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Economic implications of further harmonisation of electronic communications regulation in the EU

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Economic implications of further harmonisation of electronic communications regulation in the EU¹

J. Scott Marcus and Tseveen Gantumur, WIK²

Abstract

A European debate over measures ostensibly to fully achieve a single market for electronic communications across the EU was brought to a head by the European Commission's 2013 proposed Telecoms Single Market (TSM) legislative package. The Commission apparently hoped to achieve a Single European Market for electronic communications solely by means of regulatory harmonisation. The Commission's proposal can serve as the basis for important reflections on harmonisation at European level. Why do we seek regulatory harmonisation? How does harmonisation differ from uniformity? What benefits flow from centralisation, and what benefits from decentralisation? Is the European Union in fact a Union? To what extent do the Member States differ from one another in ways that are not readily altered in the near term? What economic consequences (beyond those already achieved by the current regulatory framework) might be expected from more extensive harmonisation of European electronic communication? What do these considerations tell us about the degree of harmonisation that is desirable, and the degree that is realistically achievable?

The approach taken in this paper can help to clarify thinking as to costs and benefits of stronger harmonisation or centralisation of electronic communications regulation, but we do not claim that we have evaluated every regulatory possibility, nor that our assessment is definitive. It is a thought exercise that is meant to help clarify the bounds to what can be achieved solely by means of regulatory harmonisation.

¹ This project draws on the results of a research project conducted for the BNetzA, the German NRA. The views expressed are however solely those of the authors, and do not necessarily reflect the views of the BNetzA.

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1 Introduction

A debate has been raging in Europe as to what is needed to fully achieve a Single European Market for electronic communications. The discussion was brought to a head by the European Commission's 2013 proposed *Telecoms Single Market (TSM)* legislative package.³ The Commission apparently hoped to achieve a Single European Market for electronic communications solely by means of regulatory harmonisation. We have argued elsewhere that this was a hopelessly flawed concept – the impediments to a Telecoms Single Market in Europe are far broader than telecoms regulation, and must be solved with instruments far broader than telecoms regulation. Furthermore, nearly all of the measures in the Commission's 2013 proposal have since rejected by the Parliament, the Council, or both. Nonetheless, the Commission's proposal can serve as the basis for important reflections on harmonisation at European level:

- Why do we seek regulatory harmonisation?
- How does harmonisation differ from uniformity?
- What benefits flow from centralisation, and what benefits from decentralisation?
- Is the European Union in fact a Union?
- To what extent do the Member States differ from one another in ways that are not readily altered in the near term? Relevant dimensions include not only their telecommunications deployment (the degree to which development was arrested in some Member States in the East before the fall of the Iron Curtain, the degree of presence of cable), but also general demographics, topography, and economic factors (such as labour costs, and disposable income per household).
- What do these considerations tell us about the degree of harmonisation that is desirable, and the degree that is realistically achievable?

1.1 Goals and methodology

Our intent here is to better understand:

- Where is additional regulatory harmonisation of telecommunications potentially useful in Europe, and where not?
- What measures might contribute to better harmonisation where needed?
- What might the potential consequences of further regulatory harmonisation measures (whether wise or not so wise) be?

This study has been conducted primarily by means of desk research, together with intensive analysis of publicly available data. We benefit from regular contact with stakeholders, both regulatory staff and market players. The assessment of policy options going forward at European level benefits from Impact Assessment methodology, as specified in the European Commission's 2009 Guidelines.⁴

³ European Commission (2013), "Proposal for a regulation of the European Parliament and the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending ...", 11 September 2013, COM(2013) 627 final.

⁴ European Commission (2009), "Impact Assessment Guidelines", 15 January 2009, at http://ec.europa.eu/smart-regulation/impact/commission_guidelines/docs/iag_2009_en.pdf.

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We will have rather little to say about the Commission's Digital Single Market (DSM) strategy of 6 May 2015⁵ at this time. It is too early. The DSM strategy is much more promising than the TSM, since it addresses a wider range of problems using a broader and more suitable palette of tools; however, only two pages of the Commission's public strategy deal with reform of telecommunications regulation.⁶ The Commission appears to be moving in the right direction, but the current text is quite sketchy as to what they specifically propose to do.

1.2 Structure of this report

The next chapter addresses centralisation versus decentralisation, and harmonisation versus uniformity. It also considers whether the European Union is more appropriately thought of as a federal structure, a confederation, or something altogether new. In Chapter 2, we consider a number of indicators that are relevant to the questions that we are posing, and summarise where Europe stands today. In Chapter 3, we consider a number of key telecommunications policy dimensions, and assess in general terms interventions that might conceivably be undertaken to enhance harmonisation. Finally, in Chapter 4, we assess different possible Options or scenarios for achieving greater harmonisation at European level, and assess the relative merits and disadvantages of each using Impact Assessment methodology as practiced by the European institutions.

⁵ European Commission (2015), Brussels, 6.5.2015, "Communication from the Commission ...: A Digital Single Market Strategy for Europe", COM(2015) 192 final, {SWD(2015) 100 final}.

⁶ See Section 3.1, "Making the telecoms rules fit for purpose".

2 Centralisation, decentralisation, harmonisation, and uniformity

Key Findings

- There are various reasons why we desire a Single Market in Europe in general, including (1) the free movement of goods, services, people and capital; (2) reduction in transaction costs; (3) European economies of scale and scope; (4) elimination of fragmentation; and (5) the ability to compete successfully with our global trading partners.
- For electronic communications in particular, it may be particularly important to obtain (1) the ability to use the same communications services everywhere (e.g. roaming); and (2) efficiency for innovators.
- There is a tension between these goals and our needs for (1) cultural and linguistic pluralism, which we rightly view as a strength of Europe; and (2) a range of national prerogatives (pursuant to the principle of *subsidiarity*).
- It is often claimed that the European Union represents a unique experiment in supranational governance. In fact, much can be learned from comparisons to systems that have existed in the past. The United States operated under *Articles of Confederation* from 1781-1789 that provided for a central government with the ability to conduct foreign policy; however, the central government (1) lacked the ability to prevent the states from conducting their own foreign policy; (2) lacked a strong central executive; and (3) had difficulty with collection of taxes, and with management of conflicts among the states. The Americans recognised that these arrangements were unsatisfactory, and switched to a more strongly centralised Constitution that was adopted in 1789.
- The European Union of today is much closer to the United States under the Articles of Confederation than to the federal United States under the Constitution. At the same time, it seems to be fairly clear based on the Irish referendum of 2008 and from the events surrounding it that European voters are not ready today to support a “United States of Europe”.
- Regulation is an important part of European electronic communications policy, but it is only a part. Many other instruments are relevant, notably including investment policy, industrial policy, and state aid; research and innovation policy; standardisation policy; a range of policies that deal with applications that use the network; and the multi-faceted issues associated with intellectual property, and especially with copyright issues in connection with online content.
- Regulatory instruments differ from broad political policy instruments in terms of the accountability of decision-makers, and the time frames over which consistency must be maintained can be different as well.
- Regulatory harmonisation represents only one aspect of European telecommunications policy, and arguably not the most important element.

In this chapter, we consider first the overall rationale for a European Single Market for electronic communications (Section 2.1). Then we review the history of the European Union, with its focus on Single Market issues, and compare it to that of the United States (Section 2.2). We continue with an exploration of the differences between regulatory policy and other policy instruments (Section 2.3). Finally, we consider the degree to which *uniformity* (as distinct from *harmonisation*) is realistically achievable in telecommunications regulation in Europe (Section 2.4).

2.1 What motivates the interest in consistency and centralisation?

Why do we want a European Single Market for electronic communications in the first place? There are multiple possible benefits that we as Europeans seek from a European Single Market in general (and not just for electronic communications):

- the free movement of goods, services, people and capital;
- reduction in transaction costs;
- European economies of scale and scope;
- elimination of fragmentation;
- the ability to compete successfully with our global trading partners.

For electronic communications in particular, it may be particularly important to obtain:

- the ability to use the same communications services everywhere (e.g. roaming); and
- efficiency for innovators.

Yet we Europeans also embrace:

- cultural and linguistic pluralism, which we rightly view as a strength of Europe; and
- a range of national prerogatives (pursuant to the principle of *subsidiarity*⁷).

This debate about *centralisation* versus *decentralisation* is not a uniquely European discussion. It is a general theme in the discipline of political science. Centralisation brings consistency of treatment, and scale economies, but at the cost of a reduction in the ability to accommodate local preferences. There is no single right answer to the degree of centralisation that should be preferred. It is heavily dependent on circumstances, and on the preferences of those who govern and those who are governed.

2.2 The European Union is not a union, but rather a confederation

The European Union can be viewed as representing the fruits of a creative evolution beginning with the Hague Conference in 1948. It was inspired by the common need to rise above the intense nationalism that was felt to have led to two catastrophic world wars during

⁷ Subsidiarity is defined in Article 5(3) of the Treaty on the Functioning of the European Union (TFEU). ‘Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, ... but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level.’

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the first half of the Twentieth Century.⁸ The Hague conference led to the creation of the European Coal and Steel Community. This led in turn to the *Treaty of Rome*, which created the *European Economic Community (EEC)*, a customs union (or free trade area) comprising Belgium, France, Germany, Italy, Luxembourg, the Netherlands.

The details of the growth in competencies and membership of the EEC are not crucial to the discussion in this study. Suffice it to say that the competencies expanded greatly with the creation of the Schengen Area⁹ in 1985, which gradually eliminated border checks among its signatories; and with the creation of the *eurozone*, a common currency area whose bank notes and coins replaced those of the corresponding European Member States in 2002. The *Maastricht Treaty* formally established the *European Union* in 1993.

The membership of the EEC and then the EU progressively expanded over the years. This is highly relevant to the discussion, inasmuch as it increased the diversity of telecommunications infrastructure among the Member States. The six founding members of the EEC were relatively homogeneous in terms of the quality and character of their telecommunications infrastructure; however, the addition of the former DDR (East Germany) when it was integrated into Germany in 1990, and the accession of eight former East Bloc countries in 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia) injected a new element. These Member States had telecommunications infrastructure that had been largely neglected during the years of the U.S.S.R. This process has continued with the accession of Romania and Bulgaria in 2007, and of Croatia in 2013. Thus, the diversity and complexity of the European Single Market as regards telecommunications has greatly increased over the years.

In the course of ratification of the Lisbon Treaty, the Irish people initially rejected the treaty in a 2008 referendum. Other national electorates might well have rejected the treaty had they been given the opportunity to vote on it. It is clear that there are limits to the degree of European integration that European citizens are willing to accept at this time.

It is often claimed that the European Union represents a unique experiment in supranational governance. We would claim that there are strong parallels to systems that have existed in the past, and that much can be learned from comparisons.

The United States is a conspicuous example. The thirteen British colonies that declared independence in 1776 did not immediately form a centralised federal republic as we have today. Instead, they initially formed a Congress, which chartered the drafting of *Articles of Confederation and Perpetual Union*.¹⁰ The Articles of Confederation were sent to the states for ratification in 1777, but were not finally ratified until 1781. The Articles of Confederation established a confederation of sovereign states. Under the Articles, “[e]ach state retains its sovereignty, freedom, and independence, and every power, jurisdiction, and right, which is not by this Confederation expressly delegated.”

The Articles of Confederation established a central government with the ability to conduct foreign policy; however, it lacked the ability to prevent the states from conducting their own

⁸ This was notably put forward in the Schuman Declaration. See European Commission, “The Schuman Declaration – 9 May 1950”, at http://europa.eu/about-eu/basic-information/symbols/europe-day/schuman-declaration/index_en.htm.

⁹ European Commission, “Schengen, Borders & Visas”, at http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/borders-and-visas/index_en.htm.

¹⁰ See for instance U.S. Department of State, “Milestones: 1776–1783: Articles of Confederation, 1777–1781”, at <http://history.state.gov/milestones/1776-1783/articles>.

foreign policy.¹¹ It lacked a strong central executive. It had difficulty with collection of taxes, and with management of conflicts among the states.

The Americans fairly quickly recognised that these arrangements were unsatisfactory. They convened a Constitutional Convention in 1787, which drafted a more strongly centralised Constitution that was adopted in 1789.

Europeans will quickly recognise that the European Union of today, even after enactment of the Lisbon Treaty in 2009, is much closer to the United States under the Articles of Confederation than to the federal United States under the Constitution.

At the same time, it seems to be fairly clear based on the Irish referendum of 2008 (as explained earlier in this section) and from the events surrounding it that European voters are not ready today to support a “United States of Europe”. This would seem to imply the need to find carefully crafted European solutions that strike an appropriate balance between centralisation and decentralisation of authority.

2.3 Regulation, industrial policy, and other policy instruments

As we explain in our 2013 study for the European Parliament,¹² the European policy space for electronic communications is exceptionally broad. Regulation is an important part of European electronic communications policy, but it is only a part. Many other instruments are relevant, notably including investment policy, industrial policy, and state aid; research and innovation policy; standardisation policy; a range of policies that deal with applications that use the network, including e-government services, cloud services, the Internet of Things (IoT),¹³ and more; and the multi-faceted issues associated with intellectual property, and especially with copyright issues in connection with online content. Some of these also constitute forms of regulation, even if they are not specifically regulation of electronic communications; others are not regulatory at all.

Regulatory instruments differ from broad political policy instruments in important ways:

- The accountability of decision-makers is different, as we shall shortly explain.
- The time frames over which consistency must be maintained can be different as well.

As explained succinctly in Tabellini (2002),¹⁴ it is crucial to bear in mind ‘the distinction between “bureaucratic accountability” (i.e. the control of appointed bureaucrats with a narrowly defined mission) and “democratic accountability” (i.e., the control of elected politicians with an open mandate).’ ‘In a representative democracy, the ultimate instrument for holding politicians accountable is an election. Citizens delegate decisions to representatives (governments, legislators). If citizens are not satisfied with the decisions taken, the delegation is not renewed: the majority loses the elections and is replaced by a new government or a new majority in Parliament. [...] Accountability in the EU instead has been achieved through methods that are typical of bureaucratic control, not of political control.

¹¹ For example, the central government “... could not prevent the state of Georgia from pursuing its own independent policy regarding Spanish Florida, attempting to occupy disputed territories and threatening war if Spanish officials did not work to curb Indian attacks or refrain from harboring escaped slaves.” Ibid.

¹² J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), “How to Build a Ubiquitous EU Digital Society”.

¹³ The Internet of Things refers to objects, rather than people, communicating with one another.

¹⁴ Tabellini, G. (2002), The Assignment of Tasks in an Evolving European Union, CEPS Policy Brief No. 10, January 2002.

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Transfer of power to an EU body has generally been accompanied by a clear operational definition of the policy goals. [...] This has two advantages. On the one hand, it limits discretion by the EU policymakers, and hence insures that transfer of power is not abused. On the other hand, it facilitates ex post control. The European Parliament, the media, the Council, can blame or approve the way in which EU decision making power has been used.’

Once again, it is crucial to remember that regulatory harmonisation represents only one aspect of European telecommunications policy, and arguably not the most important element.

2.4 Harmonisation versus uniformity in the Regulatory Framework

Harmonisation is not the same as uniformity. Where might true uniformity be needed, where is loose harmonisation sufficient? Have we made the right choices? Are there areas where going beyond harmonisation might be warranted?

Throughout the Regulatory Framework that was enacted in 2002, the word *harmonisation* is used – *never uniformity*. It was recognised from the first that European Member States differ markedly from one another in terms of the historical and current evolution of their telecommunications markets, the coverage and quality of the networks deployed, the level of competition among networks and services within the Member State, and a range of network and service cost drivers. Under these conditions, it was feasible to implement common *processes*, but unrealistic to expect that the detailed *outcomes* and rules could or should be identical.

Some of the differences among the Member States represent the historic arc that brought them into the European Union in the first place. Most of the Member States that entered the EU in 2004 had severely under-developed networks due to neglect during their years behind the Iron Curtain. Some networks have ubiquitous cable coverage (notably including the Netherlands, Belgium, and Malta), while others have none at all (Italy and Greece).

In parallel with these differences in the networks and services, substantial differences exist in disposable income, labour costs, and consumer willingness to pay (WTP) for electronic communication services. The average age is higher in some Member States than in others; computer ownership is more common in some Member States than in others. All of these have impacts on market structure and on network costs, and all thus impact on regulation. They thus militate against “one size fits all” regulatory solutions.

As Albert Einstein is supposed to have said, “Things should be as simple as they can be ... but no simpler.”

3 Candidate measures to facilitate harmonisation, uniformity, or centralisation

Key Findings

- Our analysis of changes to regulatory measures in place at European level focuses on those that shift the balance between European and national competence. We consider proposals from the European Commission's Telecoms Single Market initiative of 2013, including a number that have been rejected by the European Parliament and/or the Council; our own proposals from our 2013 report for the European Parliament; and other ideas that are "in the air" just now.
- We assess the impact on societal welfare (the sum of producer welfare and consumer welfare using the *Harberger Triangle*, a standard approach in welfare economics).
- We consider candidate improvements, including some that are quite radical, in order to develop a sense of the scale of gains to societal welfare that might be expected.
- In its 2013 legislative proposals, the Commission proposed that four remedies be standardised at European level. The rationale was never clear.
- The overlaps between industrial policy (including the Digital Agenda for Europe broadband objectives), universal service, and state aid guidelines Both at Member State and at European level, the overlaps between existing programmes are substantial. The mechanisms that support universal service are appropriate in principle, but painfully complex, and implementation diverges wildly among the Member States. In the smaller Member States, the cost of computing the net cost may well be approaching or exceeding the level of the net cost itself. There would appear to be scope for harmonisation. In previous work, we proposed phasing out universal service mechanisms "in favour of reliance on state aid and end-user measures such as vouchers to support affordability".
- For call termination, we examine a possible shift from asymmetric regulation to symmetric (recognising that substantially all network operators have SMP in any case). Subjecting all network operators to a mandatory cap not much greater than € 0,01 would simplify the process, and enable effective regulation of roaming. Direct societal welfare gains would be limited, since MTRs are already low.
- Regulators play a role in market entry and exit in multiple ways. We suggest modest improvements to authorisation. Gains are small because existing mechanisms are already efficient.
- Our sense is that Europe as a whole would be better off if the Commission were granted additional authority to ensure that spectrum is made available to the market in a timely fashion. Market players generally supported this proposed reform. In most other respects, current arrangements seem to be reasonably effective.

In this chapter, we summarise the key regulatory measures in place at European level; assess changes that could be considered, especially those that shift the balance between European and national competence; and comment briefly on the costs and benefits of candidate approaches.

A number of these areas were addressed, for better or for worse, in the Commission's 2013 proposed Telecoms Single Market (TSM) legislation.¹⁵ Where this is the case, we provide our assessment of the proposed measure. This is to some extent a theoretical exercise, since nearly all of the measures in the Commission's 2013 proposal were rejected by the Parliament, the Council, or both; however, they still serve as useful grist for the mill of the thought model that we are pursuing in the current study.

Our analysis throughout this chapter draws on our 2013 study of measures to promote the Single Market for electronic communications.¹⁶

We decline to address procompetitive last mile access remedies in this study, even though it is unquestionably an important aspect of regulatory policy, because our WIK colleagues are studying the same questions on behalf of the European Commission just now.¹⁷

We decline to make recommendations on network neutrality or on international mobile roaming in this report, since anything we could say might be hopelessly out of date in just a few weeks as the triologue process continues over the remains of the Telecoms Single Market (TSM) package. Our views on roaming are in any case available in the previously noted 2013 study for the European Parliament,¹⁸ and our current thoughts on network neutrality in a well-known 2014 study, also for the European Parliament.¹⁹

We begin by summarising the approach that is routinely used to estimate societal welfare (Section 3.1), and continue to consider four major policy areas for European electronic communications: (1) broadband deployment and adoption (Section 3.2); (2) call termination, international calls, and international mobile roaming (IMR) (Section 3.3); (3) market entry and exit (Section 3.4); and (4) spectrum management (Section 3.5).

3.1 Societal benefits

In evaluating the value of a policy intervention, an economist usually starts with the notion of societal welfare. Societal welfare is the sum of producer welfare and consumer welfare.

The underlying economics are usually expressed in terms of the *Harberger Triangle* (see Figure 1).²⁰ In an ideal competitive market, prices would be set at the exact level where

¹⁵ European Commission (2013), "Proposal for a regulation of the European Parliament and the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending ...", 11 September 2013, COM(2013) 627 final.

¹⁶ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

¹⁷ Ilsa Godlovitch, Pieter Nooren, Bas Gerrits, and Thomas Plückebaum (forthcoming), "Investigation into interoperability standards for the promotion of the internal market for electronic communications".

¹⁸ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

¹⁹ J. Scott Marcus (2014), "Network Neutrality Revisited: Challenges and Responses in the EU and in the US", a study on behalf of the European Parliament's IMCO Committee, IP/A/IMCO/2014-02, PE 518.751, available at: http://www.europarl.europa.eu/RegData/etudes/STUD/2014/518751/IPOL_STU%282014%29518751_EN.pdf.

²⁰ See J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

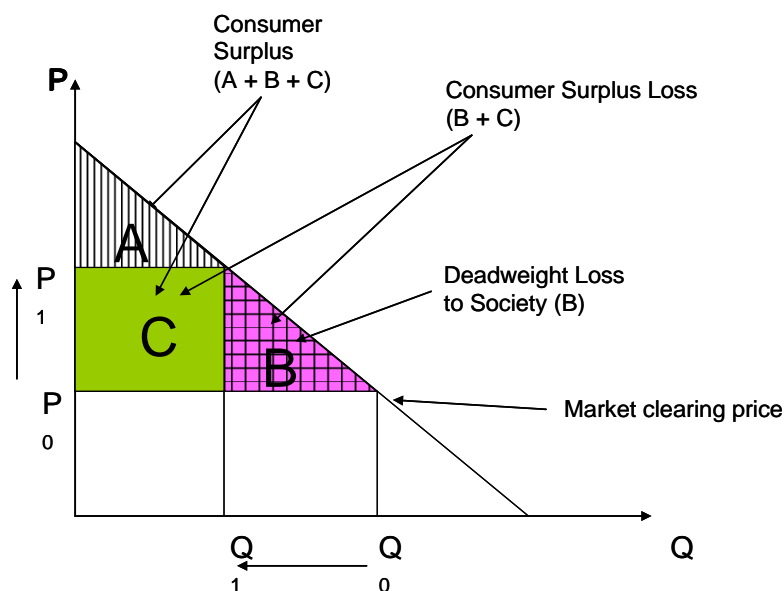
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the supply and demand curves cross. In Figure 1, the line that slopes downward to the right is the consumer demand curve, while the supply curve (the horizontal line at P_0) is not critical to this discussion. The point identified as the ‘market clearing price’ is the expected and optimal pricing point in an ideal competitive market.

If prices are distorted, societal welfare is reduced. Market power is such a distortion, and tends to lead not only to higher prices, but also to lower consumption as a result. This is due to the *price elasticity of demand*, the tendency of consumers to increase (reduce) demand in response to a reduction (increase) in price.

If prices are set at the market-clearing point (P_0), the consumer surplus corresponds to the areas labelled A, B, and C in Figure 1. It is the entire area above the price charged, but below the demand curve. It can be thought of as the degree to which consumers would have been willing to pay more than they were required to pay (i.e. the surplus accruing to consumers at the market-clearing price).

Figure 1. The Harberger triangle.



Source: WIK

If a market distortion (for instance, last mile market power, or the call termination monopoly) artificially inflates the price charged, the price moves up from P_0 to P_1 , while the quantity correspondingly contracts from Q_0 to Q_1 . This reduces the consumer surplus (previously $A+B+C$) by the sum of the areas $B+C$. All that remains as consumer surplus is A.

This change entails two distinct effects. Area C represents a transfer of surplus (or welfare) from consumers to producers. To an economist, who tends to look at societal welfare in terms of the sum of consumer surplus and producer surplus, this transfer is in principle neutral – it is an allocative effect that neither adds to nor detracts from the overall welfare of society.²¹

The area in triangle B (the so-called *Harberger triangle*), however, is truly and unambiguously problematic. It represents consumption that should have taken place, but did not. It is a loss of societal welfare, and is referred to as a *deadweight loss*.

²¹ This somewhat over-simplified statement is true under a conventional static economic view. In a dynamic view, the welfare transfer might not be neutral.

The magnitude of this deadweight loss is itself heavily dependent on *price elasticity of demand (PED)* – the degree to which consumers respond to higher prices by consuming less, or to lower prices by consuming more. The PED is real, but it is often difficult in practice to estimate its magnitude.

3.2 Broadband industrial policy, universal service, and state aid

In this section, as in each section in this chapter, we discuss current policy, candidate changes, and expected costs and benefits in that order.

Current policy

There are multiple levels of European policy as regards broadband deployment and adoption. We would characterise the three most noteworthy as:

- **industrial policy** in the form of the *Digital Agenda for Europe (DAE)*,²² which sets out broad objectives for broadband adoption and deployment (and many other aspects of a digital society);
- **universal service**, as specified in the Universal Service Directive,²³ which specifies goals and mechanisms for ensuring that all Europeans have access at affordable prices to basic communication services; and
- **state aid rules**, which limit subsidies from government to private enterprise so as to reduce the risk of competitive distortions. The Commission has issued guidance as to how to apply state aid rules to broadband.

All of these seek to promote the take up of voice and, to an increasing degree, broadband services in Europe, and they are to some extent mutually complementary, but they are not equivalent. Public policy initiatives are often focused on delivering the best possible services (including the fastest and highest quality fixed and mobile broadband) to those Europeans who can afford them, while universal service seeks to ensure that all Europeans have access to essential services (which are likely to an increasing degree over time to include broadband) at an affordable price.

These initiatives are driven and enforced at different levels, and by different entities; moreover, the boundary line between regulation and other policy measures is complex (see Section 2.3). Industrial policy is generally a government policy, and driven by a ministry. At European level, the DAE was created by the Commission. Universal service is generally a regulatory function, implemented by the NRA but subject to the European Universal Service Directive. State aid rules often come into play as the result of a request by a Member State government, but are enforced at European level by the Commission's DG COMP.

²² One of the main priorities of the European Commission in recent years has been to foster the deployment and adoption of broadband Internet services. In 2010, the European Commission adopted specific targets of achieving universal availability of standard broadband by 2013, of fast broadband (defined as speeds greater than 30 Mbps) by 2020 and achieving take-up of ultrafast broadband (defined as speeds greater than 100 Mbps) by 50% of households as of 2020. European Commission (2010), Communication from the Commission on a 'Digital Agenda for Europe'; available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>.

²³ Directive 2002/22/EC. The Universal Service Directive specifies not only universal service provisions, but also a range of consumer rights.

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Universal service is important in this discussion as a means of facilitating broadband coverage, but the linkage is complex. Universal service served historically primarily as a means of ensuring that all Europeans have access to *voice services* at fixed locations (but not necessarily using the fixed network – fixed and mobile wireless could be used if appropriate to serve fixed locations). There is, however, a growing tendency to include broadband services within the scope of universal service, which had already been understood to be an issue when the Universal Service Directive was first enacted in 2002.²⁴

Universal service provides mechanisms to determine which undertakings are to be invited or obliged to provide the service, including to areas where the service does not pay for itself; to enable the Member State to determine which services should fall within the scope of universal service; and to compensate the responsible undertakings for the *net cost* of providing the service in the event that that cost represents an *unjust burden* on the undertaking(s).

The mechanisms are logical and sound, but computation of the net cost is extremely burdensome in practice. Moreover, Member States vary widely in how they interpret the net cost, and what constitutes an unjust burden.²⁵

Universal service is often complemented by mechanisms to support disabled or disadvantaged individuals, for example by reimbursing part of the cost of the service.

Finally, we would note in passing that nearly all European policy focuses on supply side interventions that promote deployment of basic and ultrafast broadband. We would argue that more needs to be done at European or Member State level in order to promote demand for broadband Internet service; however, that is a discussion for another day.²⁶

Candidate changes

Striking a sensible balance is challenging. Both at Member State and at European level, the overlaps between existing programmes are substantial. There would appear to be scope for harmonisation.

At the same time, the differences among the Member States are great, in terms for example of:

- The fraction of households that are covered by the fixed telecommunications network (in some cases due to neglect during the years before the fall of the Iron Curtain);
- The fraction of households that are covered by cable television networks;
- Physical topology (mountains, islands);
- Population density, and the degree of variation in population density;

²⁴ See BEREC (2010), “BEREC Report on Universal Service - reflections for the future”, BoR (10) 35.

²⁵ Ibid.

²⁶ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Dieter Eilxmann and Bram van den Ende with the support of Prof Jonathan Cave: "Entertainment x.0 to boost Broadband Deployment", study on behalf of the European Parliament's Committee on Industry, Research and Energy; October 2013, available at: <http://www.europarl.europa.eu/committees/en/imco/studies.html#menuzone>; J. Scott Marcus (2014), "Network Neutrality Revisited: Challenges and Responses in the EU and in the US", a study on behalf of the European Parliament's IMCO Committee, IP/A/IMCO/2014-02, PE 518.751, at: http://www.europarl.europa.eu/RegData/etudes/STUD/2014/518751/IPOL_STU%282014%29518751_EN.pdf; and Parcu, P. L. et al. (2011), Study on Broadband Diffusion: Drivers and Policies. Study for the Independent Regulators Group, Florence School of Regulation; available at: http://www.irg.eu/streaming/CN%20%2811%29%2081_FSR_Study_on_BB_Promotion_FINAL.pdf?contentId=547201&field=ATTACHED_FILE.

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- Disposable income;
- Network usage characteristics of consumers.

As previously noted, the mechanisms that support universal service are appropriate in principle, but painfully complex. Meanwhile, compensation for the net cost of providing the service (in those few Member States that have a history of providing compensation) has declined over time. In the smaller Member States, the cost of computing the net cost (adding the costs of the universal service provider, the NRA, and those who challenge the net cost) may well be approaching or exceeding the level of the net cost itself.

It is also the case that the divergence in implementation of universal service among the Member States is simply enormous.²⁷ One could however argue that the divergence is not problematic, inasmuch as universal service does not have obvious cross-border implications, nor is it necessarily the case individual network operators need to be able to deliver consistent universal service in multiple Member States.

With all of this in mind, we suggested phasing out universal service altogether in a previous study for the European Parliament.²⁸ We argued that “universal service is no longer an appropriate mechanism in a multi-carrier broadband environment. Universal service mechanisms should be phased out in favour of reliance on state aid and end-user measures such as vouchers to support affordability.”

State aid mechanisms address many of the same needs as universal service. A firm is designated by means of objective procedures, typically an auction. Recovery of the net cost is fairly automatic, since the firm itself estimates its costs in advance; thus, there would appear to be less uncertainty for both the firm and the government. If the financial allocation is on a fixed price basis, the firm has strong incentives to improve its efficiency over time in order to enhance its profits – a characteristic that is arguably lacking in the conventional net cost reimbursement approach.

It would still be necessary to ensure that disabled or disadvantaged users are able to purchase basic, essential services at an affordable price. An auction-based state aid mechanism is not necessarily inconsistent with these goals. A requirement to continue to offer a basic service across the national territory at a specified price and level of quality could simply be a condition of the auction, in which case any net cost of providing the service under these conditions would simply be reflected in the bidder’s price.

A possible serious objection to this approach (in many of the Member States, perhaps not all) is that only the incumbent is likely to be able to make a cost-effective bid for significant portions of the national territory. Indeed, limitations to full coverage is a key reason why universal service exists in the first place. To the extent that this is the case, the auction might not protect the government or the consumer from price gouging.

Potential costs and benefits

Any assessment of the benefits from changes in broadband deployment and adoption systems needs to start with an understanding of the benefits of broadband itself. The benefits of basic broadband are established by many studies, and in our judgment are not in doubt. The incremental benefits of fast or ultra-fast broadband, however, continue to be uncertain.

²⁷ BEREC (2010), “BEREC Report on Universal Service - reflections for the future”, BoR (10) 35.

²⁸ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), “How to Build a Ubiquitous EU Digital Society”.

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A noteworthy 2013 study conducted by Analysys Mason on behalf of the European Commission²⁹ assessed the incremental societal benefits of fast and ultra-fast broadband using input-output analysis for relevant sectoral investments, and using a technique developed by Shane Greenstein and R.C. McDevitt to assess consumer welfare gains.³⁰ They find substantial benefits from adoption of ultra-fast broadband.

We consider the analysis to be competently done and helpful, but it is a single result, it rests on a great many assumptions, and none of the detailed computations are shown. Moreover, it is difficult to see how the Greenstein/McDevitt approach could have been used in 2013 to distinguish between the benefits of basic broadband and those from fast or ultra-fast broadband. Thus, the result is not altogether convincing.

Be that as it may, they compare a ‘do nothing’ scenario, with private investment (i.e. CAPEX) in Next Generation Access (NGA) of € 76.4 billion, to a ‘modest intervention’ scenario, where governments invest an additional € 5.8 billion and doing so triggers an additional and much larger € 19.2 billion in private investment. The interventions have multiple effects, both of which result in increased adoption of fast and ultra-fast services. The investment is used primarily for supply side measures to increase the availability of fixed wireline networks, and secondarily by means of cost reduction measures that increase the viable limit of market-led deployment. Both serve to reduce net cost (and risk) to investors.

The intervention has the following effects in the year 2020:

- increases the proportion of households connected to 30 Mbps broadband from 42% to 49%;
- increases the proportion of households passed by 100 Mbps NGA from 50% to 61%; and
- increases the proportion of households connected to 100 Mbps NGA from 26% to 34%.

The intervention drives a modest increase in consumer surplus for the period 2012 to 2020 from € 26.5 billion (for the baseline ‘do nothing’ case) to € 28.6 billion. More important, it drives an increase in macroeconomic benefits (as measured by the *input-output methodology*)³¹ from € 181 billion to € 270 billion. The modest intervention also increases the jobs created by NGA deployment from 1.35 to 1.98 million.

We feel that the economic impact of any harmonisation benefits that might be achieved is relatively small in comparison to the quite substantial investments that will be needed to get fast broadband deployed in the Member States, and in light of the substantial diversity in national circumstances. For this reason, we believe that these benefits are best understood in qualitative rather than quantitative terms.

²⁹ Analysys Mason (2013a), The Socio-Economic Benefits of Bandwidth, study for the European Commission.

³⁰ They progressively refined these techniques in a series of papers from 2009 through 2012. See for instance Greenstein, S. and R. C. McDevitt (2009), ‘The global broadband bonus: Estimating broadband Internet’s impact on seven countries’. The apparently low incremental WTP is also a concern relative to this analysis.

³¹ Input-output modelling is used to estimate how economic impacts ripple through different branches of an economic system. Linkages between sectors of the economy, where the output of one becomes the input to another, are modelled through a matrix (i.e. a table). Thus, the use of this model made it possible to assess not only the direct expenditures that broadband deployment would drive in construction and related employment, but also for instance the impact of expenditures that the workers would make on food, clothing, and other services.

3.3 Call termination, international calls, and international mobile roaming

Call termination in the fixed network has long been subject to regulation. Call termination in the mobile network was regulated in only a few Member States (notably including the UK) before the introduction of the regulatory framework for electronic communications in 2002.

With the advent of the first Roaming Regulation in 2007, cross-border communications came into the regulatory picture. The Commission's 2013 Telecoms Single Market proposed legislative package sought to broaden the focus so as to achieve common prices for international calls as well. The argument for strong harmonisation is far greater in these cross-border settings than for purely domestic fixed and mobile communications.

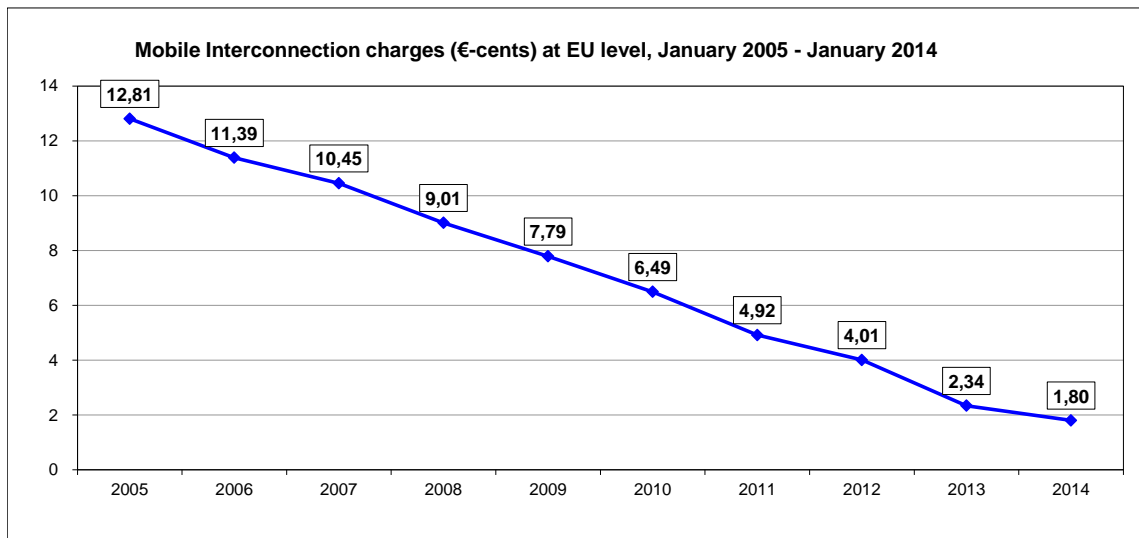
Current policy

Termination rates are handled much the same as access regulation. The market is defined as being specific to each network operator, because a given customer can generally receive calls only using the network operator to which he or she has subscribed. Consequently, it is almost invariably the case that every network operator is found to possess SMP. Multiple remedies are routinely imposed, including a cap on the Termination Rate that may be charged.

Regulation of *Fixed Termination Rates (FTRs)* was commonplace even before the 2002-2003 implementation of the Regulatory Framework for Electronic Communications, but *Mobile Termination Rates (MTRs)* were unregulated in most Member States before 2003. The weighted average MTR for the EU as a whole has been steadily declining since regulation was introduced (see Figure 2). Rate declined at a rate that accelerated after the European Commission's Recommendation on termination rates of 2009 (as we explain shortly). The weighted average charge dropped from more than 12 eurocents per minute in 2005 to less than 2 eurocents in January 2015 (see Figure 2).

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Figure 2. Mobile Termination Rates (MTRs) at EU level (January 2005 - January 2014) (eurocents)



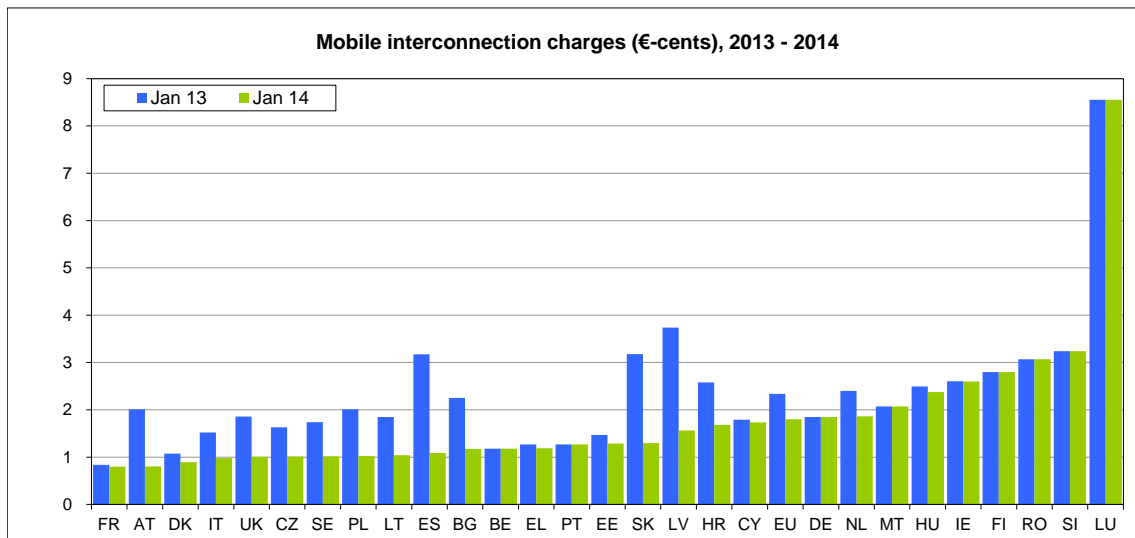
Source: European Commission DAE Scoreboard³²

Historically, different NRAs identified substantially different costs for fixed and mobile network termination. In 2009, the Commission issued a Recommendation seeking to increase harmonisation of the process, both for fixed networks and for mobile networks. The 2009 Recommendation resulted not only in substantially lower termination rates, but also in greater consistency of termination rates; nonetheless, it cannot be said to have fully harmonised termination rates, nor has it eliminated disputes between Member State NRAs and the Commission.

³² Data from the European Commission DAE Scoreboard spreadsheet on ‘financial indicators, telephony, broadcasting and bundled services (xls)’ downloaded June 2015; available at: http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=5937

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Figure 3. Mobile Termination Rates (MTRs) (January 2013 and 2014) (eurocents)



Source: European Commission DAE Scoreboard³³

International calls are generally subject to roughly the same regulation as domestic calls. In its 2013 Telecoms Single Market (TSM) legislative proposal,³⁴ the Commission proposed with little explanation to directly regulate the price of international calls as a consumer protection measure. It is true that the prices for some international calls may be inexplicably higher than those of domestic calls; however, it is not clear what would justify a major diversion from the regulation of domestic calls. The market for international calls is national, and does not pose the same challenges as the market for roaming. There is no obvious reason why it should be necessary to regulate these prices at retail (which is rare in European practice, except in the case of roaming), nor why it should be necessary to set the regulated price at an arbitrary Europe-wide level not specifically linked to underlying costs. For that matter, if there were deemed to be a special problem with international calls (which is not clear), it is not clear why the market for international calls could not be assessed by each NRA using the normal procedure (by defining international calls as a distinct market susceptible to *ex ante* regulation).

Roaming has been fully harmonised since 2007, when the first Roaming Regulation was enacted. A Regulation takes force without requiring transposition by the Member States. The Roaming Regulation of 2007 set uniform maximum wholesale and retail prices for a number of international mobile roaming services across all of the Member States (and EEA members, i.e. Norway, Iceland and Liechtenstein). The Roaming Regulation was expanded in 2009, and subsequently in 2012. In each case, the scope of the Regulation was broadened to include additional services. The 2012 revisions also added structural solutions, a fairly expensive approach that has had no visible effect whatsoever on the market.³⁵

³³ Ibid.

³⁴ European Commission (2013), “Proposal for a regulation of the European Parliament and the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending ...”, 11 September 2013, COM(2013) 627 final.

³⁵ J. Scott Marcus, Imme Philbeck, and Chrstin-Isabel Gries (2013), Structural solutions and the evolution of international mobile roaming (IMR) in Europe: Where are we headed?

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The Commission proposed revisions to the 2012 Regulation as part of its 2013 TSM legislative package. International fixed and mobile calls would be subject to price caps, ostensibly as a consumer protection measure. The Parliament rejected this measure.

Under the Commission's proposal, firms that provided roaming across most or all of the EU at prices no greater than domestic prices would be freed from various obligations; however, the benefits offered would have had, so far as we can so, negligible value.³⁶ We believe that these provisions would have been totally ineffective. Be that as it may, the Parliament rejected the Commission's approach.

Meanwhile, in the measures that the Parliament passed at First Reading in early April of 2014, they called for roaming prices to be no greater than domestic.³⁷ BEREC studied this proposal at the request of the Commission, and concluded (rightly, in our view) that the measure put forward by the Parliament would lead to unsustainable arrangements inasmuch as regulated prices would then have been below regulated costs.³⁸

As of June 2015, the Council has invested considerable effort and arrived at proposals for the Telecoms Single Market legislative package that appear to be workable, but not greatly superior to the international mobile roaming arrangements in place today.³⁹ Where the process will end up remains to be seen.

Candidate changes

Call termination is an enduring bottleneck that could lend itself to symmetric treatment. Even though regulation of fixed and mobile call termination is imposed through 'asymmetric' SMP remedies today, substantially all operators have been found to have SMP. Rates charged have steadily declined, as noted in the previous section.

Given the precedent of roaming, in which charges have been set symmetrically rather than on the basis of specific national costs, and the fact that termination costs are likely to be similar across countries (if the same modelling approach is used to calculate them) and are an input for cross-border calls, there may be a case for similar treatment of termination. It could make sense to subject all network operators to a mandatory cap on the termination rate, presumably at a rate not much greater than € 0,01.

In the recent past, a uniform rate for all call termination would likely have been problematic. A uniform rate of zero (known especially in the US as *bill and keep*) has been discussed in Europe, but has never emerged as a consensus solution. As long as termination rates were relatively high in comparison to real costs, and as long as the underlying costs themselves

³⁶ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

³⁷ European Parliament legislative resolution of 3 April 2014 on the proposal for a regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC, 2002/22/EC, and Regulations (EC) No 1211/2009 and (EU) No 531/2012 (COM(2013)0627 – C7-0267/2013 – 2013/0309(COD)), see: <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0281>.

³⁸ BEREC (2014), "International Roaming: Analysis of the impacts of "Roam Like at Home" (RLAH)", BoR (14) 209

³⁹ European Council (2015), "Proposal for a Regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012 - Examination of the Presidency's compromise proposal", 26 May 2015.

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differed significantly among the Member States (due, for instance, to differing unit costs for labour and other factors that are not specific to electronic communications), there appeared to be a strong argument for termination rates that were differentiated among the Member States.

Today, the rates are much lower than they were in 2005 (see again Figure 2), and the differences among the Member States have declined due to the use of somewhat more consistent computation of the termination rate in light of the Commission's 2009 Recommendation. Our rough estimate, based on extensive cost modelling experience, is that if MTRs in all Member States were calculated using methods fully compliant with the 2009 Recommendation, they would lie in a narrow range between € 0,0075 and € 0,0125, which is to say one eurocent plus or minus 25%. Meanwhile, competition at retail level has resulted in retail prices (for the increasingly numerous mobile-to-mobile calls) that for the most part broadly reflect the cost-based wholesale termination rates. The argument for differentiated termination rates among the Member States has thus lost much of its force today.

For international calls, we are not convinced that any regulatory change is warranted at this time.

For roaming, we are strongly of the view that retail prices should not be capped at levels less than cost (including the wholesale payments made), and that wholesale price should also not be capped at levels less than underlying cost. Beyond that, we decline to make a recommendation, since anything we could say might be hopelessly out of date in just a few weeks as the triologue process continues over the remains of the Telecoms Single Market (TSM) package.

Potential costs and benefits

Again, it is helpful to begin by understanding the economic benefits that flow from current arrangements. In the case of regulation of MTRs, we made an assessment in our 2013 study for the European Parliament.⁴⁰ In the case of roaming, we refer to a thoughtful analysis conducted by the economist Steffen Hörnig, which was subsequently used in the Commission's Impact Assessment for the 2012 modifications to the Roaming Regulation.⁴¹ In both cases, the analysis rests on standard welfare economics and the Harberger Triangle (see Section 3.1). Our objective is to understand the degree to which correction of inflated retail prices by means of regulation of MTRs and of roaming retail prices has transferred welfare from MNOs to consumers, and more importantly the degree to which this regulation has benefitted society by reducing deadweight loss.

It is reasonably clear that prices had been greatly inflated when the Regulatory Framework was introduced (see for instance Figure 2). Only today are termination rates approaching cost-based levels. Thus, each reduction in MTR to date has reduced deadweight loss. Going forward, at some point in the (possibly near) future where the MTR is no longer in excess of true costs, reductions in MTR will no longer reduce deadweight loss.

In order to make a rough estimate of the magnitude of the benefit, it is necessary to have some sense of *what retail prices would have been in the absence of regulation*. There is no perfect

⁴⁰ J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

⁴¹ European Commission (2011), Commission Staff Working Paper: Impact Assessment Of Policy Options in Relation to the Commission's Review of the Functioning of Regulation (EC) No 544/2009 Of The European Parliament and of the Council of 18 June 2009 on Roaming on Public Mobile Telephone Networks within the Community, {COM(2011) 407 final}, {SEC(2011) 871 final}, 6 July 2011.

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answer to this counter-factual question, but we assumed in the 2013 study that MTRs in Europe would have spontaneously fallen at rates similar to those in highly developed countries in which MTRs are unregulated. Japan served as our model. During the period 2004-2009, MTRs (in euro) in Japan fell at a Compound Annual Growth Rate (CAGR) of 6.2%. This observation provided the basis for a counter-factual scenario corresponding to a European Union without the Regulatory Framework.

Using the Merrill Lynch Quarterly Wireless Matrix⁴² as a source for data on Service-based Revenue (SBR) per Minute of Use (MoU) per voice (which serves as a good proxy for retail price), and making a range of reasonable assumptions about the price elasticity of demand and the linkage between wholesale MTR and retail price,⁴³ we estimated the transfer of surplus from MNOs to consumers (which can be viewed as being neutral in terms of societal welfare under a static view) and the change in deadweight loss as shown in Table 1.

Table 1. Welfare effects of the regulation of MTRs in Europe (billion euro).

Comparing the actual to the counter-factual	2005	2006	2007	2008	2009	2010	Total
Reduction in Deadweight Loss	€ 2,779	€ 5,741	€ 3,879	€ 3,943	€ 8,452	€ 11,830	€ 36,624
Transfer of Surplus	€ 26,959	€ 34,409	€ 32,888	€ 33,346	€ 38,942	€ 39,098	€ 205,642

Using similar methods, Hörnig concluded that a total elimination of regulation of roaming would have led to the following changes in societal welfare over the period 2012-2014 (in comparison with continuation without change of the rules of the Roaming Regulation of 2009):

- A decrease of consumer surplus of € 18,600 million
- An increase of producer surplus of € 5,000 million
- A net loss of societal welfare of € 13,600 million

In other words, returning to the Harberger Triangle discussion of Section 3.1, continuation of the Roaming Regulation of 2009 without change would have transferred five billion euro from network operators to consumers (in comparison with getting rid of the Roaming Regulation). Again, in a static view, that transfer is in principle neutral in terms of societal benefits.⁴⁴

With that established, we can consider the likely effects of further changes that aim at enhancing harmonisation. *In percentage terms, the direct effects of reductions in price are relatively small, because most of the economic benefit of reducing inflated prices has already been extracted* (in the case of MTRs, consider Figure 2).

Our suggestion that TRs might be set symmetrically by fiat rather than by Member State-specific cost calculations is thus not primarily motivated by a desire to achieve lower prices,

⁴² BoAML (2011), Global Wireless Matrix 1Q11, 28 April 2011.

⁴³ See for instance Tera Consultants (2010), Study On The Future Of Interconnection Charging Methods, study for the European Commission, 17 June 2010; and Growitsch, C., Marcus, J. S. and C. Wernick, "The Effects of Lower Mobile Termination Rates (MTRs) on Retail Price and Demand", a research project for the German BNetzA, at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1586464., and T. Valletti,

⁴⁴ When one considers dynamic effects (i.e. the impact on the willingness and ability of the network operators to invest in their networks), there may be some negative impact from the transfer.

although that might also be achievable; rather, it reflects a desire to enhance and simplify the regulatory system as a whole.

The computation of cost-based Member State specific termination rates is highly intensive in terms of skilled labour and attention. If Member State differences are now fairly small in terms in their impact on consumers and network operators, at some point the marginal benefit of differentiated wholesale prices at some point falls below the cost of computing them in the first place.

Moreover, a number of regulatory problems would be much easier to solve in a world where termination rates across Europe were constant. For instance, the economics of calls received while roaming in another Member State are heavily dependent on the difference between the Termination Rate that the Home Network receives and the Mobile Termination Rate that it pays to the Visited Network. It is difficult to see how Europe could ever implement reception of calls free of charge at retail level while roaming as long as Termination Rates differ among the Member States. If Termination Rates were uniform (possibly but not necessarily free of charge at wholesale level), then free of charge roaming calls received would be entirely in order.

3.4 Market entry and exit

In principle, market entry and exit should be governed by the market, not by the National Regulatory Authority (NRA); nonetheless, a role on the part of the NRA and the *National Competition Authority (NCA)* or the European Commission's *DG COMPETITION*, for good or occasionally for ill, is to some extent inevitable.

Key points of intersection include:

- Restrictions on market entry;
- Mergers and acquisitions;
- Spectrum management (release of spectrum to the market); and
- Market exit.

Current policy

We consider current policy in terms of the Authorisation process, of merger control, and of the missing Deauthorisation process. The interaction with spectrum management is explored in Section 3.5.

Authorisation

A prerequisite for entry into European telecommunications markets is to be authorised to operate networks and services in the relevant countries. The conditions governing authorisation are contained in the *Authorisation Directive*.⁴⁵ This aimed to enable an internal market in the provision of electronic communications services through the harmonisation and simplification of authorisation rules. In particular, the Directive prohibits the use of individual

⁴⁵ Ibid.

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licenses that would limit the number of operators within a market, with the exception of rights of use granted for certain radio frequencies.⁴⁶

Authorisations must be granted promptly and automatically following a *notification*, and the conditions attached to general authorisations are restricted to those specified in a list in the Annex to the Authorisation Directive. The types of obligations that could be covered in a general authorisation, applying to all operators irrespective of SMP, include:

- Provisions concerning administrative charges and any 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
- Environmental and planning requirements.

Mergers and acquisitions

In the course of a merger or acquisition, it may be the case that a firm that previously served as an independent competitor exits the market. The merging parties are generally obliged to make a notification to the relevant authority.

Mergers that are large in their aggregate effect (judged on the basis on the turnover of the merging firms) or that have significant potential impact in multiple Member States are subject to a determination on the part of the European Commission's DG COMPETITION rather than by the National Competition Authority (NCA). The specific decision principles (which are subject to some complicated exceptions) are:

“A concentration has a Community dimension, if

- the combined aggregate worldwide turnover (from ordinary activities and after turnover taxes) of all the undertakings concerned (in the case of the acquisition of parts of undertakings, only the turnover relating to the parts which are the subject of the concentration shall be taken into account with regard to the seller(s)) is more than EUR 5 000 million (special rules apply to banks), and
- the aggregate Community-wide turnover of each of at least two of the undertakings concerned is more than EUR 250 million,

unless

- each of the undertakings concerned achieves more than two-thirds of its aggregate Community-wide turnover
- within one and the same Member State.⁴⁷

⁴⁶ Certain wireless applications such as the provision of mobile communications require the provision of 'licensed' spectrum.

⁴⁷ See for instance European Commission DG COMPETITION (2010), “EU Competition Law: Rules Applicable to Merger Control: Situation as at 1 April 2010”, at http://ec.europa.eu/competition/mergers/legislation/merger_compilation.pdf.

Market exit

Paradoxically, even though entry into the market as an *Electronic Communications Network (ECN)* or *Electronic Communications Service (ECS)* is reasonably well defined, there appears to be no mention of market exit in the Regulatory Framework for Electronic Communications.⁴⁸ There is an Authorisation Directive, but no *Deauthorisation Directive*.⁴⁹ What does it mean to have a state of being that has an entry but no exit – a regulatory “roach motel”?⁵⁰

One might imagine that a provider of publicly available ECS simply turns in the general authorisation.⁵¹ This necessarily begs the question: If the provider has received assignments of spectrum, or of telephone numbers, what happens to those assignments should the provider exit the business altogether? What are the rights of subscribers to a service when the provider wishes to exit the business? Is there a glide path, a transition period, to enable the subscriber to switch to another service provider?⁵²

The reticence of the Directives on this subject is perhaps understandable. As regulators, we seek to promote market entry. We do not like to think about market exit.

Candidate changes

In the Telecoms Single Market legislative package that the Commission submitted to the European Parliament on 11 September 2013, they put forward very complicated proposals to enable Authorisation at European level, and to determine which of two (or potentially NRAs) would then have responsibility for the network operator in question.

As we have explained elsewhere,⁵³ the measures put forward by the Commission in 2013 were unnecessary and disproportionate. They have been rejected by the European Parliament and the Council, and with good reason. The Authorisation Directive as enacted in 2002 already accomplished the move from often complex and bureaucratic licensing systems to general authorisations for which only a notification was needed. This can be considered to have been effective in reducing ‘red tape’, and thus to have strengthened competition and cross-border market entry.

A public consultation put forward by BEREC found opportunities for improvement, but generally found that the Authorisation process is working reasonably well.⁵⁴ Our interviews

⁴⁸ J. Scott Marcus (2012), “Structured Legislation – Toward the Synthesis of Better Law and Regulation of Electronic Communications”. In *Legisprudence*, international journal for the study of legislation, Vol. 6, No 1, 2012, p 1-33.

⁴⁹ In U.S. law, by contrast, section 214 of the Communications Act of 1934 specifies certain limited actions when a carrier initiates or discontinues service.

⁵⁰ “... We are programmed to receive. You can check out any time you like, But you can never leave.” *Hotel California*, The Eagles.

⁵¹ The general authorisation ensures rights and obligations in connection with the provision of ECS or electronic communication networks. See Authorisation Directive, article 2(2)(a).

⁵² The *Nextwave* case in the U.S. illustrates the danger of under specification of consequences when a service provider exits the market.

⁵³ J. Scott Marcus, Ilsa Godlovitch et al. (2013), “How to Build a Ubiquitous EU Digital Society”, op. cit..

⁵⁴ BEREC (2011), “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”, BoR (11) 55.

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with operators⁵⁵ suggest that red tape is not a major barrier to market entry or cross-border expansion in telecommunications services today. Our 2008 report for the European Commission on the regulation of VoIP⁵⁶ found that numbering conditions were considered a far more significant barrier to pan-European service provision by VoIP providers than obtaining the authorisation itself. The Impact Assessment that accompanied the Commission's TSM proposal also made clear that any problems with Authorisation had little to do with the Authorisation process itself; however, the Impact Assessment report made a credible argument that fees for authorisation (and also for universal service) could be problematic for small enterprises seeking to conduct business in multiple Member States.

In a 2013 study for the European Parliament,⁵⁷ we recommended that three small, surgical changes be made to the existing Directives.

- A standard Notification application form should be provided in at most two or three of the most widely understood European languages (or possibly just in English) as a new Annex to the Authorisation Directive, and all NRAs should be required to accept it as an alternative to whatever other forms they might use. In that way, a prospective network operator could simply submit 28 identical or nearly identical forms to each of the NRAs in order to become authorised.⁵⁸
- A sentence should be added to the Authorisation Directive to require that fees be waived altogether for small enough applicants.
- A sentence should be added to the Universal Service Directive to require that universal service payments be waived altogether for small enough market players. This is already viewed as best practice in Member States that implement universal service funds.⁵⁹

As regards the merger control process, the existing procedure already seems to represent a well-crafted balance between European and Member State responsibilities. There is no obvious need for substantial change.

As regards market exit, our sense is that a specification at European level would be appropriate, for reasons similar to those that led to the creation of the Authorisation Directive:

⁵⁵ In the course of our 2013 study of Single Market issues on behalf of the European Parliament (J. Scott Marcus, Ilsa Godlovitch et al. (2013), "How to Build a Ubiquitous EU Digital Society", op. cit.), interviews with trade associations ETNO and ECTA and with several cross-border operators indicated that while authorisations could be improved, they are not a significant impediment to offering services cross-border.

⁵⁶ Marcus, J. S., Elixmann, D., Wernick, C. and the support of Cullen International (2008), *The Regulation of Voice over IP (VoIP) in Europe*, a study prepared for the European Commission, 19 March 2008.

⁵⁷ See J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), "How to Build a Ubiquitous EU Digital Society".

⁵⁸ BEREC (2011), "BEREC Report on the Impact of Administrative Requirements on the Provision of Transnational Business Electronic Communication Services", BoR (11) 56. Among possible enhancements to the process, they identified "Possibility to file online notifications/declarations ... Possibility to submit notifications in English language. Avoiding translations into several EU official languages would represent an advantage for cross-border operators, having to file more than one notification. ... Establishing a 'contact point' ..."

⁵⁹ BEREC (2010), "BEREC Report on Universal Service – reflections for the future", BoR (10) 35. "Most of the BEREC countries have indicated that the least market distortion principle is safeguarded by exempting from contribution the small operators, identified by a variety of criteria such as threshold of turnover, time since market entry, market share etc. Also, in recognition of the fact that this principle could also be regarded as an expression of the proportionality principle, some respondents consider that the market distortion is minimised by the imposition of contributions in proportion to undertaking's position in the market, generally reflected by turnover."

otherwise, there is the risk of needless and unproductive “hold up” problems by a Member State, and of the application of inconsistent rules. With businesses as with natural persons, death is a normal part of the life cycle, and should be dealt with forthrightly. At the same time, we do not have the sense that this is an urgent requirement.

Potential costs and benefits

The potential benefits of improved process in these areas are quite modest because existing practices are effective and efficient, and cannot be greatly improved upon.

The cost of an over-reaching solution, such as would for example have been the case with the Commission’s 2013 proposals, might however have been considerable.

3.5 Spectrum management

This analysis once again draws on our previous work for the European Parliament.⁶⁰ After a brief discussion of the linkage between spectrum management and market entry and exit policy, we proceed as usual to discuss current policy, candidate changes, and expected costs and benefits.

Linkage to market entry and exit policy

As previously noted, the amount of spectrum that the Spectrum Management Authority (SMA) releases to the market for WAPECS use (e.g. mobile voice and broadband) can enable or prevent market entry on the part of an additional market player. In most Member States, whenever a merger has caused one Mobile Network Operator (MNO) to effectively exit the market, it is fairly common for the SMA to rush to release new spectrum to the market so as to keep the number of MNOs in the market roughly constant. The objectives of the MNOs and those of the SMAs would appear to be diametrically opposed.

In considering the benefits of enhancing spectrum management policy at European level, the market entry and exit implications prove to be important.

Current policy

Spectrum management reflects a complex division of responsibilities between the Commission and the Member States. European spectrum management has historically been primarily the prerogative of the Member States; however, the Commission always had a coordinating role, especially in regard to the establishment of harmonised radio spectrum bands.

In the course of the opening up of the first *Digital Dividend*,⁶¹ where broadcast spectrum in the valuable 800 MHz band was turned over for more productive use for mobile services such as mobile broadband, the Commission played a more active role, and for the first time European stakeholders recognised that greater spectrum coordination was needed at European level. Had each Member State made its own decisions without regard to its neighbours, high

⁶⁰ See J. Scott Marcus, Ilsa Godlovitch, Pieter Nooren, Bram van den Ende, Jonathan Cave, and Werner Neu (2013), “How to Build a Ubiquitous EU Digital Society”.

⁶¹ Analysys Mason (2009), *Exploiting the Digital Dividend – a European approach*, 14 August 2009.

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power high antenna broadcasting would have been operating directly adjacent to medium power mobile broadband services in adjacent countries. Harmful interference would have been problematic.⁶² The Commission drove a coordinated solution favouring mobile broadband, thus mitigating interference problems.⁶³

The lesson was not lost on spectrum experts and policymakers. An expanded role for the Commission was in the common interest.

The revised Framework Directive of 2009 empowered the Commission (taking utmost account of the opinion of the *Radio Spectrum Policy Group (RSPG)*, a group of national experts) The European Commission adopted its proposal for a first *Radio Spectrum Policy Programme (RSPP)*⁶⁴ on 20 September 2010, and the European Parliament and Council approved the RSPP on 15 February 2012. The RSPP is a key element of the amendments to the regulatory framework for electronic communications that were enacted in November 2009.

The RSPP sets out the guiding principles and the objectives to be followed by Member States and EU institutions in the field of radio spectrum, and indicates the initiatives that should be taken to allow a swift implementation of these principles and objectives.

Candidate changes

As in many of the policy areas that we have assessed, a full centralisation of authority at European level might prove to be problematic. European authorities tend not to have the knowledge of local conditions that are present (and indeed essential) in the national Spectrum Management Authorities. They do not have the same awareness of the path dependencies that led to current arrangements. Most notably, they do not have the same accountability to the local public in the event that a decision is taken that has negative impact within the Member State.

This risk is to some extent already evident in the occasional allocation of harmonised bands at European level. The concern is that a harmonised allocation is not pursuant to the sort of market test that an auction provides – it is fundamentally a “beauty contest”. Many spectrum management experts consider, for instance, the allocation of the MSS bands for Europe-wide satellite usage to have been a case in point.

Spectrum management plays an increasingly central role in light of Digital Agenda for Europe objectives to make fast and ultra-fast broadband available to all Europeans. Mobile and (to a lesser degree) fixed wireless service will be used to reach parts of the national territory that cannot be cost-effectively served with fixed network solutions, and mobile will also serve as a complement to fixed in denser areas.

The Commission plays an important coordinating role, and has substantial moral authority, but has limited ability to enforce its decisions.

⁶² Ibid.

⁶³ European Commission (2010), Commission Decision of 6 May 2010 on harmonised technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union.

⁶⁴ European Union (2012), Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme.

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A conspicuous example where this has been problematic has been in reassignment of the previously mentioned 800 MHz band.⁶⁵ A few Member States (notably Germany, to its credit) promptly auctioned 800 MHz spectrum, but in many others the process dragged on for years.⁶⁶ This is a concern, first because the spectrum was not being put to the most productive use (such as mobile broadband), and second and more notably because it is an evil omen for the prospects of the next Digital Dividend band, the 700 MHz band that can be expected to become fully available after the 2015 ITU *World Radiocommunications Conference (WRC)*.⁶⁷

The correct institutional design for respective roles and responsibilities for European and Member State spectrum management authorities has been and is likely to continue to be a matter of intense debate. This is, in fact, the most noteworthy instance where the European Parliament proposed to revise but retain a major proposed Commission initiative in the TSM, but the Council rejected it.

While we note that there are no easy solutions here, our sense is that Europe as a whole would be better off if the Commission were granted additional authority to ensure that spectrum is made available to the market in a timely fashion. Market players generally supported this proposed reform. In most other respects, current arrangements seem to be reasonably effective.

Potential costs and benefits

How do delays in making spectrum available to the market (mainly for the benefit of commercial operators) impact on societal welfare?

In general, two main effects should be anticipated:

- Each release of spectrum to the market improves the efficiency of the networks that use it, thus lowering their costs.
 - In a competitive market, the networks will compete away most or all of these gains, thus benefitting consumers through lower prices.
 - Consumers will tend to respond to lower prices by consuming more thanks to the *price elasticity of demand*.
- A release of spectrum to the market may enable another market player to achieve entry, thus generating significantly greater societal gains.

⁶⁵ Under Article 6(4) of the RSPD, the band should already substantially be available for wireless broadband. 'By 1 January 2013, Member States shall carry out the authorisation process in order to allow the use of the 800 MHz band for electronic communications services. The Commission shall grant specific derogations until 31 December 2015 for Member States in which exceptional national or local circumstances or cross-border frequency coordination problems would prevent the availability of the band ...'.

⁶⁶ See European Commission (2013), Europeans suffering because most Member States are too slow delivering 4G mobile broadband spectrum, 23 July 2013. As of July 2013, spectrum had been made available in only 11 Member States: DK, DE, IE, FR, IT, LU, NL, PT, SE, UK; and Croatia. By the end of 2013, the band should be available in LT, ES, AT, SK, FI, CZ, HU, BE, and EE. Delays into 2014 are expected in RO, SI, PL, EL, and MT, into 2015 in LV and CY, and into 2017 in BG!

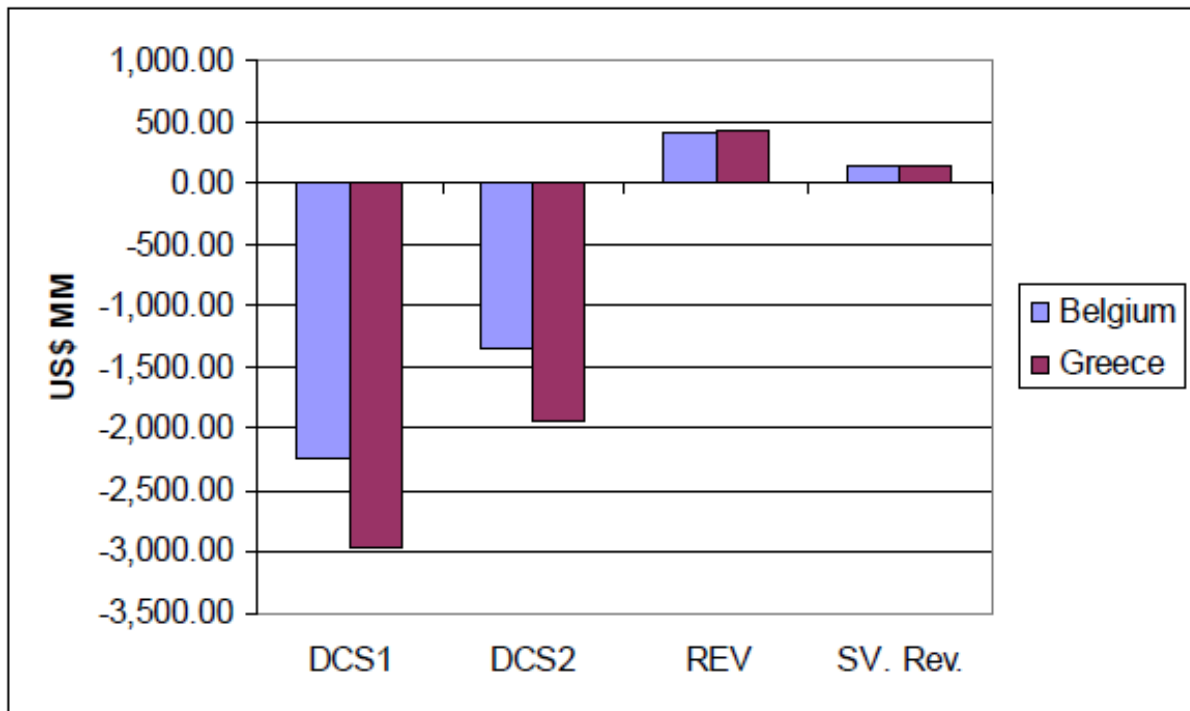
⁶⁷ The so-called 700 MHz band is actually 698–806 MHz. The 2012 World Radiocommunication Conference (WRC-12) of the International Telecommunications decided to reallocate the 700 MHz band to include mobile services (which includes mobile broadband), immediately following the 2015 WRC (WRC-15). See International Telecommunications Union (2013), Final Acts - WRC-12, Geneva.

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In a 2009 paper, Hazlett and Muñoz explored exactly this issue.⁶⁸ They used a fixed effects panel data estimation, using the same Merrill Lynch data on service-based revenue per minute of use as in the analysis in Section 3.3, albeit in this case with older data from 1999-2003. It is a sophisticated and thoughtful analysis. It enables them to develop regression coefficients that plausibly predict all of the main indicators, including transfer of surplus and reduction in deadweight loss.⁶⁹

They used the model to analyse spectrum auctions in 2001 and 2002 where Greece and Belgium offered four blocks, but in each case attracted only the three incumbents. They thus failed to release the last block to the market, and also did not realise more revenue than the reserve price. The column labelled DCS1 represents the loss of potential gains in societal welfare had the block gone to a new entrant; the column labelled DCS2 represents the smaller loss of potential gains in societal welfare in the absence of market entry. The REV column represents the loss in government revenue to the block that was not sold. SVREV reflects their assumption that roughly one third of government revenues would have flowed back into societal gains.

Figure 4. Welfare effects of not issuing the fourth licence in Greece and in Belgium in 2001 (million USD).



Source: Hazlett and Muñoz (2009)

A key observation is that the societal benefits of releasing spectrum to market will tend to greatly exceed the direct revenue realized by the government. This is consistent with the general principle that the rationale for auctioning spectrum is not to generate government

⁶⁸ Thomas W. Hazlett and Roberto E. Muñoz (2009), “A welfare analysis of spectrum allocation policies”, *RAND Journal of Economics*.

⁶⁹ “The mark-up equation results suggest that the equilibrium price in the market increases with the Herfindahl-Hirschman Index but decreases with the amount of spectrum allocated to mobile services. These results are statistically significant, and are consistent with economic theory. It is expected that more competitive markets feature lower service prices, whereas expanded availability of radio spectrum lowers both fixed costs and variable operating expenses.” Ibid.

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revenue, but rather to ensure that spectrum promptly gets into the hands of the party that values it most and is therefore likely to use it most effectively.

4 Alternative paths forward

Key Findings

- Impact Assessment as practiced by the European institutions is a useful way to compare and contrast the effects of alternative policy interventions, both in quantitative and in qualitative ways.
- This approach can help to clarify thinking as to costs and benefits of stronger harmonisation or centralisation of electronic communications regulation, but we do not claim that we have evaluated every regulatory possibility, nor that our assessment is definitive. It is a thought exercise that is meant to help clarify the bounds to what can be achieved solely by means of regulatory harmonisation.
- Here, as is common with Impact Assessment, we begin with a “business as usual” Option, and consider progressively more radical interventions. Here, we consider (1) modest evolutionary change (largely bottom up); (2) active evolutionary change (more top down); (3) a roughly federal system; and (4) full centralisation.
- We emphasise that there is ample room for reasonable people to disagree with our assessments. Nobody can predict the future with certainty.
- Our sense is that solutions in the middle are to be preferred over those at either extreme. There are some aspects of the European regulatory framework and its implementation today that could benefit from increased harmonisation; there are others where substantial accommodation to local, national or regional circumstances and preferences is desirable or required.
- Compared to Business as Usual, the approach put forward as Modest Evolutionary Change is likely to provide modest but distinct and unambiguous benefits. The Action Lines are relatively unintrusive, and thus entail little risk of serious negative consequences.
- The Active Evolutionary Change Option entails significantly greater gain than Modest Evolutionary Change, but also more negatives. Whether it should be preferred over Modest Evolutionary Change is a complex judgment call. It is a judgment call that we are not required to make in this report – the function of the Impact Assessment is to clarify the relative advantages and disadvantages of each approach, but it is always appropriate to leave final decisions to policymakers.
- The Federal Management Option arguably goes a bit too far. The benefits in comparison to Active Evolutionary Change are limited, while the disadvantages are significant. Some, however, might prefer it.
- Full Centralisation is disruptive to the point where few European policymakers would put it forward today. The advantages in comparison to Active Evolutionary Change are limited, while the disadvantages are great.

In this chapter, we explore possible changes to the European regulatory environment for electronic communications, with a particular emphasis on those aspects where centralisation versus decentralisation of function plays a key role.

We begin with a few words explaining why we choose to use Impact Assessment as a means of making the comparison (Section 4.1). We continue with a definition of the Problem to be solved, and Objectives to be achieved (if possible) in solving it (Section 4.2). We continue by defining a series of Options, based on the Action Lines that appear in Chapter 3, that seek to address the Problem and achieve the Objectives (Section 4.3). We then assess the likely Impacts of each of the Options (Section 4.4). Finally, we provide an overall assessment and concluding observations (Section 4.5).

4.1 Impact assessment as a framework for analysing the problem

Our assessment of the problem and the way forward draws heavily on European Impact Assessment methodology, following procedures defined in the European Commission's 2009 Impact Assessment Guidelines.⁷⁰ Impact Assessment provides a useful means of analysing costs and benefits of prospective policy interventions. With Impact Assessment, one identifies a Problem to be solved and Objectives to be achieved in solving it; develops Options that seek to address the Problem; and assesses the Impacts of each Option. Impact Assessment represents not only a stylised form of cost/benefit analysis, but also a means of formulating the policies to be analysed.

4.2 Defining the Problem to be addressed and the Objectives to be achieved

What exactly is the *Problem* to be addressed? We would offer the following:

Identify a set of (sector-specific) regulatory measures, and an allocation of roles and responsibilities, that strike an appropriate balance between European and Member State responsibilities so as to avoid needless fragmentation and to promote (consistent with maintenance of European cultural and linguistic pluralism and the principle of subsidiarity):

- the free movement of digital services;
- low transaction costs for network operators and the public;
- European economies of scale and scope;
- the ability to compete successfully with our global trading partners;
- the ability to use the same communications services everywhere (e.g. roaming);
- efficiency for innovators; and
- the many additional objectives identified of Article 8 of the Framework Directive.

In an Impact Assessment, one typically distinguished among *General*, *Specific*, and *Operational Objectives*. We believe that the Objectives noted above are more than sufficient – in fact, we have noted elsewhere that European electronic communications policy is subject to too many Objectives, with insufficient guidance as to the relative priorities among the objectives.

⁷⁰ European Commission (2009), “Impact Assessment Guidelines”, 15 January 2009, at http://ec.europa.eu/smart-regulation/impact/commission_guidelines/docs/iag_2009_en.pdf

4.3 Options and Action Lines for addressing the Problem

The Options generally flow from Action Lines that were already described in Chapter 3 as Candidate Changes. Each has dimensions relating to procompetitive access; broadband policy; call termination and roaming; market entry and exit; spectrum management; and (where appropriate) institutional arrangements.

In a research paper of this type, we have the luxury of considering Options that no policymaker would seriously propose. We therefore include some quite radical possibilities for purposes of completing the thought model, and in order to explore the differences among the potential Options.

We group the Action Lines together into Options as follows:

- **Business as Usual:** In every Impact Assessment, it is common to use a Business as Usual Option as the baseline against which all other Options are compared. Since it is unclear as of now whether the still-pending Telecoms Single Market (TSM) legislative package will ultimately be adopted,⁷¹ we assume for purposes of analysis that international mobile roaming and network neutrality continue to be regulated more or less as they have been to date.

- **Modest Evolutionary Change (bottom up):**
 - **Procompetitive access:** A BEREC common position clarifies the interaction between symmetric and asymmetric remedies.
 - **Market entry and exit:** The Authorisation Directive is amended to require all Member States to accept a standard Authorisation notification form in English, and to eliminate or cap authorisation fees and universal service charges for smaller network operators and service providers.
 - **Broadband deployment and adoption policy:** The Commission issues guidance to Member States as to how to address VDSL vectoring solutions that almost, but not quite, reach the 100 Mbps DAE Objective #3 target. Increased focus at policy level is placed on demand side measures. No change in universal service, state aid, or other measures.
 - **Call termination and roaming:** No change is made to call termination. Roaming wholesale and retail rates are lowered, but to levels still above cost and still in excess of domestic rates.
 - **Spectrum management:** The effectiveness of the Commission's Radio Spectrum Policy Programme (RSPP) is enhanced through gradual process improvements. Commission Recommendations (with some strengthening of the Commission's ability to enforce them) seek to coordinate release windows for bringing spectrum (especially in the 700 MHz band) to market.

- **Active Evolutionary Change (top down):**
 - **Procompetitive access:** A Commission Recommendation clarifies the interaction between symmetric and asymmetric remedies.

⁷¹ See for instance "Council to Parliament: talk to the hand", *Politico*, 2 June 2015, at <http://www.politico.eu/article/telecoms-single-market-stalemate-continues/>.

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- **Market entry and exit:** The Authorisation Directive is amended to require all Member States to accept a standard authorisation notification form in English, to provide a help desk in English, to accept online authorisation, and to eliminate or cap authorisation fees and universal service charges for smaller network operators and service providers.
- **Broadband deployment and adoption policy:** The Commission issues guidance to Member States as to how to address VDSL vectoring solutions that almost, but not quite, reach the 100 Mbps DAE Objective #3 target. Increased focus at policy level is placed on demand side measures. Universal service is phased out in favour of targeted assistance to disadvantage individuals, together with state aid mechanisms.
- **Call termination and roaming:** Call termination is capped by a Regulation (similar to roaming IOTs today) at some level that is not much more than € 0,01 (possibly zero). Calls received while roaming are free. Roaming wholesale and retail rates are lowered more than under the Modest Evolutionary Change Option, but to levels still above cost and still in excess of domestic rates.
- **Spectrum management:** The Commission is granted additional, but bounded, authority to issue Recommendations (subject to a comitology process, but then binding in the absence of a reasoned justification for an exception) to enforce provisions of the Radio Spectrum Policy Programme (RSPP). The Commission uses this authority to enforce release windows for bringing spectrum (especially in the 700 MHz band) to market.
- **Federal Management:** This radical approach is included to round out the thought model. Portions are patterned somewhat after practice in the United States.
 - **Procompetitive access:** A Recommendation clarifies the interaction between symmetric and asymmetric remedies. Standard remedies at European level are introduced for VULA and for leased line equivalents, and Member States are expected to adopt them unless they can provide reasoned grounds not to.
 - **Market entry and exit:** An Authorisation Regulation defines a standard Authorisation notification form, provides for a centralised European help desk in English, provides for online authorisation, and eliminates or caps authorisation fees and universal service charges for smaller network operators and service providers.
 - **Broadband deployment and adoption policy:** The 100 Mbps DAE Objective #3 target is reviewed and possibly redefined at European level. Increased focus at European policy level is placed on demand side measures. Universal service is phased out in favour of targeted assistance to disadvantage individuals (at Member State level), together with state aid mechanisms (managed at European level).
 - **Call termination and roaming:** Call termination is capped by Regulation (similar to roaming IOTs today) at some level that is not much more than € 0,01 (possibly zero). Calls received while roaming are free. Roaming wholesale and retail rates are capped at levels no greater than domestic rates.
 - **Spectrum management:** Competence is transferred from Member State Spectrum Management Authorities (SMAs) to a European body. The SMAs enforce European policy, enforce decisions, and adjudicate complaints (e.g. regarding alleged interference in cases that are not cross-border). The European authority determines

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allocation, assignment, rules, and time frames for each band in all Member States. Auction revenues are collected by the European spectrum management authority, but disbursed to the Member States.

- **Institutional arrangements:** A European regulatory body makes key determinations regarding for instance market definitions, market power, and remedies. Enforcement is delegated to Member State NRAs subject to oversight by the European authority.
- **Full Centralisation:** This very radical approach is included to round out the thought model. Functions shift fully to European level. Member State functions largely or fully disappear.
 - **Procompetitive access:** Standard remedies are introduced at European level. Remedies at national level are phased out.
 - **Market entry and exit:** Authorisation at European level must be accepted by all Member States. Authorisation fees and universal service charges are eliminated or capped for smaller network operators and service providers. All merger control is undertaken at European level.
 - **Broadband deployment and adoption policy:** Policy is driven from the European level. The 100 Mbps DAE Objective #3 target is reviewed and possibly redefined at European level. Increased focus at European policy level is placed on demand side measures. Universal service is phased out in favour of targeted assistance to disadvantaged individuals, together with state aid mechanisms.
 - **Call termination and roaming:** Call termination is capped at some level that is not much more than € 0,01 (possibly zero). Calls received while roaming are free. Roaming wholesale and retail rates are capped at levels no greater than domestic rates.
 - **Spectrum management:** Competence is transferred from Member State Spectrum Management Authorities (SMAs) to a European body. The European authority determines allocation, assignment, rules, and time frames for each band in all Member States. The SMAs become largely or fully irrelevant, and possibly are phased out.
 - **Institutional arrangements:** Competence is transferred from Member State NRAs to a European regulatory body. The NRAs become largely or fully irrelevant, and possibly are phased out.

4.4 Expected impacts of each Option

The Impacts of each Option generally flow from the potential costs and benefits for each Action Line, following once again the assessment that appears in Chapter 3. We present them in a format that is common for Impact Assessment.

It is occasionally possible to quantify costs and benefit; more often, however, the Impact Assessment is implemented as a qualitative comparison, as we have done here in Table 2.

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Table 2. Anticipated Impacts of each Option.

	1. Business as usual	2. Modest Evolutionary Change	3. Active Evolutionary Change	4. Federal Management	5. Full Centralisation
Effectiveness (overall)	0	0 to +	+	0 to +	0 to +
Efficiency (overall)	0	0 to +	- to +	0 to -	-
NGA deployment	0	0 to +	0 to +	0	-
Spectrum allocation / assignment	0	0 to +	- to +	0 to -	-
Spectrum assignment speed	0	0 to +	0 to +	+	+
Coherence	0	0 to +	0 to +	+	+

Note that the ratings that are used are 0 (to denote impacts the same as those of the baseline), + (better than the baseline), ++ (much better than the baseline), - (worse than the baseline), and -- (much worse than the baseline).

There are reasons for these ratings (as we briefly explain in the remainder of this section), but they always reflect judgments that to some extent are subjective.

Effectiveness here means effectiveness in achieving the goals of Section 4.2, not effectiveness in enforcing centralised decisions. Differences in effectiveness are fairly minor among the Options. The business as usual Option is not ineffective, and therefore difficult to improve on. Symmetric regulation of termination rates generates consumer benefits and enables sustainable IMR, thus providing modest gains.

Clarification of requirements for vectoring solutions that fall marginally short of 100 Mbps results in significant cost savings, which constitutes an efficiency gain.

Centralised solutions tend to lead to inefficient allocation of resources such as spectrum to the extent that they cannot sufficiently accommodate differences among the Member States.

Enhanced ability of the Commission to ensure timely release of spectrum to the market realises welfare gains earlier, and thus produces gains in societal welfare.

Coherence may be better with the centralised solutions, but at a cost.

4.5 Overall assessment

The approach taken in this paper can help to clarify thinking as to costs and benefits of stronger harmonisation or centralisation of electronic communications regulation, but we do not claim that we have evaluated every regulatory possibility, nor that our assessment is

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definitive. It is a thought exercise that is meant to help clarify the bounds to what can be achieved solely by means of regulatory harmonisation.

Before commencing, we must emphasise that even though the assessments in this chapter are based on an extensive knowledge of the European regulatory system and sound reasoning, there is nonetheless ample room for reasonable people to disagree. Nobody can predict the future with certainty.

It is important to also note at the outset that the specific Action Lines chosen for each of the Options were not picked at random. Each Action Line was carefully selected so as to focus on an area where increasing harmonisation has some potential to generate benefits. The Action Lines reflected in these Options are those most likely to generate overall benefits.

The Options are ranked from least intrusive to most intrusive, which in the context of this study means from least centralisation to most.

Our sense is that solutions in the middle are to be preferred over those at either extreme. There are some aspects of the European regulatory framework and its implementation today that could benefit from increased harmonisation; there are others where substantial accommodation to local, national or regional circumstances and preferences is desirable or required.

Compared to Business as Usual, the approach put forward as Modest Evolutionary Change is likely to provide modest but distinct and unambiguous benefits. The Action Lines are relatively unintrusive, and thus entail little risk of serious negative consequences.

The Active Evolutionary Change Option entails significantly greater gain than Modest Evolutionary Change, but also more negatives. Whether it should be preferred over Modest Evolutionary Change is a complex judgment call. It is a judgment call that we are not required to make in this report – the function of the Impact Assessment is to clarify the relative advantages and disadvantages of each approach, but it is always appropriate to leave final decisions to policymakers.

With that said, and skipping ahead, it seems fairly clear that last Option, Full Centralisation, is disruptive to the point where few European policymakers would put it forward today. The advantages in comparison to Active Evolutionary Change are limited, while the disadvantages are great. It is provided primarily to demonstrate that it is possible to go too far.

Finally, the Federal Management Option seems to us to also go a bit too far – the benefits in comparison to Active Evolutionary Change are limited, while the disadvantages are significant. Some, however, might prefer it.

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