SMART 2012/0015)²⁸,
- *Spectrum Policy. Analysis of Technology Trends, Future Needs and Demand for Spectrum in line with Article 9 of the RSPP* (SMART 2012/0005)²⁷,
- *Survey and data gathering to support the Impact Assessment of a possible new legislative proposal concerning Directive 2010/13/EU (AVMSD) and in particular the provisions on media freedom, public interest and access for disabled people*

In addition to the review and other studies quoted above the following European Commission studies and surveys in the area of electronic communication were considered

- *Identification of the market of radio equipment operating in license-exempt frequency bands to assess medium and long-term spectrum usage densities* (SMART 2014/0012)
- *Eurobarometer household survey on eCommunications* (SMART 2014/0014)
- *Investigation into access and interoperability standards for the promotion of the internal market for electronic communications networks and services* (SMART 2014/0023) a study on the 'standardisation' of wholesale access products
- *Mapping of Broadband and Infrastructure Study* (SMART 2012/0022),
- *Mapping broadband infrastructures and services (phase II)* (SMART 2014/0016)
- *Impact of Traffic Offloading and Technological Trends on the Demand for Wireless Broadband Spectrum* (SMART 2012/0015)²⁸
- *Spectrum Policy. Analysis of Technology Trends, Future Needs and Demand for Spectrum in line with Article 9 of the RSPP* (SMART 2012/0005)²⁷
- *Study in support of the preparation of an impact assessment to accompany an EU initiative on reducing the costs of high-speed broadband passive infrastructure deployment* (SMART 2012/0013).

- *Steps towards a truly Internal Market for e-communications in the run-up to 2020 (SMART 2010/0016),²³³*
- *Study on the socio-economic impact of bandwidth (SMART 2010/0033)*
- *Broadband coverage in Europe in 2013 Updated on an annual basis (SMART 2013/0054)*
- *Broadband retail broadband access prices in 2013, Updated on an annual basis (SMART 2010/0038)*
- *Challenges and Opportunities of Broadcast-Broadband Convergence and its Impact on Spectrum and Network Use (SMART 2013/0014)*
- *Use of commercial mobile networks and equipment for mission-critical high-speed broadband communications in specific sectors (SMART 2013/0016)*
- *Study in support of the preparation of an impact assessment to accompany an EU initiative on reducing the costs of high-speed broadband passive infrastructure deployment (SMART 2012/0013)*

The other relevant sources quoted in the document, ranging from academic papers to industry figures and estimates, are indicated listed in annex III "Methodology of the support studies".

²³³ https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/final_report_internal_market_ecom.pdf,
http://europa.eu/rapid/press-release_IP-12-193_en.htm?locale=en

9.2. Annex II

Synopsis Report

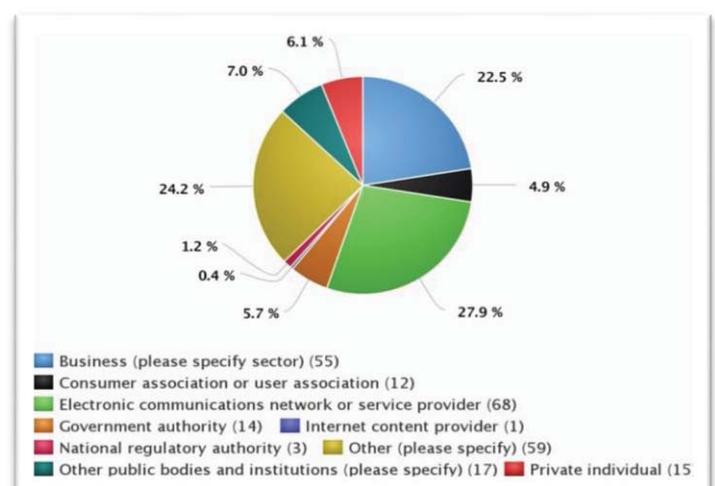
on the public consultation on the evaluation and review of the regulatory framework for electronic communications

Introduction

The consultation on the regulatory framework for electronic communications networks and services was launched to gather input for the evaluation process in order to assess the current rules and to seek views on possible adaptations to the framework in light of market and technological developments, with the objective of contributing to the Digital Single Market Strategy.

The consultation targeted consumers, providers of electronic communications networks and services, national and EU operator associations, civil society organisations, broadcasters, technology providers, Internet and online service providers, undertakings relying on connectivity and wider digital economy players, national authorities at all levels, national regulators and other interested stakeholders. The consultation gathered a total of 244 online replies from stakeholders in all Member States as well as from outside the Union. The consultation elicited both consolidated contributions from umbrella organisations and individual contributions from various stakeholders.

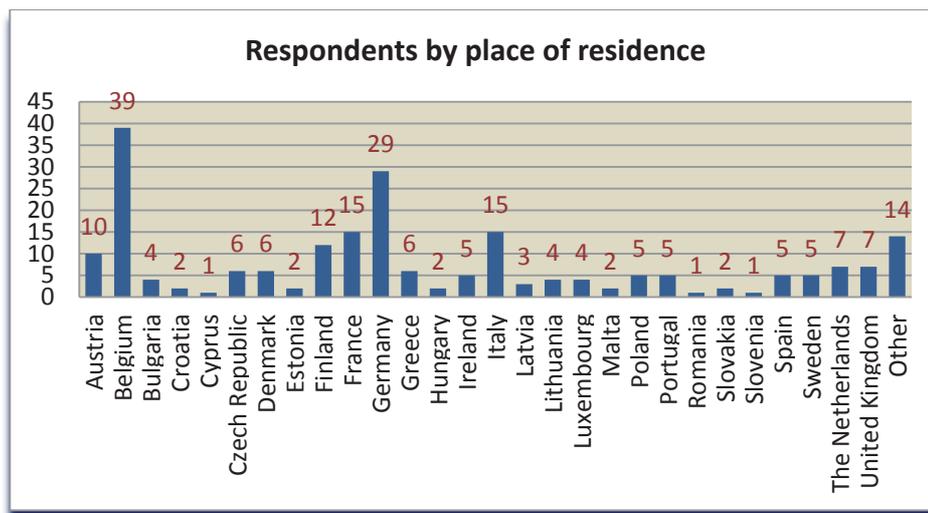
The participation of different stakeholder categories was overall balanced with stakeholders from the wider digital economy actively responding as well as consumer groups, public authorities and electronic communications networks and services providers. This includes stakeholders affected by the policy, those who have to implement it and those with a stated interest in the policy. Online contributions by public authorities (national administrations and sector regulators) were relatively fewer than the inputs of electronic communications network or service providers or wider digital economy market actors. Among stakeholders representing electronic communications networks and services providers, different clusters of economic actors with diverse economic power gave input – traditional/incumbent operators, alternative operators.



This report uses the above categorisation of stakeholders in presenting converging or differing views on issues

addressed in the consultation. The contributions of the stakeholders who gave their consent to publication are available [online](#). This report also takes account of BEREC's²³⁴ input to the evaluation and the review process provided at the request of the Commission, the RSPG²³⁵ [opinion](#) on DSM and the Framework Review and some 20 other contributions received outside the online consultation as well as feedback received via the dedicated [public hearing](#) dedicated to this review. The BEREC opinion was published in December 2015, and can be found on this [website](#).

This analysis does not represent the official position of the Commission and its services and thus does not bind the Commission.



The input gathered corresponds to the objective of the consultation in both assessing the performance of the regulatory framework to date and also providing insights about possible adjustments in order to respond to market and technological advancements and prospective challenges.

Analysis of responses

The analysis in subsequent sections of this report is based on inputs received by different stakeholder categories.

Objectives and overall performance

In terms of the *effectiveness*, it is acknowledged by most stakeholders (**consumer organisations, Member States, operators, regulators, other**) that while the framework has been successful in bringing more competition in the market and promoting the interests of EU citizens, it was less successful in promoting the internal market.

On the objective of achieving the internal market, most respondents indicated a moderate contribution. Alternative operators generally perceive the framework as having set the right environment for the internal market to develop. Conversely, several incumbents are

²³⁴ Body of European Regulators for Electronic Communications

²³⁵ Radio Spectrum Policy Group

rather negative on this point and also some small players point out that the provisions of the framework are not apt to foster cross-border deployments. Many respondents have stated that this objective has not been achieved owing to the lack of a consistent approach by NRAs (national regulatory authorities), with some of them being seen as more willing and ready to enforce framework provisions than others. Hence this objective can be considered as only partially achieved.

The framework's contribution to the objective of protecting the interest of European citizens is rated more positively. Most stakeholder groups (alternative operators, incumbents, others) consider that the framework has contributed moderately to citizens' rights and interest. **Alternative operators and small fibre operators** tend to attribute a more significant impact on EU citizens' interests, while **several incumbents** are rather negative on this point, considering that the interest of the European citizens has been promoted only to a certain extent, owing to the hurdles to investment in NGA allegedly caused by access regulation. **Some large operators** and entities wonder if the interest of citizens has been harmed by the focus on lower tariffs rather than on network quality. Finally, the sparse contributions by **private individuals** have a much more negative character, with 8 out of 12 pointing to little or no impact at all.

In terms of *efficiency* and whether the costs involved were reasonable, there was a somewhat negative perception. Larger operators (**incumbents and those with mobile arms**) consider that the administrative and regulatory costs borne have exceeded the results achieved. **Alternative operators** believe, on the contrary, that the benefits have exceeded the costs, underlining that competition, economical offers and several clear consumer benefits would not exist without the framework and that access regulation is necessary and proportionate. **Some alternative operators** underline the value of having a stable, predictable regulatory regime, whilst also highlighting some unnecessary costs: the costs of market analysis for termination markets where the outcome of the analysis in any event is stable, the cost of questionnaires, the overlap of tasks of public authorities, the lack of harmonisation in consumer regulation including data protection and data retention, of universal service obligations.

In terms of *relevance* of the framework and whether EU action is still necessary, the general perception is that framework is still necessary and there is a consensus amongst **incumbents and alternatives, large and small, consumer organisations**. **Alternative operators, consumer associations, wholesale operators** underline that competition cannot be maintained without ex ante regulation and that full duplication of network infrastructures is not realistic. Most **incumbents** argue for a simplified access regulation (limited to fixed infrastructures, with only one access product, based on commercial negotiations and dispute resolution rather than on ex ante cost orientation). Some **operators** and **equipment manufacturers** argue for a progressive transition to ex-post competition law. Many respondents groups support the relevance of the framework for network and service security.

In terms of *EU added value* and whether similar progress could have been achieved at national or regional levels, **most operators** highlighted the importance of competition for increasing choice and transparency, lowering prices and bolstering consumer rights. **Incumbents** acknowledged the role of the framework in liberalising monopolies. Many respondents highlighted a risk of fragmentation due to national implementing measures and of incoherence with other regulation and competition law. **Equipment vendors** in

particular acknowledged the role of the framework in promoting competition. While the desire to deregulate in one form or another is present in almost all categories of contributors, albeit not equally, none of the contributions concludes that full repeal of the framework is warranted. Consumer protection rules and universal service were the subject of widely contradictory opinions from different stakeholder groups, with disabled user group noting that without the framework, many measures to facilitate a disabled person's access might not have happened. In terms of process, there were calls from some operators for a maximum harmonisation to address fragmentation.

Connectivity is the overall converging theme in many contributions across different stakeholder groups, with many suggesting that it should be a more prominent focal point in the revised framework. Including investment as one of the objectives, however, divides the respondents. In particular, **consumer organisations**, **alternative operators** and **regulators** fear that this could be seen as undermining the current competition objective. **Incumbents** and many **mobile operators** stress the increased need for connectivity and investment but diverge in the proposed solutions. Connectivity to the benefit of end-users as an overarching objective to which competition, internal market and investments provide the means, could be considered as a central theme supported by most stakeholder groups.

Network access regulation

Extensive inputs were received from all of the major fixed and converged fixed/mobile electronic communications providers active in the EU, whether they are former monopolies, small or large access seekers relying on their networks, or independent fixed infrastructure owners including cable and independent fibre networks.

Good connectivity is perceived as a necessary condition to achieve the Digital Single Market, with many respondents pointing to the need for policy measures and possible adjustments to current policy and regulatory tools to support the deployment of infrastructure in line with future needs.

Evaluation of the network access regulation

Amongst stakeholders from the industry, the positions expressed on network access and interconnection regulation, including the current SMP-based approach, can be divided in two blocks, with on the one hand operators whose business model predominantly relies on access (and who strongly support the current ex-ante regulatory approach) as well as broadcasters, and on the other hand the incumbents (who call for a reform of the regulatory regime in place). Cable operators are supportive of the role that the SMP regime has had to promote competition, but warn that overly aggressive regulation could hinder infrastructure deployment.

The main argument from alternative operators and their national and European trade associations is that regulated access and interconnection have driven competition, innovation and investment and that with the ongoing shift to NGA networks the needs for SMP-based regulated access to broadband networks will remain acute. In addition, they submit that the current regulatory approach provides NRAs with the right level of

flexibility. Telecom users are also strongly in favour of the current access regulation, with the exception of one business users association which considers that the emphasis should be put on service competition rather than on the underlying infrastructure, and that the sharing of infrastructure should be emphasised.

On the other hand, incumbents consider that the access regime in general is a deterrent to investment in NGA networks, does not provide enough predictability, and is a burden for operators and regulatory authorities with high administrative costs. They claim in particular that promoting infrastructure investments by enabling competition downstream (first by the imposition of wholesale remedies and then by encouraging access seekers to gradually build their own infrastructure closer and closer to end customers), the so called "ladder of investment" approach, has failed, in particular when applied to NGAs, and that a lighter regime should be put in place with a focus only on situations where monopolistic conditions persist. The need to incentivize investment is raised by many incumbent operators. While many mobile operators also follow this line of thought, some of the mobile operators support the regulatory approach in place.

Regulators consider that the current approach drives investment. On the other hand, some responding Member States call in general for a pro-investment regulatory regime, estimating that the current ex-ante SMP-regulation is outdated and should be adapted, with some suggesting that it should enable NRAs to apply a more flexible approach for imposing symmetrical obligations of access to high-capacity networks.

With respect to the interconnection of voice, mobile operators and certain incumbents call for a phasing out of the ex-ante regime in place, arguing that the IP-based delivery of voice services is modifying market circumstances. MVNOs have an opposing view on the matter, on the ground that terminating networks will always remain a bottleneck. OTTs consider that interconnection rules are needed to avoid discrimination.

Many of the **access seekers** consider that the current rules were effective in addressing single dominance. This view is also shared by **consumer organisations** and part of the **regulatory community**. Those operators in principle agree with the existing scope of access remedies, while raising issues with its implementation in detail. On the other hand **incumbent operators** consider that the full set of access remedies is often imposed mechanically, without cost/benefits assessment and without regard to modulation according to actual problems identified. Intrusive access remedies, imposed at all levels of the "ladder of investment" hamper investments in modern networks. Moreover, the broad provisions concerning access regulation contained in the current framework allows NRAs to engage in product micro-management, business case design and steering market outcomes. This is said to cause significant delays in delivering new technologies and network upgrades.

Review of the network access regulation

The majority of **Member States/public authorities** that have responded highlight the positive effect that the implementation of the Framework has had on the market and the role of competition in promoting investments. However, there is an acceptance that updating the framework will be necessary, for reasons varying from promoting investment in next-generation infrastructures, responding to technological and market changes and diminishing administrative costs. Some Member States argue for flexibility

in the application of incentives to meet future challenges at a national or sub-national level. **Access seekers** and some other operators also call for greater guidance to be given to NRAs to analyse sub-geographic markets to increase consistency. There are also calls from certain Member States, which perceive limits in dealing with oligopolistic market structures, for a greater role for symmetrical rules. **Regulators** broadly underline the achievements of the current system but argue that some flexibility may be needed, for instance by considering more prominently symmetrical obligations or by simplifying the regulatory approach to the termination rates markets.

Among **operators**, the responses of the two largest groups of stakeholders (incumbents on one side and access seekers on the other) correspond to the general lines of the two groups: the first advocating a de-regulatory push in the name of changed market dynamics and the risks involved in future investment plans, the second defending the link between competition and investments and calling for a protection of access rights to legacy networks as well as to upgraded networks, where they fear that a deregulatory approach would lead to the loss of the welfare gains achieved so far by the regulatory framework. Those seeking further deregulation resist ideas that they fear may result in an increase of the regulatory burden, particularly in relation to regulatory measures that may lead to the continued regulation of markets even in the absence of proven market power. On the other hand, those that rely on regulation resist proposals that imply establishing a link between investment incentives and a lighter regulatory approach, as they fear that upgraded networks will become increasingly inaccessible and that broadband markets will become increasingly concentrated or even re-monopolised. In each case, however, the general approach is typically also accompanied by a recognition that regulated networks and their related markets have changed, leaving scope for adaptations.

In relation to the simplification of access products and focussing on key access points, **network owners** responded in favour of a drastic simplification to a single access product (if at all necessary), whereas **access seekers** insist on the importance of different access products to compete at the retail level. On the other hand, **access seekers** reject the idea that retail market considerations should be the focus of wholesale regulation, an idea that is strongly supported by **network owners**, who consider that continued wholesale regulation is not justified if retail markets are competitive.

In relation to different treatment of legacy copper networks (whether pure copper access networks or upgraded FttC networks with copper sub-loops) to incentivise upgrades, operators invoked the principle of technological neutrality and leaving the market to decide how to best meet demand. However, a number of contributors consider that copper-based solutions will not represent a credible alternative in the long term. **Investors** in FttH solutions and some **access seekers** call for a recognition that the risk involved in rolling out fibre to the premises is higher than upgrading copper, so that regulatory incentives, if any, should not include FttC solutions. **Regulators** also propose the idea that any risks specific to a particular new investment network project should be considered if wholesale tariffs are subject to regulation, in order to allow the operator a reasonable rate of return on adequate capital employed.

Network owners request discretion to decide whether and how to continue to use copper assets (full copper loop or sub-loop), whereas **access seekers** request guarantees that physical access to copper networks will continue to be guaranteed. While a majority of

respondents, including **regulators**, would not agree to mandating the switch-off of copper networks where fibre is present, they still see a role for regulators to manage the transition where switching off copper makes economic sense, with **copper networks owners** advocating minimal intervention, and others rather invoking public intervention to preserve competition (e.g. transitional migration regime).

With regard to co-investment models, many stakeholders can see the advantages of co-investment for increasing the reach of NGA networks, for example, in less densely populated areas. Their views however differ on the related regulatory regime. While **incumbents** favour co-investments on commercially negotiated terms, **access seekers** call for strict conditionality to ensure fairness and openness of the co-investment.

The responses overwhelmingly affirm the important role that civil engineering plays in the roll-out of NGA. Some **Member States** and a number of **infrastructure owners** don't see the need to further intervene to ensure access to civil engineering falling within the scope of the Cost Reduction Directive (2014/61/EU). However, **alternative operators** highlight the importance of detailed SMP obligations, beyond the general obligations in that directive. Furthermore, **incumbent operators** call for symmetrical access to in-house wiring.

There is broad alignment between **regulators, Member States** and many others that longer review periods (compared to the current mandatory three years) would be beneficial, particularly in stable markets such as termination rates.

Regarding measures aimed at facilitating the roll-out of high-speed networks in the most challenging areas, responses were cautious with regards to any first mover advantages (to operators that are willing to roll out next generation networks in challenge areas). **Access seekers** and **consumer associations** warned about the risk of re-monopolisation, whereas **network owners** challenged the proposition that a risk of strategic overbuild can be defined and distinguished from competition. Some **Member States** highlighted the need for local responses to sub-national competitive and investment challenges, indicating openness to consider approaches to incentivise first movers on a geographical basis, subject to suitable safeguards being built in. In supporting first mover incentives, **vendors** and wider digital economy players suggest a concession model, with some operators noting that in such a case regulators should be able to define a period in which the network operator is allowed to use its network exclusively. Most stakeholders agreed that any first mover advantage should be subject to safeguards against re-monopolisation. Wholesale-only models (which may counterbalance fears of re-monopolisation) found the support of **equipment vendors and smaller/fibre-only network operators**, but **operators in general and public authorities** disagree on whether such models would have a positive effect on investment.

On oligopolistic markets, on the basis of BEREC's recently adopted report, all respondent **regulators** and **some Member States** are calling for the widening/strengthening of regulatory powers to deal with new duopolies or oligopolies (where such market structures lead to sub-optimal market outcomes) albeit still with a high threshold for intervention. Some propose symmetrical regulation as a possible solution. Some alternative operators also raised concerns about the adequacy of approach under the current SMP test and guidelines to tackle joint dominance or "tight oligopoly" market structures. However, many operators warn of the risk of over-

regulation if ex ante regulation tools are broadened, without a clear economic underpinning, to tackle oligopolistic conditions beyond the current joint dominance test, as set out in Annex II of the Access Directive and the SMP Guidelines, or beyond the current threshold for applying symmetrical rules.

Spectrum management and wireless connectivity

The importance of wireless connectivity and wireless broadband, and its link and complementarity to a very high capacity fixed connectivity is acknowledged in consultation responses. Industry is supportive of a more co-ordinated approach and looks for additional certainty in investment and possibilities to develop throughout the EU new wireless and mobile communications including 5G. Member States generally underline the achievements in the field of technical harmonisation, and the need for additional coordination to be bottom-up and voluntary; some of them call for a better balance between harmonisation and flexibility. There is widespread recognition of the importance of more flexible access and use of spectrum in the future from both operators and public authorities, although disagreeing about how to realise this.

Evaluation of the current rules on spectrum management

While a majority of respondents consider the current regime to have significantly contributed to promoting competition, almost half say it has only moderately achieved the aims of providing market operators with sufficient transparency and regulatory predictability, promoting citizens' interests and ensuring effective and efficient spectrum use. A third of respondents considered that the current regime had only a minor impact on keeping the administrative burden appropriate and on promoting the Internal Market.

A majority of respondents that spans public authorities, regulatory and trade bodies both in and outside the electronic communications sectors, MNOs, converged and satellite operators, user associations and vendors, consider the current regime to have contributed to harmonised conditions for the availability and efficient use of spectrum. Member States and regulators have in particular, been consistent supporters of this position. More reserved views are found among broadcasters and other respondents, notably from the transport sector. The regime has been significantly more effective for new bands than for bands still requiring freeing.

There is a general perception among several respondents (converged operators, operator associations, vendors) that technical harmonisation has worked well and that the involved actors (RSPG, RSC/CEPT and the Commission) have delivered. Even those parties seeing little or no benefit from the existing regime (M(V)NOs, cable, converged operators, non-ECS associations) acknowledge the achievements in technical harmonisation, but stress persistent regulatory fragmentation. Points of criticism concern the ineffectiveness in addressing interference issues (transport) and ensuring usage efficiency.

As for the selection processes for limiting the number of rights of use, industry respondents, including operators and vendors, criticize a lack of consistency as well as sometimes unnecessary restrictions of usage rights. Some respondents recognise coherence of application in the sense of certain rules being widely used, while results still differ (converged operators, ECS associations). A majority of respondents (spanning

ECS and non-ECS associations, M(V)NOs, converged operators and vendors) considered that the lack of coordination of selection methods and assignment conditions has impaired the development of electronic communications services. The authorisation methods most often mentioned as efficient for wireless broadband were auctions and general authorisations.

While respondents comprising broadcasters, mobile operators, associations of mobile and alternative operators, regulators and vendors consider that inclusion of spectrum provisions in several instruments should not per se impede their effective interpretation and/or implementation, several respondents including incumbent operators and some Member States nevertheless consider a single instrument to be potentially more effective, stressing the benefits of applying the same set of rules to all spectrum users, which is also supported by most vendors and operators/associations, subject to the rules being consistently applied.

Review of spectrum management rules

Regarding objectives and principles, **most economic actors and some Member States** seek more consistency in spectrum management to increase legal certainty and spectrum value, and to secure greater transparency and predictability for investment, in particular on licence durations, pricing and availability of spectrum. There is also large support from public authorities to remove barriers to access harmonised spectrum across the EU, in order to foster economies of scale for wireless innovations and to promote competition and investment, as well as to avoid cross-border service impairments. **Operators** also stress problems - in particular, late access to spectrum, high reserve prices, inefficient spectrum packaging, spectrum left idle and lack of long-term vision.

The majority of respondents consider that spectrum assignment procedures have a significant impact on structuring the mobile markets and their competitive landscape, e.g. number of operators, price, network investment, and consumer prices. Some (generally **large operators**) criticise the use of assignment measures as indirect means to ex ante regulate the market (through caps, reservations) without the associated objective criteria. Others (**vendors, some regulators**) also consider that additional factors such as regulatory conditions (e.g. access obligations for MVNOs) and historical national market development have a similar structuring impact.

Most responding **Member States, broadcasters and alternative operators associations** insisted on national specificities and are generally satisfied with the current framework. While public authorities could envisage limited coordination through common deadlines for making a band available or the common definition of certain general principles, many economic actors seek greater harmonisation of award methods and procedures (need and timing of spectrum release and selections, general principles and objectives, transparency, ex-ante competition assessment, refarming conditions, timing of advanced information to market participants, measures to promote use efficiency, spectrum packaging) so as to enhance legal certainty, support investments, promote competition, provide more clarity to manufacturers and support economies of scale. **Member States** expressed much resistance regarding coordination of spectrum valuation and payment modalities, while many **operators** oppose fee disparities and excesses, and in general support greater coordination of assignment processes. Most

vendors supported harmonisation for predictability and a robust end-to-end value chain, but warn that timetables alignment should not delay early movers.

Assignment conditions generally are considered as heavily impacting investment and business decisions, competition and the single market. Most **operators** agree on the need for more consistent binding assignment conditions to increase investment predictability, and in particular to support and ensure objective, transparent and non-discriminatory treatment of operators, transparency and alignment of timing and conditions of licence renewals, longer licence duration, flexibility to trade, lease or share, technology and service neutrality limits, refarming conditions, technical performance, use-it-or-lose-it clauses and interference mitigation before assignment decisions are taken. On the contrary, there is strong opposition to harmonise or even use wholesale access conditions from **operators** and to a certain extent to harmonisation of coverage obligations from **Member States**. For **broadcasters**, decisions on criteria and conditions should remain at national level to consider local specificities or media pluralism and cultural diversity. Some also insist on the need for compensation in case of refarming.

Member States reject full harmonisation but are open to a more common approach to spectrum management, some could accept a peer review of national assignment plans as well as a certain level of harmonisation or approximation of conditions and selection processes. A number of Member States expressed their desire to remain flexible to support early take-up of new technologies and to adequately balance harmonisation and flexibility in order to be able to adapt to market demand.

Most public and commercial respondents are calling for flexible or shared access to spectrum to meet future demand, in particular for 5G, preferably on a voluntary basis; **vendors** and **operators** insist on exclusive or licensed shared access for quality purposes. **Broadcasters** raise interference issues and thus urge for careful selection of compatible sharing usages; in addition, some point to their incapacity to at the same time compete for spectrum and meet cultural targets if flexibility is purely market-based.

On refarming, a large majority including operators, vendors and their associations as well as responding Member States and regulators seek further facilitation, notably on a voluntary basis except in cases of inefficient use. The large majority of operators, vendors and their associations consider that longer licence duration would be helpful in this regard. Most operators see a need to protect and give priority to existing users to safeguard investments or avoid interference, while a minority believes that appropriate spectrum pricing, trading and auctions can address this issue. When facilitating refarming, some seek a careful balance between flexibility and preservation of harmonisation.

With regard to facilitating deployment of denser networks, many respondents pointed to obstacles - lengthy permit process, high administrative fees for back-haul provision, inappropriate fee structure, lack of harmonisation of management of electromagnetic fields' emission - to the roll-out of small area access points needed for mobile services, while some **Member States** disagree. Many market actors and public authorities consider that a general authorisation regime would foster innovation and competition both for services and end-devices and should include access rights to public and private property to build a network. **Vendors** seek a common definition of small-area wireless

access points and the harmonisation of technical characteristics about their design, deployment and operation.

While opinions are divided as to whether end-users should be entitled to share access to their Wi-Fi connections with others as a key prerequisite for the sustainable deployment of denser small cell networks in licence-exempt bands, many public authorities and private respondents supported the deployment of commercial/municipal Wi-Fi networks in public premises, while seeking appropriate regulatory safeguards for a.o. liability or exposure to EMF. Some operators reject such idea as network roll-out could be facilitated via various forms of public-private partnerships, many stressed that any such public support should be technologically neutral.

With regard to public protection and disaster relief (PPDR), a majority of respondents reject the inclusion in licence conditions of obligations of service quality and resilience of network infrastructure to enable a dual use of commercial mobile networks for PPDR, as MNOs' individual business models do not combine easily with stringent PPDR requirements, and therefore should be on a voluntary commercial basis only and based on net neutrality rules. Some operators believe that providing PPDR services via commercial networks would be economically more efficient than funding a separate network for PPDR services.

Sector-specific regulation for communications services

Evaluation of the current sector specific regulation for electronic communications services

With regard to the effectiveness of the current regulatory framework in ensuring a high level of consumer protection, the clear majority of respondents (**Member States, telecom operators** and their **associations, broadcasters, vendors and OTT providers**) believe that the current framework contributed to effectively achieving the goal of ensuring a high level of consumer protection in the electronic communications sector across the EU. **Member States** noted that in general the framework had positive effects on the protection of consumer rights regarding traditional electronic communication services (ECS). In particular, provisions related to contracts and those facilitating change of provider (switching) have diminished unfair lock-in practices and ensure a high level of consumer protection. **Users and ECS/ECN associations**, as well as the majority of **operators** consider that the existing rules have delivered good outcomes and high levels of consumer satisfaction.

Many respondents, however, consider that the current regulatory framework has failed to deliver consumer protection with respect to emerging services, which are based on new technological developments and currently fall outside the remit of the sector-specific rules. Most responding **Member States** support specific requirements to be applied to all communications services irrespective of the provider ("traditional" telecom operators or "new" OTTs) in order to avoid risks of (a) insufficient customer protection, (b) a lack of clarity, and (c) confusion among consumers who might mistakenly believe that their communication is protected by sector-specific rules.

Some **telecom operators** think that the current provisions have become outdated with little substantial value for consumers, except for basic provisions on emergency services,

number portability and interconnection and argue that competition in the sector would allow for the removal of regulation.

Regarding provisions constituting a particular administrative or operational burden, a majority of respondents (**mainly operators and their associations**) believe that there are administratively or operationally burdensome provisions. The biggest concerns expressed by operators refer to the different and overlapping legal frameworks, e.g. Consumer Rights Directive (CRD) and Universal Service Directive. Some respondents argue that this leads to over-regulation, too detailed provisions, and inconsistency of rules. Some **alternative operators** consider the application of end-user protection rules to business customers as burdensome. According to other **incumbents and their subsidiaries** almost the entire Universal Service Directive is burdensome.

With regard to provisions to be repealed, the majority of respondents (mainly **telecom operators and their associations, a few broadcasters, vendors and OTTs and a Member State**) have identified certain sector-specific end-user rights' provisions, which they consider are no longer relevant. These include provisions such as contract rules which are covered by various other directives, in particular the CRD. Regarding the maximum contract duration, some **telecom operators** suggest either an application of these rules also to OTT communications, or their abolition. One **telecom operator** suggests the repeal of Art. 34 USD as out-of-court dispute settlements are also addressed in the Directive on Consumer Alternative Dispute Resolution (ADR) and the Regulation on Consumer Online Dispute Resolution (ODR). Some **operators** suggest the repeal of the provisions on printed directories and public payphones. Some **Member States, mobile operator association, EU and national consumer associations and a trade union** have not identified any provision to be repealed.

With respect to provisions protecting disabled end-users, the USD contains specific requirements under the universal service obligation (USO) and regarding the equivalence in access and choice. The majority of the respondents (**telecom associations, telecom operators, users' associations, an association of users with disability, other NGOs, regulators and Member States**) found that the current regulatory framework has been effective in achieving these goals. Several **operators and NGOs** stated that the relevant Art. 23a is too weak ("Member States shall encourage"), it leaves too much discretion ("where appropriate") and does not contain financing provisions. They consider that it has therefore been only moderately effective in achieving the goals of providing equivalent access. As a consequence, an inconsistent diversity of approaches has developed across the EU.

Incumbent and larger operators raised the financing issue. Initiatives designed to improve accessibility of services to disabled people should be borne by the public authorities. If any contribution is required from the sector, it should be requested to all players, including OTTs, in proportion to their incomes and the number of users ("responsibility-sharing based on a proportionality principle").

With regard to the efficient implementation of number portability (NP) provisions, a large majority of respondents consider that the current NP provisions allow significantly or moderately for their efficient implementation. However, **operators** criticised the diversity of approaches, and of technical means put in place, in various Member States. In some Member States, there is no common database of ported numbers and in a few of

them direct routing of ported calls is still not available. Some **operators and their associations** argued in favour of a receiving provider-led porting process. Some respondents stated that the current NP obligations are not well suited to new services such as M2M or IoT.

With regard to the relevance of 112 provisions to ensure an effective access to emergency services, a large majority of respondents agreed with the significant relevance of the scope and requirements of the current regulation of access to emergency services. **National authorities** are also in line with this trend. The **telecom industry** highlights the importance of reliable access to emergency services that, in view of the technical standards and legal arrangements in place today, can be provided today only through ECS.ECN/ECS argue that access to 112 obligations should be imposed on OTTs as well, if technically feasible. A large number of stakeholders consider that all the voice services perceived by the users as substitutive to the current PSTN voice service and which also give access to E.164 numbers should be subject to the same obligations regarding the access to emergency services. In the same vein **regulators** support an obligation on all communication services (including OTTs) that give access to numbers in the numbering plan.

As regards the effectiveness of network and service security rules in achieving their objectives, over half of all respondents (including several **Member States**, most **telecom operators** and some **vendors**) consider that the rules have been effective. A minority (one **Member State**, a few **telecom operators** and some **associations of operators**) found them ineffective. More than a third of the respondents (many incumbent and alternative telecom operators and associations, several ENISA- member national authorities) underlined the need to involve the complete Internet value chain (including OTT services, software and hardware).

Review of the sector specific rules for communications services

With regard to the scope of the future rules and the need for sector-specific regulation of communication services, the majority of respondents including **BEREC, Member States, several associations of broadcasters, of cable operators and of alternative operators, consumer associations, cable players and OTTs** note that there is still a need for sector-specific regulation of communications services as ECS have become an essential service in every person's life, crucial to ensuring a well-functioning society and economy. Therefore sector-specific rules are still considered necessary for sustainable competition, innovation, a healthy low concentration of providers' market power and also to guarantee that consumers can reap the benefits of such competition. Several areas were listed, where sector-specific regulation is still needed: retail Internet access services, numbering, end-user protection, universal service obligations, roaming and downstream availability and accessibility of a wide variety of audio-visual services etc. Nevertheless, several of those respondents prefer horizontal to sector-specific regulation wherever possible. A few of them, however, oppose the inclusion of OTTs within the scope of such rules, because there remain fundamental differences between the telecoms market and the market for Internet applications and content, and applying the same detailed sector-specific obligations would be a disproportionate burden for a highly dynamic industry sector.

Regarding the revision of the current ECS definition, **BEREC, several Member States, most operator associations, most incumbents, some cable players, all user associations and some broadcasters** consider that the current definition of ECS should be reviewed owing to the increasing uncertainty on the scope of the definition of ECS related to "conveyance of signals", the inconsistent regulatory obligations for similar services and the convergence of communications services. Several respondents emphasised that a future-proof definition needs to be end-user-centric, the key factor being substitutability from a customer perspective. Those opposing revision of the definition, (some **Member States, OTTs, software and equipment vendors, cable operators, some broadcasters and a few individuals**), argue that the concept of ECS has proven itself and changes may create regulatory, legal and investment uncertainty. According to some stakeholders, instead of including OTT services in the definition of ECS, the current regulatory requirements on traditional electronic communications providers should be loosened. In **OTTs'** view, if the definition is reviewed, the difference between Information Society Services and telecoms networks should be maintained.

The majority of respondents (some **Member States, operator associations, most incumbents and vendors**) are of the opinion that for consumers OTT services are a functional substitute for traditional ECS. The minority of respondents (some **Member States, a few operators, OTTs and consumer and user associations**) submit that OTT services are functionally different from ECS. The majority of respondents (**Member States, regulators, most incumbents, alternative operators, associations, trade unions, vendors**) are of the opinion that all functionally substitutable communications services should fall under a new common definition, but have significantly varying positions on the types of obligations that should apply to services falling within such a definition.

The minority of the respondents (**several Member States, NRAs, some associations, broadcasters, OTTs, a few cable and fixed players**) suggest maintaining the "conveyance of signals" criterion in the definition of ECS. For broadcasters that criterion helps in distinguishing telecommunications from audiovisual services. However, the majority of respondents (**several associations, most MNOs, most incumbents and few software and equipment vendors**) do not consider "conveyance of signals" as a necessary criterion. Rather, the lack of clarity in the ECS definition, when assessing whether services "consist wholly or mainly in the conveyance of signals", opens the door to different interpretations and inconsistencies. According to **BEREC**, it "is worthwhile to examine whether it is still an appropriate distinguishing factor."

With regard to the elements of the ECS definition related to transmission services in networks used for broadcasting, **all broadcasters and their associations, alternative operators and their associations, many fixed and converged fixed/mobile operators, an equipment vendor and private individuals** advocate that these should continue to be considered as ECS. For **broadcasters**, excluding transmission services from the definition would mean that they are omitted entirely from the telecom framework, undermining important legal protections for broadcasting (e.g. transmission obligations). For some respondents "transmission services in networks used for broadcasting" should not be considered as ECS. They argue that in the light of the convergence of the legacy broadcasting transmission services and internet media services (including broadcasting),

the transmission of the service is platform-based and no longer network-based and any reference to services provided on a network has to be eliminated.

With regard to a possible differentiation between managed and best-effort services in the ECS definition, the majority of respondents (**incumbents** and **alternative** operators and their **associations, vendors and broadcasters**) prefer no differentiation between *managed and best-effort* services in the ECS definition as such a differentiation would facilitate circumvention of the rules by opting for 'best effort provision' free of obligations. As to the question whether sector-specific regulation should be limited to Internet Access Service, there is almost no support for such reduction, with only a few exceptions.

Regarding the application of sector-specific provisions (end-user and other) to the IAS, **telecom operators, industry associations and vendors** agree that as a general rule only horizontal competition and consumer law should apply to internet access service and that, if any sector-specific provisions are needed, these should apply to all other digital services. Almost all **national authorities, user associations, OTTs, some broadcasters and IT service providers** see a need for further end-user rights in relation to IAS in addition to those included in the proposal for the Telecoms Single Market Regulation, although in many cases these stakeholders do not provide detailed arguments to explain this position.

On the issue of definition of communication services, a significant number of respondents (**incumbents and alternative operators**) emphasise that in an "all IP" environment network interconnection is to be distinguished from the interoperability of services as users would be tied to a single connectivity provider but not to a single communications service provider any more.

Some respondents do not believe that there is a need to apply the existing, as well as any further end-user rights, to communication services (some **Member States, a large number of mobile, fixed, and cable operators, and OTTs**). The main argument put forward by them is that horizontal regulation (consumer and data protection), together with competition-law tools, should suffice. Those who were in favour of having end-user rights applicable to communication services are mostly **Member States and consumer protection bodies**, while **alternative operators** suggested that maximum harmonisation is needed for contractual information, transparency measures, contract duration, switching, and bundles.

Several associations, most broadcasters, a few incumbents and converged fixed/mobile players consider that there are new sector-specific end-user protection issues that need to be addressed. Among the areas listed are: bundling of contracts and their impact on switching; communications contracts with subsidised equipment; continuity of service (telephone or internet) when switching; control of consumption; contract termination in case of the tacit extension of contracts; rights of the end-users when relocating; improved rules for end-users with disabilities, findability of public-interest content.

Finally, **regulators and others** indicated that some new end-user protection concerns can be anticipated in relation to services which are substitutable to traditional ECS, including access to emergency services, network resilience, cyber security and

interoperability between different digital services, , transparency, protection of data confidentiality and privacy.

Trade unions, consumer organisations, vendors and directory services expressed support for specific rules with regard to voice services for end-users. These contributions highlighted the importance of availability (call to emergency services, functionality during power outages and disasters) and the importance of voice quality as a distinctive characteristic. Some **mobile operators** considered voice-specific requirements still relevant, noting the need to ensure interconnection and access to emergency services, while others noted the importance of requirements such as data retention/lawful intercept. In general most **incumbent operators** would prefer horizontal regulation, while maintaining the possibility of a few specific requirements (such as emergency services) and consumer information was noted as safeguard measure. Directory service providers noted a risk that without a specific requirement (Art. 25 USD), operators might not provide them with subscriber information on a fair, objective, cost-oriented and non-discriminatory basis.

Half of the respondents (some **Member States, broadcasters, a few telecom operators and consumer protection bodies**) are of the view that providers of communication services as newly to be defined should potentially be subject to an SMP-based regulatory regime, if they can limit competition, based on a market analysis and consistent with the non-discrimination principle. Those disagreeing (some **Member States, associations of incumbents, alternative and mobile operators, vendors and OTTs**) highlighted the existing high level of competition, market dynamics and diversification of providers, and stated that competition law and horizontal consumer protection offer sufficient protection in this regard.

There is a majority support ranging from **national authorities to mobile operators and incumbents**, to extend the scope of the access obligations to emergency services to best-effort services. At the same time, it is recognized by all stakeholders that minimum quality of service should be ensured for emergency communications and best-effort communication cannot provide the end-to-end quality that managed services can. Some **operators** support imposition of a general obligation to give access to emergency services, adapted to the quality of service requirements that each type of services (managed vs. best-effort) can provide.

Regarding numbering resources and assigning numbers directly to M2M users, **most MNOs, including smaller ones**, highlight that this solution raises many implementation and security issues and risks of fraud, could exhaust national numbers, would endanger interoperability and end-to-end connectivity. There is a clear consensus that to cope with the numbering needs of M2M in the future, a clear framework for extra-territorial use of numbers is necessary to ensure sufficient numbering resources. A majority of respondents see a demand for over-the-air provisioning of SIM cards for M2M communications, and to a lesser extent for end-users' own devices later on. However, the idea of regulatory promotion of over-the-air provisioning is not supported, with the argument that it should be up to the markets to decide on specific technological options.

While there is a majority view that transmission obligations imposed on electronic network operators ('must-carry' rules) and rules related to electronic programme guides should be adapted to new market and technological realities, there is sharp disagreement

as to how such adaptation should be conceived. Extension of the current rules is supported by some **Member States** and most **broadcasters**, whereas most **telecom operators** are in favour of reducing the scope of the rules. **Public service broadcasters** consider that the future scope of rules should extend to interactive and non-linear services, should also cover hybrid TV signalling and should apply on a technologically neutral basis to all distributors of audiovisual content, not only to ECNs. **Telecom operators** call for a level playing field between broadcasters and online platforms and call for improving access to content rights. Some **cable and telecom operators** call for complete removal of must-carry obligations or at least to limit them to the main/most essential general interest channels. **Commercial broadcasters, one telecom operator** and a citizen consider that the current provisions are adequate.

Media regulators and some **telecom** and **cable operators** consider that the presentation and the order on navigation interfaces is crucial for user choices of audiovisual content and that ensuring non-discrimination of general interest content is sufficient. **Public service broadcasters** consider that Member States should be competent to ensure 'findability' of general interest content on user interfaces of significant networks and audiovisual platforms and that regulated EPGs should be included in new TV sets. A **pay-TV provider** considers that prominence of content could also be improved by better referencing/tagging of national and European offers. Several **telecom operators** point to the need for broadcasters to be obliged to make real-time signalling available, in order for EPGs to work satisfactorily.

The universal service regime

Evaluation of the current rules on universal service

The majority of **Member States and regulators** agree that universal service has been effective and efficient in safeguarding end-users from the risk of social exclusion, while **most of the operators** see little or no impact and efficiency at all. Proponents of universal service argue that the availability of certain basic services increased and that services became affordable and accessible to all. Opponents claim that (1) the universal service regime has become outdated; (2) the high level of competition for fixed and mobile services ensures the affordability of tariffs and not the regulatory obligation; (3) the calculation of net costs have been fraught with controversy, challenges, and appeals; and (4) the overall administrative burden and regulatory uncertainty have been very high, for a regime which has not produced major benefits.

As for coherency with other rules, the majority of **Member States** agree that universal service has been coherent with other provisions of the framework and state aid, while most of the **operators** see little or no coherence at all.

The vast majority of **operators** consider that this review should be the opportunity to redefine or completely reconsider the universal service regime (including its financing), with many claiming that it has become obsolete. **Member States** mostly claim the need to maintain a universal service scheme, with flexibility at Member State level on funding and on broadband. **Regulators** support maintaining the status quo.

Review of the universal service rules

With regard to the scope of universal service most respondents consider that the current scope is outdated because it was shaped in a context of market liberalisation and since then market conditions have drastically evolved, with more competition and choice available to consumers.

There is a general acceptance among the respondents to exclude public payphones and comprehensive directories and directory enquiry services from the scope. Due to availability of mobile telephony and internet, there is no usage of or demand for public pay phones. **Regulators** acknowledge a decreasing demand/usage for public pay phones but argue that Member States should retain flexibility to include pay phones within the scope. As for directories, the availability of the same information through the internet is a further competitive alternative. However, some directory and local search providers underline that access to data risks being refused in the future, absent a universal service obligation guaranteeing access to directory enquiry services.

Concerning the provision of telephony services at a fixed location, **operators** mostly agree that this inclusion in the universal service scope is no longer necessary, because various types of players are providing voice services (mobile, VoIP) on a competitive basis while **regulators and Member States** mostly claim the opposite.

With regard to the inclusion of **broadband within the scope of universal service**, while most **operators and their associations** have no doubts about the positive impact of broadband on social and economic life, they claim that USO is not the right instrument to foster broadband deployment. In any case, if broadband were to be included in the US regime, it would have to be revised substantially. Respondents supporting both in and out options (mostly **Member States and regulators**) submit that Member States should retain the flexibility to make the choice at national level.

Most **operators and their associations, several Member States and regulators** consider that broadband under universal service bears high risks of market distortions and cost inefficiencies. In particular, industry funding is considered too distortive. The risk of lowering incentives to invest, crowding-out effects, delays in network expansion and unpredictable large financial transfers between competitors (if industry funding is used) are considerable. Instead, an investment-friendly regulatory framework, lowering of deployment costs, demand stimulation, and well-designed public subsidy schemes targeted at cases of clear market failure (evaluated by an impact assessment) should be used for fostering broadband instead of USO. Many also highlight the need to promote competition and commercial investment via regulatory tools. The use of such other public policy measures should be based on timeliness (so as not to come in too early to disrupt or crowd out private investments), proportionality, non-discrimination and technological neutrality.

As to how broadband should be defined if included: those favouring the speed aspect (**consumer groups, several Member States, media players, operators**) consider it a simpler and more neutral parameter. **Media players** argue for sufficient speeds to deliver media content. Those favouring the criterion of the use of certain types of services (**ECS/N associations**) generally feel that it is more flexible, able to evolve with time, more technologically neutral and has a more direct link to social inclusion. Some players are wary of setting the speeds based on the average speeds used by the majority of the population, so that the speeds are not set at a high level. With regard to the list of

essential services, most of the respondents agree that the list of services should be based on what is necessary for social (digital) inclusion, but they have varying views on what set services this would entail.

With regard to financing universal service, most **operators and associations** agree that the most appropriate and equitable way of financing the universal service, in particular in light of the possibility to include broadband within the universal service, would be through public funds. Broadband for all should be supported through general taxation since it is a general public interest goal that benefits society as a whole. The scope of universal service should be defined narrowly, representing only **a safety net** in a market-driven sector. Many **operators** state that industry funding, especially when limited to operators, is disproportionate. The use of public funds would have the advantage of limiting the risk of setting too high targets for the universal service and is the only way of ensuring that Member States properly weigh the needs against costs because of the need of reducing public expenditure and maximising public economic welfare. The uncertainty of the right to compensation in the present universal service system and the difficult enforcement that led to disputes/litigations can be considered as a weakness.

Several actors considered a combination of public funding and industry funding acceptable with the **majority of respondents** however specifying that providers of on-line content, applications and services should contribute, given they are the biggest beneficiaries of access. **Broadcasters** warned against the redirection of resources from audio-visual content, innovative online services and digital skills activities to the financing of infrastructure, since availability of such content is an important determinant for the development of broadband networks.

According to **regulators**, the current funding mechanisms for USO remain relevant and that flexibility should be retained, allowing Member States to choose the appropriate mechanism.

Most market actors and regulators agree that universal service is not the right instrument to foster very high-capacity connectivity for public places. Market forces deliver these services and other public funding policies should be used because the service is of public interest. Only a small minority of respondents (**satellite operators**) agree that universal service should play a future role in to help realise public interest objectives, but this should be financed by public funds.

Most market actors, **Member States and consumer organisations** submit that obligations related to disabled end-users should be incorporated in horizontal law. Respondents stress that any obligations should apply equally to all market players. Through the broader implementation of the provisions of Article 23a of the Universal Service Directive, a wider choice of services and tariffs for disabled users could be achieved. According to **regulators**, specific provisions for disabled end-users are already included in the national regulatory frameworks of many Member States. Measures in the Directives should continue to be flexible enough to adapt to the situation of each country.

Institutional set-up and governance

Evaluation of the current institutional set up and governance structure

The perception as regards NRAs' independence is generally positive, in particular those safeguards applicable to independent NRAs. This perception is supported by different kinds of stakeholders, in particular public and private, including **operators (mostly incumbents as well as some alternative operators and trade associations)**.

Just over half of the respondents consider that there is generally a sufficient degree of coherence in the application of the regulatory framework by the various institutional players (NRAs, BEREC, the European Commission). This idea was supported by **public authorities, especially regulators** and approximately **half of the operators**. Some operators propose to reduce the overlapping competences at EU and national level and to reduce and prioritise the objectives of the framework.

BEREC's role is positively perceived in relation to the Art.7 procedure, roaming, net neutrality, M2M communications and advice to EU Institutions. While more than half of respondents (including national regulators) considered that BEREC has achieved its main objective, a group of **incumbent operators**, on the contrary, considered that BEREC has not achieved its main objective, arguing that flexibility is overall favoured compared to harmonisation/consistency of application and that BEREC has a tendency to support over-regulation. Some **operators** stated that BEREC should be constituted as a supervisory authority independent from national interests or that it should be a proper EU regulatory authority with decision-making powers.

Some respondents submit that BEREC's current institutional set-up results in it opting for greater flexibility at national level or the lowest common denominator instead of focusing on a more consistent or harmonised approach for the single market, and therefore, BEREC's Positions and Guidelines are sometimes just descriptive documents and not a collective commitment or a development of best practice guidelines. Suggested proposals for addressing this include: allowing BEREC to make binding decisions, appointing board members for four years, establishing a Director appointed by the Board, more adequate funding, reassessment of the location of the BEREC Office, more consistent launch of consultations, longer consultation periods and introducing a two-stage consultation process on key policy matters. There were also calls for a stronger advisory role to the Commission, more pro-activeness, and improved transparency and stakeholders' involvement.

As regards consistency of market regulation, just over half of the respondents answered that the Art.7/7a process had been effective in achieving greater regulatory consistency, while a third were of the opinion that this process had little or no effect on consistency. In the first category of positive responses, there were many **alternative operators, FttH-operators** and some **incumbents and MVNOs**. Also those **regulators and Member States** who responded were largely positive. With regards to areas which could be improved, many respondents who were generally positive suggested that the entire process could be streamlined, made less burdensome for all stakeholders and that the Commission's role vis-à-vis remedies (under Art.7a) should be strengthened, either by a veto power, or by a so-called double-lock veto (i.e. regulators would be required to withdraw the draft regulatory measures if BEREC agrees with the Commission's serious doubts).

Those who disagree, are mainly **incumbents** as well as some **individual respondents**. The main arguments brought forward for this view differ widely. On one hand, it is criticised that the current process does not lead to enough consistency. On the other hand, some respondents complained that the current system attempts a 'one-size-fits-all' approach not taking sufficient account of the need for different solutions in different Member States, i.e. not giving regulators enough discretion. **Regulators** challenged the need to ensure further regulatory consistency and the link between the lack of consistency and the current institutional set-up. **Regulators** state that access markets are intrinsically local and the nature of competition is not homogeneous either for supply or demand reasons.

As regards the current spectrum governance, the technical side of harmonisation is seen by most respondents to be working well with its aim of harmonising the least restrictive conditions. There is criticism of the present system's capability to bring the actual services into being in a coordinated and timely manner.

There is significant support for the role of RSPG in assisting and advising the Commission on radio spectrum policy issues, with some respondents promoting it for a status similar to BEREC. The interplay between national experts and the European format is seen to work well. In particular, vendors would like the RSPG deliberations to be more open to industry participation.

Review of the institutional set-up and governance structure

Institutional set-up for market regulation

Almost half of the respondents agree that the current institutional set-up at EU level should be revised in order better to ensure legal certainty and accountability. Respondents call for i) a clearer division of powers between the different institutions (to avoid overlapping), ii) making sure that institutions are accountable for their decisions (both politically and legally), iii) a high level of transparency in decision-making (improved stakeholders' involvement). The arguments brought forward for change, however, differed considerably. On the one hand, a group of mainly **incumbent** operators proposed more discretion for NRAs with a reduced role of the Commission (or BEREC), highlighting the need for taking account of national circumstances. On the other hand, a number of voices have called either for an increased role of the Commission to ensure consistency (through a veto for remedies, for example), or even the establishment of a pan-EU regulator. **The regulatory community** was of the view that there are benefits associated with all NRAs having a common toolkit and flexibility to determine which tools to use, in particular in view of the increasing complexity of the sector.

Amongst those who favoured a revision of the current institutional set-up, proposals differed from BEREC adopting a limited advisory or benchmarking role (giving opinions and giving assistance to NRAs where needed, providing timely technical guidance, etc.) to turning it into an EU regulatory authority with proper decision-making power. Some respondents called for strengthening BEREC's role within the Art.7 procedure and also for improving coordination rather than implementing institutional changes. Some **incumbents** and **alternative operators** submit that BEREC in its current form has shown a limited ability to act strategically and in the interest of EU

competitiveness and, in particular, for the development of the single market. Further it was alleged that it does not contribute to the objectives of the framework in a satisfactory manner. Most respondents (**all types of operators and public bodies**) considered that the current EU consultation process can be streamlined. However, in the detail as to how this could be done the respondents vary considerably. Whilst some respondents call for more NRA discretion (and a less prominent role for the Commission), others ask for full harmonisation measures, at a minimum regarding the termination markets. In addition, a shift from *ex-ante* to *ex-post* control is proposed, rendering an Art.7 procedure less relevant. Among those who disagree (largely **alternative operators**), most argue that the current process is well-balanced and has proved effective.

Some **incumbents** advocate for dividing competence between EU and national levels, making BEREC redundant, arguing that stronger compliance or a more binding nature of BEREC guidance would not be appropriate. On the contrary, some **alternative operators** supported a stronger role of BEREC within the Art.7 procedure and the strengthening of its influence on the scope of remedies in case of a veto of the Commission. The sentiment as regards whether BEREC should be given more executive tasks or binding powers is generally negative (including the **majority of operators as well as public authorities**). Some respondents are concerned by the lack of accountability of BEREC because it has a '*de facto*' significant influence on national regulatory decisions and decisions by the Commission.

The majority of the respondents disagreed with the establishment of an EU Agency with regulatory decision-making powers for all the different areas (market regulation, EU spectrum management, end-user protection and other). Some respondents, mainly **operators**, recommended that an EU agency should be responsible for services of the EU single market or for issues such as consumer protection, content, service platforms, whilst NRAs should continue dealing with local issues (e.g. network access). As regards spectrum and numbering there was a call for more harmonisation, but there were divergent positions as to whether these issues should be dealt with by an EU agency.

The regulatory community expressed its view against further harmonisation and indicated that differences in regulatory approaches can be beneficial where they allow experimentation and innovation (leading to the discovery of new best practices). Respondents were divided as to whether a common EU approach would add value in addressing the differences in the regulatory approach chosen by NRAs for individual markets in similar circumstances. **The regulatory community** also notes that, in the wider digital ecosystem, it is particularly important to adopt a “light touch” regulatory approach so as not to undermine investment and innovation. In principle, there could be more room for co-regulation and self-regulation mechanisms. According to **regulators**, while this kind of innovative and “softer” approach to regulation can be effective, where it is pursued it will be important that its details are defined “bottom-up”, through the direct involvement of the affected stakeholders.

Consumer associations called for caution and considered that co-regulation and self-regulation should only be used on very specific issues and under strict conditions, such as: strong independent governance of the self-regulatory scheme, oversight and enforcement across the sector, and the presence of effective sanctions in cases of non-compliance.

As regards BEREC and the BEREC Office, almost half of the respondents had identified provisions in the framework which in their opinion should be revised. Proposals put forward include longer or extendable mandates for the BEREC Chair, relocation of the BEREC Office and definition of the role of BEREC in drafting Recommendations. Some **national regulators** considered that the governance structure is satisfactory but suggested a number of proposals for the mandate (consultation by the Commission on legislative initiatives, new responsibilities as regards connectivity objectives, more involvement in the area of spectrum through the exchange of best practices in the design of auctions and beauty contests and monitoring of coverage and QoS), deliverables (binding acts in limited circumstances, reinforced data collection) and functioning (simplification of the role of the Management Committee, establishment of an office in Brussels).

Consumer and civil society organisations referred to the need for better collaboration of BEREC with consumer organisations, civil society organisations and individual operators in addition to operators' associations as well as with other bodies/agencies such as ERGA and ENISA. The **regulatory community** has also identified the need to strengthen the cooperation with other networks of regulators established in adjacent economic sectors.

NRA status and competences

There is overall support for strengthening NRAs' independence, in particular by ensuring i) complete separation between ownership of providers and regulatory tasks, ii) political independence in particular in cases of restructuring, iii) control of adequate human and financial resources and iv) no political appointment of Board members. **Alternative operators** stated that NRAs' independence may also be affected when sector-specific NRAs are merged with other authorities. Respondents favoured that the powers of NRAs are extended to areas such as State Aid, consumer protection and coordination of spectrum policies. **The regulatory community** stressed the need of aligning the minimum competences (including end-user protection) of NRAs to those of BEREC.

A clear majority of respondents considered that NRAs should have a role in mapping areas of investment deficit or infrastructure presence because they are vested with the necessary powers to access relevant information and have the necessary expertise, as well as independence. Those opposed to such a role contested as a matter of principle any public interference with investment. There is strong support to a revision of the framework to better accommodate the role of NRAs regarding state aid, notably i) identification of target areas, ii) setting access price and access obligations, iii) ensuring better coherence between state aid and ex-ante regulation and iv) resolution of disputes. A few respondents propose that the role of NRAs regarding mapping of infrastructures or setting target areas must be limited to provide technical assistance to the relevant competent authorities or to being consulted.

Most **operators** indicated the need to revise several aspects of the general authorisation conditions, strictly interlinked with some general substantive choices on the scope and extent of regulation on ECNS (level playing field), in order not to hinder the cross-border provision of electronic communications services and networks. Several operators suggested a specific lighter regime for some categories of services (best efforts OTT, business services, small cross-border providers) in order to reduce cross-border

obstacles. Other suggestions included the harmonisation of Mobile Network Codes conditions, reducing the scope of national discretion in setting the conditions attached to rights of use, and a common notification template.

The principle according to which established and non-established operators should be subject to the same rules in the country of provision was stressed by several respondents. The extension of notification requirements to OTTs as well as the harmonisation of a notification template and administrative simplification (online submission, single language version, one-stop-shop, harmonisation of categories of services) were suggested, in particular by business users and **cross-border providers**.

On numbering, most respondents do not consider it necessary to allocate more executive powers to BEREC, in particular since numbering is a national competence and existing harmonisation at CEPT/ITU/COCOM level seems to be working. On the contrary, some **operators** did not exclude the power to grant pan-EU numbers for specific services (M2M).

Institutional set-up for spectrum management

With regard to spectrum governance, in order to serve the future wireless connectivity needs of the EU, a common EU approach to governing spectrum access was welcomed by respondents in order to enable technologies to be used seamlessly, but respect for spectrum as a national asset is required. Delays in availability of spectrum and fragmentation between conditions of use in different Member States were noted. Some respondents promoted a stronger role of the Commission. Some respondents disagreed and stressed the national character of spectrum policy.

As regards spectrum management, **the regulatory community** encompassing both BEREC and RSPG was of the view that the EU already benefits from substantial coordination and harmonisation processes, and no further EU-level coordination procedures are necessary. However, RSPG showed openness to a peer-review mechanism as regards spectrum assignment.

As regards the need for binding guidance on certain aspects of assignment procedures and conditions, there was a split between **regulators** and (mainly) **broadcasters** that preferred a national approach and telecoms operators that supported a certain level of binding guidance. Most respondents supported the Commission issuing Recommendations (Art.19 FD) on assignment conditions and/or procedural aspects, often qualifying it with basing any Recommendation on an RSPG/RSC process. The majority of respondents supported the idea of establishing a mechanism similar to that set by Article 4 of the Radio Spectrum Decision for certain key assignment parameters, at times pointing out the need to choose between this process and the one under Art.19 FD.

There is little demand for mandatory **pan-EU or regional assignments**. Most respondents questioned the need for EU-wide licences. A preponderance of answers viewed assignment as a national matter. Any wider geographical scope should involve the MS with some respondents viewing it as a Council matter.

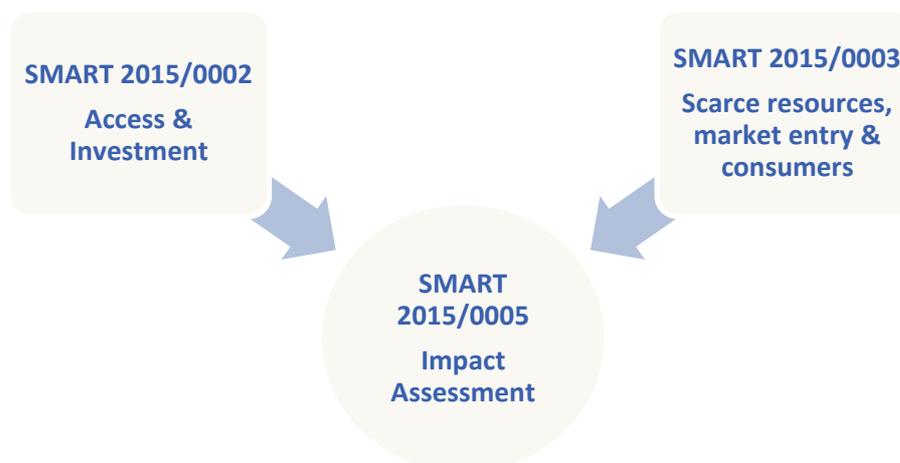
9.3. Annex III

Methodology of the Support Studies

Further to the elements described in Chapter V of the evaluation staff working document on Method, this annex summarises the methods used by the service providers in the externalised evaluation and review support studies:

- (vi) *Support for the preparation of the impact assessment accompanying the review of the regulatory framework for e-communications (SMART 2015/0005)*²³⁶
- (vii) *Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002)*²³⁷
- (viii) *Substantive issues for review in the areas of market entry, management of scarce resources and general consumer issues (SMART 2015/0003)*²³⁸.

The study work ran between November/December and July/August 2016. The second and third study were particularly relevant for the current evaluation, as they were required to examine the functioning of the regulation areas and their impact on a set of key performance indicators, as explained in detail below. The second study (SMART 2015/0002) focused primarily on the access regulation, while the third study (SMART 2015/0003) covered market entry provisions, spectrum and numbering, and consumer issues including sector specific consumer protection legislation, must carry and findability, universal service, etc. The problems identified and the options suggested for potentially addressing those problems served subsequently as input to the separate Impact Assessment study (SMART 2015/0005).



²³⁶ <https://etendering.ted.europa.eu/cft/cft-display.html?cftId=763>

²³⁷ <https://etendering.ted.europa.eu/cft/cft-display.html?cftId=729>

²³⁸ <https://etendering.ted.europa.eu/cft/cft-display.html?cftId=730>

Regulatory, in particular access, regimes for network investment models in Europe

SMART 2015/0002

The second study focused on access regulation and analysed its impact on various end-user outcomes, and in particular investment. The tasks of the studies are summarised in the figure below.

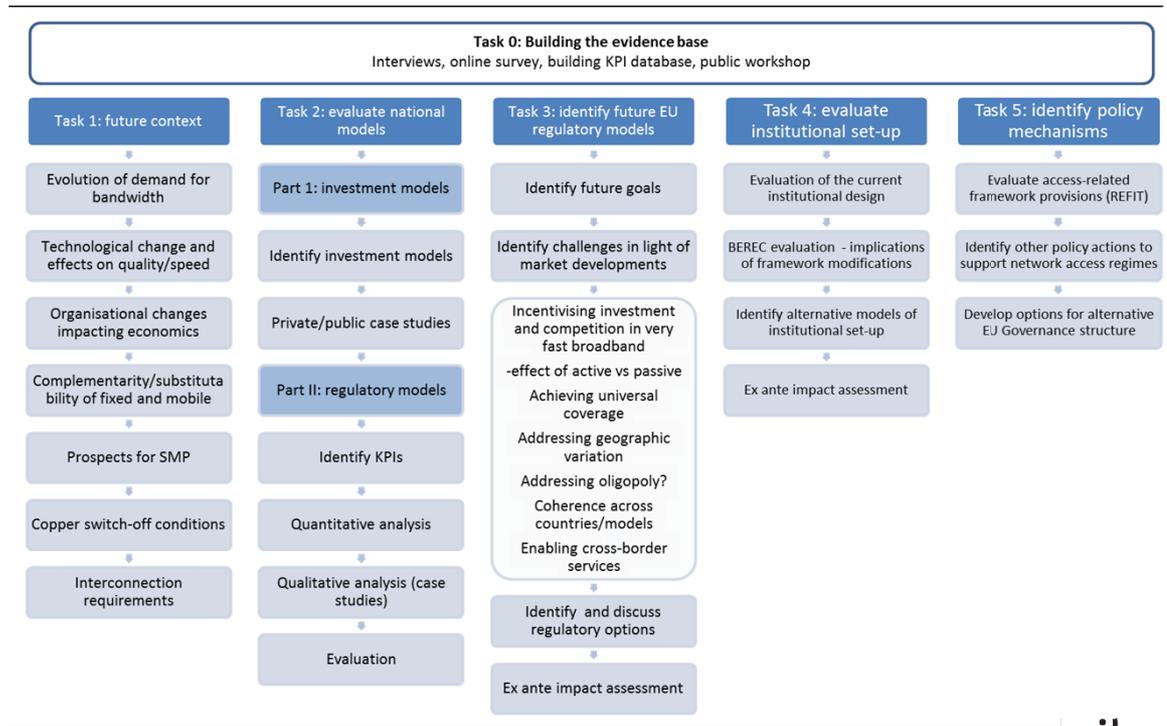


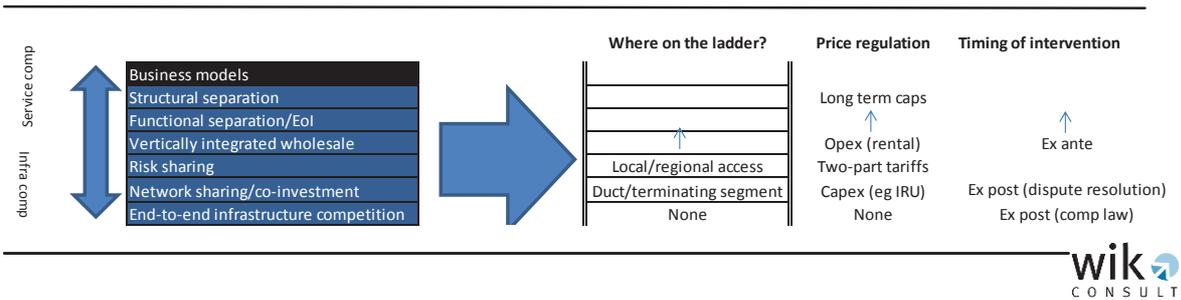
Figure 21 Summary of tasks: access regimes for network investment

The evaluation leg of the study was conducted in line with the Better Regulation Guidelines, gathering evidence as to the effectiveness, efficiency, coherence and EU value add of access regulation - including stakeholder feedback, quantitative assessments (including where relevant econometrics) and qualitative assessments of the effects of different approaches based on case studies.

Furthermore, in view of delineating future policy options, business and regulatory models were defined and categorised and evaluated against Key Performance Indicators (KPIs). Indeed, a cost benefit analysis of different regulatory approaches associated with prevalent investment models is performed. A central question is whether regulation has achieved its intended objectives for end-users as well as fostering sustainable market structures.

The following figure gives a characterisation of the different types of business models with reference to their emphasis on service competition (open access) vs end-to-end infrastructure competition (vertical integration) – and highlights which regulatory themes are typically associated with these business models.

Figure 22 Types of business model in relation to regulatory approach

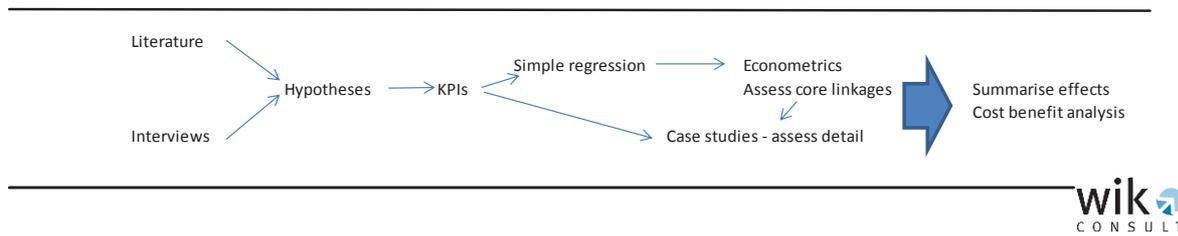


Source: WIK

The three methods of assessment used are: theoretical and empirical literature, quantitative analysis (based on the DAE broadband targets, the relevant demographic, commercial and regulatory inputs and benchmark outputs) and qualitative analysis (specifically, 16 European and international case studies, grouping countries with similar characteristics to assess whether these provide insights on the effects of different regulatory models).

The effects of different forms of regulation and associated business models on intermediate KPIs such as infrastructure and service-based competition, investment, sustainability, consistency and KPIs relating to consumer outcomes such as NGA availability, take-up, usage price and customer satisfaction are summarised in a Likert-type scale:

Figure 23 Assessing regulatory models – analytical steps



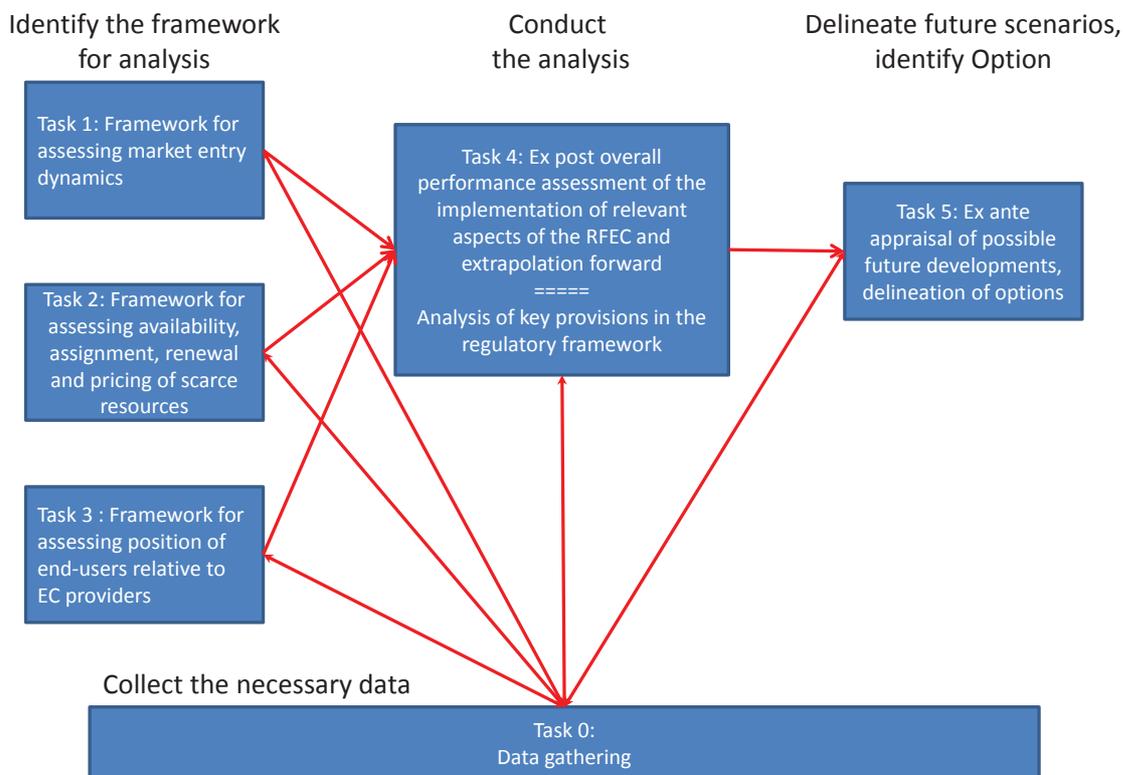
Source: WIK

Substantive issues for review in the areas of market entry, management of scarce resources and general end-user issues

SMART 2015/0003

The third study covered an extensive number of regulation areas and evaluated in particular their effectiveness and efficiency, in view of delineating policy options. The figure below presents the tasks covered in the project

Figure 24 Sequence and structure of tasks in the project



Source: WIK

The evaluation of the relevant framework provisions was based mainly on qualitative assessments, reflecting individual observations and case studies. Findings were summarised in a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis.

An extensive data gathering exercise (based on literature review – see list below, desk research, structured interviews and public workshop) was followed by the evaluation of each regulation/thematic area, which included:

- An analysis of technological and commercial trends relevant to the area.
- The assessment of implementation and performance of framework, consisting of:
 - Comparison of regulatory rules across the Member States; and
 - Assessment of how implementation / application of rules impacts on outcomes, including identification of best practice and deficiencies.
- The assessment of whether any shortcomings are related to institutional functioning.

The results of the analysis fed into an overall summary assessment (akin to an ex post evaluation) of the functioning of relevant aspects of the regulatory framework, a detailed performance assessment of relevant aspects of the framework, and a presentation of the results in an analysis of (SWOT).

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Access Regulation

There is extensive theoretical and empirical literature concerning the effect of access regulation on investment and consumer outcomes in broadband.

At a high level, there are different perspectives regarding the ‘philosophy’ of intervention, ranging from the ‘neo-classical’ view²³⁹ which suggests that market structure is key to determining market outcomes (thereby implying some justification for intervention in market structure), through to the more sceptical Schumpeterian view, which holds that investment incentives are greater in concentrated markets because firms with market power face a lower risk that profits will be eroded by competition. Proponents of this theory accept that ‘static’ short-term benefits may be gained from intervening to promote competition (such as lower prices), but claim this may be at the expense of longer term ‘dynamic’ benefits achieved in a free – largely unregulated – market.

The approach towards broadband access regulation within Europe, which has been supported in successive iterations of the Recommendation on Relevant Markets susceptible to ex ante regulation²⁴⁰, has in general supported the neo-classical concept of regulatory intervention to promote competitive market structures, but has embraced the idea that access regulation could be used as a ‘stepping stone’ to infrastructure-based competition, following a theory of the ‘ladder of investment’ originally elaborated by Martin Cave in a series of papers²⁴¹. An ultimate goal in this context could be the removal of ex ante regulation once infrastructure competition develops.

Various empirical analyses have been conducted to assess whether the policy of local loop unbundling has promoted or undermined broadband outcomes. Most studies broadly support the role of inter-platform competition (such as cable) in supporting broadband diffusion²⁴², but are mixed on the effects of LLU²⁴³.

Because NGA is still under development in many countries, there is less data available to undertake empirical research. However, a recent paper of interest by Cave and Shortall²⁴⁴, claims that a more deregulatory approach to NGA (focused only on passive access) delivers greater FTTH deployment, than measures which require access to upgraded NGA infrastructures – for example through VULA or unbundled fibre access. In the July 2015

²³⁹ See for example the ‘structure-conduct-performance’ paradigm Barin (1956)

²⁴⁰ See for example the relationship between markets 3a and 3b Commission Recommendation on relevant markets (2014) <http://ec.europa.eu/digital-agenda/en/news/commission-recommendation-relevant-product-and-service-markets-within-electronic-communications>

²⁴¹ See for instance Cave, M. (2006), Encouraging infrastructure competition via the ladder of investment, Telecommunications Policy 30, 223-237

²⁴² The empirical evidence suggests a positive impact of inter-platform competition on broadband diffusion (see, e.g., Cava-Ferreruela and Alabau-Munoz, 2006, Distaso, Lupi and Maneti, 2006, Höffler, 2007, Denni and Gruber, 2007, Bouckaert, van Dijk and Verboven, 2010, and, most recently, Nardetto, Valletti and Verboven, 2013). Briglauer, Ecker and Gugler (2013) as well as Briglauer (2013) have found a non-linear relationship between inter-network competition and broadband diffusion, Only Calzada (2013) and Gruber (2013) have both found no evidence for inter-platform competition accelerating broadband diffusion.

²⁴³ Lee, Marcu and Lee (2011) have found unbundling and service-based competition to foster broadband uptake, Denni and Gruber (2007), Distaso, Lupi and Maneti (2006), Cava-Ferreruela and Alabau-Munoz (2006) and Höffler (2007) found only small or insignificant effects. Wallsten and Hausladen (2009), Bouckaert, van Dijk and Verboven (2010) and Briglauer, Ecker and Gugler (2013) found that facilitating intra-network competition through access regulation negatively affects broadband penetration as it reduces incentives for broadband investment. Garrone and Zaccagnino (2012) find no evidence that entrants have climbed the ladder to invest in their own access infrastructure. Nardetto, Valletti and Verboven (2014) find that unbundling increases broadband quality and initial penetration, but not ultimate penetration. Cable increases both penetration and quality.

²⁴⁴ Shortall, Cave (2015) Communications and Strategies

study for Ofcom assessing outcomes in 12 EU and international countries, WIK also found that ‘deep passive approaches’ support FTTH deployment by alternative operators thereby stimulating infrastructure-based competition – and may influence technological choices towards FTTH overall. However, we noted that the degree of choice outside dense urban areas in countries which have followed this approach is limited (due to the economic challenge of replicating fixed infrastructure outside dense areas), and that there was a risk that over the medium term the lack of competitive choice outside dense zones may negatively affect consumer outcomes. WIK accordingly suggested that different approaches may be needed for different geographic areas.

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9.4. Annex IV

Legislation covered & correspondence with regulation areas

Instruments included within the scope of the evaluation

- Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.4.2002, p. 33, as amended;
- 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 (Authorisation Directive), OJ L 108, 24.4.2002, p. 21, as amended;
- Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive), OJ L 108, 24.4.2002, p. 7, as amended;
- Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), OJ L 108, 24.4.2002, p. 51, as amended;
- Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Office (BEREC Regulation), OJ L 337, 18.12.2009, p. 1;
- Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) OJ L 108, 24.4.2002, p. 1;
- Commission Decision 2002/622/EC of 26 July 2002 establishing a Radio Spectrum Policy Group (RSPG) OJ L 198 27.7.2002, p. 49, as amended;
- Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme (RSPP), OJ L 81, 21.3.2012, p. 7;
- Commission Recommendation of 9 October 2014 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 (2014/710/EU), OJ L 295, 11.10.2014, p. 79;
- Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU), OJ L, 25.9.2010, p. 35;
- Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU) OJ L 251, 21.9.2013, p. 13;
- Commission Recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC), OJ L 124, 20.5.2009, p. 67

Instruments excluded from the scope of the evaluation

- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications), OJ L 201, 31.7.2002, p. 37 [part of a parallel evaluation process of subsequent to the review of the general data protection regulation, see <https://ec.europa.eu/digital-single-market/en/news/public-consultation-evaluation-and-review-privacy-directive>]
- Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (TSM Regulation), OJ L 310, 26.11.2015, p. 1 [entered into force on 30 April 2016];
- Regulation (EC) no 717/2007 of the European Parliament and of the Council of 27 June 2007 on roaming on public mobile telephone networks within the Community and amending Directive 2002/21/EC (Roaming Regulation), OJ L 171, 29.6.2007, p.32 [addressed via Regulation 2015/2120];
- Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks, OJ L 155, 23.5.2014, p. 1 [transposition ongoing, generally applicable as of 1 July 2016];
- Commission Decision of 10 October 2011 on modalities for coordinated application of the rules on enforcement with regard to mobile satellite services (MSS) pursuant to Article 9(3) of Decision No 626/2008/EC of the European Parliament and of the Council (notified under document C(2011) 7001) (2011/667), OJ L 265, 11.10.2011, p. 25 [under implementation, rights of use granted in general for 18 years].

Overview of the main provisions corresponding to regulation areas

Regulation Area	Corresponding Provisions
Access	<p>Framework Directive</p> <p>Art. 7: consolidating the internal market for electronic communications Art. 7a: procedure for consistent application of remedies Art. 7b: implementing provisions Art. 12: co-location & facility sharing Art. 14: undertakings with significant market power Art. 15: procedure for the identification and definition of markets Art. 16: market analysis procedure Art. 19: harmonisation procedure</p> <p>Access Directive</p> <p>Art. 5: powers of NRA in relation to access & interconnection Art. 6 – 13: obligations on operators and market review procedures</p>

<p>Spectrum</p>	<p>Framework Directive Art. 8a: strategic planning and coordination Art. 9: management of radio frequencies Art. 9a: restrictions on existing rights Art. 9b: transfer or lease of individual rights to use radiofrequencies</p> <p>Authorisation Directive Art. 5: rights of use and numbers Art. 6: conditions attached to rights of use Art. 7 – procedure for limiting the number of rights of use to be granted for radio frequencies Art. 8: harmonised assignment of radio frequencies Art 12; administrative charges Art 13: fees for rights of use and rights to install facilities Art. 14: amendment of rights and obligations Annex to the Authorisation Directive</p>
<p>Numbers</p>	<p>Framework Directive Art. 10: numbering, naming and addressing</p> <p>Authorisation Directive Art. 5: rights of use for numbers Art. 6: conditions attached to rights of use Art 12; administrative charges Art 13: fees for rights of use and rights to install facilities Annex to the Authorisation Directive</p> <p>Universal Service Directive Art. 27, 27a: European telephone access codes</p>
<p>Authorisation</p>	<p>Framework Directive Art. 9a: review of restrictions on existing rights.</p> <p>Authorisation Directive Art.3 general authorisation Art.4: Minimum list of rights Art. 6: Conditions attached to the general authorisation Art. 9: Declarations to facilitate the exercise of rights Art. 10: compliance with the conditions of the general authorisation Art 11: Information required under the general authorisation Art 12; administrative charges Art. 14: Amendment of rights and obligations</p>
<p>Rights of way</p>	<p>Framework Directive Art 11: rights of way Art 12: co-location</p> <p>Authorisation Directive Art.4: Minimum list of rights Art. 9 Declarations to facilitate the exercise of rights Art. 13: fees for rights of use and rights to install facilities</p>

	Annex to the Authorisation Directive
Standardisation	Framework Directive Art 17 – standardisation
End-user protection including European numbers	Authorisation Directive Art. 11(d): publication of comparative overviews of quality and price of services for the benefit of consumers Universal Service Directive Art. 1.4: relationship with horizontal rules on consumer protection Art. 20: contracts Art. 21 + Annex II: transparency and publication of information Art. 22: Quality of Service Art. 24 + Annex VI: interoperability of consumer digital television equipment Art. 26: single European emergency call number Art. 28: harmonized numbers for services of social value, including the missing children hotline number Art. 29 + Annex I: provision of additional facilities Art. 30 + Annex I: change of providers Art. 33: consultation with interested parties Art. 34: out-of-court settlement procedure Access Directive Art. 5 (1) (b): access to the other facilities on fair, reasonable and non-discriminatory terms to ensure accessibility to digital radio and television broadcasting services Art. 6(1) through 6(3): conditional access
Universal Service	Universal Service Directive Art. 3 – 15: universal service obligations including social obligations Art. 23a: ensuring equivalence in access and choice for disabled end-users Art.25: telephone directory enquiry services
Must carry & findability	Framework Directive Art. 31: must carry obligations
Network & service security & integrity	Framework Directive Art. 13a Security & integrity Art. 13b Implementation and enforcement
NRA	Framework Directive Art. 3: national regulatory authorities Art. 4: right of appeal Art. 8: policy objectives Art. 20 - 21: dispute resolution Art. 21a: penalties
BEREC	BEREC Regulation Framework Directive Art. 8: policy objectives
RSPG	RSPG Decision as amended

9.5. Annex V

Screening of the Directives

Screening of the Framework Directive (2002/21/EC)

This annex summarises the evaluation of the provisions of the Framework Directive (Directive 2002/21/CE), as amended by the Better Regulation Directive (Directive 2009/140/CE). It assesses in particular their relevance, effectiveness, efficiency, and coherence²⁴⁵.

Main purpose of the Framework Directive (legal basis: 95 EC (114 TFEU))

The main purpose of the Directive is to establish a harmonised framework for the regulation of electronic communications networks and services, associated facilities and associated services. Together with the specific Directives (Authorisation, Access, Universal Service and ePrivacy), it forms the Regulatory Framework which contains the regulatory principles for the deployment and operation of electronic communications networks and services and forms the basis for the legislations of the Member States.

Explain below why only certain provisions are selected and others not, and which criteria were used to do the selection.

A number of provisions of the Framework Directive are procedural provisions, which have remained largely unchanged since their enactment because they have not raised any particular issue over the past years, or have been amended with the 2009 review thus resolving issues which had arisen (e.g. Articles 5, 6, 13, 23, 24, 25). Furthermore, this Directive sets the objectives against which the specific provisions are assessed. The objectives are already evaluated in the text.

Analysis of specific provisions

Provisions raising issues of relevance

Provisions	Assessment	Evidence
Definition of transnational markets	Transnational markets have never been defined so far, because on the one hand roaming is covered by a regulation and on the other hand the provision of electronic communications services is closely linked to that of a network and therefore rather local. However, as Electronic Communications Services	Administrative practice of the Commission in the context of Article 7

²⁴⁵ The same analysis has in addition identified technical corrections which appear necessary, for instance provisions which have become obsolete (e.g. Article 9a on a review clause which expired), terms which are unclear (e.g. user v end-user), terms which need to be adapted in view of technical evolution (e.g. network termination point, which refers to fixed networks rather than mobile networks).

	(ECS) are more and more competing with services unbundled from the provision of a network, the question about the geographic scope of the markets in which ECS and OTTs compete, and hence of the need to define transnational markets, may arise in future. The provision remains therefore relevant.	
Rights of way	The 6-month deadline to take a decision on applications for <i>rights of way</i> has not become obsolete after the adoption of Directive 2014/61/CE (the Broadband Cost Reduction Directive). The latter provides for a four-month default deadline for permits in view of the deployment of high-speed networks. In this respect, a clarification between legal 'privileges' accorded to electronic communications providers (servitude/rights of way) and permit granting (Directive 2014/61/CE) seems necessary. Definitions deadlines and scope could however be aligned, in particular in relation to physical infrastructure.	Impact assessment study. Exchange with Member States at COCOM
Standardisation (Article 17)	One of the reasons explaining the under-use of the standardisation procedure is that it does not involve BEREC in the definition of a standardisation mandate in the area of its competence, even if the latter is in a better position than the Commission to define the technical aspects of the standardisation mandate. The lack of implication of BEREC in the phase of definition of the mandate could undermine adherence of its members to the implementation of the mandate.	Review studies

Provisions raising issues of effectiveness

Provisions	Assessment	Evidence
Provisions – Scope Definitions in Article 2	<p>Some of the definitions have raised interpretation issues by the Member States or the operators of the sector which were ultimately referred to the Court:</p> <p>The definition of 'Electronic communications service' has raised doubts as to the exact meaning of the words "normally provided for remuneration", "wholly or mainly" (e.g. cable providers covered or not, satellite providers, etc.) and "conveyance of signals". Pure Over-The-Top (OTT) players (i.e. not providing ECS) are excluded from the scope of the Directive. With the migration of the networks towards all-IP, the role of OTT players is expected to be reinforced in the future. Already today, many OTT services directly compete</p>	<p>For OTT, cf. the relevant study.</p> <p>Internal investigations</p>

	<p>with ECS without being subject however to the same framework, and therefore without benefitting from the same rights or abiding by the same obligations.</p> <p>While providers of associated facilities which do not provide electronic communications networks fall within the scope of application of the framework, the application of many provisions is limited to providers of electronic communications networks and/or services. Providers of associated facilities play an important role in network deployment, investing in infrastructure without being vertically integrated. In a number of Member States (UK, NL, IT) where traditional network operators have divested their physical infrastructure (mainly towers) in order to invest CAPEX on network deployment, providers of associated facilities acquire control of potentially essential facilities. Being outside the scope of the regulatory framework, they may be subject to national regulation, as is already happening in the Netherlands.</p>	
NRA independence & regulatory capacity	<p>The exact scope of the prohibition of instructions (i.e. whether it applies only to the tasks of ex ante regulation and resolution of disputes between undertakings or to all the tasks of the main body designated as NRA) has been debated in pre-litigation proceedings. At the same time, the reference to '<i>supervision in accordance with national constitutional law</i>' is not entirely clear. As a consequence, the provision has provoked litigation and would gain from more clarity.</p> <p>As regards NRA tasks more specifically, the possibility of having more than one body of NRAs has led to NRAs of varying degrees of effectiveness on the market (as well as to coherence issues vis à vis BEREC functions). Most importantly, it has led to a trend of re-appropriation and transfer of powers from the NRAs back to the Ministries.</p>	<p>Infringement proceeding against BE</p> <p>Case law of the Court of justice (CMT and ISTAT)</p> <p>Implementation reports, CMT case.</p>
Market regulation in view of the Single Market objectives	<p>Article 7a provides for the procedure for the consistent application of remedies and establishes a scrutiny mechanism undertaken by the Commission and BEREC. However, unlike in Article 7, where the Commission has a veto power, regarding remedies, it does not have the power to oblige NRAs to change their measures. Lack of binding powers, as regards remedies, does not allow the provision to ensure consistent and harmonised</p>	<p>Second phase procedures in MTR cases</p>

	measures throughout the single market. Any such power would benefit however from sufficient guarantees of respect for subsidiarity / national market specificities.	
	Article 7(3) includes a cross-reference to the public consultation of Article 6. It could be useful to clarify that the exception to the need to conduct a national public consultation in the case of Articles 7(9), 20 or 21 does not apply to the 'European consultation'. This is important, since in particular in the context of dispute resolution, a number of NRAs have been proceeding through 'regulation by litigation', without notifying to the Commission their measures, with consequences on the Single Market. Moreover, the limited powers of the Commission on remedies (in Article 7a) has generated different regulatory outcomes which cannot be entirely explained by national specificities.	Administrative practice of the Commission in the context of Article 7
Facility sharing	Article 12 (co-location and facility sharing) has raised a number of interpretation issues with regard to 1) the identity of the authority which is given the right to impose facility sharing (NRA or MS or both), 2) the addressee of the obligation (any undertaking, EC providers only, only if or irrespective of whether they enjoy rights of way or benefit from procedures for expropriation), 3) the infrastructure which is the object of sharing (only the infrastructure built thanks to rights of way or to expropriation or any infrastructure belonging to the operator), 4) the objective (competition and/or environment, public, health, security etc.), 5) when exactly the procedural requirement of public consultation applies and, 6) whether or not cost-orientation is permitted. In short, a variety of outcomes with different effects on competition have been created across member States.	Internal investigations
Spectrum trading (Article 9b)	Article 9b on the transfer of the rights of use has not managed to achieve the existence of a secondary market for spectrum, which would allow the valuation of the spectrum by the market. More flexibility could therefore be pursued in the new Framework, in particular since, as explained, the users and uses of spectrum are expected to grow with a geometric progression.	Internal analysis, market entry study
Numbering (Article 10)	The provision has served as a legal basis for the harmonisation of the 116 numbering range (missing children). It has successfully allowed the development of services with important social impact throughout the EU. It has been less successful however in promoting	

	the development of other pan-European services, in particular via the development and promotion of an EU numbering code. This is an area where further improvement, or else partial deregulation, could be envisaged, through a more coordinated approach to key aspects of national numbering assignment (extra-territorial use) while anticipating possible future number scarcity.	
Penalties 21a	While in one Member State (BG) the sanctions that the NRA could impose were not sufficiently dissuasive, national legislation has been amended to provide for more dissuasive sanctions.	Internal investigations

Provisions raising issues of efficiency

Provisions	Assessment	Evidence
Market regulation - tailored administrative burden on companies:	The NRAs have not made much use of the possibility offered by Article 15(3) to define different geographic markets, in particular in the areas where a competitive infrastructure (cable or fibre) is present. Still, this possibility could ensure that remedies only apply in the areas where there is a real competitive issue. The provision is however not less relevant and its importance can be reasonably expected to grow with the deployment of alternative infrastructure.	Commission & NRA administrative practice under Article 7
Timing of market regulation 16(6)	While the introduction with the 2009 review of a periodic timeframe for market reviews (3 years from the adoption of previous measures in the same market, or 2 years from a Commission recommendation on relevant markets) has contributed to the consistent deregulation of electronic communications markets in the Member States, the three years deadline has proved to be rigid for the termination markets which are not subject to many changes and for the broadband markets, where more stable regulatory conditions could facilitate private investment.	Internal investigations Public consultation
Article 19 harmonisation procedures	This provision aims at ensuring that when NRAs diverge in the implementation of regulatory tasks regarding market reviews or numbering, the Commission may take binding measures (decisions) to impose a harmonised approach. This procedure was established in order to ensure a more rapid harmonisation than normal infringement proceedings could achieve. However, when it comes to issues of	Access (& IA) Study

	market review, the Commission may only take binding measures two years after it has adopted a recommendation. This delay for the adoption of binding measures makes the procedure cumbersome, and negatively affects its efficiency.	
Spectrum management (Article 9)	Article 9 on the management of radio frequencies, technology and service neutrality has been a valuable tool for the Commission for the liberalisation of the sector. In general terms, it has achieved its objective of ensuring that spectrum is allocated and assigned under objective transparent and non-discriminatory criteria, and has allowed the development of innovative services using the radio-spectrum. Nevertheless, it will need to be adapted to the exponential growth in the use of spectrum, a result of the development of innovative services such as the internet of things.	Study (tbc)

Provisions raising issues of coherence

Provisions	Assessment	Evidence
Article 4	<p>Regarding the right to appeal, there is no explicit reassurance that the appeal body is independent of the parties but also from any other body. The issue is not theoretical and arose from recent case law (C-222/13).</p> <p>While the obligation provided in the last paragraph of the Article (to collect information on appeals) could serve <i>inter alia</i> to enable the creation of an inventory of case-law, the object of the obligation is currently statistical information and not the actual text of the judgments. Furthermore, obligations are to be sent on request and not periodically.</p>	<p>The issue results from recent case law C-222/13</p> <p>Study 2012/018, Final report</p>
Article 8a	Article 8a does not clarify the relationship between spectrum used for electronic communications and other spectrum uses (military, public protection and disaster relief, intelligent transport system). While this was not necessary at the time the current framework entered into force, such clarification would be needed in the future framework to the extent that it would have implications on policy objectives including avoidance of harmful interference (e.g. ensuring that public protection and disaster relief (PPDR), utilities and intelligent transport services (ITS) for road and rail could be provided to a certain extent by improved commercial electronic communication services). More importantly,	Internal analysis

	competencies in terms of solving cross sector interference issues need to be clarified.	
Cross border dispute resolution (Article 21)	In case of a dispute with cross-border elements, the 2009 review added the possibility for each one of the competent NRAs to consult BEREC, with the view to ensuring a consistent resolution of the dispute. BEREC has developed internal Guidelines for the provision of its opinion. However, in case of cross-border dispute, there is no legal obligation for the NRA, but only a right to request the opinion of BEREC. Such lack of legal obligation and the cumbersome procedure which involves at least two NRAs and BEREC undermines the usefulness of the procedure. Furthermore, the scope of the procedure is unclear, with specific regard to spectrum interference disputes or numbering or other tasks which may be assigned to bodies of NRAs which do not participate in BEREC.	Internal analysis, Berek guidelines

Screening of the Authorisation Directive (2002/20/EC)]

This annex summarises the evaluation of the provisions of the Authorisation Directive (Directive 2002/20/CE), as amended by the Better Regulation Directive (Directive 2009/140/CE). It assesses in particular their relevance, effectiveness, efficiency, and coherence²⁴⁶.

Main purpose of the Authorisation Directive (legal basis: 95 EC (114 TFEU))

The aim of this Directive is to implement an internal market for electronic communications networks and services through the harmonisation and simplification of authorisation rules and conditions in order to facilitate their provision throughout the Community.

The purpose of the overview below is to analyse the provisions of the Authorisation Directive and to identify provisions which may have become obsolete or have raised implementation issues in practice.

A number of provisions lack clarity in their wording and have caused problems with its practical application (e.g. Article Articles 3, 12). The analysis also identifies provisions that

²⁴⁶ The same analysis has in addition identified technical corrections which appear necessary, for instance provisions which have become obsolete (e.g. Article 9a on a review clause which expired), terms which are unclear (e.g. user v end-user/end-user), terms which need to be adapted in view of technical evolution (e.g. network termination point, which refers to fixed networks rather than mobile networks).

should be brought in line with recent case law of the ECJ (e.g. Article 12, 13). The analysis takes particular account of effectiveness in the light of the objective of achieving a true internal market bearing in mind the provision of cross-border services.

Analysis of specific provisions

Provisions raising issues of relevance

Provisions	Assessment	Evidence
Article 8 Harmonised assignment of radio frequencies	This provision has never been applied. There was an attempt to modify it during 2009 review, but this was rejected by the Council. Also, the reference to selection "in accordance with international agreements", like the similar reference in Article 9 FD, is not sufficiently clear in order to ensure that compliance with international coordination is a criterion for assessment of spectrum use and assignment pursuant to EU law (LS has doubts on this at this stage, being EU not part of ITU agreements).	Monitoring activity of the Commission
Article 9 Declarations to facilitate the exercise of rights to install facilities and rights of interconnection	The provision had limited relevance at the moment, but is currently easily implemented through acknowledgement of notification by MS. In line with the current practice for implementing Article 3, there is room for additional clarification that this acknowledgment has no authorising value (activity should be possible upon notification)	BoR(11)56 ²⁴⁷

Provisions raising issues of effectiveness

Provisions	Assessment	Evidence
Definitions Article 2	The definition of general authorisations leaves margins to Member States to define "specific sub-types" of general	Public consultations, BoR(11)56 ²⁴⁸

²⁴⁷ BEREC report on the impact of administrative requirements on the provision of transnational business electronic communication services, pages 13 and 16.

	<p>authorisation regime with corresponding conditions applicable. This can be seen as particularly problematic in the light of achieving a truly Digital Single Market in the EU.</p>	
<p>Article 3 General authorisation of electronic communications networks and services</p>	<p>While Article 3 has generally improved the working of authorisation regimes, in recent years there has been some uncertainty over the application of the national notification requirements and their impact on the general authorisation systems in several Member States (in particular with respect to certain establishment and guarantee requirements). The legal issues in this area were also clarified by a preliminary ruling of the European Court of Justice in 2014.</p> <p>Also, second subparagraph of Article 3(2) introduced in 2009 proved to be of limited or no utility, although it was intended to facilitate the provision and deployment of services delivered without any specific infrastructure (e.g. VoIP). There is an issue of multiple general authorisation regimes applicable which currently in particular affects the provision of some kind of services (cross-border services to business; satellite services) and could increasingly involve others (mobile services, VOIP, etc...).</p> <p>Although the formalities for registration are indeed limited by current EU law and are not a major issue, their application has raised problems in several MS and by stakeholders, in particular those operating mainly across borders.</p> <p>More generally, the existence of multiple</p>	<p>Implementation of the EU regulatory framework for electronic communications Report 2015, 2014</p> <p>Case C-475/12 UPC on establishment requirement.</p> <p>BoR(11)56²⁴⁹ BoR(11)55²⁵⁰</p> <p>Public consultation (see in particular Q192)</p>

²⁴⁸ BEREC Report on the impact of administrative requirements on the provision of transnational business electronic communication services, page 17

²⁴⁹ BEREC Report on the impact of administrative requirements on the provision of transnational business electronic communication services, page 16 and, with specific regard to Article 3(2) second subpara, page 20

²⁵⁰ 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, page 4 with regard to existing inconsistencies resulting in the public consultation

	general authorisation regimes within the EU implies in fact that a multiple range of conditions are applicable (in particular end-users' rules) that limit the provision of standardised products at EU level.	
Article 6 Conditions attached to the general authorisation and to the rights of use for radio frequencies	<p>Article 6 provides significant safeguards against over-regulation at national level. However, the maximum harmonisation of conditions (paragraph 1) provided in conjunction with the Annex however still leaves MS discretion on which conditions among the annex shall apply and above all on the more detailed specification of these conditions.</p> <p>The effective implementation of the principle which prohibits duplication of conditions (paragraph 3) is often overruled by NRAs in practice.</p>	<p>On the specific the persisting obstacles of general authorisation regime, see also references to the Annex.</p> <p>BoR(11)55²⁵¹</p> <p>For an overview of different participation/assessment criteria/conditions applied across EU see also Radio Spectrum Policy Group Report on Assignment and Pricing Methods, RSPG09-298²⁵²</p> <p>public consultation, in particular Q193²⁵³</p>
Article 17 Existing authorisations	A systematic general review of individual rights of use pursuant to para 1 has not been explicitly carried out by MS in 2011, probably in view of the fact that excluding modification due to Article 9a FD (tech./service neutrality), the other changes have been very limited and modification of primary law transposing the 2009 amendments have been sufficient to fulfil the objective. Consequently para 2 and 3 did not have specific application.	Monitoring activity of the Commission
Annex A	The following items included in the Annex may represent an obstacle to cross-border provision, in particular, specific kinds of	BoR(11)55 ²⁵⁴

²⁵¹ Concerning in particular different conditions applicable in particular for similar specific services, in particular with cross-border relevance, but also evidence of establishment requirements reported by stakeholders

²⁵² http://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg09_298_final_report_assignment_pricing_122009.pdf

²⁵³ Out of 55 replies, 36 agreed that current general authorisation conditions are still a barrier to provide services across borders

²⁵⁴ 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, pages 6-7

	<p>services (in particular B2B):</p> <ul style="list-style-type: none"> - Administrative charges (A2) - Reporting obligations (A10) - Consumer Protection Obligations (A8) - Legal interception (A11) - Data protection (A11) - Emergency numbers (in particular 112) 	Q193 public consultation
Annex B	Commitments made in the course of competitive and comparative selection procedure (B7) triggered the adoption of a wide range of different assignment requirements/conditions for use beyond those identified in the Annex itself.	Radio Spectrum Policy Group Report on Assignment and Pricing Methods, RSPG09-298 ²⁵⁵

Provisions raising issues of efficiency

Provisions	Assessment	Evidence
<p>Article 5(2)</p> <p>Rights of use for radio frequencies and numbers</p>	<p>Article 5(2) is the main legal basis for scrutiny of assignment procedures. The full effects of the implementation of technological neutrality to existing rights of use has not yet been materialised, but its implementation could benefit from increased harmonisation.</p> <p>The ex post use of the specific justification/derogation pursuant to Article 5(2) on spectrum rights for broadcasting has often led to infringement action once rights of use were already assigned, with limited possibility of scrutiny of the justification put forward.</p>	<p>Public consultations;</p> <p>Infringements and pre-infringement actions on assignments of rights of use in several MS (IT, BG, FR, SI), see Implementation Reports years 2012-2015</p>

²⁵⁵ Available at http://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg09_298_final_report_assignment_pricing_122009.pdf

<p>Article 7</p> <p>Procedure for limiting the number of rights of use to be granted for radio frequencies</p>	<p>The amendments introduced in 2009 with a view to applying the same regime to new rights of use and extension of old ones, were not clear and created legal uncertainty (in particular in the event of expiry in the short term).</p> <p>The requirement of market assessment (in particular, but not only in case of renewal) also is not defined precisely enough; in practice it has been difficult to distinguish to what extent the effective market demand has been consulted and the level of seriousness of claims for market demand.</p>	<p>Pre-infringement actions and/or uncertainty on renewal procedures carried out in IE, RO, and EL</p> <p>Difficulties in assessing effective market demand for RSPB bands due to be assigned in 2012 (approx. 30% of spectrum not assigned, see EDPR 2016 Chapter 1)</p>
<p>Article 12</p> <p>Administrative charges</p>	<p>Case law has significantly limited the scope of the current notion of "administrative charges" (C-485/11), which is linked only to the charges levied pursuant to the general authorisation procedure and not also because of the fact that an operator is authorised. The current wording is not sufficiently clear and not fully aligned with the Court of Justice case law (since the Court of Justice linked it to the procedure of general authorisation; at least it should be linked to the general authorisation as such). Other attempts to further extend the wording may trigger the taxation legal basis of the Treaty.²⁵⁶</p> <p>The effective implementation of Para 2 is not always fully ensured in MS where different administrative charges are levied by different bodies or when NRAs are competent for different sectors (in particular with regard to costs sustained for the regulation of ECSN). There have been a number of cases where the Commission has had to look into how the systems of administrative charges are being implemented in various Member States.</p>	<p>Implementation of the EU regulatory framework for electronic communications Report 2015, 2014, several court cases (FR tax, ES tax, HU tax, preliminary ruling on MT and IT end-users taxes).</p> <p>The results of the study SMART 2015/003 also confirm that authorisation fees may be inappropriately high in some</p>

²⁵⁶ In total, six infringement cases were registered in NIF specifically concerning the application of Article 12 Authorisation Directive since its entry into force in 2002. These cases are only a fraction of overall problematic cases dealt in the context of the pre-infringement procedure at service level, where clarifications and/or amendments by national authorities may already address the concern raised by the services and prevent the opening of an infringement procedure.

	<p>There have been infringement cases based on the Framework tackling the high administrative charges imposed on small undertakings which could be considered as a barrier to market entry for those undertakings.</p>	<p>Member States especially for small enterprises or new entrants.</p> <p>BEREC Report on the impact of administrative requirements on the provision of transnational business electronic communications services of 2011 (BoR(11)56)</p>
<p>Article 13</p> <p>Fees for rights of use and rights to install facilities</p>	<p>A number of cases have been taken with regard to this provision, and the wording of the rulings is not fully aligned with the Court of Justice case law.</p>	<p>Implementation of the EU regulatory framework for electronic communications Report 2015, Court cases</p>
<p>Article 14</p> <p>Amendment of rights and obligations</p>	<p>In 2014 the Commission services also investigated a number of cases concerning the amendment of rights of use, in particular those linked to spectrum resources.</p> <p>From a systematic point of view a distinction could be drawn between amendments to the general authorisation (that entails amendments to a normative regime generally applicable) and those to the rights of use.</p> <p>In the former case, indeed, an "agreement" with the "holder" is virtually not possible, since the general authorisation is not strictly speaking "assigned". Changes to the general authorisation, indeed, concern changes to rules (either primary or secondary), therefore public consultation, plus the usual requirements of general authorisation conditions pursuant to Article 6, should suffice.</p> <p>Stricter requirements should be maintained in case of changes to rights of use, in particular where they have been assigned pursuant to competitive/comparative procedures, in order to avoid circumvention of these procedures by changes to the object of the right tendered. Also, where long-term/undefined duration</p>	<p>Implementation of the EU regulatory framework for electronic communications Report 2014</p>

	<p>rights are at stake, harmonisation of withdrawal conditions and/or procedure could be envisaged (for example, the mandatory use-or-lose it clause).</p> <p>Some guidance on minor changes could be considered, so to ensure that such a change does not have an impact on third parties and does not grant unfair advantages to the rights holder.</p>	
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Provisions raising issues of coherence

Provisions	Assessment	Evidence
<p>Article 6</p> <p>Conditions attached to the general authorisation and to the rights of use for radio frequencies</p>	<p>The interrelationship of the <i>numerus clausus</i> of conditions provided here with the symmetric regulation applicable pursuant to article 12 of the Framework Directive is not clear.</p>	
<p>Article 15</p> <p>Publication of information</p>	<p>Coordination of para 2 with the corresponding provisions of Directive 2014/61/EU (article 7) could be envisaged</p>	
<p>Annex</p>	<p>Point A3: consistency with changes to the Access Directive</p> <p>Point A4: This provision is complementary to art 28 USD (cross-border access). COM had reservations on: "where technically and economically feasible" at the time of the previous review. This expression has been used in the past to escape the obligation.</p> <p>Point A5: inconsistency with Article 6(3) AuD (insufficient clarity on relation between the inclusion of urban planning and the principle of separation of sector-specific and general conditions; if maintained, it should be made clear in order not to jeopardise the principle)</p> <p>Point A6: coordination with any change proposed to Must Carry</p>	

	Point A9 and A19 coordination with rules on NN	
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Screening of the Access Directive (2002/19/EC)

This annex summarises the evaluation of the provisions of the Access Directive (Directive 2002/21/CE), as amended by the Better Regulation Directive (Directive 2009/140/CE). It assesses in particular their relevance, effectiveness, efficiency, and coherence²⁵⁷.

Main purpose of the Access Directive (legal basis: 95 EC (114 TFEU))

The Access Directive grants telecom operators rights and obligations to negotiate interconnection of their networks with the view to ensure interoperability of services throughout the EU in the interest of end-users. The Directive also empowers national regulatory authorities (NRAs) to impose adequate regulatory obligations in the areas of access and interconnection to operators enjoying a significant market power with the view to secure the access to end-users by third-party operators with the far reaching objectives to ensure competition in the market and contribute to the achievement of the single market. The Directive also empowers NRAs to impose access and interconnection obligations without prejudice to the finding of market power with the view to ensure end-to-end connectivity and service interoperability.

Under specific circumstances, the Access Directive also empowers NRAs to impose, as a last resort remedy, the functional separation of a vertically integrated operator.

Last but not least, the Access Directive sets out conditions for access to digital television and radio service broadcast with the view to ensure cultural diversity and media pluralism in the EU.

Analysis of specific provisions

Provisions raising issues of relevance

Provisions	Assessment	Evidence ²⁵⁸
Article 1	The objectives mentioned at the end of para. 1	

²⁵⁷ The same analysis has in addition identified technical corrections which appear necessary, for instance provisions which have become obsolete (e.g. Article 9a on a review clause which expired), terms which are unclear (e.g. user v end-user/end-user), terms which need to be adapted in view of technical evolution (e.g. network termination point, which refers to fixed networks rather than mobile networks).

²⁵⁸ Much evidence can be found in the Access study (Regulatory, in particular access, regimes for network investment models in Europe (SMART 2015/0002))

Scope and Aim	should be aligned with the changes made to Article 8 FWD.	
Article 2 Definitions	Several definitions need to be updated to take into account technological change. This concerns the definition of access in para. 2, which should reflect the move towards network virtualization, and the definition of local loop in para. (e), which refers in its current version to circuits, a legacy from PSTN which is not adapted to 'all-IP' networks.	
Article 4 Rights and obligations for undertakings	<p>The transition to all IP networks whereby a voice call is routed through packet-switched IP mode has modified the market circumstances and questions the validity of the current approach – as communication links can be set up through a multitude of routes via different networks, with the exception of the terminating network which cannot be substituted. The same goes with the advent of Voice over IP (VoIP) which progressively replaces circuit-switched voice telephony.</p> <p>As a monopoly on network termination is likely to remain a reality for at least 10-15 years (reinforced by the use of numbering plans), some form of safeguard with regards to interconnection may be justified.</p>	NRAs
Article 5 Powers and responsibilities of the national regulatory authorities with regard to access and interconnection	<p>Use of Art. 5 by NRAs has been relatively modest, but has been used as a basis for symmetrical regulation (i.e. not based on SMP). A concern is that symmetrical remedies imposed on access networks that apply across the board and do not consider economic principles such as market power may lead to overregulation and may represent a disproportionate burden on new entrants and small-scale providers.</p> <p>However, further consideration must be given to whether this kind of provision may be helpful, provided the right safeguards against</p>	NRAs

	<p>overregulation are in place, in circumstances where significant market power is difficult to prove, but market dynamics still warrant intervention in order for the market to function effectively, for example to guarantee interoperability beyond access networks or access to non-replicable bottlenecks such as in-house wiring. In this sense, it would be beneficial for the provisions to present a better explanation of the application of this article and of Article 12(3) of the Framework Directive, and of their relationship with SMP-based obligations.</p> <p>As the number of networks, often local in character, proliferates in at least some Member States, it would be helpful to specify that NRAs should foresee guidance and procedures for ensuring interconnection and interoperability which are realistically accessible for SMEs.</p>	
<p>Article 9 Obligation of transparency</p>	<p>As shown by the increased relevance of virtual access products in several access markets, there is a clear need to update the list of wholesale access products in Annex II to reflect market developments and technological change, as it is currently limited to physical LLU, on the basis of the provisions set out in para. 5. (Regulatory procedure with scrutiny to be replaced, presumably by a delegated act.)</p>	<p>NRAs</p>
<p>Article 12 Obligations of access to, and use of, specific network facilities</p>	<p>The whole article would need an update to take into account market developments, technological change and regulatory developments. These concerns in particular in para. (1) references to carrier selection/preselection which is outdated, reference to virtual networks which should be modernized to take into account virtual unbundling and bitstream, intelligent networks which is outdated and in para.(2) reference to capacity which is geared towards low capacity DSL technology.</p> <p>Moreover, in 2(f), the article calls on NRAs to consider the provision of pan-European services when imposing access. This should be aligned with the approach taken on trans-national markets.</p>	<p>NRAs</p>

<p>Annex II</p> <p>Minimum list of items to be included in a reference offer for wholesale network infrastructure access (SMP)</p>	<p>The content of this annex does not cover the most relevant access products and is outdated in the light of market developments and technological change.</p>	<p>NRAs</p>
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Provisions raising issues of effectiveness

Provisions	Assessment	Evidence
<p>Article 9</p> <p>Obligation of transparency</p>	<p>Article 9(2) includes the publication of a reference offer as a transparency obligation. Reference offers are a key instrument for granting access and have become very lengthy and sophisticated documents, which shape the nature of access beyond mere transparency.</p> <p>The experience has shown that, absent of the appropriate level of technical harmonisation, guidance and coordination, there is a strong degree of heterogeneity in the definition of reference offers, a situation which raises obstacles to the internal market and hinders competition, inhibiting economic efficiency (also due to longer time to markets).</p>	<p>Commission' study on access and interoperability standards conducted for the Commission by WIK and TNO released in Dec. 2015 (SMART 2014/0023)</p>
<p>Article 10</p> <p>Non-discrimination</p>	<p>The main limit in the application of this article has been its general nature. If imposed without any further specification, a non-discrimination obligation can be relatively meaningless as the burden of proof that discrimination is taking place would be on the access seeker claiming it, and there is a significant imbalance in the level of information between access provider and access seeker. The Commission has recommended</p>	<p>Impact Assessment of the Recommendation on cost accounting and non-discrimination, 11.9.2013 SWD(2013) 329 final</p>

	<p>principles for implementing this obligation in the Costing and Non-discrimination recommendation, but this is a non-binding document. For this reason, it would be worth considering taking on board some wording on equivalence from the Recommendation.</p>	
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Provisions raising issues of efficiency

Provisions	Assessment	Evidence
<p>Article 5 Powers and responsibilities of the national regulatory authorities with regard to access and interconnection</p>	<p>Article 5 doesn't provide the same level of detail as other remedies imposed on the basis of SMP.</p> <p>In the context of competing NGA infrastructure deployment by several operators and fewer markets where SMP will be found, the potential increase in the imposition of symmetric remedies based on Article 5, would require more detailed provisions in order to ensure the appropriate guidance for NRAs and legal certainty for investors.</p> <p>In addition some coherence with Art. 12(3) of the Framework Dir. would be required, as the approach is relatively similar (i.e. independent of a finding of SMP)</p>	<p>NRAs, Public consultation, BEREC Opinion</p>
	<p>Article 9(2) includes the publication of a reference offer as a transparency obligation. Reference offers are a key instrument for granting access and have become very lengthy and sophisticated documents, which shape the nature of access beyond mere transparency. Experience has shown that they are very long to define, absent of appropriate guidance and technical harmonisation</p>	<p>Commission' study on access and interoperability standards conducted for the Commission by WIK and TNO released in Dec. 2015 (SMART 2014/0023)</p>

Article 13b voluntary separation by a vertically integrated undertaking	The provisions that are rather complex could be a hindrance to vertical separation proposals coming to fruition. In particular, overlapping between the assessment of the proposals by the vertically integrated undertaking and the ongoing market analysis review by the NRA could result in red tape and delays.	NRAs
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Provisions raising issues of coherence

Provisions	Assessment	Evidence
Article 8 Imposition, amendment or withdrawal of obligations	The principles of appropriateness, proportionality and fitness for purpose in light of the chosen objectives have been assessed as valid principles. Consistency with any changes made to FWD, AutD, USD and the ePrivacy Dir. will have to be ensured, as well as with FTA agreements concluded with our international trade partners (TTIP, Tisa, Japan, China).	NRAs
Article 12 Obligations of access to, and use of, specific network facilities	The reference to access to ducts has proved to be useful, e.g. for the approach to NGA investment in FR, ES. However, one should assess to what extent it could be relevant to include some of the new remedies set out in the Directive on Cost Reduction (2014/61/EC) e.g. in-building wiring – bearing in mind any changes would have to be made to the scope of the framework.	NRAs
Article 13 Price control and cost accounting obligations	The link between price control obligations and incentives to invest (for the regulated operator as well as for challengers and alternative infrastructure operators, whose pricing decisions are affected by regulated prices present in the market). If a need is identified to codify the principles set out in the Recommendation on costing and non-discrimination, in order to increase legal certainty and strengthen their enforcement, this might be the article where this would be appropriate.	NRAs
Article 14 Committee	The comitology provisions should be adapted to the Lisbon Treaty.	

Screening of the Universal Service Directive (2002/22/EC)

This annex summarises the evaluation of the provisions of the Universal Service Directive (Directive 2002/22/EC), as amended by the Citizen's Rights Directive (Directive 2009/136/EC). It assesses in particular their relevance, effectiveness, efficiency, and coherence²⁵⁹.

Main purpose of the Universal Service Directive (legal basis: 95 EC (114 TFEU))

This Directive establishes the rights of end-users and the corresponding obligations of undertakings providing publicly available electronic communications networks and services. With regard to ensuring provision of universal service within an environment of open and competitive markets, this Directive defines the minimum set of services of specified quality to which all end-users have access, at an affordable price in the light of specific national conditions, without distorting competition. This Directive also sets out obligations with regard to the provision of certain mandatory services.

Analysis of specific provisions

Provisions raising issues of relevance

Provisions	Assessment	Evidence
Article 1 (Subject-matter and scope)	<p>Technological changes have changed the relevance of the elements under the scope of universal service obligations as defined in Art 1. Furthermore, since the early stages of liberalisation the market conditions have drastically evolved, with more competition and choice available to consumers.</p> <p>In the last decade, there have been 31 withdrawals of a universal service obligation (USO) in relation to an entire component of the universal service in a Member State, meaning reliance on the market to supply these components.</p>	<p>Tech4i2 et al. (2016) "Review of the scope of universal service, SMART 2014/0011"</p> <p>EC questionnaire on the implementation and application of the universal service provisions (BEREC, 2015)</p> <p>Public consultation</p>
Article 4 (Provision of access at a	While functional internet access is included in the scope of US the exact definition of it is left for Member States. Therefore broadband is not	Public consultation

²⁵⁹ The same analysis has in addition identified technical corrections which appear necessary, for instance provisions which have become obsolete, terms which need to be adapted in view of technical evolution (e.g. Quality of Service Parameters in ANNEX III of the Universal Service Directive, which includes for example reference to public pay-telephones).

<p>fixed location and provision of telephone services)</p>	<p>automatically included within the scope of the universal service, but Member States are nevertheless entitled to so include it if national circumstances so impose.</p> <p>A vast majority of respondents in the public consultation insist that this flexibility for Member States is still relevant and should be kept. A vast majority of respondents believe that USO is not the right instrument to foster high-speed broadband deployment. Other policy tools incentivising commercial investment should be used first, coupled with targeted state aid using pro-competitive and technologically neutral project models in specific areas of market failure.</p>	
<p>Art 5 (Directory enquiry services and directories)</p>	<p>The relevance of directory services in the universal service scope has diminished.</p> <p>Many Member States have relaxed USO in regard of directory enquiry services and directories provided in Article 5 since the services are satisfactorily provided by the market (eleven of the 31 withdrawals of USO concerned the comprehensive directory enquiry service and nine were comprehensive directories).</p> <p>Member States without a universal service obligation regarding comprehensive directories or directory enquiry services noted the availability of commercial competitors in the market.</p> <p>Availability of data for provision of directories is safeguarded by Art 25 USD.</p> <p>On the basis of the public consultation, there is a general agreement to exclude comprehensive directories and directory enquiry services from the scope of the USO.</p>	<p>Tech4i2 et al. (2016) "Review of the scope of universal service, SMART 2014/0011"</p> <p>EC questionnaire on the implementation and application of the universal service provisions (BEREC, 2015)</p> <p>Public consultation</p>
<p>Article 6 (Public payphones)</p>	<p>The relevance of public payphones in the universal service scope has diminished.</p> <p>Eight of the 31 withdrawals of universal service obligations concerned public payphones.</p> <p>The Article 6 inclusion of public payphones in the scope of the universal service has lost relevance in the context of market and technological developments (e.g. the non-use by 88% of the population across the</p>	<p>Tech4i2 et al. (2016) "Review of the scope of universal service, SMART 2014/0011"</p> <p>EC questionnaire on the implementation and application of</p>

	<p>EU28 regarding public payphones).</p> <p>In the public consultation, there is a general agreement to exclude public payphones from the scope of the USO.</p>	<p>the universal service provisions (BEREC, 2015)</p> <p>Special Eurobarometer Report 414, 2014, p.153.</p> <p>Public consultation</p>
<p>Article 9 (Affordability of tariffs)</p>	<p>The scope of the provision of affordable tariffs might need to be reconsidered, because affordable broadband has become of crucial importance to society and the wider economy.</p> <p>Despite declining hardware costs for computers and tablets and decreasing costs for broadband subscriptions some users are still not able to afford a broadband package. On average in EU28 Member States, 24 per cent of households without an internet subscription, believe that subscriptions cost are too high to subscribe.</p>	<p>Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011</p>

Provisions raising issues of effectiveness

Provisions	Assessment	Evidence
<p>Article 1 (Subject-matter and scope)</p>	<p>The results of the public consultation show that the majority of Member States and regulators agree that universal service has been effective in safeguarding end-users from the risk of social exclusion while most of the operators see little or no impact. Proponents of universal service argue that the availability of certain basic services increased and that services became affordable and accessible to all. Opponents claim that (1) the universal service regime has become rapidly out-of-date (2) the high level of competition for fixed and mobile services ensures the affordability of tariffs and not the regulatory obligation.</p>	<p>Public consultation</p> <p><i>Note: no EU level data exists on the incremental increase of coverage or services use due to the universal service obligation</i></p>
<p>Article 4 (Provision of access at a fixed location and provision of telephone)</p>	<p>While it can be concluded that the provisions of Article 4 have been effective in ensuring the availability of PATS, it is important to note that the availability today is to a large extent ensured by the market and irrespective of any universal service obligation. Subscriptions for and use of fixed</p>	<p>Digital Agenda Scoreboard 2015;</p> <p>Tech4i2 et al. (2016) Review of the scope of</p>

<p>services)</p>	<p>telephony have been dropping, in particular by comparison to mobile telephony.</p> <p>For data communications at data rates that are sufficient to permit functional Internet access included in Article 4, fixed connections are nearly universally available and used by a majority of citizens across the EU and in each individual Member State. The basic fixed broadband coverage in the EU stands at 97% of homes, with an average take-up rate of 72%. However there are still differences between Member States when examining availability and affordability of fixed broadband across urban and rural averages.</p>	<p>universal service, SMART 2014/0011</p>
<p>Art 5 (Directory enquiry services and directories)</p>	<p>The future effectiveness of directory services in the universal service scope needs to be clarified.</p> <p>Directories and directory inquiry services are used regularly but their provision does not seem linked to a universal service obligation. Availability of the same information through the internet is a further competitive alternative.</p>	<p>Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011, pp. 38-42.</p>
<p>Article 6 (Public payphones)</p>	<p>The future effectiveness of directory services in the universal service scope needs to be clarified.</p> <p>While the universal service provisions have proven to be effective in the past in addressing basic needs for citizens, the use of public payphones, is in a steep decline.</p>	<p>Eurobarometer survey in 2014 (public payphones)</p>
<p>Article 7 (Measures for disabled end-users), Article 23a (Ensuring equivalence in access and choice for disabled end-users)</p>	<p>Although the current regulatory framework has been effective in achieving protection of disabled end-users (art 7) and equivalence in access and choice (art 23a), it has to be recognized that the wording of these provisions is quite vague and does not seem to be sufficient, given the divergences in implementing the provisions regarding disabled users among Member States.</p> <p>According to the draft BEREC report “Update of the report on equivalent access and choice for disabled end-users” only 14 out of 28 National Regulatory Authorities (NRAs) limit the actions concerning persons with disabilities to Universal Service Obligations, while 13 answered that additional</p>	<p>Relevant stakeholders in the public consultation;</p> <p>BEREC report “Update of the report on equivalent access and choice for disabled end-users”²⁶⁰;</p> <p>The study Assessing and</p>

²⁶⁰ http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/5418-update-of-the-report-on-equivalent-access_0.pdf

	<p>measures were adopted for other services and service providers. The most common actions include: address directory enquiry services and directories, equipment, public pay telephones, information, special tariffs, accessible billing, emergency services and relay services.</p> <p>In the BEREC report eighteen out of 28 respondents do consider it appropriate that NRAs have a role in encouraging the availability of terminal equipment.</p> <p>According to the BEREC report only thirteen out of 28 respondents do have subsidies for electronic communications services, features or terminal equipment available for disabled end-users in their country (AT, BE, BG, CY, CZ, FI, DE, IT, MT, NO, NL, SE and the UK).</p> <p>In view of all this evidence the wording of Article 23a USD should be strengthened. Additionally, the protection of disabled end-users would be more effective if obligations related to disabled end-users would be also incorporated in horizontal law.</p>	Promoting e-Accessibility (known as MeAC 3) ²⁶¹
Article 21 (Transparency and publication of information)	<p>Article 21 of the Universal Service Directive sets out rules as regards the publication of transparent, comparable adequate and up-to date information. NRAs also should encourage the provision of comparable information.</p> <p>In addition to these measures, a number of respondents to the public consultation asserted that, there is further a need to introduce certain transparency measures for communications services. Certain respondents see independent price and quality comparison tools as useful and advocate to introduce measures for control of consumption.</p>	Public consultation (Q125): BEUC and other consumer organisations, consumer authorities, Member States, trade unions, and a smaller number of operators supported additional end-user rights for communications services
Article 26 (Emergency services and the single	The USD provides that access to emergency services through the European emergency number 112 must be ensured all over the EU. Evidence suggests that this provision has generally speaking been rather effective	COCOM report, Public consultation

²⁶¹ source: <http://ec.europa.eu/digital-agenda/en/news/study-assessing-and-promoting-e-accessibility>

<p>European emergency call number)</p>	<p>(112 COCOM report).</p> <p>Awareness of the 112 number has increased slowly but constantly. At the same time, there is still room for improvement on awareness. According to a recent Eurobarometer survey (Special 438, dated November 2015), 61% of the respondents would call 112 if they had an emergency in their country, while 46% correctly identified 112 as the single number to call throughout the EU.</p> <p>Difficulties in implementation have been nevertheless reported, including in relation to the lack of implementation of caller location accuracy and reliability requirements by Member States.</p> <p>The caller location accuracy criteria adopted by Member States are below the accuracy of the currently available technical solutions, leading to a situation where in spite of technical developments in this area, the effectiveness of the call remained the same in the past 10 years. Hence the caller location accuracy is cell ID that could range from 50m to 30 km – not suitable for emergency intervention. Meanwhile new deployable technologies are available, including handset based location that could radically improve caller location accuracy (to 20-25 m).</p> <p>In terms of accessibility, equivalence of access is ensured with SMS communication. However, more evolved video and messaging systems (Web Real Time Communication) are currently available to ensure a higher level of equivalence of access to emergency services.²⁶²</p>	
<p>Article 30 (Facilitating change of provider)</p>	<p>Article 30 USD sets out rules as regards porting of numbers and regarding maximum duration of contracts. While these rules proved to be effective (based on latest Eurobarometer results as regards switching), there are additional issues that arise when changing providers, which would need to be considered in revising the rules that facilitate</p>	<p>Special Eurobarometer 438 (page 76-95), Public consultation (Q125): BEUC and other</p>

²⁶² eCall legislation on Public Safety Answering Points (PSAPs) and in-vehicle systems defines an emergency call service based on the 112 EU emergency number as defined in Article 26 of the USD (see DECISION No 585/2014/EU; Regulation (EU) 2015/758). The eCall service is based on the adoption and implementation of specific eCall standards by PSAPs, car manufacturers and mobile network operators. Hence the support of mobile network operators for the correct routing of eCall is necessary for the effective functioning of the eCall service.

	<p>switching; ensuring the continuity of the service, switching bundles, the reimbursement of subsidized equipment, receiving-operator-led switching process, measures to facilitate switching of internet access services (i.e. measures going beyond number portability).</p> <p>Article 30(6) also stipulates that conditions and procedures for contract termination should not act as a disincentive against changing service provider. As this formulation is quite vague, there are issues around contract termination that are not explicitly addressed, and which require further consideration: automatic roll-over of contracts (tacit extension), subscription to additional services that prolong the initial contract period, the notice period and termination fees.</p> <p>In conclusion the present provision is not adequate to respond to the need of the sector and therefore it should be modified/extended.</p> <p>During the transposition, the wording of Article 30 (4) has proven unclear as to the starting point of the one-day requirement, thus resulting divergent transposition in Member States that rather focuses on the time when the service is inaccessible, instead of the time for technical process of porting. This was last raised by CEPT experts at the EC-CEPT Workshop on Advanced Numbering Systems in DSM held in Brussels on 7 December 2015.</p>	<p>consumer organisations, consumer authorities, Member States, trade unions, and a smaller number of operators supported additional end-user rights for communications services</p>
<p>Article 27 – European Telephony Access codes</p>	<p>The provisions on ETNS are not applicable anymore. The USD provision in question specifies a concrete prefix that is no longer available (recalled by ITU), and the Commission is not in a position to directly retrieve it. This article should be repealed.</p>	

Provisions raising issues of efficiency

Provisions	Assessment	Evidence
<p>Article 3 (Availability of universal service)</p>	<p>Since the introduction of universal service, only few Member States have calculated the USO net cost. The final amount of the calculated USO net cost varies significantly from country to country, depending mainly of the country size and on the USO scope. In five countries, the USO net cost is less than 1 million euros. In four countries, the USO net cost is between 1 and 10</p>	<p>EC questionnaire on the implementation and application of the universal service provisions (BEREC, 2015)</p>

	<p>million euros. While, in 4 countries the USO the net cost exceeded 20 million euros.</p> <p>According to the public consultation the vast majority of Member States agree that universal service has been significantly or moderately efficient in safeguarding end-users from the risk of social exclusion. On the other hand, most of the electronic communication service providers and other associations see little or no efficiency.</p> <p>Respondents to the public consultation brought up views that the overall administrative burden²⁶³ and regulatory uncertainty have been very high. Several respondents also noted that USO puts the burden of a social objective on the private sector and in particular on the electronic communications sector when the burden should be shared by society as a whole.</p>	<p>and SWD(2015) 126.</p> <p>Public consultation</p>
Article 5 (Directory enquiry services and directories)	<p>With regard to the comprehensive directory and directory enquiry services the provision cost is difficult to estimate, but available data suggests that the relation between the cost and demand is such as to enable commercial provision by the market. Availability of commercial services over an extended period of time, absent of any legal obligation, would suggest sufficient use to ensure continued availability in the market even in the absence of policy intervention.</p>	<p>Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011.</p>
Article 6 (Public pay telephones)	<p>Maintaining public pay telephones in Art 6 of the USD might need to be assessed in view of the cost-benefit.</p> <p>The estimated maintenance cost of payphones in the EU is estimated annually over 1 billion euro – a significant amount considering a rather infrequent facility use (e.g. the non-use by 88% of the population across the EU²⁸ regarding public payphones).</p>	<p>Tech4i2 et al. (2016) Review of the scope of universal service, SMART 2014/0011.</p>
Article 12	<p>The articles on costing (Art 12) and financing of the USO (Art 13) have raised a number of interpretation</p>	<p>EC questionnaire on the</p>

²⁶³ Twelve European countries used competitive designation mechanisms to designate the US provider either for all or for part of the services encompassed within the Universal Service Obligations (USO) scope. Apart from some countries where there is no compensation fund in place, the most commonly found way to fund the USO net costs is via sectorial funding. In only a handful of countries all operators are obliged to contribute, whilst in the remaining countries where a compensation fund exists a minimum income/revenue/turnover is required regarding the operators capacity to contribute to that fund. Among the countries where operators are part of a funding mechanism, in three cases a ceiling was established for the operators' contributions which is related to operators' annual revenues. In a significant number of countries, the USO net costs were calculated at least once.

<p>(Costing)</p> <p>Article 13 (Financing)</p>	<p>issues.</p> <p>Current rules on compensation of the net cost of the universal service provision are complicated, and designated providers cannot be sure what percentage of their bidding tender will be regarded as net cost and whether NRAs consider it an unfair burden. The current way of financing mainly by the industry is an administrative and financial burden for the sector, which can cause market distortions and uncertainty in the market.</p> <p>The vast majority of respondents to the public consultation (including all major players and associations) agree that the most appropriate and equitable way of financing the universal service, would be through public funds.</p>	<p>implementation and application of the universal service provisions (BEREC, 2015) and SWD(2015) 126.</p> <p>Public consultation</p>
<p>Article 27a - Harmonised numbers for services of social value</p>	<p>The main provisions governing 116 numbers are enshrined in the 116 Decision (2007/116/EC). In addition to that, Article 27(a) USD requires Member States to promote 116 numbers, ensure that disabled end-users are able to access the 116 numbers; ensure that citizens are adequately informed of 116 services, (in particular targeting persons travelling in the EU) and finally, provides that citizens have access to a missing children hotline under the number 116000.</p> <p>Currently some of the numbers are not taken up at all, while the total numbering range (consisting of five numbers) is used at about 50%. The last remaining Member State implemented its 116000 service only in June 2016, which was required by Article 27a (4) USD. Also, the Eurobarometer studies carried out in 2011 and 2012 revealed very low awareness, among citizens, despite the manifest interest about the services provided under the 116 number. These results suggest that the provision in Article 27a has not been very effective, which raises the need to repeal.</p>	<p>Statistics on take are available on the Commission's 116 web page (https://ec.europa.eu/digital-single-market/en/eu-rules-116#the-implementation-of-the-116-numbers), the latest COCOM Working Document on the implementation on the reserved '116' numbers – as of 1 November 2015 was published in November 2015 and the next report COCOM16-05 is due to be published by end of May</p> <p>Eurobarometer</p>

		studies carried out in 2011 ²⁶⁴ and 2012 ²⁶⁵
Article 26 (Emergency services and the single European emergency call number (112))	The obligations regarding access to 112, especially the provisions on caller location information, are considered a public interest service accepted by network operators. However, to the extent that qualitative requirements are attached to the obligation (caller location, equivalent access) it is more burdensome for network operators. For this reason, several operators claim that the financial burden should lay on the public budget or be shared amongst all communications providers. On the other hand, end-users, Public Safety Answering Points and stakeholders (EENA) are complaining about the lack of caller location accuracy in such an important operation like the emergency service. While the costs of reliable network based location technologies are deemed to be high, handset based technologies – not currently mandated in EU legislation – might constitute a cheaper solution to enhance the existing network based caller location. In terms of accessibility for disabled end-users, more effective web based solutions could ensure a higher equivalence of access than the currently implemented SMS solutions.	Public consultation, 112 COCOM report

Provisions raising issues of coherence

Provisions	Assessment	Evidence
Article 20 (Contracts)	The Consumer Rights Directive (CRD) contains general consumer law rules on information requirements in contracts (Article 5 CRD) covering aspects such as: characteristics of services, identity of trader, tariffs or contract duration; or requirements for distance contracts (Article 6 CRD). These general rules overlap with certain general provisions on contracts in Article 20 Universal Service Directive while more communications-specific contract provisions, for instance on specific minimum service quality levels offered, are not covered by the CRD. General information requirements on contracts are also included	Public consultation, SMART 2015/0003 study, assessment by the Commission services

²⁶⁴ For Special Eurobarometer 367 on Harmonised numbers for services of social value -116 please see: http://ec.europa.eu/public_opinion/archives/eb_special_379_360_en.htm#367

²⁶⁵ For Special Eurobarometer 387 on harmonised numbers for services of social value – 116, please see: http://ec.europa.eu/public_opinion/archives/ebs/ebs_387_en.pdf

	in the Services Directive, e-Commerce Directive, Unfair Commercial Services Directive, however none of these include sector-specific information that is crucial for end-users.	
Article 20 (Contracts), Article 21 (Transparency and publication of information), Article 22 (Quality of service)	The recently adopted Regulation (EU) 2015/2120 on open internet access and roaming includes transparency measures regarding contracts which include internet access services in Article 4. These overlap with certain parts of Article 20 USD on contracts (e.g. information on traffic shaping), of Article 21 USD on transparency and publication of information (e.g. information on conditions limiting access to and/or use of services and applications and information on traffic shaping). Additionally, both Article 5 of the Regulation and Article 22(3) USD empower NRAs to set minimum quality of service requirements.	Public consultation, SMART 2015/0003 study, assessment by the Commission services
Article 34 (Out-of-court dispute resolution)	Out-of-court complaint and redress mechanisms are provided for under Article 34 Universal Service Directive, while a recourse to similar mechanisms is provided by the legislation on Alternative and Online Dispute Resolution (Directive 2013/11/EU on consumer ADR ("ADR Directive") and Regulation (EU) No 524/2013 on consumer ODR ("ODR Regulation"). The ADR Directive enables EU consumers to solve their disputes concerning contractual obligations stemming from sales contracts or service contracts with EU traders, including electronic communications service providers, through the intervention of ADR entities respecting binding quality requirements. Under the ODR Regulation, the European Commission launched in February 2016 an EU-wide online platform (ODR platform) that facilitates the online resolution of contractual disputes between EU consumers and traders over purchases made online. Online traders and online marketplaces are required to provide a link to the EU ODR platform on their website. The ADR and ODR apply to consumers only, whereas Article 34 also applies to other end-users.	Public consultation, SMART 2015/0003 study, assessment by the Commission services

9.6. Annex VI

Screening of the BEREC Regulation [(2009/1211/EC)]

This annex summarises the evaluation of the provisions of the Regulation (EC) No 1211/2009 of the European Parliament and the Council (BEREC Regulation).

Main purpose of the BEREC Regulation (legal basis: 95 EC (114 TFEU))

The Body of European Regulators for Electronic Communications (BEREC) was established by the BEREC Regulation together with the BEREC Office which is an EU agency providing professional and administrative support to BEREC. BEREC must pursue the objectives established in Article 8 of the Framework Directive (same objectives as those of NRAs) and, in particular, ensure a consistent application of the EU regulatory framework for electronic communications in order to contribute to the development and better functioning of the internal market.

The provisions below have been selected since are the most relevant to tackle a certain aspect of each proposed evaluation criterion, namely: relevance, effectiveness, efficiency, coherence.

Analysis of specific provisions

Provisions raising issues of relevance

Provisions	Assessment	Evidence
Art 1 (Establishment)	The objectives of BEREC (achievement of the internal market) remain valid and there is still a need to maintain this intervention at EU level since significant bottlenecks and barriers to entry remain in the provision of electronic communications services across the EU.	Public consultation
Art 2 (Role of BEREC)	The tasks of BEREC are of an advisory character towards NRAs and the European Parliament, the Council and the Commission, on request or on its own initiative, mainly through the adoption of opinions and reports. The work carried out by BEREC and supported by the BEREC Office is relevant and has an impact on stakeholders. However the degree of effectiveness would depend on the actual implementation done at national level by the	Public consultation ²⁶⁶ , Study on the Evaluation of BEREC and the BEREC Office (Evaluation Study), ²⁶⁷ Study for the EP on How to build a

²⁶⁶ Add reference

²⁶⁷ Study on the Evaluation of BEREC and the BEREC Office, Published on 21/12/2012 (see: <https://ec.europa.eu/digital-single-market/en/news/study-evaluation-berec-and-berec-office>).

	<p>NRAs due to the non-binding character of BEREC's tasks. This aspect should be considered, since the current nature of the BEREC tasks seems insufficient to support a consistent application of the EU regulatory framework and the further development of consistent regulatory practice among the NRAs. BEREC issues its "guidelines" and "common positions" in view to achieve greater consistency of measures but the non-binding character of its tasks makes it strongly dependent on the NRAs willingness to take it on board. Another example where a lack of binding power has been detrimental to the achievement of the single market is the case of the termination rates. In addition BEREC's structure as a group of NRAs without legal personality is perceived to undermine BEREC's incentives to pursue the internal market objectives (as opposed to the individual or collective objectives of its national members).</p> <p>As part of the Regulation 2015/2120, BEREC has been assigned additional tasks in relation to net neutrality and roaming which are very relevant for market players and end-users.</p>	Ubiquitous EU Digital Society.
Article 6 (The office)	The BEREC Office (BO) provides administrative support to BEREC and its budget is also used to finance BEREC activities, therefore its activities continue to be relevant for BEREC.	Evaluation Study

Provisions raising issues of effectiveness

Provisions	Assessment	Evidence
Article 2 (Role of BEREC)	The advisory role of BEREC should be better clarified and improved: BEREC does not shed enough light on emerging issues or propose recommendations/guidelines to face them. Furthermore, BEREC often exemplifies national considerations rather than a single-market driven approach. One example, as pointed	Evaluation Study, EP's opinion on the Evaluation Report, ²⁶⁸ Study for the EP on How to build a Ubiquitous EU Digital Society.

²⁶⁸ European Parliament Resolution of 10 December 2013 containing its opinion on the evaluation report regarding BEREC and the Office (2013/2053(INI) see: <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2013-0536&language=EN>

	<p>out above, is the case of the BEREC guidelines. This is partially due to the structure of BEREC as a group of NRAs without legal personality. Furthermore, a study for the European Parliament suggests that "BEREC delivers verdicts based on the "lowest common denominator" or prioritizes flexibility over consistency (see also comments below on the institutional set-up).</p>	
<p>Article 4 (Composition and organisation of BEREC)</p> <p>Article 6 (The office)</p> <p>Article 7 (Management Committee)</p> <p>Article 8 (The Administrative Manager)</p>	<p>An adequate and effective institutional set-up is key to ensure a positive outcome of the overall regulatory framework.</p> <p>The Evaluation Report conducted in 2012 by the Commission and further acknowledged by the European Parliament concluded that BEREC has so far fulfilled its assigned functions rather successfully but indicates that BEREC's structure and overall functioning could be further improved.</p> <p>The study indicates the difficulties in developing a collective European thinking different from the national interests of the NRAs which form it. This may be due to its current set-up (two-tier governance structure²⁶⁹) and also to the fact that BEREC, as pointed out also on the Evaluation Study, functions as a bottom-up regulatory model.²⁷⁰ The bottom-up approach</p>	<p>Evaluation Report, EP's opinion on the Evaluation Report, Public Consultation, BEREC Opinion on the Review of the EU Electronic Communications Regulatory Framework,²⁷² Common Approach, Study for the EP on How to build a Ubiquitous EU Digital Society.</p>

²⁶⁹ The BoR is neither an EU Agency nor has it legal personality but has decisions making powers, only the Office is established as an EU body with legal personality but only with a supporting role.

²⁷⁰ The outputs of BEREC are Article 4.7 of the BEREC Regulation establishes that "the work of BEREC may be organised into Expert Working Groups, where the experts of NRAs participate in order to prepare the work foreseen in the annual BEREC Work Programme. All the draft documents (opinions, reports...) are then discussed at the level of the Contact Network (which is a group of NRAs experts not established in the BEREC Regulation but by BEREC's own Rules of Procedure). The Contact network aims at preparing the meetings of the Board of Regulators of BEREC and of the Management Committee of the BEREC Office in view of the final adoption of the draft documents at the Plenary meetings (each Head of the NRAs vote on the draft documents).

	<p>ensures a link back to the national market but at the same time the Evaluation Study indicates that BEREC should instead have more room to take strategic decisions and that the process should be more top-down. Even if BEREC has further developed its capacity to focus on strategic issues (e.g. by revising BEREC's strategy paper and by organising workshops on key regulatory challenges)²⁷¹ respondents to the public consultation has signalled the need for more proactiveness from BEREC on key topics as well as the fact that BEREC's current institutional set-up results in it often opting for greater flexibility or the lowest common denominator instead of focusing on a harmonised approach for the single market.</p> <p>Therefore the current governance structure does not seem adequate for properly carrying out the tasks established under the BEREC Regulation both in terms of content and procedure. Furthermore it is not in line with the Common Approach (CA) since currently only the Office is established as an EU body with legal personality, the BoR is not a community Agency and does not have legal personality (but has decision making powers in relation to BEREC's remit, even if the Commission has no voting power).</p> <p>As pointed out by respondents to the public Consultation the absence of a stable Chair (currently Article 4.4</p>	
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²⁷² BEREC Opinion on the Review of the EU Electronic Communications Regulatory Framework (BoR (15) 206) 10 December 2015 (see: http://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/5577-berec-opinion-on-the-review-of-the-eu-electronic-communications-regulatory-framework)

²⁷¹ See http://berec.europa.eu/eng/document_register/subject_matter/berec/annual_work_programmes/4785-berec-strategy-2015-2017

	<p>provides for a rotating - 1 year - Chair) may explain the current lack of a clear and stable supervision of the Agency.</p> <p>(See also additional comments under "efficiency" and under "coherence").</p> <p>Furthermore it should be signalled, as also BEREC pointed out in its opinion on the telecom review, that the provision on NRAs participation from EEA States as observers (Article 4.3) does not reflect the current practice in other agencies and the incorporation of the 2009 Telecom package into the EEA Agreement is still pending mainly caused by a disagreement between the Commission and the EFTA countries because of the reference to the observer status.</p>	
<p>Article 10 (Staff)</p>	<p>Article 10(3) of the BEREC regulation provides that the power of the Appointing Authority should be exercised by the Vice-Chair of the Management Committee. However only a limited list of tasks is delegated to the Administrative Manager, and this creates some administrative burden. This aspect of operational improvement has also been identified by BEREC in its opinion on the telecom review.</p> <p>Furthermore this is not in line with the Common Approach which foresees that, in order to allow the Management Board (MB) to focus on the core business, he/she should be given the powers of the Appointing Authority for all the staff but these competencies should be delegated to the Executive Director (who must also be authorised to sub-delegate those powers).</p>	<p>Common Approach, Public consultation, BEREC Opinion on the Review of the EU Electronic Communications Regulatory Framework</p>

Provisions raising issues of efficiency

Provisions	Assessment	Evidence
<p>Article 3 of BEREK</p>	<p>As also pointed out in the Evaluation Report BEREK's tasks need to be prioritised in order to reach its objective with high standards and ensure efficiency of its work. This is particularly important since many NRAs already face or will face in the future difficulties to participate in BEREK because of the downsizing of their resources occurring while the BEREK agenda gets denser.</p>	<p>EP's opinion on the Evaluation Report, Public consultation)</p>
<p>Article 4 (Composition and organisation of BEREK)</p> <p>Article 6 (The office)</p>	<p>The role of the Office, which is currently limited to administrative and professional support, and its size (only 27 FTE posts, around 11 posts are exclusively occupied with providing administrative support for the Office itself), creates some inefficiency. The Office has to comply with the same resource-intensive procedures as much bigger Agencies and its professional support provided to BEREK is still rather limited, as identified through experience and pointed out in the Evaluation Study. This has created difficulties in order to recruit and retain qualified staff as well as challenges in ensuring such basic requirements as the segregation of duties in financial circuits or ensuring that certain functions could be performed in an independent way (this is one the reasons why recently the accounting officer function has been delegated to the Commission).</p> <p>However, as pointed out in the Evaluation Study, the BO could be better used, especially when supporting EWGs in their everyday work (see also comments below under "effectiveness" and "coherence").</p>	<p>Evaluation Study, EP's opinion on the Evaluation Study, Public consultation</p>
<p>Article 5(4) Tasks of the BoR</p> <p>Article 9(3) Tasks of the Administrative Manager</p>	<p>The BEREK Regulation currently provides for two separate Annual Reports and two separate Working Programmes in line with the current two-tier structure of BEREK/BEREK Office. This, together with the fact that according to the new rules for EU Agencies on annual/multiannual Working Programmes (and in line with the Common Approach), the BO Working Programmes is adopted 11 months earlier than the WP for BEREK, causes certain inefficiencies and coordination issues.</p> <p>Finally no performance indicators are included in the</p>	<p>Common Approach, Evaluation Report, EP's opinion on the Evaluation Report, Public consultation</p>

	Working Programmes to allow for effective assessment of the results achieved in term of objectives, as pointed out in the Evaluation Study, in the EP's opinion on the Evaluation Report and by respondents to the Public Consultation.	
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Provisions raising issues of coherence

Provisions	Assessment	Evidence
Article 3 of BEREK)	<p>A critical aspect has been identified as regards the mismatch between the tasks of the independent NRAs and the tasks of the BEREC, where BEREC is expected to issue opinions in fields for which not all its NRA members are competent as pointed out in the EP's opinion on the Evaluation Report as well as in the BEREC Opinion on the Telecom Review, where BEREC urged the Commission to align the competences of the NRAs to those of BEREC.</p> <p>This is undermining the contribution of BEREC to its tasks as well as the predictability for market players.</p> <p>Moreover, the BEREC tasks, partly due to its non-binding advisory role, might not always be adequate in order to ensure coherence with the national regulatory practice at national level. Sometimes BEREC lacks a consistent EU-wide regulatory approach in order to represent an EU-wide single market interest.</p> <p>Furthermore a clarification of the tasks of the Agency as regards international activities is necessary (type of initiative/addressees/field) in line with the Common Approach, in order to overcome the current ambiguities related to the role and mandate of BEREC/BEREC Office in this field.</p>	EP's opinion on the Evaluation Report, Evaluation Report, Public consultation, BEREC Opinion on the Review of the EU Electronic Communications Regulatory Framework, Common Approach
Article 4 (Composition and organisation of BEREK) Article 6 (The office) Article 7 (Management)	<p>As pointed out above, BEREC and its Office are two complementary distinct entities since the BoR is a platform of regulators with no legal personality and the Office is an EU body with legal personality but with only a supporting role.</p> <p>This is not in line with the CA and undermines legal certainty and accountability. BEREC has on several occasions claimed not to be an EU Agency to avoid the application of the EU rules. This is from the</p>	Evaluation Study, Public Consultation

<p>Committee)</p>	<p>formal point of view correct, however it should be taken into account that BEREC, in order to perform its role and actions, is using financial and other resources from the Office which is financed by EU funds. Therefore this claim from BEREC seems artificial and, more importantly, it undermines its accountability.</p> <p>Furthermore the provision on NRAs' participation from EEA States as observers (Article 4.3) is not coherent with the current practice in other agencies (see also comments under "effectiveness").</p>	
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9.7. Annex VII

The implementation of the multiannual Radio Spectrum Policy Programme and of the harmonisation measures adopted pursuant to the Radio Spectrum Decision

1. Introduction

This annex reviews the implementation of the multiannual radio spectrum policy programme (RSPP) and of the harmonisation measures adopted pursuant to the Radio Spectrum Decision (RSD).

Article 15 of Decision 243/2012/EU²⁷³ of the European Parliament and of the Council establishing a multiannual radio spectrum policy programme (the RSPP) provides that the Commission shall conduct a review of the application of this Decision by 31 December 2015. In addition, annual reporting obligations on the harmonised use of radio spectrum are also contained in Article 9 of Decision 676/2002/EC²⁷⁴ of the European Parliament and of the Council on a regulatory framework for radio spectrum policy in the European Community (the Radio Spectrum Decision). In 2014, the Commission adopted its Report to the European Parliament and the Council COM(2014)228 on the implementation of the RSPP.

Radio spectrum is the basis for wireless communications such as Wi-Fi and mobile phones, and a key resource to other sectors including broadcasting, manufacturing and transport, and non-commercial essential services such as defence, emergency services, and environmental protection. Radio spectrum is a finite natural and reusable resource in high demand, and the devices that use it can easily cross national borders. Using spectrum as efficiently as possible throughout the internal market, including spectrum sharing between different applications and users, requires coordination at international level and at European level, taking into account its impact on EU policies.

2. The Radio Spectrum Decision

The Radio Spectrum Decision (RSD) provides a framework for the coordination of policy approaches and, where appropriate, harmonised conditions for the availability and efficient use of radio spectrum necessary for the functioning of the internal market. It also established the Radio Spectrum Committee (RSC), whose role is to assist the European Commission in the exercise of implementing powers which build on mandates to the European Conference of Postal and Telecommunications Administrations (CEPT)²⁷⁵ to achieve the above mentioned policy objectives. Successful implementation of the RSD has built upon fostering good working relationships between the Commission and Member States represented in the RSC. This collaboration has been continued in the current implementation of the RSPP. All measures proposed to the RSC for voting have received a positive opinion. A list of decisions adopted between 2006 and 2015 is provided in Tables 2-5.

The Radio Spectrum Policy Group (RSPG) is an advisory group established under Decision 2002/622/EC to advise the Commission on the strategic policy orientations concerning

²⁷³ OJ L 81, 21.3.2012, p. 7–17

²⁷⁴ OJ L 108, 24.4.2002, pp. 1–6

²⁷⁵ CEPT is a technical cooperation platform where Members from 48 European countries cooperate in the area of posts, radio spectrum and telecommunication networks

spectrum. The "RSPG Opinion on DSM and Framework Review" also indicates that the RSD²⁷⁶, coupled with equipment regulation, has provided an efficient tool for the implementation of harmonised technical conditions in Europe and that this supports a 'single market of equipment' with cross-border inter-operability, bringing many benefits including economies of scale in equipment manufacturing [...] and service deployment; mobility of use; and greater technical efficiency.

3. The EU's Radio Spectrum Policy Programme

The RSPP defines key policy objectives and sets out general principles for the strategic planning and harmonisation of the use of spectrum to ensure the functioning of the internal market using the mechanisms established by the RSD. Based on these principles, the RSPP identifies priorities for action in the area of wireless broadband communications and calls for sufficient spectrum for innovative audio-visual media, as well as for other EU policy areas such as the Galileo programme, the European Earth Observation Programme Copernicus, transport, health, research, civil protection and disaster relief, environment and energy-saving applications. Pursuant to the Radio Spectrum Decision and the RSPP, the Commission has adopted implementing decisions supporting specific EU policy areas based on its collaboration with the Radio Spectrum Committee, the Radio Spectrum Policy Group (RSPG)²⁷⁷ and with the CEPT.

The RSPG mentions in its "Opinion on the implementation of the current RSPP and its revision to address the next period"²⁷⁸ that "the RSPP and the Spectrum Decisions of the European Commission are the two pillars to support the implementation of a Digital Single Market. Whilst the RSPP provides the directions, technical harmonisation measures are to be developed based on the Radio Spectrum Decision." The respondents to the Commission's public consultation on the review agreed that the current framework has delivered on technical harmonisation while it could better deliver on the consistent release or efficient use of spectrum.

The RSPG recommends a continuous review of the multiannual RSPP approach to provide political guidance for the measures under the RSD. It recommends that any future RSPP goes beyond wireless broadband addressing the needs of various other sectors supported by EU public policies but does not set overall targets on how much spectrum should be made available for the different services. The RSPG further concludes that the objectives of the first RSPP have been largely achieved and identifies a number of key issues for the future:

- Increasing role of spectrum sharing
- The need for some forms of national flexibility, in particular for electronic communication services. As a consequence, the RSPG prefers a band by band analysis and makes some recommendations for specific bands to be prioritised.

²⁷⁶ RSPG16-001 http://rspg-spectrum.eu/wp-content/uploads/2013/05/RSPG16-001-DSM_opinion.pdf

²⁷⁷ The Radio Spectrum Policy Group is an advisory group to the Commission established under Decision 2002/622/EC

²⁷⁸ RSPG15-621 rev https://circabc.europa.eu/d/a/workspace/SpacesStore/4709f36a-f27b-4850-a19b-95df0154d5aa/RSPG16-006final_RSPP_opinion.pdf

3.1. Regulatory principles and policy objectives

Article 2 of the RSPP provides for Member States to cooperate with each other and with the Commission in order to ensure the consistent application of the general regulatory principle when managing spectrum. These include applying the most appropriate and least onerous authorisation system based on objective, transparent, non-discriminatory and proportionate criteria and in such a way as to maximise flexibility and efficiency in spectrum use; fostering the development of the internal market by promoting Union-wide digital services; promoting competition and innovation taking account of the need to avoid harmful interference and of the need to ensure technical quality of service, defining the technical conditions of the use of spectrum and promoting technology and service neutrality in the rights of use of spectrum.

Article 3 of the RSPP details the policy objectives to focus the priorities of Member States and the Commission. The main objectives are to encourage efficient management and use of spectrum; seek to allocate sufficient and appropriate spectrum in a timely manner to support Union policies, including the target of 1200 MHz of suitable spectrum by 2015 to meet the increasing demand for wireless data traffic; promote innovation and investment through enhanced flexibility in the use of spectrum including general authorisations, passive infrastructure sharing; avoid the excessive accumulation of rights by certain undertakings.

Setting out in the RSPP spectrum related common principles and objectives has contributed to guide Member States decisions in the management of spectrum while leaving them ample flexibility in the choice of the measures. At the same time, due to the general character of some of the regulatory principles and policy objectives and without any accompanying mechanism for Member States coordination, they have fallen short of ensuring a consistent approach between Member States in the spectrum area for the benefit of greater legal predictability.

With regards to flexible spectrum use, the RSPP calls for a consistent application of technology and service neutrality; the freeing up of harmonised spectrum for new advanced technologies and the possibility of trading rights of use and facilitating general authorisations in order to foster innovation and high-speed broadband connections. In terms of trading or leasing mechanisms, these have hardly been used so far with the exception of indirect such arrangements in cases of mergers or acquisitions.

3.2. Wireless broadband services

Concerning wireless broadband, Article 3(b) of the RSPP calls upon the Member States and the Commission to cooperate in identifying at least 1200 MHz of spectrum by 2015 to meet the increasing demand from wireless data traffic.

The Commission, in cooperation with the Member States, carried out studies to identify appropriate frequency bands in order to achieve the 1200 MHz target. These bands are or will be subject to harmonisation measures. Following the adoption of [Implementing Decision 2015/750/EU](#) concerning the 1.5 GHz band, 1030 MHz have been harmonised as of December 2015 for wireless broadband through Commission implementing decisions adopted under the Radio Spectrum Decision. This means that the 1200 MHz target by 2015 has not yet been fully achieved. As of February 2016, Member States have assigned an average of about 700 MHz of the spectrum harmonised through these implementation measures (Figure 23).

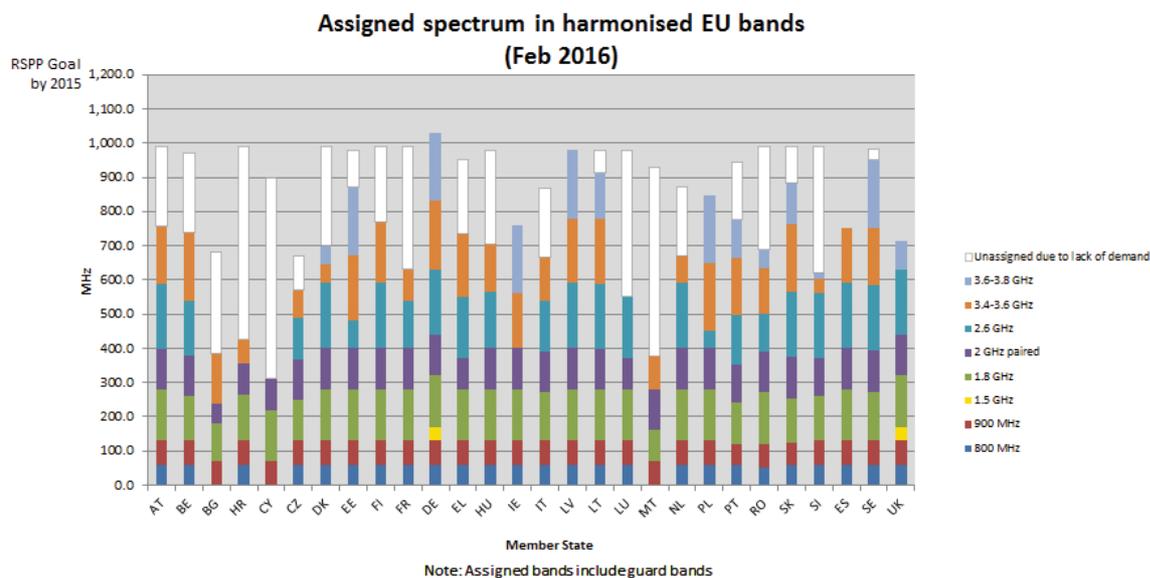


Figure 25 Assigned spectrum in harmonised EU band per Member State

The 700 MHz band is an important band towards the 1200 MHz target (which will nonetheless not be reached with this band exclusively) and towards the 30Mbps-for-all objective of the Digital Agenda for Europe. Commission Implementing Decision (EU) 2016/687 of 28 April 2016 on the harmonisation of the 694-790 MHz (700 MHz) frequency band for wireless broadband and some additional applications sets the technical conditions of use in this band. This Implementing Decision is complementary to the legislative proposal to EP and Council on the long-term use of the UHF band of 2 February 2016 which sets out specific deadlines and conditions for the coordinated transition in spectrum use within the whole 470-790 MHz ('UHF') band across the Union. The 2.3 GHz is also being considered for an implementing measure to harmonise the technical conditions of use of this band for wireless broadband.

With regard to Electronic Communication Services (ECS), Article 4(5) requires Member States to put in place, where appropriate, selection criteria and procedures for granting rights of use that promote competition, investment and the efficient use of spectrum. In addition, Article 4(8) of the RSPG requires the Commission, in cooperation with Member States, to address the possible risk of fragmentation of the internal market due to divergent selection criteria and procedures for harmonised spectrum by facilitating the identification and sharing of best practices on authorisation conditions and procedures, and by encouraging the sharing of information in order to increase consistency across the Union.

In response to the public consultation on the review of the regulatory framework, most respondents indicated that the current regime has better delivered on technical harmonisation than on consistent release or efficient use of spectrum and many reported that a lack of coordination of selection methods and assignment conditions has affected the development of ECS. A majority of market actors seek more consistency in spectrum management to increase legal certainty, transparency and predictability for investment. The RSPG adopted a report on

"Efficient awards and efficient use of spectrum" in 2016 where it concludes that "there isn't one single method of awarding spectrum that could be extrapolated across all Member States or all bands [...] however, there are some key lessons that can be learnt from across the EU and globally in the approach to designing and conducting awards. Common to all of these, and of particular importance to stakeholders is clarity, simplicity and regulatory certainty."

Article 5 of the RSPP is more specific and mentions several measures such as limiting the amount of spectrum for which rights of use are granted to any undertaking (spectrum caps), attaching conditions to such rights of use, reserving a certain part of a frequency band to new entrants, refusing to grant new rights or new users in certain bands, prohibiting or imposing conditions on transfer of rights or amending existing rights. All of these measures are valuable in that they can and should be used in cases where they can promote competition or avoid market distortions. Indeed, the majority of market actors and several public authorities responding to the public consultation on the review consider that spectrum assignment procedures have a significant impact in structuring the mobile market and its competitive landscape.

Member States have individual competence on these market shaping measures and have frequently used them in some form or another to help achieve their intended policy objectives but the use of these measures does not commonly follow the outcome of an ex ante competitive assessment that proves that the market is not effectively competitive. In many Member States these measures are defined by the Ministry and even when NRAs are involved in their design this is not a consequence of an ex ante competitive assessment in which the competition authorities play a major role (to the exception of those integrated authorities in as far as internal consultation takes place). There is no mechanism to ensure that such measures are used consistently across the EU. To this regard, the RSPG Report on Efficient Awards and Efficient Use of Spectrum²⁷⁹ notes that " spectrum caps and reservations should reflect the identified objectives of an award based on a market assessment in order to be consistent with competition law " and more specifically indicates that "Member States need to be aware of unintended consequences arising from caps or set asides".

Article 6(2) of the RSPP required Member States to authorise, by the end of 2012, subject to market demand, the use of the frequency bands already harmonised at EU level²⁸⁰. The Commission has been working to ensure the timely implementation of Member States' obligations under Article 6(2), using all means at its disposal, including pilot letters which were sent to 23 Member States and the launch of one infringement procedure.

Article 6(4) of the RSPP required Member States to carry out an authorisation process in order to allow the 800 MHz band, the so-called 'digital dividend band', to be used to provide electronic communications services by 1 January 2013. This article also allowed the Commission to grant specific 3 years maximum derogations for Member States where exceptional national or local circumstances or cross-border frequency coordination problems prevented the availability of the band (see Table 1). Three years after the original deadline, the 800 MHz band has not yet been assigned in all Member States.

²⁷⁹ RSPG16-004 FINAL https://circabc.europa.eu/d/a/workspace/SpacesStore/ddb735a3-a7e8-4c55-a4a5-679577c8d2bd/RSPG16-004final-Efficient_Awards_report.pdf

²⁸⁰ OJ L 144, 4.6.2008, pp. 77–81; OJ L 163, 24.6.2008, pp. 37–41; OJ L 274, 20.10.2009, pp. 32–35

Table 1 - Assignment and derogations of the 800 MHz harmonised band

Status	Member States	Number of MS
Assignment in 2012 or before	ES*, DK, DE, IE, FR, IT, LU, NL, PT, SE, HR, RO	12
Assignment in 2013**	LT, AT, SK, FI, CZ, BE, UK, EE, LV	9
Assignment in 2014	HU, EL, SI	3
Assignment in 2016	PL	1
Not yet assigned	BG (military use notified pursuant to Art.1(3)), CY****, MT***	3

* *Despite being assigned in 2011, the band was made available in 2015.*

** *Including some derogations until 1 January 2014*

*** *Cross-border interference issues*

**** *Interference issues due to local political situation*

Fourteen Member States sought derogations; two were refused in their entirety as they did not meet the conditions of Article 6(4). The Commission limited the duration of the derogations for the remaining 12 countries to the minimum time necessary, taking each specific circumstance into consideration. Two derogation requests were only partially granted and four others were granted for a shorter duration than requested. While seeking to avoid negative consequences for neighbouring Member States, derogations were mainly justified by difficulties in switching off analogue TV due to specific geographical or economic situations, or coordination problems between Member States with other countries. The availability of the 800 MHz spectrum has also been delayed in Bulgaria as, in accordance with Article 1(3) of the RSPG, it notified the continued use of the 800 MHz band by the military until the equipment in use is phased out. The RSPG offered ‘good offices’ to help Member States with cross-border coordination issues within the Union; however this valuable mediation has proven in some cases to be lengthy and has been limited by the lack of clear enforcement powers.

4. Conclusions

The RSPG has helped to foster innovation and competition in electronic communication services by setting the goal of 1200 MHz for wireless broadband while stressing the importance of network and service neutrality as well as transparency and predictability. It has established the principles and objectives for spectrum management needed to enable innovative services and support electronic communications and other EU policies. The harmonisation of spectrum creates the potential for economies of scale and, by allowing,

whenever possible, the widest spectrum usage conditions, many new applications can use the spectrum while respecting existing usage.

The RSPP has nevertheless shown certain limits due to the general character of some of the regulatory principles it established, which need to be made more precise for effective monitoring of implementation, for example as concerns the authorisation principles and system and the maximisation of flexibility and efficiency of spectrum use. While each Member State continues to set the authorisation conditions and procedures for spectrum, the large differences in these conditions and procedures contribute to the fragmentation of the internal market with a negative impact on deployment of networks throughout the whole European territory and of their integration across borders and to other disadvantages for consumers such as lower speeds and quality and slower take up.

The general principles and conditions of the current framework do not appear to be sufficient to put in place a consistent approach for spectrum assignment and to thus remove these barriers to the single market.

In the case of electronic communications, the 1200 MHz by 2015 target is not yet achieved. The experience gained in implementing the RSPP's wireless broadband provisions and in monitoring national authorisation conditions and procedures over the last four years, shows that the RSPP has not sufficiently stimulated a single market and has been unable to achieve sufficient convergence of licensing conditions, integration of networks or investment in and rollout of wireless broadband at rates comparable to those of other regions or those needed for achieving the DAE target of 30 Mbps for all by 2020. The Commission notes that the time lag in which the spectrum is made available in the first and the last Member State is several years for some of the harmonised bands with an effect on the availability of services for consumers in different Member States. Delays in assigning the 800 MHz band demonstrates the need for more nimble mechanisms for the harmonised timing of assignments throughout the Union or for categories of Member States based on the characteristics of the wireless broadband market, and for the harmonised duration of spectrum usage rights. It is important to ensure the efficient and timely assignment of existing harmonised spectrum in order to accrue the potential socio-economic benefits through digital services provided over wireless broadband networks.

Legal certainty on common timing and duration of spectrum assignments for wireless broadband, including clarity on renewal conditions, should be beneficial to operators in their business case evaluations and in their cross-border strategies and will allow them to have more predictable access to spectrum and conditions for investment.

In terms of promoting competition and avoiding distortion of the market, the Commission notes several instances where market players have expressed dissatisfaction with the assignment process and the conditions of use of their licences, particularly with respect to their competitors. More consistency in terms of policy objectives and a thorough ex-ante evaluation of the market, including processes in which authorities or peer review groups are involved and/or consulted, are therefore needed to ensure that competition is promoted and that negative indirect effects on the market can be avoided.

Table 2 — General spectrum policy (programme, definition and inventory)

Date	Decision	Content
16 May 2007	2007/344/EC	Harmonisation availability of information regarding spectrum use within the Community
16 Dec 2009	Commission Decision 2009/978/EC	Amending Decision 2002/622/EC establishing a Radio Spectrum Policy Group
14 Mar 2012	Decision 243/2012/EU of the Parliament and the Council	Establishing a multi-annual radio spectrum policy programme (RSPP)
23 Apr 2013	2013/195/EU	Defining the practical arrangements, uniform formats and a methodology in relation to the radio spectrum inventory

Table 3 — Electronic communications services (including wireless broadband)

Date	Union Act	Content
12 Feb 2007	Commission Decision 2007/90/EC	Amending Decision 2005/513/EC on the use the 5 GHz band for the implementation of Wireless Access Systems and Radio Local Area Networks
14 Feb 2007	Commission Decision 2007/98/EC	Harmonisation of the radio spectrum in the 2 GHz band for systems providing mobile satellite services
7 Apr 2008	2008/294/EC	Harmonised conditions of spectrum use for mobile communication services on aircraft
21 May 2008	Commission Decision 2008/411/EC	Harmonisation of the 3400 - 3800 MHz band for electronic communications services
13 Jun 2008	Commission Decision 2008/477/EC	Harmonisation of the 2500-2690 MHz frequency band for electronic communications services
5 Aug 2008	Commission Decision	Harmonisation of the 5875-5905 MHz frequency bands for safety-related

	2008/671/EC	applications of Intelligent Transport Systems (ITS)
16 Sep 2009	Directive 2009/114/EC of the Parliament and the Council	Amending the GSM Directive to make the 900 MHz band available for any terrestrial system capable of providing electronic communications services that can coexist with GSM systems
16 Oct 2009	Commission Decision 2009/766/EC	Harmonisation of the 900 MHz and 1800 MHz bands for electronic communications services
19 Mar 2010	2010/166/EU	Harmonisation conditions of use of radio spectrum for mobile communication services on board vessels
6 May 2010	Commission Decision 2010/267/EU	Harmonisation of technical conditions of use in the 790-862 MHz band for electronic communications services
18 Apr 2011	Commission Implementing Decision 2011/251/EU	Amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz bands for electronic communications services
5 Nov 2012	Commission Implementing Decision 2012/688/EU	Harmonisation of the 1920-1980 MHz and 2110-2170 MHz bands for electronic communications services
12 Nov 2013	2013/654/EU	Amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on aircraft.
2 May 2014	Commission Implementing Decision 2014/276/EU	Amending Decision 2008/411/EC on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communications services
8 May 2015	Commission Implementing Decision 2015/750/EU	Harmonisation of the 1452-1492 MHz frequency band for terrestrial systems capable of providing electronic communications services

Table 4 - Devices and equipment (including machine to machine)

Date	Commission Decision	Content
08 July 2004	2004/545/EC	Harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment
9 Nov 2006	2006/771/EC	Harmonisation of the radio spectrum for use by short-range devices (SRD)
23 Nov 2006	2006/804/EC	Harmonisation of the radio spectrum for radio frequency identification (RFID) devices operating in the ultra-high frequency band
21 Feb 2007	2007/131/EC	Allowing harmonised use of the radio spectrum for equipment using ultra-wideband technology
23 May 2008	2008/432/EC	Amending Commission Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices
5 Aug 2008	2008/673/EC	Amending Decision 2005/928/EC on the harmonisation of the 169,4-169,8125 MHz frequency band for certain types of short range devices
13 May 2009	2009/381/EC	Amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices
21 Apr 2009	2009/343/EC	Amending Decision 2007/131/EC on allowing the use of the radio spectrum for equipment using ultra-wideband technology
30 Jun 2010	2010/368/EU	Amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices
29 Jul 2011	2011/485/EU	Amending Decision 2005/50/EC on the 24 GHz band for the time-limited use by automotive short-range radar equipment
8 Dec 2011	2011/829/EU	Amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices

11 Dec 2013	2013/752/EU	Amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices and repealing Decision 2005/928/EC
7 Oct 2014	2014/702/EU	Amending Decision 2007/131/EC on allowing the use of the radio spectrum for equipment using ultra-wideband technology
1 Sep 2014	Commission Implementing Decision 2014/641/EU	Harmonised technical conditions of spectrum use by programme making and special events (PMSE) equipment

Table 5 - Derogations under Art. 6(4) of the RSPP Decision regarding the 800 MHz band

Date of Decision	Commission Decision notified to MSs	Content
23 Jul 2013	C(2013) 4546	Spain — 12 months
23 Jul 2013	C(2013) 4547	Poland — 12 months
23 Jul 2013	C(2013) 4569	Hungary — 18 months
23 Jul 2013	C(2013) 4570	Austria — 9 months
23 Jul 2013	C(2013) 4590	Malta — 24 months
23 Jul 2013	C(2013) 4592	Slovakia — no derogation granted
23 Jul 2013	C(2013) 4593	Romania — until 5.4.2014
23 Jul 2013	C(2013) 4594	Slovenia — no derogation granted
23 Jul 2013	C(2013) 4595	Cyprus — 36 months
23 Jul 2013	C(2013) 4608	Finland — 12 months
23 Jul 2013	C(2013) 4613	Lithuania — 6 months*
17 Oct 2013	C(2013)6765	Greece — 30.10.2014
17 Oct 2013	C(2013)6764	Latvia — 30 months
9 Dec 2013	C(2013)8690	Czech Republic — 6 months**

* 30 months for 820-821 MHz sub-band

** Two districts only