



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT **A**
ECONOMIC AND SCIENTIFIC POLICY



Reforming e-communications services: A critical assessment

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Reforming e-communications services: A critical assessment

In-depth Analysis for the IMCO Committee



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

REFORMING E-COMMUNICATIONS SERVICES: A CRITICAL ASSESSMENT

IN-DEPTH ANALYSIS

Abstract

This report analyses the proposed reform of the e-communications regulatory framework presented by the European Commission in September 2016. While many of the proposed changes appear meaningful, the report argues that overall the proposal does not entirely reflect the lessons learned from the past two decades of e-communications regulation in Europe, and ends up being at once too conservative (i.e. incremental with respect to legacy rules); fragile, since its effectiveness crucially depends on governance reform; and “retro”, since it does not incorporate principles of flexible, adaptive regulation in its overarching framework. The report argues that the merits of a lighter, ex post approach to e-communications were not sufficiently gauged by the European Commission in its impact assessment.

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LIST OF ABBREVIATIONS

DG COMP	Directorate-General for Competition
DSM	Digital Single Market
EC	European Commission
EP	European Parliament
EU	European Union
IP	Internet Protocol
LTE	Long Term Evolution
MS	Member State
TFEU	Treaty on the Functioning of the European Union
UK	United Kingdom
VHC	Very High Capacity

EXECUTIVE SUMMARY

On 14 September 2016, the European Commission set out a vision for a European Gigabit society, where availability and take-up of very high capacity networks enable the widespread use of products, services and applications in the Digital Single Market. Contextually, the Commission proposed a significant reform of existing rules related to, *i.a.* regulatory remedies to be considered by national regulators; the legal status and functions of the Bureau of European Regulators on Electronic Communications (BEREC); the scope of legal rules related to universal service and consumer protection, including their possible application to Over-The-Top (OTT) players; and a more coordinated and centralized spectrum policy. This policy initiative must be considered also in light of other initiatives that were announced and launched by the European Commission in the past months, such as Commission's Communication on "Online Platforms and the Digital Single Market - Opportunities and Challenges for Europe" dated May 2016; the Communication on an "Action Plan for 5G"; and the ongoing review of the regulatory framework for audiovisual services and media, and of copyright in the information society. Other relevant initiatives include the review of the consumer *acquis*, the review of the e-commerce directive, the implementation of the General Data Protection Regulation, and ongoing competition investigations in fields such as e-commerce and search.

This report discusses and reviews the current state of play in the area of electronic communications infrastructure and services, including existing connectivity targets under the EU Digital Agenda; provides general comments on the current proposed reform of the e-communications package; and focuses specifically on issues that are more directly falling under the competences of the IMCO Committee, and in particular the internal market, universal service, rights of end users/consumers, and the regulatory treatment of OTT players.

This report concludes that the current proposal is meaningful, but there are important margins for improvement and possibly also for departing from the legacy approach embedded in the 2002 regulatory framework. More in detail, the proposal appears to be:

- *Path-dependent*, since does not acknowledge failures, does not contemplate new, more flexible regulatory instruments, and does not reconsider any of the existing arrangements that have proven ineffective especially in spurring VHC connectivity.
- *Incremental*, since – with some small exceptions (e.g. a handful of USO services and consumer protection rules considered obsolete) – it just adds to the existing framework's rules and instruments, without eliminating any of them. This is even more curious if one considers that initially the 2002 framework was presented as temporary, transitory.
- *"Fragile"*, since removing one of the key provisions (on governance and spectrum) risks hampering the rest, and the overall impact of the proposed Code.
- *Acrobatic*, since it seeks to solve an industrial policy problem through a regulatory framework that proved partly ineffective and unfit for the single market; while at the same time acknowledging that the most impactful initiative of the past decade was the introduction of targets through the Digital Agenda for Europe.
- *"Retro"*, since it ignores the emerging need for well-managed, flexible regulatory schemes including co-regulatory solutions, especially when it comes to empowering and informing end users.

The table below summarizes this assessment. The universal service part was most positively assessed, whereas the evaluation becomes less encouraging on aspects such as fixed and mobile connectivity, consumer protection, OTTs, and institutional governance.

	VHC connectivity	Mobile and spectrum	Universal service	Consumer protection	OTTs	Institutional Governance
Effectiveness	**	*	***	**	*	***
Efficiency	**	**	***	*	**	**
Coherence	***	***	****	**	**	***
Relevance	**	*	***	**	*	***

Legend: min * to max *****

The report also argues that more disruptive changes in the existing framework would be worth a more careful look. One possibility could be to require that Member States draw their national digital economy plans, and let the Commission review and validate those plans *ex post* with a view to promoting innovation, competition, single market, universal access and user protection principles and goals. The Commission would move to a new role, more focused on monitoring and *ex post* evaluation, and towards a more adaptive framework in which outcomes and targets are decided and adapted with time. Member States would be left freer to experiment to the policy solutions they consider to be most effective in order to reach the VHC targets, in a way that safeguards dynamic, sustainable competition and hence facilities-based competition.

Among the selected topics that fall more directly under the competence of the IMCO committee, there seem to be little reason to be concerned about universal service, which can be expected to play a relatively minor role in the future of the regulatory framework (so-called “safety net”). However, the rules on consumer protection and OTTs are key to the development of a full-fledged Digital Single Market. On the one hand, the proposed rules related to services appear too vaguely and broadly formulated, possibly leading to a new wave of possibly competition-altering regulation; this is due to the fact that the Commission continues to rely, at least partly, on the “conveyance of signals” criterion as the basis for regulating service providers. In addition, if some of the key institutional governance provisions contained in the Commission’s proposal were not approved during the ordinary legislative procedure, OTTs would face a high risk of having to face a very fragmented legal landscape, especially on consumer protection, in the EU27. Against this background, it appears much more preferable to strengthen and adapt general consumer law provisions, coupling them with existing strong legislation such as the GDPR and the NIS Directives, which already impose regulatory obligations on OTTs.

1. INTRODUCTION

On 14 September 2016, the European Commission presented a Communication on Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society [SWD(2016) 300 final], accompanied by a detailed staff working document and a comprehensive set of policy appraisal documents, including an *ex post* evaluation of the current EU regulatory framework for e-communications, and an *ex ante* impact assessment of the proposed review of the same framework¹. In the Communication, the Commission sets out a vision for a European Gigabit society, where availability and take-up of very high capacity networks enable the widespread use of products, services and applications in the Digital Single Market. This vision is operationalised through three strategic objectives for 2025: for Europe's growth and jobs, Gigabit connectivity for places driving socio-economic developments; for Europe's competitiveness, 5G coverage for all urban areas and all major terrestrial transport paths; for Europe's cohesion, access for all European households to Internet connectivity offering at least 100 Mbps.

The proposed reform of the e-communications framework incorporates these strategic objectives by adding very high capacity (VHC) connectivity to the list of objectives already identified in the existing framework, and thus proposing that VHC connectivity is promoted as a stand-alone policy objective for the EU, to be balanced with other existing goals (single market, consumer protection, innovation and competition)². In addition, the Commission proposed a significant reform of existing rules related to, *i.a.* regulatory remedies to be considered by national regulators; the legal status and functions of the Bureau of European Regulators on Electronic Communications (BEREC); the scope of legal rules related to universal service and consumer protection, including their possible application to Over-The-Top (OTT) players; and a more coordinated and centralized spectrum policy.

This policy initiative must be considered also in light of other initiatives that were announced and launched by the European Commission in the past months. These include, *i.a.* the inclusion of the Digital Single Market as one of the ten priorities of the Juncker Commission, the Commission's Communication on "Online Platforms and the Digital Single Market - Opportunities and Challenges for Europe" dated May 2016; the Communication on an "Action Plan for 5G"; and the ongoing review of the regulatory framework for audiovisual services and media, and of copyright in the information society. Other relevant initiatives include the review of the consumer *acquis*, the review of the e-commerce directive, the implementation of the General Data Protection Regulation, and ongoing competition investigations in fields such as e-commerce and search.

These various pieces were followed up by the European Parliament in a variety of documents and reports, including the resolution "Towards a Digital Single Market Act"³. An *ad hoc* Digital Single Market Working Group was set up as the IMCO Committee's forum to discuss Digital Single Market issues, including the reform of electronic communications services in the EU. This briefing note aims at contributing to the work of the Digital Single Market Working Group by: (i) discussing and reviewing the current state of play in the area of electronic communications infrastructure and services, including existing connectivity targets under the EU Digital Agenda; (ii) providing general comments on the current proposed reform of the e-

¹ See, for links to all these documents, <https://ec.europa.eu/digital-single-market/en/news/proposed-directive-establishing-european-electronic-communications-code>.

² VHC should guarantee best-in-class performance in terms of speed (that should be significantly above 100 Mbps and able to reach 1 Gbps when considering both upload and download capacity), latency, package loss and jitter. This definition is therefore more ambitious than the definition of NGA that includes all technological solutions able to deliver more than 30Mbps download.

³ See <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A8-2015-0371+0+DOC+PDF+VO//EN>.

communications package; and (iii) focusing specifically on issues that are more directly falling under the competences of the IMCO Committee, and in particular the internal market, universal service, rights of end users/consumers, and the regulatory treatment of OTT players.

Section 2 below takes stock on the EU's main achievements in the field of e-communications, and the challenges that have emerged over the past few years, with specific focus on the existing regulatory framework and on the current evolution of the Internet. Section 3 presents the current Commission proposal and provides a general reflection on the extent to which the proposal addresses the problems created by existing rules. Section 4 focuses specifically on the single market dimension, on universal service, rights of end users/consumers, and the regulatory treatment of OTT players. Section 5 concludes and presents a number of policy recommendations for the IMCO Committee's Digital Single Market Working Group.

2. THE EU FRAMEWORK FOR E-COMMUNICATIONS IN LIGHT OF THE EVOLUTION OF THE INTERNET

KEY FINDINGS

- The development of very high capacity networks is very uneven in Member States, and was not helped by the regulatory approach promoted by the existing framework, mostly based on access policy (i.e. network sharing obligations).
- Access policy is based on relatively outdated competition policy tools.
- The framework was not conceived to deliver the Digital Single Market in the first place, especially in the field of spectrum and on OTT players.
- The framework has been way too shy on spectrum policy so far, and this is largely inconsistent with the framework's goals.
- The framework has proven too complex, and at times reliant on market micromanagement: this is hard to reconcile with the dynamic nature of the Internet.
- Several provisions of the framework are outdated, including in particular those on Universal Service and on consumer protection.
- The framework was supposed to be transitory, at least when it was introduced. By now, it is clear it will not be transitory, and this should be explained.

2.1. The EU regulatory framework for e-communications: origins, goals, and evolution

2.1.1. Brief description of the framework

The liberalization of EU electronic communications began officially in the mid-1990s, and in particular in 1998 with the "First Telecoms Package" containing the so-called Open Network Provisions. The First Package was later thoroughly revised with the "Second Telecoms Package" in 2002, and further amended through a series of regulatory measures that are commonly termed the "Third Telecoms Package" in 2009⁴. More recently, rules on roaming and net neutrality were introduced, together with relevant rules on data protection regulation and on network and information security, and rules on the portability of content in the digital single market. The current regulatory framework displays the following features⁵:

- *The framework provides a set of rules that apply to all electronic communications services, including telecommunications and broadcasting. The rules are not supposed to favour any particular technology, and are then mostly technology-neutral.*

⁴ See European Commission (2013), at page 17, Box 1.

⁵ The Framework Directive is based on the Framework Directive 2002/21/EC and the Better Regulation Directive 2009/140/EC. The Access Directive is based on the Access Directive 2002/19/EC and the Better Regulation Directive 2009/140/EC. The Authorisation Directive is based on the Authorisation Directive 2002/20/EC and the Better Regulation Directive 2009/140/EC. The Universal Service Directive is based on the Universal Service Directive 2002/22/EC and the Citizens' Rights Directive 2009/136/EC. The Directive on Privacy and Electronic Communications is based on the Directive on Privacy and Electronic Communications 2002/58/EC, the Amending Directive 2006/24/EC and the Citizens' Rights Directive 2009/136/EC. The Regulation on Body of European Regulators for Electronic Communications (BEREC). The Regulation on roaming on public mobile communications networks.

- *Since 2002, the framework has been designed as borrowing extensively from EU competition law, especially for key concepts such as defining the “relevant market” and “significant market power” (SMP)⁶.*
- *The framework features a multi-level governance structure that has the following main characteristics:*
 - *EU institutions define the basic rules, definitions, principles and goals for the framework in a set of directives and related documents⁷.*
 - *The European Commission defines a list of relevant markets that might warrant ex ante regulation in a Recommendation (i.e., a piece of soft law), which is sent to national regulatory authorities (NRAs) and contains a reference list of markets that potentially satisfy the criteria for regulation (the so-called “three criteria test”).*
 - *NRAs apply these rules in their territories. They perform market analyses, identify operators that have SMP, and select remedies. They exchange practices and receive soft guidance by BEREC.*
 - *NRAs notify the European Commission of their market analyses, SMP decisions and remedies. The Commission can reject the market analysis and the finding of SMP, but can only “express concerns” about the remedies chosen by the NRA⁸.*
- *The framework relies extensively on mandatory network sharing obligations. Operators designated as having SMP are required to share their networks with competitors at regulated prices: this can occur at various access points in the network. Underlying this approach is the faith in the so-called “ladder of investment” approach, which postulates that promoting service-based competition in the short term can be compatible with achieving infrastructure-based competition in the long term)⁹.*
- *The regulatory framework introduced very significant rules on universal service and consumer protection, which led to a more (but not completely) harmonised “safety net” provisions in terms of availability accessibility and affordability of basic telecommunications services, as well as clearer, stronger rights for end users in their contractual relationships with e-communications service providers¹⁰.*
- *The regulatory framework provided for very limited coordination and harmonisation of spectrum policy. The assignment and management of frequencies has traditionally been considered as a prerogative of Member States in Europe, and this was reflected in the*

⁶ SMP is equivalent to the concept of “dominance” applied in antitrust law (Art. 102 of the Treaty on the Functioning of the EU). However, there are key differences between the application of those concepts in competition law and their application within the framework (e.g., the notion of essential facilities, see Renda 2010).

⁷ At the EU level, the European Commission has the right of initiative, but Commission proposals are subject to a co-decision procedure that involves the European Parliament and the Council of the EU.

⁸ This possibility was introduced only in 2009 with the so-called “Third telecoms package”. The European Commission had long sought to extend its *veto* power to the remedies selected by NRAs, but eventually did not achieve this result due to the opposition of Member States.

⁹ Cave, Martin, Sumit Kumar Majumdar and Ingo Vogelsang (eds.) (2002), *Handbook of Telecommunications Economics*, Volume 1, North-Holland.

¹⁰ The EU telecoms rules include these parts on consumers. To ensure reasonable quality of service at affordable prices, regardless of geographical location. Access to the emergency telephone call, free of charge, such as the single European emergency number 112 and also to enable people with disabilities or specific needs to access telecoms' services. Right to receive a written contract including specific details, in particular on tariffs and costs, with the possibility to break the contract if the supplier changes the terms. In addition, the maximum initial duration of a contract shall be no longer than 24 months. Operators must also offer consumers the 12 months contract; Right to be given information on what services consumers subscribe to and, in particular, what they can do with those communications services. Consumer contracts must specify the minimum service quality levels, as well as on compensation and refunds if these levels are not met; High standards of data protection for personal data stored or transmitted over the telecommunication network; To protect user identity, if required; To change telecom operator without changing phone number in one day; Fair roaming prices in Europe.

very narrow provisions contained in the 2002 Radio Spectrum Decision (676/2002/EC). In 2012 the EU established a Radio Spectrum Policy Programme (RSPP) to define key policy objectives and set up general principles for managing radio spectrum in the internal market, leading to some degree of coordination at least in selected key spectrum bands.

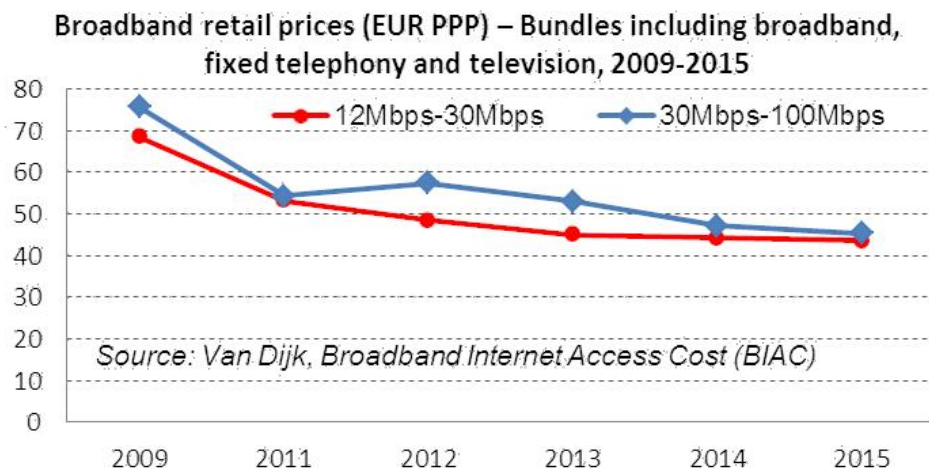
- *Given its initial emphasis on liberalisation and the choice to borrow tools from competition policy, the framework was presented as temporary, to be replaced by the exclusive application of ex post competition law after a few years. However, this transition never materialized, and mostly for understandable reasons: compared to what we knew about the evolution of the sector back in 2001-2002, today it is clear that the challenges posed by new technology and business models still warrant the attention of policymakers.*

2.1.2. Key achievements and problems

Overall, the EU regulatory framework is considered as a success story, not without some dark spots. The main accomplishment of the current package can be summarised as follows.

First, *the framework has led to significantly lower prices, which compare favourably with other jurisdictions, including among others the United States and Canada (see figure 1 below). However, recent literature (Yoo 2014) has shown that in the U.S. prices tend to be lower for lower speed tiers, and higher for higher speed tiers (less available in Europe). Moreover, average usage is higher in other jurisdictions, suggesting that customers demand bandwidth when it is available at good speed and relatively affordable prices (Yoo 2014).*

Figure 1: Broadband bundles, retail prices, 2009-2015



Second, and relatedly, *the framework has led to massive entry of new players in the market, which in turn led to increased consumer choice. This happened mostly thanks to strong reliance on network sharing obligations and on the “investment ladder” model, which aimed at promoting long-run infrastructure-based competition by initially allowing short-term service-based competition. At the same time, such beneficial impact must also come with some drawbacks, in particular in terms of limited investment by both incumbents and new entrants in new infrastructure. Moreover, the framework was not really conceived to realise a full-fledged Digital Single Market: while attempting to achieve convergence in legislative and regulatory approaches, the framework mostly aimed at liberalizing national markets, not at creating a single space for telecom operators to operate across borders (Pelkmans and Renda 2011).*

Third, *most scholars have praised the choice to link the regulatory framework to the application of competition law tools and notions* such as market definition and dominance. However, this occurred only to a limited extent, for a number of reasons: (i) the market analysis process was heavily influenced by the “pre-definition” of markets by the European Commission, which left the NRAs the decision whether to stick to the Commission’s definition (and then avoid a lengthy market analysis process), or propose new markets; (ii) the “three criteria test”, on which market definition and SMP findings should be based, has not been fully “codified” to date, and remained confined to the recitals and the soft law documents produced by the European Commission; (iii) what is even more important, the competition law approach to market definition and market power (not to mention remedies) in the Internet age is facing enormous challenges and problems, and many scholars argue that a major rethink would be needed in order to keep competition policy in line with the peculiar dynamics of competition in the information age. This possibly has important consequences also for the e-communications framework.

Fourth, *the framework has led to some degree to a more harmonised approach to regulation in a number of domains*, from market analysis to spectrum allocation, universal service and consumer protection. However, here too the record is mixed, as in all these fields there remain important areas in which the approach adopted by Member States is excessively fragmented, and this potentially affects the Single Market. More specifically, while a degree of variation across Member States is normal given the different conditions features by the economy and the e-communications market in European countries, past articles have shown that: (i) excessive price variations are inconsistent with the Single Market goal (Pelkmans and Renda 2012; European Commission 2013); (ii) diverging approaches to spectrum policy have led to considerable delays in the uptake of wireless broadband, both 3G and 4G (European Commission 2016); (iii) different approaches to the scope and funding of universal service are leading to very diverging levels of availability, affordability and accessibility throughout the EU; (iv) the absence of an effective coordination and control mechanism with respect to remedies chosen by NRAs has led to excessive dispersion and divergence in regulatory solutions, despite the considerable convergence of practices triggered by ERG and then BEREC on related aspects such as market definition and the findings of SMP.

All in all, the framework can be considered as a moderately effective and successful cluster of legal rules, which also inspired many non-EU countries due to its internal consistency and reliance on established competition law tools. A closer look, however, reveals that the framework stopped halfway in its attempt to achieve harmonisation of regulatory approaches, and was not really designed as a Digital Single Market initiative. As a first remark, it is important to mention that the framework has consistently remained weak in considering both wireless and satellite technologies, despite its stated technology neutrality. As a matter of fact, these technologies have proven essential to bridge the digital divide and to achieve connectivity goals, at much lower cost than fixed-line networks. Likewise, these technologies will prove essential in achieving future connectivity goals such as those foreseen by the Commission for 2025. In an environment in which mobility is increasingly important, more attention for the harmonious development of competitive markets for these technologies could have saved money and resources and led to more successful outcomes. Much in the same vein, the 2020 goals set by the Digital Agenda soon prove inadequate and arbitrary, and no process was finally put in place to ensure their update and refinement: the long-awaited review of the umbrella Europe 2020 strategy, in which the Digital Agenda was originally nested, was never completed, a decision accompanied by no convincing justification. Furthermore, as will be stated in more detail below, the framework critically lacked provisions oriented towards the Single Market, and was rather focused on liberalizing e-communications markets within national borders. This, still today, leaves the EU orphan of

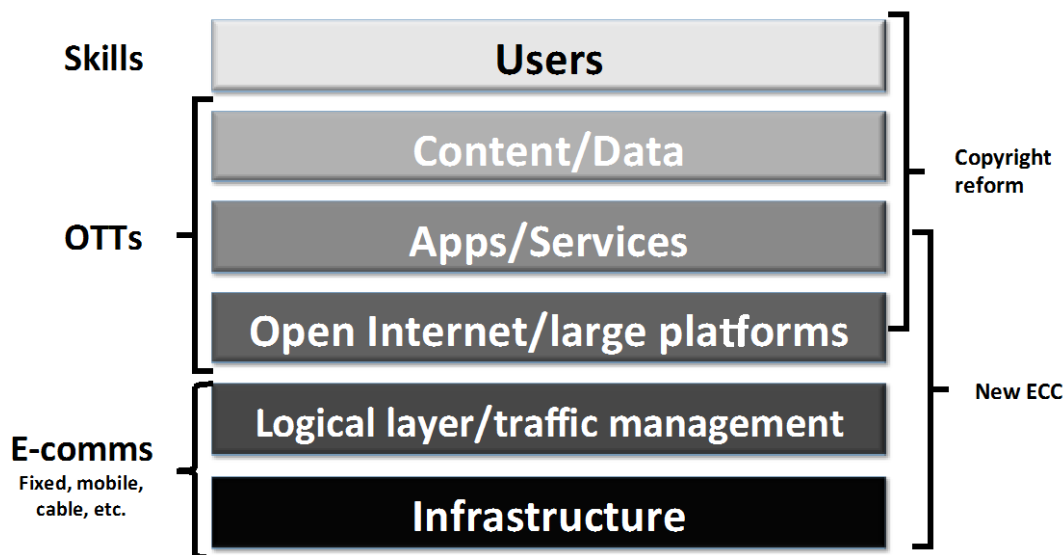
meaningful rules that facilitate the cross-border provision of services, as well as cross-border data flows¹¹.

Moreover, and very importantly the framework met with important difficulties when it came to adapting its scope and approach to emerging technologies such as VHC and mobile broadband networks, competition from OTT players, and online platforms. The next section briefly touches base on this evolution.

2.2. The evolution of the Internet: a brief account

Compared to when the e-communications framework was first adopted, almost fifteen years ago, the Internet age has determined a massive transformation of the e-communications sector. More precisely, it is accurate to state that the e-communications sector has now become a province of the Internet ecosystem. Figure X below shows proposes a simplified version of the so-called "OSI" architecture model used by engineers. As shown, the Internet is composed of many layers, starting at the bottom with the infrastructure layer, which encompasses all the tangible, hardware part that is needed for the Internet to perform its functions. The logical layer hosts all the standards protocols that govern file transfer and traffic management, whereas the higher layers are the domain of platforms, apps and services. Finally, end users are increasingly an active part of the Internet, and their skills and ability to contribute to the Internet ecosystem are key to a vibrant Digital Single Market.

Figure 2: The layered architecture of the Internet



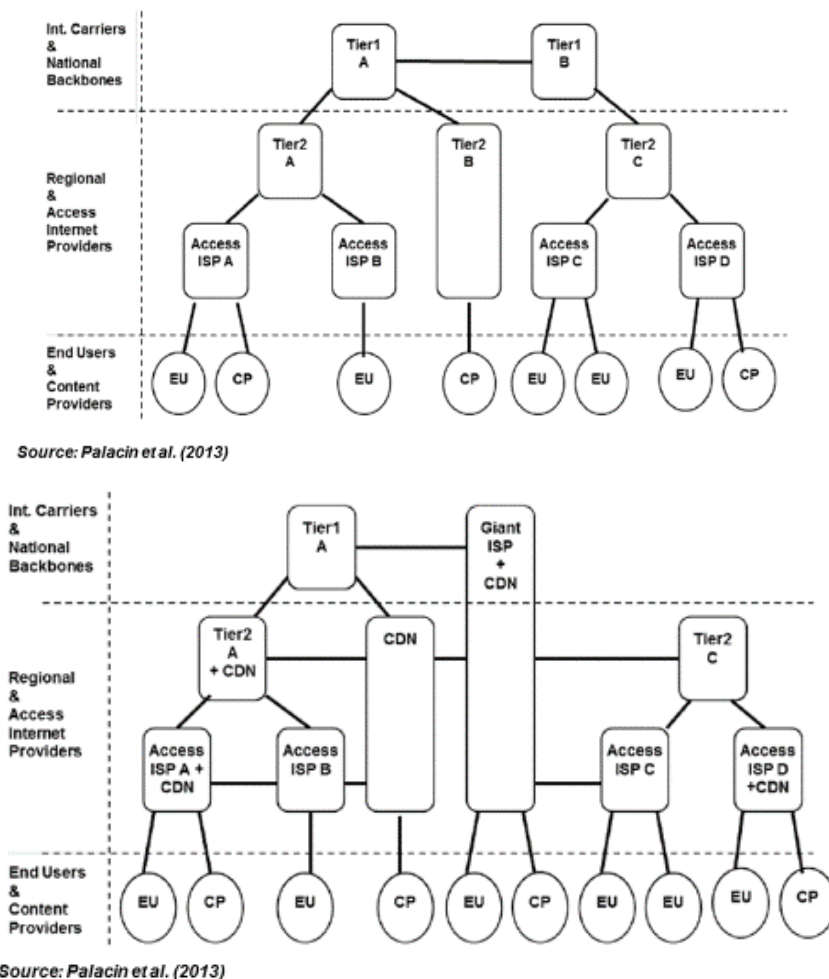
Source: own elaboration

Figure X above also shows that while the e-communications framework mostly dealt with the infrastructure layer of the Internet, and since 2009 also with the logical layer (especially with the introduction of network neutrality rules already in the 2009 review of the USO Directive), the newly proposed Electronic Communications Code goes potentially beyond by extending also to part of the OTT world. This, at the same time, creates overlaps between the new proposed Code and other legal provisions such as the AVMS directive and the copyright *acquis*, the e-commerce framework, etc.

¹¹ See, *i.a.* the Study by WIK and TNO on "Over-the-Top players: market dynamics and policy challenges", commissioned by the European Parliament. At [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/569979/IPOL_STU\(2015\)569979_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/569979/IPOL_STU(2015)569979_EN.pdf).

Understanding the different features, competitive dynamics, pace of change of the various layers is essential in order to address the issue of how to design an effective and efficient policy framework for the Internet. The issue is complex, and further complicated by the fact that over the past few years, the architecture of the Internet has rapidly changed. The explosion of Internet traffic in the 1990s and 2000s, powered by parallel streams of evolving technologies (data storage, broadband communications, data compression, innovation in traffic management) led to an emerging need for solutions that would reduce complexity: this solution was spontaneously developed by market forces, and mostly took the form of industry convergence towards a limited number of *de facto* industry standards at the higher layers of the architecture. As observed *i.a.* by Palacin et al. (2013) and by David Clark and KC Claffy (2014, 2015), this transition is now evident if one confronts the original (three-tier) model of the connectivity and logical layer of the ICT ecosystem with the emergence of vertically integrated platforms that make extensive use of traffic acceleration techniques, and developed their own semi-walled gardens to improve their customers' experience and capture the bulk of the end users' attention (figure X below)¹².

Figure 3: Old v. new Internet: platformization



¹² For example, a company like Apple uses Content Delivery Networks (CDNs) like the ones provided by Akamai to deliver faster traffic to its FaceTime users; and at the same time hosts more specialized providers such as Netflix, which in turn use traffic acceleration techniques to enable video streaming services to subscribers through a multitude of existing platforms (iOS, Android, public Internet). A company like Spotify can be defined as a two-sided specialized platform (matching users with rights holders), but access to it mostly occurs through existing large platforms (iOS and Android).

Couple this with other emerging trends, such as the ongoing virtualization of a growing number of network functions, the breath-taking surge in the availability of data, the gradual extension of connectivity to objects and humans, the emergence of distributed architectures (e.g. Blockchain, Ethereum) that promise the development of an “Internet of Value”¹³, and the rise of pervasive artificial intelligence in many sectors, and it becomes crystal-clear that the regulation of e-communications must be seen in a new light and that the availability of a suitable, resilient, secure, high-capacity infrastructure is even more important today than it was back in 2001¹⁴.

2.3. How is the EU performing in terms of infrastructure?

Regulators and policymakers should take into account that the whole Internet runs as fast as the underlying architecture allows. More precisely, the evolution of content and applications layers significantly (though not exclusively) depends on the possibilities that the speed and capacity of existing networks offer them. VHC networks, not excessive market fragmentation, are what provides end-users with choice. And the academic literature confirms that when it comes to VHC connectivity, there is a trade-off between mandating *ex post* network sharing obligations at regulated prices (after networks have been deployed) and promoting investment and the development of facilities-based competition. Similarly, a timely, innovative, flexible approach to spectrum management and a sufficiently sized market to deploy wireless services and applications is essential for the rapid uptake of new generation wireless broadband.

On both these aspects, fixed and wireless broadband, the EU e-communications framework has not delivered entirely successful result, as admitted by the European Commission in its *ex post* evaluation of the existing framework, as well as in earlier documents. In the same vein, the European Commission recently observed that “FTTH and FTTB together 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 Japan”¹⁵. Also in comparison with the United States, despite overall greater population density, Europe seems to lag behind: in the U.S. FTTP coverage is around 25%, with very uneven distribution in the individual states: while small, rich and densely populated states like Rhode Island have almost ubiquitous FTTP (97.9%), other states like Montana only have 3.4% coverage¹⁶. But overall, there are several states of the U.S. that are ahead of similarly sized EU Member States. Yoo (2014) reports that FTTP coverage is approximately double in the U.S. compared to Europe (23% v. 12%); and overall NGA coverage reaches 82% in the United States versus 54% in Europe¹⁷.

Moreover, the level of investment in telecommunications infrastructure has been significantly greater in the United States compared to Europe in the past decade, to the extent that it reached 562 USD per household in 2013, compared to a mere 244 USD per household in Europe. And there are also other dimensions along which comparison between Europe and the United States can provide interesting insights. First, *in terms of operators’*

¹³ <http://www.finextra.com/finextra-downloads/newsdocs/The%20Fintech%20%20%20Paper.PDF>.

¹⁴ See Renda (2016) for a more detailed explanation of each of these trends.

¹⁵ <https://ec.europa.eu/transparency/regdoc/rep/10102/2016/EN/10102-2016-187-EN-F1-1.PDF>.

¹⁶ <http://broadbandnow.com/Fiber>.

¹⁷ This discrepancy hides a number of important differences between the United States and Europe, which are worth being mentioned. First, as mentioned, the population density is completely different in the two areas: in Europe it reaches 116 people per square km, whereas in the United States is only 34. This also means that the level of investment needed to bring NGA connectivity to all areas of the country is greater, and the case for protecting and promoting investment through public policy and regulation even stronger.

revenues, Europe has been seeing constant decreases over the past decade: while the Internet ecosystem flourishes on top of the fixed and mobile telecom infrastructure, the latter's owners and operators are allocated a shrinking portion of the pie. Similarly, the OECD data on telecommunications revenues per access path, which typically corresponds to revenues per subscription or per fixed line, show very diverging conditions between EU Member States and other parts of the world¹⁸.

At the Member States level, current experience suggests that **VHC network deployment is relatively strong only in those countries that adopted pro-investment regulatory approaches**, and promoted facilities-based competition, or managed to create such competition through industrial policy measures over time. To the contrary, in countries that relied on access policy, new entrants have taken the lead in the deployment of brand new ultra-high-speed infrastructure. Investment has also taken place in countries where no widespread fixed-line infrastructure was in place, such as Baltic states or Romania. But countries that have entirely relied on the so-called "investment ladder" model to generate facilities-based competition in the long run have not managed to generate sufficient incentives to invest, and consequently very slow network deployment (Yoo 2014; Bacache et al. 2014; Brieglauer et al. 2016).

The situation is not much better **when it comes to mobile broadband**. While many Member States have featured improvements during the past months, **LTE coverage is still imperfect and incomplete, especially if compared to other countries like the U.S. and Canada, Korea and Japan**. This is partly due to delays, lack of political will and innovative approaches to spectrum allocation in many countries: if one considers that the U.S. awarded spectrum in the 700 MHz band (through a single, complex auction) already in 2008, and are currently in the process of running a comprehensive auction on the 600 MHz band, it becomes clear why LTE became widespread even in rural areas there, and not in the EU. While many European countries have decided to allocate spectrum from the 800MHz band to wireless broadband, and some countries have started looking at the 700 MHz band, the amount of spectrum available is still insufficient for a full-fledged development of wireless broadband, and the lack of innovative approaches to spectrum reallocation (such as the "incentive auctions" approach in the United States) is likely to make this endeavour even more acrobatic. To further complicate things, the future transition towards 5G wireless communications will likely require the availability of spectrum both at low and higher frequencies (Forge 2016): even if the timeframe is relatively uncertain, the preconditions for a smooth development of 5G include a well-coordinated, if not harmonized access to a large swathe of spectrum frequencies, a condition that is far from being met today¹⁹.

2.4. Summary: taking stock of existing and emerging problems faced by the EU e-communications framework

Based on the previous sections, and as also acknowledged by the European Commission, it is fair to state that **the current e-communications framework has not placed the EU in a position to excel in the transition towards the Gigabit economy**. The path towards greater competitiveness in this respect is complex (see Renda 2016 for a more detailed analysis), and likely to require an ambitious overhaul of the existing framework.

The key problems identified with respect to the existing framework can be summarized as follows:

¹⁸ In OECD broadband statistics, access path include analogue + ISDN, DSL, cable modem, fiber and mobile subscriptions.

¹⁹ EU Action Plan on 5G.

- *Access policy has been ineffective for VHC networks.* Data confirm that the development of such networks is very uneven in Member States, and was not helped by the regulatory approach promoted by the existing framework.
- *Access policy is based on relatively outdated competition policy tools,* which implies that it is affected by the same problems that increasingly affect competition policy in the Internet age;
- *The framework was not conceived to deliver the Digital Single Market in the first place:* especially in the field of spectrum and in the approach to OTT players, rules would require a massive overhaul to be fully oriented towards the DSM;
- *The framework has been way too shy on spectrum policy so far,* and this is largely inconsistent with the goal of promoting connectivity, the single market and dynamic competition in the EU;
- *The framework has proven too complex, and at times reliant on market micromanagement* (as in the case of the investment ladder implementation in some countries): this is hardly in line with the dynamic, ever-changing nature of the Internet as described above;
- *Several provisions of the framework are outdated,* including in particular those on Universal Service and on consumer protection (see below).
- *The framework was supposed to be transitory,* at least when it was introduced. By now, it is clear it will not be transitory, and this is not necessarily bad news: it is however important to acknowledge that the opportunities and challenges posed by the evolution of the Internet call for the development of a new set of tools, aimed at the creation of a vibrant, secure, dynamic digital single market powered by ubiquitous, affordable VHC networks.

3. THE COMMISSION'S PROPOSED ELECTRONIC COMMUNICATIONS CODE: AN ANALYSIS

KEY FINDINGS

- The current proposal is too path-dependent, since does not acknowledge failures, does not contemplate new, more flexible regulatory instruments, and does not reconsider arrangements that have proven ineffective.
- The proposal is too incremental, since it mostly adds to the existing framework's rules and instruments, without eliminating any of them.
- The proposal is also fragile, since removing one of the key provisions (on governance and spectrum) risks hampering the rest.
- The proposal is "acrobatic" since it seeks to solve an industrial policy problem through a regulatory framework that proved partly ineffective and unfit for the single market.
- The proposal is also "retro", since it ignores the emerging need for well-managed, flexible regulatory schemes, including co-regulatory solutions, especially when it comes to empowering and informing end users.
- Our assessment of the proposed rules on universal service is the most positive, whereas it is less encouraging on fixed and mobile connectivity, consumer protection, OTTs, and institutional governance.

According to the Commission's Communication dated 6 May 2015, the Digital Single Market Strategy must be 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 the European Digital Economy. In light of these goals, the Commission announced in September 2016 what it called "an ambitious overhaul of EU telecoms rules with new initiatives to meet Europeans' growing connectivity needs and boost Europe's competitiveness"²⁰. As will be discussed in more detail in the next sections, there are reasons to believe that, while the European Commission has certainly devoted massive resources and attention to the current proposal, the level of ambition is not as high as one would have expected.

3.1. The proposed Code: main new features

Presented in mid September 2016, the proposed Electronic Communications Code compiles and reforms the existing e-communications package by introducing new rules on access regulation, spectrum, universal service, services and end-user protection, and institutional governance. In addition, the Commission proposes to expand the existing ones already specified in the 2002 e-communications framework to emphasize the emphasis on connectivity, and reflecting President Juncker's recent statement during the State of the Union speech in September 2016: "We need to be connected. Our economy needs it. People need it. And we have to invest in that connectivity now"²¹.

3.1.1. The rationale

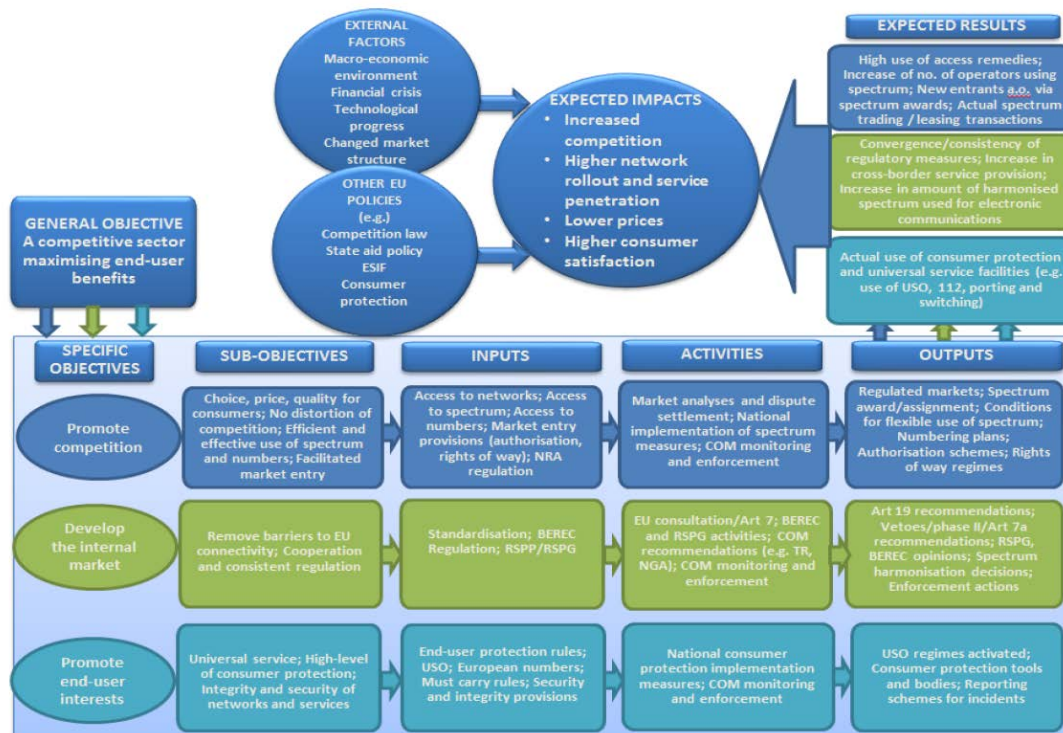
It is important to describe in detail the logical sequence followed by the European Commission to arrive at the current proposal. As shown in Figure X below, the Commission identified a

²⁰ http://europa.eu/rapid/press-release_IP-16-3008_en.htm.

²¹ Report Ansip and Oettinger from http://europa.eu/rapid/press-release_IP-16-3008_en.htm.

number of outputs, results and overall impacts that were expected to follow from the implementation of the framework, possibly leading to increased competition, higher network rollout, lower prices and higher consumer satisfaction.

Figure 4: Intervention logic of the current framework



Source: European Commission, ex post evaluation, 2016

However, the Commission acknowledged that problems emerged on the way. The European Commission identifies **three sets of problems**: (i) existing obstacles to unconstrained connectivity by means of ubiquitous, VHC fixed and mobile infrastructures for a DSM; (ii) the fitness of the framework to deal with rapid market and technological changes; and (iii) regulatory redundancies and inefficiencies and a lack of coherence, resulting in unnecessary administrative burdens. These problems arguably make it impossible to reach the framework's overarching goals as spelled by Article 8 of the Framework Directive; plus the additional "connectivity" goal that the Commission proposed to introduce.

The proposed new features included in the proposed Code include the following:

- On **access regulation** the Commission proposes to maintain the current access-based regime and its range of regulatory instruments, at the same time expanding the menu of tools available to NRAs. The overall objective is to increase competition and predictability for investment: this leads to opening the door to *ex ante* risk sharing arrangements such as co-investment and schemes that facilitate smaller players in being part of investment projects, thanks i.a. to the pooling of costs, the overcoming of scale barriers. These proposals mostly echo the good results obtained in countries like Spain, Portugal and to a lesser extent France in promoting broadband through *ex ante* cooperation and pooling of operators, as echoed in a recent paper by Cave and Shortall (2015). New proposed rules allegedly make the investment case more predictable for "first movers" who take the risk to invest in those networks in less profitable areas, such as rural areas. At the same time, the proposed rules also require a preliminary, accurate mapping of the whole

territory of the EU to identify areas in which the so-called “stronger ladder” would be put to work, and areas where other approaches might be warranted (no regulation, public funding, etc.).

- On **spectrum**, the Commission proposes to extend licence duration, and couple it with more stringent requirements to use spectrum effectively and efficiently. It also proposes to coordinate basic parameters such as the timing of assignments to ensure timely release of spectrum to the EU market and more converged spectrum policies across the EU with the aim to provide full wireless coverage across the EU. However, the Commission rejected more ambitious options, which would entail the full centralization of spectrum management and allocation in key bands, and only left Member States the possibility to launch voluntary multi-country spectrum auctions under specific circumstances.
- On **Universal Service**, the Commission concentrates on affordability rather than availability (the latter being pursued mostly through other policy means), and proposes to expand the scope of USO to fixed-line, functional broadband connections²². Member States would still have the flexibility to keep old legacy universal services (e.g. public payphones) within the scope of their national obligation, but this will not anymore be mandated at EU level. Affordability for the services would be at least at a fixed location, thus allowing Member States the possibility to include affordability measures by mobile. Measures can include special tariff options, direct consumer support or a combination of both, and will mostly be funded through general budget, recognized as a more equitable and least distortive way compared to sectorial funding schemes.
- **On consumer protection**, in areas where general consumer protection rules do not address the sector-specific needs. Proposed rules would make it easier for consumers to switch suppliers when consumers have purchased bundles of services and products (e.g. quadruple play packages combining internet, phone, TV, mobile etc.), and ensure that vulnerable groups (like the elderly, disabled and those receiving social assistance) have the right to affordable Internet contracts.
- For what concerns **OTTs**, the Commission proposes to extend consumer protection rules to new online players, which offer equivalent services to traditional operators, to ensure that security requirements (making sure networks and servers are secure) apply. The rules also foresee the possibility for users to reach the EU emergency number 112 via such online services in the future.
- Finally, when it comes to **institutional governance** the Commission refrains from proposing the creation of a new pan-European regulator, as it had tried to do in 2001 and 2009. However, the proposed Code comes with important changes, such as: (i) strengthening the role of independent NRAs by establishing a minimum set of competences to be carried out by those NRAs across the EU (including the regulatory and market shaping elements of spectrum assignment for ECNS, subject to governmental definition of objectives) and aligning them with BEREC tasks; (ii) introducing normative powers for BEREC for certain spectrum assignment elements, taking utmost account of RSPG opinion and adopted through comitology procedure; (iii) introducing a 'double-lock' mechanism whereby, in cases where BEREC and the Commission agree on their position regarding the draft remedies proposed by an NRA, the NRA could be required by the Commission to amend or withdraw the draft measure and, if necessary, to re-notify the market analysis; (iv) reducing the frequency of market analyses from every three years to every five years; (v) tasking BEREC with additional guidelines as regards issues like

²² This option relies on the consideration that basic broadband (>256 kbps, and in reality at least 2 Mbps, through a mix of technologies) is currently available to all European citizens. At the EU level, broadband would be defined by referring to a functional internet access connection defined on the basis of a minimum list of on-line services (web-browsing, eGovernment, VoIP etc.) that should be accessible.

mapping, standardised wholesale inputs for business, technical aspects of numbering, switching and interoperability.

3.2. An assessment of the current proposal

A useful way to look at the current proposal is to evaluate it by using the framework for ex post evaluation adopted by both the European Commission and the European Parliament. This requires an evaluation of the efficiency, effectiveness, coherence and relevance of the proposed new rules.

3.2.1. Effectiveness

A fully effective proposal would imply a high likelihood of achieving the intended goals, which now include connectivity, the single market, static/dynamic competition and a high level of consumer protection. In this respect, the current proposals appear to contain several important novelties, but at the same time appear to lack the ability to fully respond to the problems identified in Section 2.3 above. At the same time, the effectiveness of the current proposal appears jeopardized by the risk that some of the rules proposed do not make it into the final text.

More specifically:

- *On fixed (VHC) connectivity, the Commission rightly points the attention to the need to map the EU territory; to adopt new instruments, including co-investment and risk sharing arrangements; and to codify the Three Criteria Test.* However at the same time:
 - *The Commission fails to acknowledge the failure of currently used instruments, and leaves NRAs with significant discretion on which instruments to use, including the ones that have proven ineffective in promoting investment in VHC networks.*
 - *The choice of more effective instruments is potentially made more likely by the enhanced coordination role that should be played by BEREC, but this role is not to be taken for granted, given that the Council has traditionally shown hostility towards further centralisation of powers in the hands of the Commission or a Pan-EU agency (in 2009, this was the case for the proposed EECMA, then rename BERT, BEREC and finally BEREC)²³.*
 - *Also the possibility to extend the Commission's control powers over remedies (through the "double lock" mechanism) is not new, and has attracted very limited consensus in other EU institutions (especially in the Council).*
 - *A similar argument can be made for the idea of "mapping the EU" to find out which areas are best suited for specific regulatory instruments: without enhanced coordination, this time-consuming, resource-intensive, highly discretionary process might end up not producing the desired, very beneficial results.*
 - *Likewise, the proposal to codify the Three-Criteria-Test is meaningful and welcome but also risky: this test requires very careful clarification and guidance from DG CONNECT and even more DG COMP (and probably also by the Legal service) since all three criteria appear to have been significantly shaken by the advent of the Internet age. SMP (dominance) requires careful assessment related to independence of behaviour, not merely market share, and require careful analysis of supply-side substitution and potential competition; long term tendency towards effective competition must be appraised in light of technological evolution and platform competition; and the need to demonstrate the primacy of ex ante*

²³ See Renda anti-commons.

regulation over ex post competition policy has never fully been accompanied by adequate conceptual and methodological guidance.

Here, as will be observed in more detail below, the proposal appears *very incremental and path dependent, and also fragile*, as its effectiveness chiefly depends on whether the proposed changes in institutional governance will be approved.

- *On mobile connectivity, the Commission filed a meaningful and urgent set of proposals, mostly related to spectrum.* There too, a number of concerns must be spelled out:
 - *The Commission acknowledges that the current governance of spectrum in the EU has led to the accumulation of very significant delays for both 3G and 4G technologies, and that absent a clear discontinuity and an ambitious new governance, the same is going to happen for 5G. However, the Commission does not fully explain how the current proposal is going to guarantee this much-needed shift of gear.* While more guidance (such as the proposed Article 19 recommendation on some aspects of spectrum assignment) and even some binding powers for the RSPG might help avoid some of the most evident discrepancies in the allocation, award, management of spectrum in Member States, what Europe would really need is a more timely and coordinated allocation of spectrum in various bands in the years to come, to ensure that 4G and then 5G can fully develop.
 - *The proposal contemplates a voluntary pan-EU or multi-countries assignment procedure, which provides Member States with the possibility to jointly organize a spectrum auction does not add much to the existing rules, exactly since it is voluntary.* Countries with limited political will or inefficient procedures will still continue to adopt a sub-optimal approach to the award and management of spectrum in key bands. And in any event, this proposal is still to be approved by the Council, who traditionally showed limited or no sympathy for spectrum policy coordination and centralization.
 - *The Commission should consider introducing (or at least providing more guidance on) innovative tools in spectrum policy, including i.a. new auction designs that have proven to be effective in speeding up the handover of spectrum from broadcasters to mobile broadband operators whenever efficient, such as incentive auctions²⁴.*
- *On Universal Service, the Commission proposes a number of relatively uncontroversial changes in the framework, which can be considered as possibly improving on the current situation.* One of the underlying problems is that the *level of harmonization sought by the framework has not fully materialized due to lack of sufficient stringency* in the existing provisions, or governance problems. So far, only Public Access Telephony Services (PATS) and the provision of functional Internet access, are mandatory at EU level and can be financed from a universal service funding mechanism supported by the sector, but Member States have the flexibility to add other services such as old legacy universal services (directories/directory enquiries and public pay phones). At the same time, it can be fully agreed that basic broadband connectivity has become an essential condition for digital inclusion, and as such its affordability (but not necessarily its availability) should be promoted also through universal service policy. Whether funding from the general budget can be assured, where should it be deployed, and how low should affordable prices be, are among the key problems that only further guidance by the European Commission and BEREC should contribute to solving in the coming years.

²⁴ See <https://www.fcc.gov/about-fcc/fcc-initiatives/incentive-auctions>.

A different issue is the absence of references to mobile connectivity in the current proposal: this might seem strange given that mobility has become one of the most important features of modern e-communications, and is essential for applications in fields such as e-health, the augmented self, the IoT and many others. At the same time, it could be observed that: (i) wireless connectivity does not really need the “help” of USO legislation, with the exception of very remote areas where satellite connectivity should have been taken into account; (ii) 4G telephony can carry very heavy signals, but most of the heavy traffic is more efficiently offloaded onto fixed (wi-fi) networks: also, for reasons related to the need to manage i.a. security, latency and micro-congestion, having fixed VHC networks than can be used as backhaul for wireless networks or as infrastructure directly serving end users is preferable. All in all, while the Commission’s emphasis on fixed-line availability is justified by the need to secure that all citizens have access to VCH networks with a good fixed-line backhaul, the Universal Service provisions focus on affordability, which in turn calls into question mobile broadband.

Eventually, the Commission proposes to focus on affordability (of fixed-line) and not on availability, although a look at the comparison scorecard table shows that the affordability option (n. 3) is only very slightly preferable to the availability one (n. 4), mostly due to external coherence problems.

- *On Consumer Protection, the Commission proposes an extension of existing provisions to some OTT players.* Currently the USO directive includes specific provisions such as obligations to facilitate switching (including 1 day number portability obligations); sectorial contractual obligations, including conditions on contract contents, contract duration and contract termination; provisions concerning transparency on tariffs and other conditions; provisions on equivalence in access and choice for disabled end-users; and on transparency on Quality of Service and potential minimum QoS requirements. Such provisions only apply to e-communications service providers, who are also subject to obligations concerning security and integrity, let alone general consumer protection legislation.

Today, some of the existing consumer protection provisions have been rendered obsolete by the adoption of the Consumer Rights Directive, and others are increasingly creating uncertainty in the market. The Commission mentions a few areas on which even a minimal adaptation would focus on: rules on bundles and barriers to switching; rules on better readability of contracts and the possibility to impose an obligation on operators to provide consumption monitoring tools; and an extension of Commission’s mandate to impose technical implementing measures to ensure the compatibility, interoperability, quality, reliability and continuity of emergency communications in the Union with regards to caller location, call routing to the Public Safety Answering Point (PSAP) and access for disabled end-users.

Most importantly, there seems to be a need to simplify and clarify the definition of electronic communications services, currently linked to the “conveyance of signals” criterion²⁵. Eventually the Commission proposes to go beyond a minimal adaptation of

²⁵ More specifically, in the proposed European Communications Code, ‘Electronic Communications Services’ (ECS) have been redefined from being ‘services which consist wholly or mainly of the conveyance of signals’ (voice) to include three types of service:

(i) Internet access services;

(ii) Interpersonal communications services, including number-based interpersonal services (such as voice, Skype) and number-independent interpersonal services (most OTT services will fall within this category). For these there must be at least one natural person involved and the recipients must be taken from a finite number of recipients chosen by the sender. This includes services where the remuneration is data instead of money, and excludes broadcast-style services. There is still confusion as to whether services such as Facebook/Twitter fall within this definition.

existing consumer protection rules, and proposes to apply existing rules, with some due modification, to Internet Access Services and also to some communications services, provided either traditionally, such as voice telephony, or on top of IAS. This marks the extension of the existing framework beyond the infrastructure layer of the Internet, and into “functionally substitutable” OTT services used for interpersonal communications. The Commission argues that such option contributes most to realising efficiency gains, since it entails lower transactional and compliance costs and providing for a “more equal regulatory treatment (particularly with regards to security and privacy obligations), a reduction of regulatory risk as a result of more clarity about the scope of the regulatory framework which promotes confident future planning and investments; and ... contributes to fostering the Internal Market”. This is very important: reliance on the “conveyance of signals” criterion might lead to a generalized imposition of regulatory requirements (in particular, interoperability obligations), which seems likely to be disproportionate and contrary to the goal of levelling the playing field: as a matter of fact, most if not all services provided by telecommunications operators, including M2M services, entail the conveyance of a signal.

- *On institutional governance, the European Commission puts forward key provisions that are likely to prove essential for the overall effectiveness of the proposed reform.* Absent stronger institutions and adequate checks and balances, it is unlikely that the new framework will deliver on its promises, especially for what concerns the digital single market, and even more when it comes to securing proportionate, evidence-based policy measures. Almost half of the respondents to the public consultation have expressed their agreement with the view that the current institutional set-up should be revised in order better to ensure legal certainty and accountability. Some of the Commission’s proposals appear relatively straightforward, including the ones related to the alignment of NRA competences with the ones required by the framework (and with BEREC’s competences), through the introduction of a minimum set of competences to be carried out by those NRAs across the EU and the alignment of BEREC’s governance structure with the Common Approach for EU agencies²⁶. The Commission goes beyond by proposing that on aspects such as access spectrum, services and numbering, BEREC be given more binding powers. But all in all, there are reasons to doubt that the proposed changes will be sufficiently effective to help the EU shift gear especially on spectrum assignment and management. The proposal appears too shy, in that it builds on the current governance, which has proven to be far from sufficiently coordinated and unable to achieve single market and growth objectives.

3.2.2. Efficiency

In terms of efficiency, the current proposal appears unlikely to provide a boost to the benefits associated with the implementation of the e-communications framework, and at the same time seems likely to have a mixed impact on regulatory costs.

For what concerns costs, *the Commission could have provided a more accurate estimate of the cost associated with the periodic mapping of the territory by NRAs in each Member State*, a highly deserving but also risky and burdensome proposal. Even more importantly, the cost related to the extension of specific regulatory obligations to OTTs cannot be limited to the

(iii) Services consisting wholly or mainly in the conveyance of signals, such as machine-to-machine and broadcasting.

²⁶ The proposed reform would vest the NRAs with necessary competence to intervene in all main areas related to the electronic communications networks, except spectrum. As (some) NRAs would be assigned an increased portfolio of competences, it is essential to ensure that they are attributed the necessary human and financial resources to carry out those tasks.

mere administrative burdens associated with compliance, but should focus on substantive compliance costs, need to adapt to likely differences in regulatory regimes across Member States, as well as possible consequences in terms of innovation. The often invoked, highly obscure “innovation principle” here was not translated into a concrete test in this impact assessment, despite the fact that dedicated guidance on innovation impacts already exists in the EU impact assessment guidelines, and pre-existed the call for an innovation principle endorsed by the Dutch presidency in June 2016²⁷.

On the benefits side, the issue is even more complicated. On the one hand, the Commission strives to monetize all possible impacts. However, in order to achieve this goal it probably stretches too much the explanatory power of existing research. For example, the Commission argues that the proposed regulatory reforms may generate increased efficiency gains, spurring innovation and increases in total factor productivity and income per capita. In doing this, the Commission quotes a study by Haidar (not Haider) (2012), which analyses 1,140 reforms in 172 countries during the period 2006-2010, finding that each reform is associated (on average) with a 0.15 percentage points increase in annual economic growth. The literature quoted by the European Commission, however, is hardly applicable to the monetization of these impacts, as it refers to general Doing Business reforms applied at the global level, in 170 countries: not only these are reforms that do not feature the same substantive, and sectoral scope of the one proposed by the Commission; but they also include reforms implemented in developing countries, in which the pre-existing regulatory regime is more likely to be less well-shaped than the one featured by the EU.

Similarly, the Commission attributes to its option 3 (NGA+: Focusing regulation on VHC connectivity) the whole benefit of an all-FTTH scenario across the EU by 2025, which corresponds to GDP levels 2% higher than the status quo. Here too, the estimate should be related to the increased likelihood that the proposed option would make this result possible, without attributing the full benefit on an all-FTTH scenario to the regulatory remedies proposed.

Overall, the Commission proposal is likely to increase the efficiency of the e-communications framework, subject to specific conditions: in particular, that the relatively timid governance reforms proposed by the Commission are fully endorsed or even strengthened (otherwise, old-style access policy, not the new set of regulatory instruments, might still prevail in many Member States); that spectrum proposals are fully endorsed, and possibly strengthened; and that the EU institutions resist the temptation to extend sector-specific regulatory provisions to layers of the Internet ecosystem that feature the presence of dynamic, agile, often smaller players that would be disproportionately hit by the related administrative burdens and compliance costs.

3.2.3. Internal and external coherence

When it comes to coherence, a number of important considerations have to be made with regard to the existing proposal.

Internal coherence is high, but limited by two potential concerns:

- *The need to acknowledge that, if some OTT services are seen by consumer as functionally equivalent to existing e-communications services, then this cannot be a relevant finding only for regulatory purposes, but should also become the basis for including these services in the same relevant market as their equivalents.* The issue is further complicated by the fact that different NRAs might define their relevant markets differently in their countries, due to diverging approaches or to differences in consumer preferences, or in

²⁷ Renda (2016).

current market structure. Having OTT players not included in the same market as the same e-communications services that they are supposed to be equivalent of, is an element that would significantly reduce internal coherence.

- As already mentioned, the current regulatory approach considered by the Commission is a combination of highly interdependent policy options, some of which are essential for the overall framework to really deploy its intended benefits. These certainly include governance and spectrum options. *The overall internal coherence of the proposed new framework* (including the success of the mapping exercise, the convergence of practices in access regulation and regulatory remedies, progress towards more efficient spectrum policy and more harmonised consumer protection rules) *depends on these key pillars of the proposed review, a fortiori* since such pillars can be considered as already timid compared to what would be needed for a real paradigm shift or, as the Commission termed it, an “ambitious overhaul” of the existing framework.

Similarly, while *external coherence* is also to be considered high, concerns can be expressed due to the following aspects of the proposal:

- *The possible overlaps between the e-communications framework and other pieces of legislation* that deal with higher layer of the Internet ecosystem, including copyright and audiovisual media services.
- *Possible inconsistencies between the proposed rules and the rules related to data protection*, which already drew a line between e-communications providers and OTTs.
- *Possible overlaps between sector-specific consumer protection rules and general consumer protection rules.*

3.2.4. Relevance

Perhaps the most delicate aspect of our assessment of the current proposal is its relevance. As already explained in Sections 1 and 2 above, as the Internet world is changing at light speed and new trends promise to radically revolutionize its architecture and the overall end user experience, the European Commission has put together a proposal that, while aimed at achieving enormously ambitious impacts, ends up being extremely timid, path dependent and incremental. Here, the following aspects of the proposal’s relevance can be highlighted:

- While there is a need to acknowledge partial regulatory failure and move on to refocus the framework towards effective co-investment and risk sharing schemes, symmetric duct access and in-house wiring rules, *the current proposal keeps all instruments in place and adds new ones*, relying on its stronger governance and on NRAs’ goodwill to realize convergence and modernization.
- *While the app and data economy is raging, the current proposal introduces new regulatory burdens for OTTs*, potentially making their life more difficult without guaranteeing that end users will be better off.
- While consumers have become users and must be treated as active participants to the Internet economy, the current proposal reiterates previous consumer protection schemes. And it fails to consider the use of behavioural policy approaches, communications strategy and co-regulatory schemes to make it easier for users to navigate the “confusopoly” of current bundles, contract terms and data protection policies, and make informed decisions that do not just “protect” them, but enable their most complete and rewarding internet experience.
- While spectrum policy decentralization and fragmentation has slowed down Europe’s mobile economy, leading the EU from leader to laggard in the field of wireless communications, the current proposal anticipates the likely hostility of the Council

towards meaningful centralisation of spectrum assignment, and limits itself to a few brush strokes on the *status quo*.

3.3. Final remarks and summary table

The analysis provided in the previous sections is inevitably partial, given the comprehensiveness of the proposed Electronic Communications Code. A more detailed analysis would require delving into several issues, from the impacts of the mapping exercise to measures proposed for 112 and 116 numbers. This paper only provided a first, helicopter view of the fundamental problems that can be identified in the current proposal, and with a view to offering guidance to Member of the IMCO Committee of the European Parliament.

In summary, this report argues that the current proposal is:

- *Path-dependent*, since does not acknowledge failures, does not contemplate new, more flexible regulatory instruments, and does not reconsider any of the existing arrangements that have proven ineffective especially in spurring VHC connectivity.
- *Incremental*, since – with some small exceptions (e.g. a handful of USO services and consumer protection rules considered obsolete) – it just adds to the existing framework's rules and instruments, without eliminating any of them. This is even more curious if one considers that initially the 2002 framework was presented as temporary, transitory.
- *"Fragile"*, since removing one of the key provisions (on governance and spectrum) risks hampering the rest, and the overall impact of the proposed Code.
- *Acrobatic*, since it seeks to solve an industrial policy problem through a regulatory framework that proved partly ineffective and unfit for the single market; while at the same time acknowledging that the most impactful initiative of the past decade was the introduction of targets through the Digital Agenda for Europe.
- *"Retro"*, since it ignores the emerging need for well-managed, flexible regulatory schemes including co-regulatory solutions, especially when it comes to empowering and informing end users.

The table below summarizes our assessment. As shown in the table, our assessment of the universal service part is the most positive, whereas our evaluation becomes less encouraging on fixed and mobile connectivity, consumer protection, OTTs, and institutional governance.

	VHC connectivity	Mobile and spectrum	Universal service	Consumer protection	OTTs	Institutional Governance
Effectiveness	**	*	***	**	*	***
Efficiency	**	**	***	*	**	**
Coherence	***	***	****	**	**	***
Relevance	**	*	***	**	*	***

Legend: min * to max *****

4. CONCLUSION AND POLICY RECOMMENDATIONS

KEY FINDINGS

- A more ambitious, disruptive proposal would be needed to solve outstanding problems and re-launch the DSM.
- The merits of an ex post approach that leaves Member States with more discretion in choosing their policy mix have not been fully appraised.
- The proposed rules on services are too vague, and could generate too much regulatory pressure; the definitions adopted should be narrowed down.
- More flexible, co-regulatory approaches should be sought to improve consumer information and enable switching, empowering end users in managing their relationships with e-communications networks and service providers.
- Rather than extending special rules to OTTs and service providers, EU institutions should aim at improving and refining general legislation on consumer protection, privacy and security.

After announcing an ambitious overhaul of the framework, the Commission has presented a proposal that, while containing interesting and promising ideas, is still too “incremental” compared to the previous, partly successful framework. One ends up wondering why would such a massive exercise in ex post evaluation and ex ante impact assessment be needed, if the Commission does not fully consider options that significantly depart from the existing regulatory framework? In other words, could the Commission have considered a more disruptive, courageous reshuffling of the framework? And what could the Commission do to improve on the effectiveness of the provisions that mostly fall under the competence of the IMCO Committee?

On the possible consideration of more ambitious proposals, the answer is yes. The Commission could have lined up available evidence and at least considered a more drastic departure from the existing framework. For example: given that the *ex post* evaluation for the framework acknowledges that industrial policy targets, not regulation, have been the most effective incentive for Member States to formulate and implement ambitious broadband plans, one possibility could have been to require that Member States draw their plans to achieve VHC connectivity objectives (and other objectives, e.g. on spectrum, e-skills, uptake of broadband services by SMEs etc.). The Commission acknowledged that “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”.

To show that a different framework is possible, as a thought experiment, we sketch a possible alternative approach.

- *The Commission requires that Member States’ NRAs draft a national broadband plan in which possible options to reach at least the VHC targets by 2025 are considered. The plan should include:*
 - A map of broadband availability throughout the territory of the Member State, to be completed following guidelines from the Commission and BEREC.

- An application of the Three Criteria Test for each area mapped by the NRA, including the need for regulation in the medium- to long-term in various areas.
- An indication of the policy measures that will be adopted in order to achieve connectivity objectives by 2025 in the various areas.
- A plan of any future market analyses and remedies that the NRA plans to impose.
- The Commission receives national plans from NRAs. *The Commission (DG CONNECT) evaluates the plan* in terms of feasibility, efficiency, and proportionality. In doing so, it seeks the advice of DG COMP on possible restrictions of competition that might emerge from the national plan, as well as on seeking clarifications on possible alternative policy measures that have not been considered by the NRAs.
- *NRAs regularly report to the Commission the results achieved* on the way towards connectivity objectives, price levels, and possible concerns as regards the future evolution of the market. Such report includes measures adopted to promote universal affordability and accessibility of broadband.
- *NRAs also report to the Commission on a regular basis on measures adopted to challenge contractual practices* that violate horizontal EU consumer protection rules, subject to additional guidance to be drafted by the European Commission on how to adapt general consumer protection rules to the reality of the online environment (especially in the IoT age²⁸). Such measures may well extend beyond e-communications providers, and cover also OTT players to the extent that they coincide with horizontal consumer protection legislation, as reviewed, adapted to the online environment and regularly updated).
- Meanwhile, *the Commission works with Member States to ensure that the UHF band is reallocated to wireless broadband services in a timely and coordinated way*, along the lines already determined by the European Parliament and the Council following the proposal adopted by the European Commission in February 2016²⁹. As an optional add-on, the Commission could also coordinate national spectrum authorities for the development of a pan-European spectrum auction, e.g. in the 600MHz band, with the prospect of allocating revenues back to Member States. Likewise, the Commission could also start prioritizing the reallocation of other spectrum swathes, both in very low and very high frequencies, to ensure that Europe does not miss the 5G opportunity.
- Moreover, *the Commission starts working with industry players on the development of new tools and platforms* that can facilitate end users in (i) choosing their fixed and mobile bundles; (ii) switching bundles; (iii) taking decisions on the use by third parties of their personal data; (iv) request access to their personal data file in structured, commonly used, machine-readable and interoperable format, as provided by the GDPR at Article 20³⁰.

Based on this tentative approach, the Commission would depart from an *ex ante* regulation framework to move towards a new role, more focused on monitoring and *ex post* evaluation, and towards a more adaptive framework in which outcomes and targets are decided and adapted with time. Member States would be left freer to experiment to the policy solutions they consider to be most effective in order to reach the VHC targets, in a way that safeguards dynamic, sustainable competition and hence facilities-based competition. *The targets could be updated over time, since they already look obsolete* (recently, in South Korea Nokia and SK Broadband have provided the fastest fibre access speeds ever to a first set of apartment

²⁸ See i.a. Elvy (2016) for a description of problems that might emerge in the IoT era for consumer contracts.

²⁹ http://europa.eu/rapid/press-release_IP-16-207_en.htm.

³⁰ http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.119.01.0001.01.ENG&toc=OJ:L:2016:119:TOC.

buildings in Seoul, South Korea, reaching aggregate speeds of 52.5 Gbps). Moreover, the framework would become more coordinated on spectrum, where EU added value and the impact of enhanced coordination on the DSM are likely to be greater. The use of innovative spectrum assignment techniques such as incentive auctions could be pioneered and experimented with more easily is managed at the EU level.

Finally, this framework would feature other advantages, especially for what concerns end users and OTTs. In particular, *it would not simply protect consumers, but would empower end users*. It would address the problem of lengthy and challenging contract terms, which end users by definition do not read (due to both rational ignorance, and bounded rationality); and it would leave users with the freedom to control their data and switch across providers more freely. At the same time, such a set of rules would liberate OTTs from the prospect of having to adapt to a whole new set of rules, not originally conceived for them; in doing this, it would anyway leave end users with enough protection and more information, thanks to the co-regulatory scheme in place to facilitate consumer decisions. OTTs would then not be overburdened with regulatory obligations, but would remain accountable for the impact of their contractual conditions on consumer freedom of choice. This outcome, however, depends on the outcome of the REFIT on the consumer *acquis*, and in particular on whether the consumer rules will be significantly adapted to the online environment, including to consumer contracts in the OTT and IoT world.

The framework described above would be significantly simpler and more compatible with existing pieces of legislation, such as the GDPR, the AVMS, the new copyright *acquis*, and possible future rules on online platforms. It would also be less costly, as it would be based (at least for fixed-line broadband) on outcomes, rather than procedures. It could also be more easily integrated in the European semester and in the use of public EU and national funds to promote broadband availability. In other words, it would potentially bring advantages compared to the currently proposed solution, in terms of effectiveness, efficiency, coherence, and relevance.

Among the selected topics that fall more directly under the competences of the IMCO committee, there seem to be little reason to be concerned about universal service, which can be expected to play a relatively minor role in the future of the regulatory framework (so-called “safety net”). However, the rules on consumer protection and OTTs are key to the development of a full-fledged Digital Single Market. And while possible changes to the current proposals on consumer protection have already been outlined above, on OTTs the issue is likely to become very controversial in the future, for a number of reasons.

First, OTTs are not all created equal. Some of them have more control of the content they transmit than others: generally, free VoB services such as Skype can be said to have partial control of the quality of service experienced by their end users, which makes an obligation to guarantee a minimum quality of service a very burdensome, uncontrollable regulatory requirement (especially under current net neutrality rules).

Second, at current technologies OTTs enable almost limitless multi-homing. For example, it is very common for end users to store on their smartphones at least three or four messaging services and audio/videoconferencing such as Viber, Skype, FaceTime, and similar services offered by Facebook and Google. Similarly, end users have no real capacity constraints in deciding to install social media such as Facebook or Snapchat: and the impossibility to “port” messages from one social network to another does not seem to be stopping the market from evolving at breath-taking speed.

Third, OTTs tend to be smaller companies compared to e-communications service providers, in particular incumbents. For example, recent work by the Kauffman Foundation (see graph below) showed that virtually all new net job creation in the U.S. economy has been generated

by firms that are less than five years-old and which, almost by definition, are more than likely to be small³¹. Extremely successful global companies like WhatsApp only need approximately 50 engineers to govern their 900 million users³². The relatively smaller size of most OTTs implies that regulatory burdens would hit them disproportionately, as well known to the European Commission, which developed for this same purpose a “think small first” policy³³.

Fourth, if some of the key institutional governance provisions contained in the Commission’s proposal were not approved during the ordinary legislative procedure, OTTs might face a high risk of having to face a very fragmented legal landscape, especially on consumer protection, in the EU27. This, in turn, could lead to three possible reactions: (i) OTTs could decide to still adopt one single policy for the whole EU, but they would need to tailor it to the most legally restrictive country, thus leading to possible chilling effects on competition in all other countries: (ii) OTTs might decide to adapt their contractual practices and terms to the different realities and legal frameworks in each Member State, but they would end up facing very high administrative adaptation costs: or (iii) OTT might decide to operate only in a subset of Member States, with negative consequences for the DSM.

Against this background, it appears much more preferable to strengthen and adapt general consumer law provisions, coupling them with existing strong legislation such as the GDPR and the NIS Directives, which already impose regulatory obligations on OTTs.

³¹ <http://www.kauffman.org/what-we-do/resources/entrepreneurship-policy-digest/the-importance-of-young-firms-for-economic-growth>.

³² <https://www.wired.com/2015/09/whatsapp-serves-900-million-users-50-engineers/>.

³³ http://europa.eu/rapid/press-release_IP-08-1003_en.htm.

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