

Should Universal Service be extended to Broadband?

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Abstract

Bridging the “digital divide” between the people who do and those who do not have access to digital data by 2010 is one of the Commission's objectives, as officially stated by the European Commissioner responsible for Information Society and Media, Viviane Reding. While broadband use has exploded over the last few years, striking gaps remain in the EU.

The possibility of an extension of universal service to broadband has been raised on several occasions within the framework of European initiatives promoting a digital economy. Because the criteria guiding the review of Directive 2002/22 were not satisfied, the Commission has opted not to make this change but proceeded to launch the public debate. In order to take part in the decision, it is crucial to understand the complexity and the stakes of a global commitment to universal broadband service.

As a result of the convergence towards an "all IP" world and of the growing dependence on “bandwidth hungry” applications, narrowband is likely to become obsolete. Users without broadband internet access will lag behind and the current divide will be exacerbated by the roll-out of broadband services. The concept of universal service could gain a new lease of life by supporting the European strategy to encourage the deployment of broadband in unserved areas. It could not only play a key role in the cohesion of Europe but could also allow cost effective services to be put in place. The significant network effect and other positive externalities triggered by a widespread high speed Internet could contribute to improving Europe's growth and competitiveness.

The coming months are likely to bring lively discussions in Member States as there is much disagreement over the extension of universal service obligation to broadband. On the one hand, it raises fears around competition and technological neutrality in the Internet provision market. Furthermore, opponents to the reform point out that the financing of universal service runs the risk of putting an undue burden on the telecommunications industry. On the other hand, including broadband in universal service would give more freedom to Member States as regards the funding of their strategy aimed at bringing high speed Internet to every home.

Even though the complexity of a global commitment to a universal broadband service limits conceivable changes to relatively modest targets, a review of the scope of universal service would be an opportunity to promote cutting edge telecommunications and thus to make a step in the direction of more competitiveness and development in the European Union.

Keywords

Universal service

Broadband

Impact on competition

Technological neutrality

Information Society

Lisbon Strategy

Public funding

List of Abbreviations

EU	European Union
US	Universal Service
USO	Universal Service Obligation
NRA	National Regulatory Authorities
E.C.R	European Court Reports
ECJ	European Court of Justice
Mbps	Megabit per second
Cf	Confer, consult
I.e	Id est, that is
E.g	Exempli gratia, for example

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Introduction

Bridging the “digital divide” between the people who do and those who do not have access to digital data by 2010 is one of the Commission's objectives, as officially stated by the European Commissioner responsible for Information Society and Media, Viviane Reding. In a Press release following the Report on the scope of Universal Service in Telecoms of September 2008 the Commission revealed that while broadband use has been multiplied by three between 2003 and 2007, “striking gaps remained in the EU: 100% of the population is covered in Denmark, Luxembourg and Belgium, but more than 60% in Romania (75% in rural areas) do not have broadband access”¹.

While broadband was already present in several European initiatives for a knowledge based society during the past decade, it has taken on a renewed importance in the context of the recent economic crisis. Since the beginning of 2009 several national plans, set to cope with the economic slowdown, allocate funds to expanding broadband. Following the example of the “Stimulus package” announced by President Obama, the Australian Prime Minister declared that “Just as railway tracks laid out the future of the 19th Century and electricity grids the future of the 20th Century, so broadband represents the core infrastructure of the 21st Century”².

The term broadband refers to the amount of capacity or bandwidth provided on a telecommunications network. It covers Internet connections that are “always on” and significantly faster than dial-up ones. Different definitions give varying minimum data rates. However current mass market broadband consumer packages offer a connection of at least 512 Kbps/s.

At stake here is not only Internet access, but also the wide range of services which accompany it, from voice to data, from sound to moving images, from wired to wireless telephony, from global services to location-specific services.

The Commission has eschewed an extension of the scope of universal service, defined as “a minimum set of services, of specified quality to which all end-users have access, at an affordable

1 EUROPEAN COMMISSION “Broadband Internet for all Europeans: Commission launches debate on future of universal service” Brussels, 25.11.2008, Press release, IP/08/1397

2 BBC NEWS “Australia to get faster broadband”, 07.04.2009, available at <http://news.bbc.co.uk/2/hi/asia-pacific/7986918.stm>

price in the light of national conditions, without distorting competition."³

However, it has launched a public debate which it intends to summarise in a Communication (to be issued in the second semester of 2009). The coming months are likely to deliver lively discussions in Member States because the review of universal service raises concerns as regards its impact on competition and innovation as well as the financing of unprofitable services. Following a forward-looking approach, this paper intends to take part in the discussion by carrying out a critical assessment of an extension of Universal Service Obligation (hereinafter "USO") to broadband. We will examine broadband's potential, but must also analyse the choice of universal service as a policy instrument to ensure e-inclusion.

Analysing the past and current faces of universal service is helpful in order to rethink universal service in today's Europe. It is interesting to see how a wide-scale roll-out of broadband would foster innovation and employment and thus could be a step in the right direction for the objectives stated in the Lisbon strategy.

In a second chapter, we will assess the economic and social impact of a global commitment to universal broadband service, looking at the challenges and the considerations which guide an extension of USO. The essential character of broadband in our society and the positive externalities have to be considered. A quick guide to wire and wireless technologies will allow us to comprehend the main features of the Internet market and the impact the reform could have on competition.

The inclusion of broadband within the scope of universal service implies large scale development of infrastructure, using cutting edge technologies. It is likely to require costly intervention using public and private funds, thus placing a heavy burden on States and market players. Clearly the calculation of the cost and the financing of broadband deployment are sensitive issues and this paper will evaluate whether the legal framework can ensure that universal service's extension would not be carried out to the detriment of competition. Verifying whether an intervention via universal service at the European level is justified will finally lead us to assess the existing possibility of public financing in broadband projects.

3 Article 1.2 of the Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services, [2002] OJ L 108, p.51-77

Chapter One

The Need for Speed: Rethinking Universal Service in a Digital Age

In order to understand and then take part in the public discussion on broadband and universal service obligation, we must retrace the evolution of universal service and its current content relating to telecoms. The different stakes and stakeholders in the provision of internet access will be presented, as will the driving forces of the debate.

I Universal Service on the Road to a Free Market for Telecommunications

In order to understand the context of the present discussion, one must keep in mind that even though the universal service played a key role in the liberalisation process, its scope is limited to a set of basic services and its importance is declining.

A. Universal service, a cornerstone in the liberalisation of telecoms in the European Union

The roots of universal service are to be found in the United-States, at the beginning of the 20th century.⁴ Historically a national policy matter, the affordability and the availability of services were guaranteed by national forms of public service, provided by state-owned monopolies. It only came to the forefront in Europe in the mid-80's with the advent of the telecommunications market liberalisation process. Even though the Commission's Green Paper "on the development of the common market for telecommunications service and telecommunications equipment" of 1987 did not explicitly mention universal service as such, it already excluded "a limited number of basic services"⁵ from competition.

4 M. MICHALIS "The Debate over Universal Service in the European Union: Plus ça change, plus c'est la même chose" (2002) 8 *Convergence* 84

5 EUROPEAN COMMISSION "Towards a Dynamic European Economy, Green Paper on the development of the common market for telecommunications sector services and equipment", Brussels, 30.06.1987, COM(87) 290, p.14

Universal services took on a renewed importance in the debate between *anti* and *pro* liberalisation. USOs were seen as a crucial guarantee by certain Member States where fears existed amongst the population that liberalisation would be carried out to the detriment of social goals. The debate was more lively in France, Belgium, Spain or Italy than in Great Britain, Germany or the Netherlands where there is no corresponding notion of "public service"⁶

USO provision, in the framework of liberalisation can be seen as part of the general process of conciliation between market integration and social cohesion. Network industries are politically obliged to provide goods with "merit good" characteristics: "it is a political decision that certain goods such as access to domestic water, electricity and voice telephony services, must be provided regardless of whether this runs counter to the service operator's efficient pricing policy."⁷

Increasing attention was bestowed on goals of social cohesion after a first phase where the emphasis was clearly on goals of liberalisation. Promotion of general interest services found roots in the European institutions' decisions⁸ and contrasted with initial wary language used in 1987 as regards the reserved services. For instance, the Commission explicitly recognized in its 1996 Communication that objectives of solidarity and equal treatment are "furthered by services as social rights that make an important contribution to economic and social cohesion". The introduction of the general economic interest goals as European values in a new article 16 by the Intergovernmental Conference for the Amsterdam Treaty was also an important landmark in that process, result of a "political battle in the European Arena, spearheaded by France."⁹

General interest services and USO can then be considered as a counterweight of paramount importance which contributed to the success of the liberalisation process of telecoms. According to Héritier, "The Commission itself deliberately used the development of universal service principles as a means of achieving the widest possible support for the policies of liberalization in the Parliament, which in 1993 and 1994 adopted various resolutions to uphold public services in telecommunications (...)."¹⁰

B. The current scope of the Directive on universal service

Universal service is a safety net for achieving social inclusiveness, ensuring that basic

6 S.K SCHMIDT " Liberalisierung in Europa: Die Rolle der Europäischen Kommission" 1998 Frankfurt am Main, Campus 1998 p. 227 cited in A. HERITIER " Market integration and social cohesion: the politics of public services in European regulation" (2001) 8:5 *Journal of European Public Policy* 827

7 A. HERITIER " Market integration and social cohesion: the politics of public services in European regulation" (2001) 8:5 *Journal of European Public Policy* 827

8 See e.g Case C-320/91 Criminal proceedings against Paul Corbeau [1993] ECR I-2563 §14

9 *Ibid* p.829

10 *Ibid* p.839

communications services of good quality are always available at an affordable price, even if the market does not provide them under normal commercial conditions. “This set of basic services, which are already available to the great majority of citizens are considered essential for participation in society”.¹¹

Directive 2002/22 is part of the legal framework of the European Union for regulating telecommunications. The rules of the "Telecoms package" were last revised in 2002 and are currently the subject of the Commission's review proposals, adopted in November 2007, expected to be in place by 2010.

Universal service (hereinafter “US”) implies mainly that Member States must ensure the availability of:

1. A connection to the public telephone network at a fixed location, where the connection enables voice and data communications services – at narrowband speeds – with functional access to the Internet¹²
2. Services closely associated with basic telephony: phone directories and directory enquiry services, public payphones¹³
3. Special measures for disabled users¹⁴ or people with low income or special social needs¹⁵

It is important to note that functional access is to be guaranteed without any precise obligation of a minimum data rate¹⁶ and that no technology is privileged (in conformity with the principle of technological neutrality, discussed in Chapter Three). In the Preamble, a data rate of 56 kbit/s is suggested¹⁷ but it is actually left to individual Member States to decide whether there is a need to specify this. In practice, most of the States, considering that such a rate would be an unnecessary additional constraint, preferred to keep the term of "functional access" in their national provision, which corresponds in the common sense to dial-up Internet access.

11 EUROPEAN COMMISSION “Report on the Scope of the Universal Service in telecoms: Frequently Asked Questions”, Brussels, 25.09.2008, MEMO 08-583

12 Directive 2002/22 *supra* note 3 art.4

13 *Ibid* art 6

14 *Ibid* art 7

15 *Ibid* art 9.3

16 *Ibid* recital 8

17 *Ibid* recital 8

II Broadband for All, an objective in line with the Lisbon Strategy

Encouraging the availability of high-speed internet is already part of Europe's plan to become the most competitive economy in the world. However, some sceptical views contest broadband's merits.

A. Broadband's potential for Growth and Competitiveness

The Commission in its communication to the press summed up why it has launched a public debate on the extension of US: "The increased take-up and importance of broadband in daily life raise questions about the universality of access to telecoms services (which will increasingly be provided over high-speed networks like broadband) in the future, especially in underserved areas."¹⁸

In recognition of this problem, bridging the "digital divide" was included in the economic and social pillars of the so-called "Lisbon Strategy" launched during the European Council of March 2000. Building a knowledge-based society is indeed considered a step towards more cohesion in Europe and more competitiveness.

The EU therefore wants to exploit all available policy instruments to foster broadband diffusion, and Viviane Reding has declared that "It is this Commission's policy objective to achieve broadband Internet for all Europeans by 2010."¹⁹

The widespread use of high-speed connections was already an objective at the heart of the "eEurope 2005 Action Plan"²⁰ (which ended in 2005) and is a policy priority in the "i2010 initiative" designed as a "strategy for modernising and deploying all EU policy instruments to encourage the development of the digital economy: regulatory instruments, research and partnerships with industry"²¹

Why is broadband so important for the EU? Firstly, access to high calibre communications is not only a driver of productivity gains and economic growth. It is also becoming a prime objective of

18 EUROPEAN COMMISSION MEMO-08-583 *supra* note 11 p.4

19 *Ibid* p. 1

20 *See* EUROPEAN COMMISSION, Communication to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions "eEurope 2005: An information society for all", Brussels, 28.5.2002 COM(2002) 263 final.

21 EUROPEAN COMMISSION, "Commission launches five-year strategy to boost the digital economy", Brussels, 01.06.2005, Press release IP/05/643

consumer welfare and digital inclusion.

Furthermore, as stated in the Communication on its 2008 review "the Commission's 2006 Communication "Bridging the Broadband Gap" gave a strong impulse to achieving broadband by mobilising both EU-level policies such as spectrum policy, cohesion funding and State aid rules as well as regional and local initiatives based on public-private partnerships"²²".

The Economic crisis revealed once again that hopes of growth are vested in broadband deployment: the European Commission announced its intent to earmark, in the framework of the European Economic Recovery Plan, €1 billion "to help rural areas get on-line, bring new jobs and help businesses grow."²³

The goal is ambitious since the Commission declared that "Broadband internet connection is expected to create 1 million jobs and boost the EU's economy by €850 billion between 2006 and 2015"²⁴.

B. Cabled, enabled?

A high-performance connection to the web allows the population to take full advantage of the convergence of media communication towards services delivered over Internet. Faster connection speeds are likely to revolutionize the World Wide Web (combining animation with sound and videos) and the way we use it. The outstanding performance of broadband in comparison with dial-up and narrow-band internet is irrefutable. As a result of the convergence toward an "all IP" world and of the growing dependence on "network hogging" applications, narrowband is likely to become obsolete, and users without broadband internet access would lag behind. That is why regulators are concerned that the current divide will be exacerbated by the roll-out of broadband services.

The role of broadband in social development is however controversial. After all it has been argued that "the ability to access telecommunications services is no more socially important than, for example, having ownership of a car"²⁵.

Cave, Prosperetti and Doyle offer an interesting, somewhat sceptical view as to the "merit good" characteristics of Broadband: "Users, on average, are more likely to use broadband to check mail or

22 EUROPEAN COMMISSION, Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "on the second periodic review of the scope of universal service in electronic communications networks and services in accordance with Article 15 of Directive 2002/22/EC", Brussels, 25.9.2008, COM(2008) 572 final

23 EUROPEAN COMMISSION " Commission earmarks €1bn for investment in broadband – Frequently Asked Questions" Brussels, 28.01.2009, Press Release MEMO/09/35

24 *Ibid*

25 B. COMPAINE, S. GREENSTEIN *Communications policy in transition-The internet and beyond* The MIT Press, Cambridge 2001 338

to download or share music and video files, activities that would seem unlikely candidates for the role of 'merit goods'. Of course, having a broadband connection would always be nice, and, as we discussed above, NGNs [Next Generation Networks] will allow the delivery of an increasing array of services. But, on balance, all this would seem an insufficient argument for policies establishing large cross-subsidies among groups of users and/or granting special rights to an operator (actually, most often the incumbent)"²⁶.

Nevertheless, potential benefits of broadband are not limited to the politically resonant image of a knowledge-based society. By bridging distances and boosting the attractiveness to business of remote and rural areas, broadband can contribute to the cohesion of the territory and the single market. Once the geographical, technical and financial barriers are overcome, democratic access to the fruits of the digital age would be made possible.

In addition to new communications and media services, e-commerce and e-government could facilitate concrete innovations such as "telemedicine". Viviane Reding explained that broadband will be necessary to allow use of "bandwidth-hungry" applications: "Take for example, telemedicine and teleradiology applications which avoid the movement of patients by electronically transferring data. Previously X-rays were taken and stored on film, and then sent through the post. Now, modern technology allows X-rays to be taken, digitally stored and then sent electronically. High-resolution images are needed which means large file sizes. And since patients often have more than one examination and X-ray, the numbers soon add-up."²⁷

II Keeping Universal Service Alive in the 21st Century

Bringing US up to date is today's hot topic. However the concept of an evolving scope has always been part of the Directive, and may now give it a new lease of life.

26 CAVE, PROSPERETTI, DOYLE "Where are we going? Technologies, markets and long-range public policy issues in European communications" (2006).18 *Information Economics and Policy* 254

27 P. IBANEZ COLOMO Interview "Building an European IT for the XXI century" (2007) 4 *Concurrences, Revue des Droits de la concurrence* 8.

A. The evolving nature of universal service

As was already made clear in the 1987 Green paper²⁸, the Commission is aware that "technologies and services evolve over time as do market developments and people's needs"²⁹. By nature, the Directive on universal service should be adapted regularly to potential changes in the electronic communications environment. That is why the Commission is required to review the scope of universal services every three years.³⁰

It was clear that particular attention would be afforded to the question of whether mobile and broadband services should be included within the scope.

"Functional internet access" is taking on a different meaning as the content of internet pages becomes more and more demanding in bandwidth. The role of fixed telephony is diminishing now that mobile technologies are largely accessible and the whole financial equilibrium of fixed telephony is undermined.

Emphasis is therefore given to evolving technological conditions notably in the second paragraph of article 15 of the directive 2002/22: "This review shall be undertaken in light of social, economic and technological developments, taking into account, *inter alia*, mobility and data rates in the light of the prevailing technologies used by the majority of subscribers".

B. Inclusion of broadband in the Directive, the resurrection of a declining concept?

As we have seen, universal service was formerly a cornerstone of the regulation of telecoms in the EU, as a crucial counterweight in the liberalisation process. With the decreasing role of fixed telephony in our society and the advent of mobile technologies, the safety net provided by universal service appears less and less important. As a result, the benefits of a universal service mechanism are less obvious, their cost is more controversial and incumbents are in general the only operators in a position to fulfil these services.

This could explain why the Commission evoked two radically opposed options for the review of the scope of universal service: "The options range from removing the provision of universal service completely, and relying instead on horizontal consumer protection legislation to protect users, or going in the opposite direction and expanding the scope of universal service and use it to meet

28 EUROPEAN COMMISSION, "Green Paper on the development of the common market for telecommunications sector services and equipment" (1987) *supra* note 5, p.17

29 EUROPEAN COMMISSION, Communication "on the Scope of the Universal Service in telecoms" *supra* note 22

30 Directive 2002/22 *supra* note 3 art.15

social goals other than those for which it is currently designed."³¹

At the same time, overhauling universal service promises to be much more complicated than when it was first conceived at the European level: Europe now encompasses twenty seven members and supply and demand vary greatly across the European territory. Extending the scope of USOs to broadband would therefore be very ambitious and would give a new lease of life to this policy instrument. However, some authors do not hesitate to conclude that a radical reform of universal service represents its only chance to survive: "Looking ahead, and considering the technological trends reviewed above, it seems likely that universal service issues will no longer be a relevant policy problem, unless policy makers decide to re-define the notion of universal service to include some form of access to broadband."³²

We've examined the concept of universal service and the context of the Directive 2002/22 review. We shall now move on to the organisation of USO in order to better understand what consequences the inclusion of Broadband would imply.

31 EUROPEAN COMMISSION, Communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on the Review of the EU Regulatory Framework for electronic communications networks and services Brussels, 28.05.2006, {COM(2006) 334 final }

32 CAVE, PROSPERETTI, DOYLE *supra* note 26 p.254

Chapter Two

New Technologies on the Old Continent: the Challenges of promoting Broadband via Universal Service in the EU

In conformity with the principle of subsidiarity a certain leeway is granted to Member States for the financing of USO. While it has been accused of having "adversely affected the creation of a level playing field"³³, this arrangement allows them to adapt to the specificities of their national markets. Following the criteria provided by the Directive for the review of its scope will lead us to analyse the social and economic impact of making broadband a US. Looking ahead, we will touch on the possible technologies to be used to close the "digital divide".

I Adjusting Universal Service Obligation to European markets

Regulation of Broadband access by means of a USO would necessarily leave National authorities a margin for manoeuvre. This would in all cases be subject to the Commission's strict surveillance.

A. "One size does not fit all"³⁴

Member States must ensure that market liberalisation does not bring into question integration of the poorest or more remote areas. Both demand side and supply side require differentiated solutions depending on regional characteristics.

33 M. MICHALIS *supra* note 4

34 OECD, "Universal Service Obligations and Broadband", (2003) 68 *OECD Digital Economy Papers*, OECD publishing, © OECD. Doi:10.1787/233266421685, 16

1. Demand-side policies

Along with high cost, low demand is another challenge to the deployment of platforms that shows the complexity of the "digital divide". If the EU wants to encourage broadband penetration, it will be necessary to resort to demand-side policies. Certain parts of the population remain unaware of the benefits of Internet and high-speed access.

The "Digital Britain" report of January 2009³⁵ issued by the British Minister for Communications affirms: "There is virtually no-one, from young children to the very elderly, who does not engage in some way with digital technologies in today's Britain. The average adult spends almost half of his or her waking hours using the products and services of the digital information and communications industries, whether at work, at home or on the move".

Digital information may be ubiquitous in our society. But clearly not everyone is sufficiently aware of this, nor comfortable with the use of computers and internet services. In this respect, the broadband gap (between people who have an high speed internet access and those who have not) can only be overcome through campaigns aimed at convincing people of the benefits of a digital society. Accordingly, the "Digital Divide" report dedicates its "action 22" to encouraging media literacy.

In the same way, France is willing to foster a wide scale roll-out of broadband notably by encouraging the segment of the population less familiar with internet. Promoting the use of digital technology by senior citizens is the stated goal of "Action 27" of a recent report³⁶ addressing the problem of the "fracture numérique" (issued by the Secretary in charge of digital economy development).

In order to reap the full benefit of a sturdy broadband network, it seems indispensable to make sure technical developments come hand in hand with media literacy. Thus, education policies seem primordial if we don't want sceptical prediction concerning the Internet's future role in society to come true. Indeed some authors note that the most popular segments of the digital interactive television market in the UK are home shopping and gambling. They regret that "There are already indications that the nascent digital broadband environment could end up delivering more of the same, for instance, more multi-channel television and commercial offerings. This scenario will reinforce the trend of treating users as private consumers rather than citizens"³⁷.

35 S. CARTER The Secretary of State for Culture, Media and Sport and the Minister for Communications, Technology and Broadcasting, presented to the Parliament "Digital Britain, The Interim Report", 01.2009, p.59

36 E. BESSON Secrétariat d'état chargé de la prospective de l'évaluation des politiques publiques et du développement de l'économie numérique "France Numérique 2012, Plan de développement de l'économie numérique", 10.2008, p. 28.

37 M. MICHALIS *supra* 4 p.91

2. Supply-side policies

Given the features of broadband delivery, market forces are not likely to satisfy every part of the demand. Certain services are simply too expensive for the poorest part of the population to purchase. Then, in communications networking, the cost of providing telephony services or internet varies with the density of the population. Isolated areas or areas with a low density of population demand specific installations for a low return. In these circumstances the deployment of the network's infrastructure does not allow economies of scale and is therefore not profitable. Supply side strategies have to cope with the challenging features of the broadband network, as summed up in the following table³⁸.

	HIGH DENSITY	LOW DENSITY
HIGH DEMAND	Competition/Market solutions adequate	Universal access mechanisms, availability of new technology enabling declining incremental cost, demand aggregation initiative
LOW DEMAND	Economic and community development approaches (for Internet publicising its benefits)	Most challenging, universal access obligations, government financial support

Figure 1

Taking into consideration the actual need for intervention is crucial in order to avoid distorting competition and thus comply with the principles laid down by the Directive on universal service.³⁹ Intervention on the part of the regulator may or may not be necessary depending on the characteristics of the local market, *a fortiori* because "Member States' legacies in terms of networks varies considerably".⁴⁰ A uniform approach would not be suitable given the heterogeneity which characterizes European supply side structure.⁴¹ One of the main differences is the contrast between on the one hand countries lacking in alternative infrastructure, with competition existing only around services, and on the other hand countries such as the Netherlands, Denmark or Finland⁴² where there is also vivid competition amongst platforms.

38 Adapted from US Computer Sciences and Telecommunications Board, "Broadband: Bringing Home the Bits", 11.2001, reproduced in OECD, "Universal Service Obligations and Broadband" (2003), *supra* note 34, p.13

39 Directive 2002/22 *supra* note 3 art 1.2

40 J. HUIGEN, M.CAVE "Regulation and the promotion of investment in next generation networks-A European dilemma"(2008) 32 *Telecommunications Policy* 713

41 A. PICOT, C. WERNICK "The rôle of government in broadband access" (2007) 31 *Telecommunications Policy* 664

42 *Ibid*, p.664

Article 8 provides that Member States "may designate one or more undertakings" to that end. In other words, they are free to choose between two methods of intervention. All potential service providers may be given an opportunity to fulfil USO, or, where the market fails to deliver the defined service, an obligation to provide it may be imposed on providers.

So far, sixteen Member States⁴³ have designated providers of universal service on the basis of the Directive. Article 8 paragraph 2 of the Directive 2002/22 imposes to do so respecting in "an efficient, objective, transparent and non-discriminatory" manner that "shall ensure that universal service is provided in a cost-effective manner".

Thus, the regulation of US strikes a balance between liberalisation and re-regulation, and between harmonization and delegation. For its establishment, powers are distributed between the national level and the European institutions. The measures taken to transpose Directive 2002/22 as well as the characteristics of universal service in Telecoms vary significantly amongst Member States. They can choose to designate universal service providers or to let the market ensure the provision of USO. It is for instance noteworthy that Germany and Luxembourg have not designated an operator in charge of USO because it is provided by the market.⁴⁴

Discretion is also granted as regards the scope of the Directive itself, since some Member States have chosen to limit the services included. Network access at a fixed location has been excluded from the designation by the Czech Republic; associated services such as directory enquiries have not been included by Italy and Ireland, amongst others. Access is limited to "tele-centres" in rural areas in Romania.⁴⁵

Technically, Member States can take additional measures to ensure universal access of broadband. However, the Directive provides⁴⁶ that "such obligation should be implemented on a cost efficient basis and outside the scope of universal service obligations", "in conformity with Community law". The EU regulator also imposes a clear constraint as to the method of financing, as we will see in Chapter Three.

43 EUROPEAN COMMISSION Memo 08-583 (FAQ) *supra* 11 p.1

44 *Ibid* p.1

45 EUROPEAN COMMISSION, Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "Progress report on the single European electronic communications market 2007", Brussels, 19.03.2008 (13th report) COM(2008) 153 final p.14

46 Directive 2002/22 *supra* 3 recital 46

B. The monitoring role of the Commission

Investors in this market must have the guarantee that USO mechanisms will not favour any one actor, and that the appointment of a USO provider will not be biased by the interests of the authorities. With that aim in mind, the Commission closely checks that Member States fulfil their obligations, both pertaining to the provision of universal services and to the appointment of the operator.

As of September 2008⁴⁷, the Commission had launched seventeen infringement proceedings relating to USO. Some of those concerned the availability and the content of the services provided⁴⁸.

The process of designation is obviously critical. Infringements were thus launched against France, Hungary, Finland, Portugal and Spain. The last two are still pending.

In the same vein, the Commission verifies that National Regulatory Authorities (hereinafter “NRA”) are effectively independent, which is a necessary condition for the legitimacy of the regulation.

This would be all the more true if broadband were included in the US basket since it would increase the stakes. To answer the concerns voiced over the lack of independence of NRAs, it "had to launch infringement proceedings against Lithuania, Latvia and Luxembourg to ensure effective separation between regulatory functions and ownership/control functions (...). The conditions for the appointment or removal of the head of the NRA led the Commission to refer Poland to the Court of Justice and to launch an infringement proceeding against Romania. The Commission services are also examining the conditions under which the head of the Slovakian NRA was dismissed. Effective separation between regulatory and ownership functions led the Commission to close the corresponding infringement proceeding against Bulgaria."⁴⁹

The lack of conformity with the rules on financing US has also been the subject of infringement proceedings against Spain and Belgium.⁵⁰

47 EUROPEAN COMMISSION Memo 08-583 (FAQ) *supra* note 11 p.3

48 "11 of those were initiated due to non-availability of comprehensive directory and directory enquiry services" *Ibid.*, p.3

49 EUROPEAN COMMISSION, Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions “Progress report on the single European electronic Communications market”, Brussels, 24.3.2009, (14th report) COM(2009) 140 final

50 EUROPEAN COMMISSION Memo 08-583 *supra* note 11 p.3

II The Review of the Scope of Directive 2002/02: at the Crossroads between Economic Efficiency and Social Policy

Even though USOs extension to broadband has been excluded for the moment by the Commission, this possibility has been evoked on several occasions by the Commissioner responsible for telecommunications⁵¹. However, the conditions set by article 15 and annex V of Directive 2002/22 would have first to be fulfilled. Clear economic and social concerns lie behind these considerations. As a potential candidate for inclusion in USOs, broadband access will have to fulfil two requirements, object of the periodical review carried out by the Commission:⁵²

- A minority of consumers would be excluded from society by not being able to use a service available to and used by the majority;
- Inclusion provides a "general benefit to all consumers" whereas these services could not be provided to the public "under normal commercial circumstances"⁵³.

Taking a forward looking approach, we will assess to what extent broadband could meet the characteristic of a universal service once it will be used by the majority of Europeans.

A. Broadband availability and Social exclusion

1. High-Speed Internet in today's Europe

The first criterion, which requires the regulator to check whether a part of the population is excluded prior to any potential intervention, corresponds to an objective of social cohesion.

The service in question must be used by the majority of the population so that the minority which does not have access to it cannot fully participate in society. This first consideration echoes the so-called "Public interest approach" based on "the assumption of a benevolent government, solely interested in the best way to pursue economic welfare"⁵⁴.

Is broadband used by the majority of the population of the EU?

The average rate of fixed broadband penetration in the EU was about 22.9% in January 2009, which is comparable to the members of the Organisation for Economic and Co-operation Development.

This rate varies significantly across Member States, from 10.9% in Slovakia to 37.3% in Denmark

51 V.REDING "How Europe can bridge the broadband gap", speech pronounced in Brussels, 14.05.2007 available at https://mail.coleurope.eu/owa/redir.aspx?C=258b4b4d897c428b9f6e7b3fd5139521&URL=http%3a%2f%2fec.europa.eu%2fcommission_barroso%2freding%2fdocs%2fspeeches%2fbrussels_20070514.pdf.

52 Directive 2002/22 *supra* note 3, Annex V

53 *Ibid*

54 J.PELKMANS *European Integration Method and Economic Analysis*, 3rd ed, Pearson Education, 2005, p.54

as shown in the charts below⁵⁵.

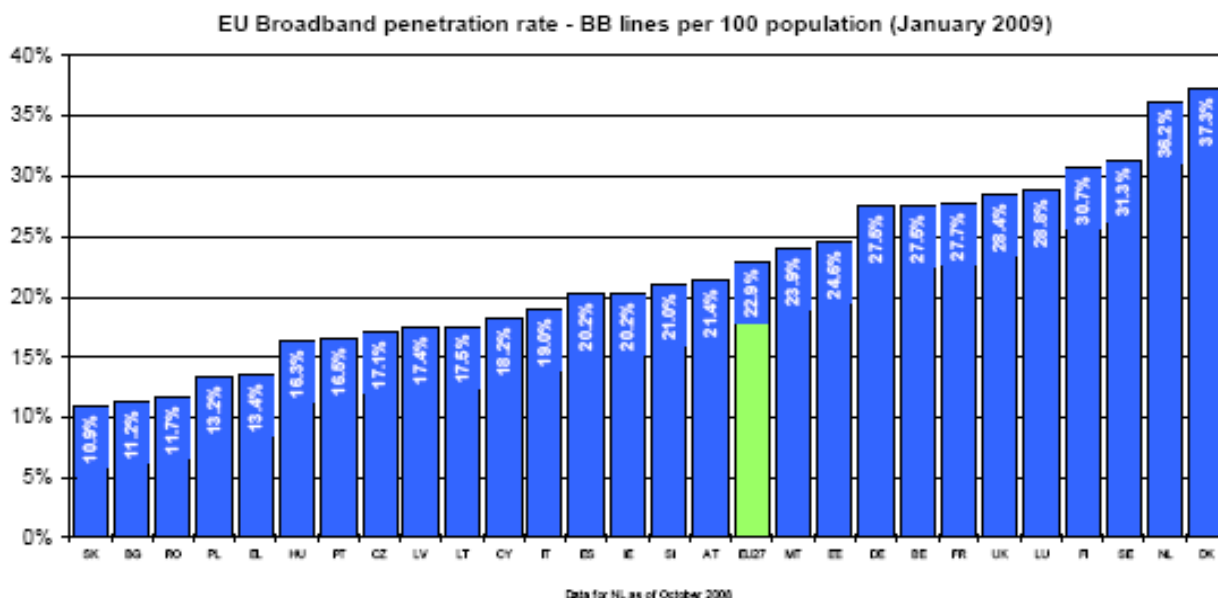


Figure 2

If we compare these figures with the rest of the OECD countries⁵⁶, we observe that European countries are amongst the world leaders in terms of high-speed internet access, with usage rates of above 30% in Denmark, the Netherlands, Sweden and Finland.

However the world leaders in optical fibre are, by a considerable margin, Korea and Japan.

The United-States do not hold the leading position in terms of broadband diffusion⁵⁷, lagging behind eight EU countries. This situation has probably inspired the newly elected President Obama whose stimulus package has a portion allocated to roll-out of broadband.

Is Europe really ahead of the USA in terms of broadband? It seems that Europe cannot rest on its laurels. The USA still records "the best economically productive use of communication technology by consumers, businesses and government" according to the study carried by the London Business School⁵⁸.

Coverage of broadband network is now very high in most Member States, being available, on average, to more than 90% of the EU population. As for use of the internet, it is now approaching

55 EUROPEAN COMMISSION, (14 Report) COM(2009) 140 final *supra* note 49

56 See <http://www.oecd.org/sti/ict/broadband>

57 See S.K. MAJUMDAR "Broadband adoption, jobs and wages in the US telecommunications industry" (2008) 32 *Telecommunications policy* 596

58 L. WAVERMAN London Business School, and economic consulting firm LECG, study commissioned by Nokia Siemens Networks. Available at ConnectivityScorecard.Org,

the level of a service used by the majority, with 49% of EU households using the internet, 36% of which are on broadband⁵⁹.

Despite this pervasiveness of high speed network coverage in all but the most recent entrants to the EU, we can infer that dozens of millions of EU citizen cannot have internet broadband access. Moreover, in some countries over half the rural population is deprived of access⁶⁰.

Coming back the question of whether or not the first criteria provided by Directive 202/22 is fulfilled, the Commission's assessment of 2005 and 2008⁶¹ is still valid: broadband adoption has not yet reached levels of take-up that would qualify it for consideration under the universal service framework. This echoes several reports carried out by the OECD and several Member States authorities since the establishment of USO⁶².

However, broadband penetration is approaching the threshold of the majority rather quickly whilst the number of narrowband connections is progressively decreasing. Looking ahead, it is likely that a majority of Europeans uses broadband connections within the next few years.

The other considerations for a review of the scope of the universal services provided by Directive 2002/02 were not examined by the Commission because of the cumulative nature of the requirements. It is nonetheless interesting to adopt a forward looking approach and to analyse them.

2. Is broadband necessary for participation in society?

Even if broadband were used by a majority of Europeans, it would still have to be deemed a necessity for fully-fledged participation in society. *A contrario*, not enjoying the benefit of a high-speed connection would be a cause of social exclusion. An equity rationale for universal service underpins this criterion.

As we saw in the first chapter, access to faster internet enhances active participation in society: e-health, e-learning, e-government and e-business services are increasingly being used by citizens. This provides better opportunities for finding employment, partaking in business and study, irrespective of location. Access to broadband communication is not just needed for competitiveness and economic growth but is becoming a prime objective of consumer welfare and regional

59 EUROPEAN COMMISSION, COM (2008) 572 final *supra* note 22

60 EUROPEAN COMMISSION, MEMO/09/35 *supra* note 23

61 *See* EUROPEAN COMMISSION, COM(2008) 572 final *supra* note 20 and Communication to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions "On the Review of the Scope of Universal Service in accordance with Article 15 of Directive 2002/22/EC", Brussels, 24.5.2005, COM(2005) 203 final

62 *See* OECD (2003), "Universal Service Obligations and Broadband" *supra* note 34

inclusion. In fact the digital divide is very link to social and economic divide⁶³. By making narrowband connections obsolete, broadband will exacerbate current gaps in society.

To understand why exclusion from society is a concern of the regulator while reviewing the Directive, one has to think of USO provisions in network industries as an instrument for redistributing resources between different groups in a society. The redistribution would be operated here through prices as opposed to transfer of revenues. In that sense, some economists draw an interesting parallel "with policies involving public provision of private goods or in-kind transfers, etc. The basic feature of these policies [being] that some essentially private goods like education, child care or health care are provided either free of charges or at (sometimes highly) subsidized prices"⁶⁴.

Meeting the dual objectives of accessibility and affordability will not allow the provider to charge rural dwellers (or people living in areas where the connection is especially hard to established given environmental circumstances) for the full cost of the service. Consequently, USOs will have to be funded by the State or by the market players, which implies redistribution towards high-cost customers. This can be achieved either through uniform pricing (which means the surplus in cost is not passed on to consumers) and cross-subsidisation or through social tariffs (which means redistribution will benefit low-income individuals). In this respect, USO extension would be rooted in a liberal egalitarian conception of society, according to which "ubiquitous communications can contribute to [...] unity and equality of opportunity."⁶⁵

This contrasts with the view, more economic, that USO mechanisms would operate as a remedy to market failures. Within the framework of Directive 2002/22 these different rationales are actually complementary since the remedial aspect of USO underpins the other condition for an extension to a new service: it must spark a general benefit that would not be provided otherwise.

B. The Economics of a universal service extension to broadband

Employing economic analysis can help to shed some light on the benefits of a more widespread use of high-speed internet which can justify the intervention of the regulator. It is generally admitted

63 TRKMAN, BLAZIC, TURK "Factors of broadband development and the design of a strategic policy framework" (2008) 32 *Telecommunications Policy* 113

64 CREMER, GASMI, GRIMAUD, LAFFONT "The Economics of Universal Service: Theory", [1998] The Economic Development Institute of the World Bank

65 M. MUELLER *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System* 1st ed. AEI Press, 1998, p.5

that regulation can be economically justified by market failures. In case of USO regulation, externalities (defined as "costs or benefits transmitted between agents, in the absence of any related economic transaction between those agents"⁶⁶) are the most relevant.

This concept of externalities is at the heart of the argumentation supporting the view that social welfare would be maximised with a public intervention⁶⁷. The regulator's intervention would only be justified if the externalities are sufficiently important to overcome the potential downside of such an intervention. Indeed, "Concerns have been expressed that, in telecommunications, the pursuit of universal service through a series of requirements placed on telecommunications players has resulted, in a liberalised market context, in market distortions which will cause overall disbenefits to accrue to companies, and ultimately, consumers, thereby calling into question existing methods of universal service provision"⁶⁸ It is thus crucial to identify the positive externalities resulting from a ubiquitous broadband network.

The most important kind of externalities generated by broadband is certainly network externalities. They arise from the fact that the individual decision to subscribe to broadband internet will affect the whole community of subscribers. Why? Because of the size effect implied by that decision: if the majority of the population is using broadband, subscription to broadband becomes more valuable than if the broadband community is small. The decision of an individual subscriber has a positive welfare effect on other users as they can now contact more people. Nevertheless, the individual demand for broadband will only take into account its own "private" benefit and without an intervention from the regulator the equilibrium of the market would not be optimal. This networks effect has been an essential justification of USO in telephony.

66 J.PELKMANS *supra* note 54 p.57

67 R.D ATKINSON "The case for a national broadband policy"[2007] *The Information Technology and Innovation foundation*

68 S. SIMPSON "Universal service issues in converging communications environments: the case of the UK" (2004) 28 *Telecommunications Policy* 243

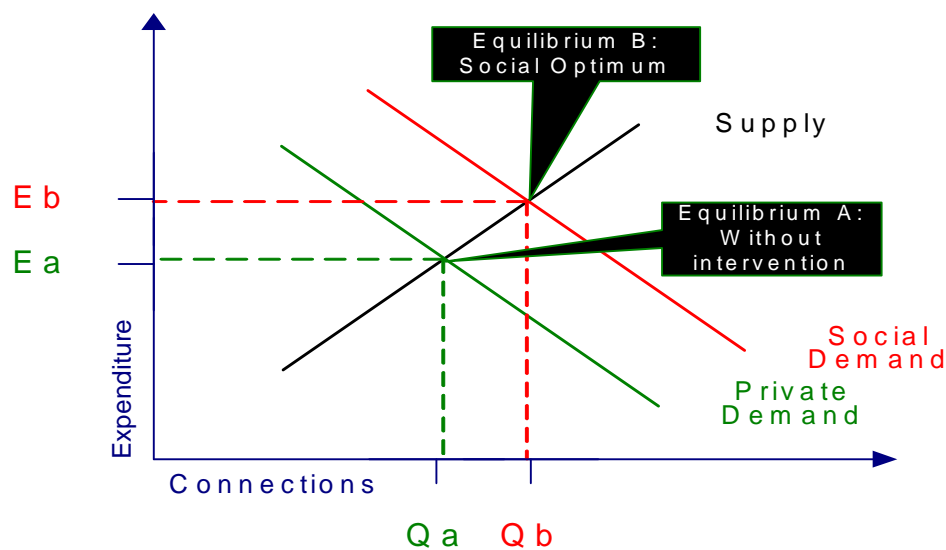


Figure 3

The graph above⁶⁹ shows the classical effect of positive externalities on total welfare. Each new user increases the value of the service to all other users. Private consumers looking to maximise their personal gain from acquiring a broadband connection will not take this into account. So without public intervention, the market for broadband reaches equilibrium at quantity Q_a and expenditure E_a . Society as a whole however factors in the greater benefit. This increase in the value of broadband connections means the demand curve for society as a whole is higher i.e it shifts to the right. The supply will correspondingly be increased, until a new equilibrium B is reached. The market is now supplying more connections (Q_b), for a greater level of expenditure (E_b).

Other positive externalities are generated by this network effect and a virtuous circle can come up. Firstly, the more people having broadband, the more likely others are to subscribe because the decision to purchase broadband is dependent in part of sufficient knowledge about it. Secondly, this size effect will also encourage more investments and innovation and this will make broadband more attractive.

Moreover, wider availability of a reliable high performance network will encourage the development of significantly richer content and applications. "More data-intensive applications would make high-speed broadband more valuable, while more high-speed broadband subscribers would make data-intensive applications more commercially viable."⁷⁰

69 Adapted from ATKINSON, p.6

70 *Ibid* p.7

In a broader view, some externalities are linked to the "merit good" nature of broadband. As we have seen in chapter One, a widespread high-quality network would contribute to EU's strategy for growth and competitiveness. It would be act as an "enabler", facilitating e-business and supporting regional policies.

We see that if the market is left alone it will not supply the most efficient quantity of this service. As a consequence of network externalities and other positive externalities it can be considered that fostering the roll-out of broadband can lead to a general benefit that the market forces alone will not provide.

III. Out with the old but what comes next? The Technology Dilemma

Along with mobile communications, broadband internet is one of the most important new development in the telecoms environment of the past few years. The technological breakthroughs and the success of internet protocol-based services throw up new challenges for the industry and policy makers, who face "tough new decisions"⁷¹. According to Huigen and Cave, "The most important question is whether the access component of the current copper networks will be sufficiently developed to fulfil the potential and promise of IP and, essentially, deliver the new services it enables"⁷². Without attempting an exhaustive presentation of the different technologies, this section will give an overview of the technical solutions which may help to bridge the broadband gap. For instance, satellite or powerline broadband, which are not considered as substitutes for DSL and optical fibre technologies, will not be covered.

A. A quick guide to broadband

1. Wire technologies: the "trench warfare"

Cheaper, wire technologies are still largely dominant in telecommunications. Even if its low cost can make it a popular tool of pro-active policies encouraging broadband development, the

71 J. HUIGEN, M. CAVE "Regulation and the promotion of investment in next generation networks-A European dilemma" (2008) 32 *Telecommunications Policy* 713

72 *Ibid* p.713

economics of the traditional copper network which make up the telephone networks is based on economies of scale and can be singled out as the main factor of the "digital divide" .

"DSL" stands for "Digital Subscriber Line". As a means of transferring data over normal phone lines, it is today the predominant broadband internet delivery technology,

"xDSL" refers to different variations of DSL. The most common so far in Europe is ADSL (asymmetric DSL) which typically offers faster speed in the downstream direction than in the upstream. VDSL (very high speed DSL), significantly faster, has the particularity of being partly upgraded with fibre and therefore demands important investments.

One of the advantages of xDSL when considering broadband deployment is the opportunity to avoid using new cables as it is based on the existing infrastructure, namely the local loop of the traditional telephone network. Burying cables is then the main cost driver for network deployment, "particularly in the last mile of the distribution network where a lot of branching is necessary to connect each user to the infrastructure (local loop)"⁷³.

Thanks to the unbundling of the local loop, the digging costs in view of extending the broadband reach would be mainly limited to areas without telephone infrastructure.

However, the availability and the speed of your DSL service depends on the distance from your home or business to the closest telephone company facility. It is efficient and easily accessible for a low cost in urban areas, but can offer only a limited service to remote areas without the costly addition of signal amplifiers or relays.

"Cable modem" is one of the oldest technologies. A cable modem is a device that enables you to link your computer to a local cable television line and receive data at similar speeds to DSL. One of its characteristics is that although it provides a download connection of superior quality, it does not allow information to be sent back via the same route⁷⁴. Moreover, the fact that cable access is only affordable in areas with a high density of population such as in the Netherlands means that this technology is not a convincing solution to bring broadband to under-served zones.

"Fibre optic" is a technology that enables a large amount of data to be transmitted. Even if it is a buzzword in the broadband issue, fibre has been used to upgrade telephone infrastructure since the 1980's⁷⁵.

73 M. FORNEFELD G. DELAUNAY D. ELIXMANN "The Impact of Broadband on Growth and Productivity" (2008) Study on behalf of the European Commission, MICUS Management Consulting, Düsseldorf p.11

74 *Ibid* p.12

75 *Ibid* p.12

Fibre transmission has several advantages over traditional metal communications lines including virtually unlimited bandwidth which is hardly affected by distance. Fibre is far less subject to electromagnetic interference and the need to retransmit signals. These characteristics are very important as they make fibre networks a promising tool for policies aimed at deploying broadband in rural areas.

When considering this type of network an important distinction is to be made in terms of ambition and costs between Fibre To The Home (FTTH) and Fibre To The Building (FTTB).

A FTTH project will connect the premises directly to the telecommunications infrastructure with a typical bandwidth of 100 Mbit/s. In case of FTTB, fibre will be rolled out to within the boundaries of a building, after which each home may be connected via a copper or wireless link.⁷⁶

2. Wireless : the “starwars”

Even though fixed networks offer a superior quality of service to mobile services, the wireless sector is clearly flourishing, characterised by promising innovations.

Wireless local area networks (W-LAN) connect a home or business to the internet using a terrestrial radio link between the customer's location and the service provider's facility in the same a mobile phone operates. It can provide a service over a limited area to any suitably-equipped user terminal within reach of the signal. A new variant is called WiMax (Worldwide Interoperability for Microwave Access) and can transfer data over a longer distance with a bigger bandwidth. Will this promising technology contribute to bridge the broadband gap? It is not easy to say since regulations on the use of radio frequencies have been a major brake of its development⁷⁷ and WiMAX technology is sensitive to environmental conditions.

Mobile solutions rely on the radio cells already established or being established for "second generation" and "third generation" mobile communications networks. Despite recent technical upgrade they still offer lower bandwidth and is not seen as a direct substitution for broadband (rather as a complementary technology⁷⁸). While subject to saturation in the countries of Western Europe, mobile solutions still have an important margin of progression in some new Member States where broadband penetration is still very low (such as Bulgaria and Romania).

⁷⁶ *Ibid* p.13

⁷⁷ *Ibid* p.14

⁷⁸ *Ibid* p.15

B. Why technology matters

There are several reasons why these different technologies have a bearing on the public debate launched by the Commission.

1. European broadband markets: United in Diversity

Promises lent by wireless technologies may give the new Member States a chance to quickly make up lost ground. Given the limited landline penetration and consequently higher prices of DSL in Central and Eastern Europe, bridging the broadband gap should be undertaken using different technologies amongst the 27 European countries. Whereas in Western Europe mobile broadband is seen as a complement to conventional lines, in Central and Eastern Europe (as in developing countries in general)⁷⁹, mobile services will probably partially replace landlines.

Technologies are a key to understanding the respective positions of stakeholders. Speed and service matter in operators' marketing strategies to differentiate their offer and to gain market shares. For instance ADSL offer a too low bandwidth for bandwidth-hungry multimedia applications such as games or High-Definition television, both of which are drivers of demand. That is a brake to broadband's growth that can help to explain the discrepancy between penetration rates in Korea or Japan and Europe.

2. The tug of war between stakeholders

Given the amount of investment required (up to €300 Billion would be needed to upgrade the existing EU infrastructure to fibre⁸⁰), the debate is likely to become a battleground with the different players attempting to influence regulation in a way which maximises their gains. For instance, rural dwellers associations such as "l'Association des régions de France", are calling for an intervention from the regulator. They would indeed directly benefit from uniform pricing in broadband access, which has the advantage of being a less visible and therefore less contested policy.⁸¹

At the level of the market, interests will often oppose the incumbent to the other operators. How can this situation influence decision-making as regards USO? "This would be the case if the entrants successfully lobby in favour of strict restrictions on the (incumbent) historic operator's pricing

79 J-L GOMEZ-BARROSO, A. ROBLES-ROVALO "Wireless hopes for universal service in developing countries: an assessment in the Mexican context", 2008 10 *Info* 84

80 EUROPEAN TELECOMMUNICATIONS NETWORK OPERATORS' ASSOCIATION (ETNO) annual report, 05 2008, based on McKinsey & Company analysis, February 2008, p.5

81 CREMER, GASMI, GRIMAUD, LAFFONT *supra* note 64 pp.7 and 8

policy with the intent of weakening its competitive position. At the opposite extreme, one can also think of situations where the historic operator itself may use its leverage on the regulator to maintain a stringent USO as this may justify some of its privileges (e.g., monopoly protection in some market segments)"⁸².

According to some observers⁸³ certain features of the technologies can explain the persistent strength of the incumbent. Typically, the state-owned monopoly took advantage of its existing ducts containing the copper infrastructure to upgrade its network with fibre whenever road works were carried out. This structural competitive advantage argues in favour of having them invest in the new networks. These issues are at the core of regulatory discussions regarding fibre and may require the regulator to intervene to allow competitors access to the ducts⁸⁴ of the historic operators.

In any event, the incentives to invest must not violate competition rules. The ongoing opposition between Germany and the Commission is another example of the problems raised by the conciliation of heavy investments with the regulation of the network. In June 2007 the Commission announced it will take Germany to the ECJ after launching an infringement proceeding in February the same year. The German government had indeed granted "regulatory holidays" to Deutsche Telekom. This operator (in which the German government holds a 32% share), in a dominant position on the German broadband market, had announced a €3 billion investment in fibre optic network.⁸⁵

Technological evolution is therefore a key factor in explaining the debate around universal service and broadband; the regulator faces a dilemma between "the revenue generating but aging legacy network and the costly-to-deploy, but efficient and future-proof fibre network"⁸⁶ Specifically one must keep in mind that the information and communication sector is likely to go through major upheavals in the coming years as the result of the advent of Next Generation Networks, defined as "Internet Protocol based core networks which can support a variety of existing and new services, typically replacing multiple, single service legacy networks"⁸⁷. The increasing quantity of digital information generated (the growth in data traffic is expected to grow six-fold by 2010⁸⁸) as well as

82 *Ibid* p.9

83 See C. BERNARD "Fibre optique la guerre des tranchées" (January 2009) 253 *Enjeux Les Echos* 41

84 E.g in France, "A la demande du régulateur des télécommunications, l'Arcep, Orange a - selon le vocabulaire consacré - proposé une offre de référence qui permet aux opérateurs concurrents d'utiliser ses conduits", *Ibid* p. 43

85 EUROPEAN COMMISSION Press Release "Telecoms: Commission to take Germany to Court over its "regulatory holiday law", Brussels, 27.06.2007, IP/07/889

86 B. FELTEN "Taking the pulse of European FTTx", February 2009, Yankee Group Research, Inc., p.3

87 S. CARTER "Digital Britain, The Interim Report", *supra* note 35 p.74.

88 ETNO annual report, *supra* note 80 p.5

the fact that applications are more and more demanding in terms of bandwidth call for an upgrade of European networks with fibre.

After looking at the implications of Directive 2002/02 for the Member States, it is important to consider how the burden of these obligations is calculated and shared, in order to anticipate the financial implications of extending universal service.

Chapter Three

Walking the High Wire between Competition and Public Intervention in the Broadband Market

Even where special measures for the deployment of broadband are accepted in order to remedy market failures, the question of who should pay for them is highly contentious. After having critically examined the impact of US mechanisms on the development of technology and the process of competition, we will finally place US extension in the context of public policies supporting broadband in order to assess it as an instrument to bridge the broadband gap.

I. Financing Universal Service

While in all Member States the calculation of cost of US must follow the guidelines given in the Directive, a certain leeway is given to NRAs. Thus the weight of the cost is perceived differently depending on the Member States and influences the choice of financing. In any event, the inclusion of broadband in the Directive is likely to significantly upset the status quo.

A. Cost of universal service

The net cost of USO is a controversial topic in which national policies clearly diverge. Whereas compensation is paid in France, Italy and Romania, in other countries led by the UK, national

regulatory authorities assessed that overall benefits from universal service overcome its cost.

The net cost of US must be precisely calculated in if the provider is to be fairly compensated. If universal services are provided by designated undertakings, compensation will have to be allocated to avoid an unfair burden severely distorting competition. At the same time, it must not encourage a lenient management of expenditures. The difficulty for the regulator lies in avoiding the pitfalls inherent to non-competitive environments, which are the lack of incentives for innovation and cost effective production which would trigger a misallocation of resources. Responsibility for putting a price on universal service has fallen to NRAs, following instructions given in the Directive 2002/22⁸⁹. The Commission will verify the compatibility of the calculation of the cost with the Treaty, wary of the fact that “[t]here are incentives for designated operators to raise the assessed net cost of universal service obligations”⁹⁰. That is why USO mechanisms are designed in a way that maintains competitive constraints and strict conditions for the compensating the cost of the services in question.

The net cost of universal service, which is the loss in profits incurred by the operator due to the USO, must be identified using a counter-factual approach: NRAs must calculate the difference between the net cost of operating with the USOs and without the USOs.

The total cost of USO is the cost that would be avoided if the universal services were not provided. The regulator must take into account the economies of scale that companies concerned would profit from. All benefits have to be deducted from the total cost of USO including intangible ones.

There are a number of ways in which a public access provider might receive significant commercial gains from being the US provider. The added-value on image which comes with USO is not negligible. For instance, one can think of the positive impact of US on corporate reputation, marketing and brand recognition. The privileged relationship the USO provider establishes with the customer may have several advantages: the operator will be able to gather and mine information on how customers use internet. It will also be able use "customer life cycles" to its advantage (unprofitable customers at one given time may become profitable over time)⁹¹.

How can USO be fulfilled without compensation or subsidies, by market forces alone? Intangible benefits naturally play a key role, and network effects must also be taken into consideration. Operators find a balance between cost and benefits of USO: "When proper accounting models were deployed, it was generally found that, although supplying customers who made few calls was often unprofitable, these customers generated incoming traffic and more generally added some value to

89 Directive 2002/22 *supra* note 3, art.12.1

90 *Ibid*, recital 24

91 X. PATRICK “Universal service and public access in the networked society”, 1997 21 *Telecommunications Policy* 835

the network. Tariff rebalancing, which brought about an increase in monthly subscription fees, was therefore sufficient to make the supply of telecommunications services to them quite profitable⁹²." However, what is true for USOs in telephony can be wrong for broadband: the significant expenditure linked to its provision cannot be ignored. Ensuring affordability and accessibility of high-speed internet to all possibly implies a delicate conciliation between colossal investments and averaged prices or social tariffs.⁹³

While rethinking universal service policy, it is important to take into account the cost which will have to be borne by taxpayers or by market players, and eventually by consumers. One of the main preoccupations surrounding the USO extension debate is the funding of the potential inclusion. Constraints weighing upon Member States as regards financing of broadband provision under USO plead in favour of an amendment to the Directive.

B. Financing USO in today's Telecoms

1. Financing USO in a liberalised sector

Liberalisation of telecommunications markets has complicated the issue of funding universal services. Opening the market disrupted the traditional mechanisms of cross-subsidisation put in place by incumbents. Funding the universal service became more problematic due to the well-known issue of "cream-skimming". This happens when new entrants penetrate markets, focusing on the more profitable areas, where the US provider maintained prices artificially higher in order to cross-subsidize US in unprofitable areas. As a result the "access deficit" will not be compensated. "Access deficit" is the loss occurred "when an operator's average access charges (line rental and connection) are not set high enough to cover the long-run average incremental cost (LRAIC) of providing an access service"⁹⁴.

This loss is problematic when the USO provider is the only one responsible for the financing: ensuring the provision of a defined minimum set of services to all consumers at an affordable price comes at a cost. Some areas, with low density of population or geographical features require heavy

92 CAVE, PROSPERETTI, DOYLE *supra* note 26 p.254

93 Directive 2002 *supra* note 3, Annex IV

94 INTERNATIONAL TELECOMMUNICATIONS UNION (ITU), Asia Pacific Centre of Excellence, telecommunications OFTA Virtual Training Center, Universal service lecture available at www.itu-coe.ofta.gov.hk/vtm/universal/lecture/Lecture_universal_p4.htm#d2

investment with little prospect of profit-making. Therefore bridging the broadband gap will imply that one group of customers subsidises another, by paying more for their services than they would do in the absence of USO mechanisms. If the profitable part of the demand is not "reserved", USO provision will result in a net loss that only an operator with "deep pockets" can afford, typically the incumbent.

Sharing the burden of USO amongst the market players is also possible through a levy on the telecommunications sector. According to some economists, this mechanism could "reduce the threat of cream skimming. If the universal service taxes are properly designed, a competitor can only capture a market segment if he is more efficient than the incumbent operator. Consequently the competitive process can work in a more efficient way(...)"⁹⁵.

2.The two options provided by the Directive

Directive 2002/22⁹⁶ leaves the Member States free to assess whether or not USOs impose an unfair burden on suppliers. In case "it is demonstrated that the obligations can only be provided at a loss or at a net cost which falls outside normal commercial standards"⁹⁷, they can put in place the system they consider the more suited to their market. They can either finance the US directly through public funds *i.e.* state resources or establish a mechanism to share the cost amongst providers (they can also combine the two methods).

In other words, they can finance any net costs of USO by using "funding from general government budgets including other public financing sources such as state lotteries"⁹⁸, or they can set up a sector-specific fund to which market players would have to contribute provided they respect "the principles of transparency, least market distortion, non-discrimination and proportionality"⁹⁹. However this last possibility is explicitly excluded in case Member States decide to extend obligations of availability to "additional services"¹⁰⁰. That prevent current pro-active policies supporting broadband diffusion to be financed otherwise than be state resources.

II. USO and Competition, Dangerous Liaisons?

95 CREMER, GASMI, GRIMAUD, LAFFONT *supra* note 64 p.14

96 *See* Directive 2002/22, *supra* note 3 recital 18 to 24 and art.13

97 *Ibid* recital 18

98 *Ibid* recital 22

99 *Ibid* art.13

100 *Ibid* art.32

Some arguments plead for a primary reliance on competitive market forces to develop advanced Internet access, to avoid the burden of any special programs and subsidies and potential adverse effects on competition. If some risks are clearly addressed by the current legal framework, issues raised by the financial burden of reforms remain controversial.

A. Respecting the principle of technological neutrality

It is feared that one broadband technology would be favoured and that this would hamper innovation in a market which is still in its “infancy”. Historically, OFCOM, the British NRA, based its reluctance to extend USO on such grounds, as explained in a 2006 report: "By imposing a USO and in choosing which suppliers were required to fill that obligation, the Government would define one particular technology as broadband. As well as conflicting with the Government's technology neutral approach, this could lead to imbalance in the market, less competitiveness and less consumer choice".¹⁰¹

OECD data reveals that although technological neutrality is broadly accepted by policy makers as desirable "it is important to note that the competitive broadband markets in many OECD countries are actually the result of technologically biased regulation"¹⁰². In what way could the neutrality of the regulation be upset? For instance, by exempting a given broadband platform of a requirement of unbundling as it is the case in the OECD for cable network (excepting Canada)¹⁰³.

The 2003 regulatory framework attempts to address these fears. In addition to the traditional principles of EU regulations (such as the principle of non-discrimination and of proportionality) several specific regulatory principles are provided in the field of electronic communications. They must guide the Commission when reviewing the scope of USO and the NRAs: regulators should not discriminate between different technologies offering similar services. As we have seen, Directive 2002/22 respects this principle since no technologies (whether fixed, mobile, wired or wireless) are specified for the delivery of universal services.

The "Framework" Directive¹⁰⁴ which is part of the 2003 “Telecoms package” provides in its article 8 that "Member States shall ensure that in carrying out the regulatory tasks specified in this Directive and the Specific Directives, in particular those designed to ensure effective competition, national regulatory authorities take the utmost account of the desirability of making regulations

101 OFCOM, “The communications market 2006”, 2006, London ,UK Office of Communications, p.64

102 OECD Broadband Growth and Policies in OECD Countries OECD Publications, Paris 2008, p.56

103 *Ibid* p.56

104 Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), [2002] OJ L 38, p. 33–50

technologically neutral."

This principle is important to ensure that one technology is not privileged "artificially" as opposed to the natural process of selection operated by free market forces. Different platforms can then compete in the same market and competition increases to the benefit of consumer choice.

Directive 2002/22 includes clear instructions as to the neutrality of USO in recital 8 "there should be no constraints on the technical means by which the connection is provided, allowing for wired or wireless technologies, nor any constraints on which operators provide part or all of universal service obligations."¹⁰⁵

The risk of discouraging competitive entry also looms. A recent report on the future of broadband in the UK, commissioned by the British government, in dealing with the future of USO, emphasized the fact that regulation must give guarantees to investors as regards their freedom on the market : "The Government and OFCOM should make sure that as USO policy evolves, they avoid the dangers of either diverting resources away from NGA development, or creating perception of a hazard in the eyes of investors that if they provide a service to some areas they will be forced to do so to the entire country"¹⁰⁶.

The Commission is however aware of the special importance of optical fibre. For example the EU Competition Commissioner Neelie Kroes stated: "The deployment of new fibre-networks will shape the competitive conditions of the future. We need an appropriate framework to give European companies fair access to the new networks. We want national rules that will not only encourage the necessary substantial investment in fibre investment but also strengthen broadband competition."¹⁰⁷

B. USO, an opportunity for the broadband market?

Whether by designating an undertaking in charge of USO or by allocating compensation, it is feared that the regulator may upset the natural play of market mechanisms.

Firstly, if the extension of universal service to broadband is not unanimously welcomed by all concerned parties, it is partly due to suspicions that the cost and benefits of connecting Europe would not be allocated in a "competitively neutral" way, and would be a step backwards in the process towards a competitive market in telecoms. Opponents of universal service mechanisms

105 Directive 2002/22 *supra* note 3

106 F. CAIO "The next Phase of Broadband UK: Action now for long term competitiveness. Review of Barriers to investment in Next Generation Access" 11.2008, p.60

107 EUROPEAN COMMISSION Press Release "Broadband: Commission consults on regulatory strategy to promote high-speed Next Generation Access networks in Europe", Brussels, 18.11.2008, IP/08/1370

point out that in practice the historical operator is the only operator able to fulfil USO on a national scale¹⁰⁸ and then contribute to enhancing the continuing dominance of the incumbents¹⁰⁹. Thus the appointment of the USO provider could favour an operator who is not the most efficient, in which case subsidies would cause a misallocation of resources. Other fears focus on the indemnification of USO. The real net cost of USO is not easy to calculate, *a fortiori* because of an asymmetry of information between regulators and operators, and any subsidy that exceeds the expense would give an advantage to USO providers (who are often the owners of the network, and therefore the incumbent).

NRAs have an important part to play in answering these accusations. To prevent this kind of distortion the regulator can make sure that operators must compete regularly *for* the market, for instance through an auctioning of the USO licence. Each bidder would specify the amount of compensation they would require to roll out an ubiquitous broadband network and the franchise would be granted to the least expensive operator.

Secondly, another kind of criticism concerns the idea of a sharing mechanism shifting the burden of US from state resources to operators and customers.

We have just seen that services included in the scope of the Directive on US can be financed otherwise than by State's resources. Given that necessary investments are potentially enormous, even countries where broadband deployment was voluntarily left to market forces could opt for a sharing mechanism. For instance, in the United-Kingdom, while the "Digital Britain" report (aforementioned in chapter Two) concludes that 2 Megabits per second (Mbps) could be an optimal level of universal service commitment,¹¹⁰ it clearly suggests that the USO providers could not bear the cost of the new obligations alone (as they currently do) once broadband is added to the universal service basket : "we expect that the costs of a future universal service commitment could be shared more widely, as it is in other countries, between a range of communications providers, and those who provide communication services over the network"¹¹¹. The British Government has committed itself to working on an update of the current universal service framework.

This sheds some light on the debate surrounding the term "functional internet access" that crept in the second reading of the revised "Telecom package" in the European Parliament. The idea backed by Malcolm Harbour, rapporteur for the Committee on the Internal Market and Consumer

108 OECD "Broadband infrastructure deployment: the role of government assistance" Paris, 22.05.2002 DSTI/DOC(2002)15, p.21

109 N. VAN EIJK "Universal Service, a new look at an old concept: Broadband access as a universal service in Europe", 2004, Institute for Information Law (IviR) University of Amsterdam, p.3

110 See "Digital Britain" *supra* note 35 at section 4, p.51

111 See *Ibid* action 17 p.55

Protection in the European Parliament, was to modify the recital in a way that would leave room for Member States to decide the meaning they want to attribute to that notion. Settling for an amendment of a recital, without a proper revision of the directive on US was however a questionable legislative technique.

The example of Switzerland, the first country in Western Europe to include broadband in USO, is also interesting. When, in 2007, Swisscom was appointed by the Federal Communications Commission as the universal service licensee with an obligation to provide broadband internet connection, the operator "that has refrained from applying for financial compensation for the first five years of the licence"¹¹² declared explicitly that it may ask for such compensation for the following years.

Constraints universal service financing schemes are a driving force of the broadband gap debate in Europe. Some authors clearly disagree with the idea of shifting such a high burden on the telecom industry. They stress the fact that if public intervention must respond to social issues raised by the "digital divide", governments should bear the cost in the same way they finance other social schemes. "With telecommunication operators increasingly operating in competitive markets and circumstances similar to those in other industries, they should be increasingly treated in a similar way with similar obligations and rights. As the telecommunications industry converges with the broadcasting and information technology industries, this need for symmetric treatment becomes even more important"¹¹³.

However, in my opinion, the special nature of broadband as generator of significant network externalities (*cf* chapter Two, part II) justifies the fact that bridging the "digital divide" should be distinguished from other social objectives. In any event, this criticism raises an interesting point in the discussion. If we consider that national governments should pay for broadband provision where the market fails to give access to high speed Internet, the establishment of a levy on the telecommunication sector as allowed in Directive 2002/22 is excluded. Can national and regional authorities fund plans extending the broadband reach without infringing the rules of the European Community competition Law? Answering that question leads us to examine the role of national and local actors and the limits of public funding of a wide scale roll-out of broadband.

¹¹² FEDERAL COMMUNICATIONS COMMISSION, Press release, available at: www.comcom.admin.ch/aktuell/00429/00636/00712/index.html?lang=en&msg-id=13239

¹¹³ OECD "Universal Service Obligations and Broadband" *supra* note 34 p.24

III Setting the tone for European broadband strategies

According to Viviane Reding "EU approach to promote broadband take-up combines market competition and public policy to complement the effective functioning of the market"¹¹⁴. Preparing Europe for "Next Generation Network" combines efforts of the private and public actors. More than hundred companies, very often owned by public authorities or power utilities, are currently deploying fibre to the home.¹¹⁵

How can European and national strategies for a pervasive high speed internet reconcile the play of market forces with public intervention? Looking at the different forms of intervention helps to understand and evaluate the role of a universal service of broadband. An amendment of the Directive could help to shape European regulation of telecommunications by conciliating the different initiatives: local and global, public and private.

A. What place for national and local policies?

We have seen that the temptation was strong to sacrifice competition rules to encourage operators to invest in next generation networks (cf the German claim to "regulatory holidays" aforementioned). However, other examples of national initiatives are more successful, in countries as different as Sweden and the Netherlands. A wide spectrum of policies is available to governments from a mere stimulation of competition to the ownership of infrastructures or financial support to supply and demand¹¹⁶.

Does that mean the EU's intervention in the area of broadband availability is not necessary? Do national and local authorities already have sufficient means to act? The idea that a wide scale roll-out of broadband should be financed through public authorities' budget does not sit well with European rules on public funding. The margin of manoeuvre left to national and local actions gives an indication of the context in which USO would be put in place. Styliadou underlines the irony of public initiatives, which often intervene to support the development of alternative infrastructures. She recalls in this respect the fact that liberalisation relied "on the premise that private sector investment will deliver much better services and innovation to European consumers than state-owned monopolies"¹¹⁷.

114 Interview, *Concurrences supra* note 27

115 M. STYLIADOU "Public funding and Broadband: Distortion of competition or recognition of policy failure?" (2005) 6 *Journal of Network industries* 187

116 OECD "Broadband Infrastructure Deployment; The Role of Government Assistance" DSTI/DOC(2002)15, p.16

117 M. STYLIADOU *supra* note 116 p.187

Given the diversity characterising broadband penetration in today's EU, an overhaul financed at the national level has some obvious advantages which should be taken into account while rethinking US. In practice, public intervention regards "end to end broadband services" as well as the deployment of "open-access infrastructures".¹¹⁸ In the latter case, the State or the local authority will finance the construction of infrastructure and guarantee access or wholesale services to operators.

However, the numerous infringement proceedings remind us that pro-active Member States willing to promote broadband networks would have first to comply with their obligations arising from EU law. Not only must they respect the framework given by the Directives of the Telecom package but also state aids rules. If the financing is not purely private, the State may take part in investments aimed at bridging the broadband gap. Unless it behaves as a private investor (which is quite rare since generally public authorities intervene where supply is uneconomical), it has to comply with article 87 of the Treaty establishing the European Community.

It has been argued¹¹⁹ that projects should be seen as a public task of general infrastructure, falling outside the scope of article 87(1). Nonetheless, this argument is only conceivable if the market forces were incapable of satisfying the demand and will concern primarily "basic civil works and passive elements such as ducts and dark fibre in unserved area"¹²⁰. Given the existence of "grey areas", where the owner of passive infrastructure refuses access to other operators, the definition of "unserved area" remains unclear¹²¹.

Moreover, public initiatives must meet strict conditions if they are not to be considered as state aids, but rather as the financing of services of general public interest (notably the criteria laid down by the *Altmark*¹²² case).

Once acknowledged as state aids, the measure concerned can nonetheless be considered as compatible with the Treaty on the basis of article 87(3)(c) which regards "aid to facilitate the of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest". The Commission will examine the necessity and the proportionality of the project in light of the objectives of the i2010. Amongst other

118 *Ibid*, p.189

119 See argument put forward by UK authorities in the Commission's decision 20.07.03 state aid N 213/2003, "ATLAS Broadband infrastructure scheme for business parks" C(2004)1809 JOCE C/131/2005

120 M. HENCSEY, O. REYMOND, A. RIEDL, S. SANTAMATO, J. G. WESTERHOF "State Aid rules and public funding of broadband" (2005) 1 *Competition Policy Newsletter* 10

121 STYLIADOU *supra* note 116, p.200

122 Case C-280/00, *Altmark Trans, GmbH v Nahverkehrsgesellschaft Almark GmbH* [2003] ECR I-7747

considerations it will check thoroughly for market failures and for discrimination in the procedure of selecting the services provider. It will also ensure that the project is technologically neutral and minimizes any distortion of competition.

Even though the Commission has accepted numerous national plans, most of the time approving the benefits they brought to a region, public funding of broadband roll-out remains strictly framed by the rules on state aids.

B. What paradigm for a European pro-active strategy?

The eEurope 2005 and the i2010 initiatives gave a strong impetus to national strategies for connecting every citizen with an efficient internet connection.

On the supply side, national or regional initiatives are being undertaken at the level of the infrastructure, to support the roll out of broadband in under-served areas. Governments and local authorities also intend to give incentives to investors and thus facilitate demand aggregation by coordinating public administrations' requirements. It has been argued "that question should not be how to fine-tune or gradually adapt current access regulation. Instead the issue is how to give the various networks and newcomers stronger incentives to invest in their infrastructures. In other words, given the fortunate conditions that are present, what is needed is to trigger a socially beneficial "race of network investments".¹²³

This idea corresponds to a minimalist "hands off" approach, which intends to minimize, not to say eliminate, universal service and aims at widening "the current network reach" to fill the "market efficiency gap" described in the graph below.¹²⁴

123 P. de BIJL, M PEITZ "Innovation, convergence and the role of regulation in the Netherlands and beyond" (2008) 32 *Telecommunications policy* 751

124 Adapted from "Telecommunications & Information services for the Poor. Towards a Strategy for Universal Access", by J. Navas-Sabater, A. Dymond, N. Juntunen, 2002. Modified by Intelecon. Available at www.ictregulationtoolkit.org/en/Section.3144.html

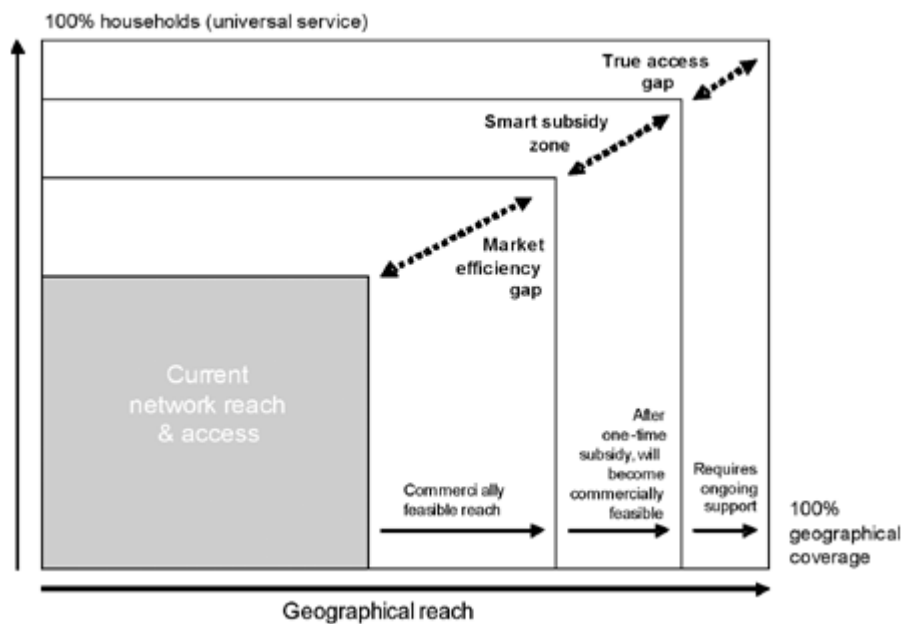


Figure 4

States which opted for this “incentivizing” approach tried to encourage broadband deployment via competition, establishing a “ladder” of investment¹²⁵ (“metaphor to the regulatory policy-making belief that allowing access to different levels of existing access network infrastructure eventually will lead to entrants investing in their own access networks”¹²⁶).

The recent discussion following the report of the British Minister for Communications, (“Digital Britain”, aforementioned) illustrates the limits of such a “hands off” approach. In answer to critics towards the modest commitment of 2 Mbps, Lord Carter pointed out that there will “certainly be 25-30 per cent of the country where there will be no economic case for building a next generation fixed network”¹²⁷. Indeed, without a comprehensive social policy, a great deal of remote areas would remain unserved, (the “true access gap” on the graph) and that seems quite contradictory with the ambition of the objectives set by the Lisbon strategy and the i2010 initiative.

The European Union intervenes to remedy the insufficiencies of policies betting on a “ladder of investments”. National and local initiatives benefit from Structural funds and funding from the European Investment Bank, following the “Guidelines on criteria and modalities of use of Structural

125 M. CAVE, I. VOGELSANG. “How access pricing and entry interact” (2003) 27 *Telecommunications Policy* 725.

126 ETNO “Reflection Document on re-assessing the “ladder of investment” in the context of broadband access regulation”(2005/09), RD227 p.2

127 Interview Daily Telegraph 20.04.2009 “ Rural Britain to miss out super fast broadband” available at <http://www.telegraph.co.uk/finance/financetopics/budget/5189525/Rural-Britain-to-miss-out-on-super-fast-broadband.html>

Funds for electronic communications"¹²⁸ issued by the Commission. The “Recovery plan”, adopted by the European Council in December 2008, will support the deployment of the network in the “white spot in the broadband map”¹²⁹ through the existing Rural Development fund. Thus Estonia announced a 283 million euro plan to roll-out fibre optic and extend broadband to rural areas. 25% of the project is funded by EU's structural fund, the rest by private operators¹³⁰.

A more “hands on” approach would be difficult to implement, at least as long as investments required to allow a ubiquitous network are so large. Financing them would imply the setting up of sharing mechanisms which would increase the risk of market distortions, and imposing a universal service for broadband could be perceived as over-interventionist. Given that broadband is not used by a large majority of Europeans, extension of USO to very fast Internet seems premature. In the short term the European strategy could fix a target relatively low (such as universal access to broadband at 2 Mbps), following the approach of the “Digital Britain” plan, recently backed by the British Government¹³¹. This objective should nonetheless be a mere intermediate step, followed up by a more ambitious commitment guaranteeing a widespread access to Next Generation Networks. Another “middle road” for the EU would be to widen the meaning of “functional internet access” such as giving the Member States the freedom to interpret it and then allowing them to establish a sector-specific fund to finance it.

A consensus as to the role of Internet and of universal service in our society seems to be a precondition for a change as crucial as the extension of the scope of USO. The debate surrounding the French “loi Hadopi” has shown that political considerations can blur the question of whether or not access to Internet is part of a fundamental right to information. In any event, if we want to give broadband a chance to keep its promises (cf Chapter One), the real objectives behind the drive for a so-called “Information Society” as well as the theoretical basis on which European regulation of electronic communications rests must be determined. That would avoid letting NRAs choose different models, thus “undermining the building of a common regulatory culture and possibly the establishment of a single market for electronic communications”¹³². The regulator will adopt a

128 EUROPEAN COMMISSION, Staff Working paper, “Guidelines on criteria and modalities of use of Structural Funds for electronic communications”, Brussels, 28.7.2003, SEC(2003) 895

129 EUROPEAN COMMISSION, Press Release, “The Commission proposes € 5 billion new investment in energy and Internet broadband infrastructure in 2009-2010, in support of the EU recovery plan”, Brussels, 28.01.2009, IP/09/142

130 STRAITS TIMES “Fast broadband for Estonia”, 25.04.2009 available at www.straitstimes.com/Breaking%2BNews/Tech%2Band%2BScience/Story/STIStory_368088.html

131 BBC NEWS “Government backs 2 Mbps broadband”, 22.04.2009, available at <http://news.bbc.co.uk/2/hi/technology/8012848.stm>

132 A. DE STEEL “Current and future European regulation of electronic communications: A critical assessment”(2008) 32 *Telecommunications Policy* 726.

“hands on” approach or will intervene in a more limited fashion, depending on the stated aims of European policy in this area.

Conclusion

After having recalled the context of the review of universal service in the European Union, this paper attempted to show the complexity of a global commitment to universal broadband service. The approach chosen would necessarily be adapted to the different characteristics of the European Market and would respect the objectives of the legal framework in telecoms. A widespread action would generate significant positive externalities, seemingly advocating an intervention by public authorities. In this respect, extending US to broadband could contribute to the EU's efforts to encourage growth and competitiveness.

The regulator, in giving a new dimension to universal service, will have to avoid many pitfalls. US has to be as "competitively neutral" as possible and must not lead to a step backward in liberalisation of the sector. The Directive on universal service must also avoid taking a stand in favour of a given technology. Therefore the scope of USO will have to be determined, either by redefining the meaning of "functional internet access", or by setting a minimum data rate.

In conformity with the principle of subsidiarity, a certain leeway is granted to Member States for the implementation of universal service. The calculation of the cost and the designation of the US provider raise fears as regards their impact on competition in the broadband market. A legal framework guaranteeing the respect of non discrimination and least market distortion principles under the surveillance of independent NRAs and the Commission should address these concerns.

If the prior conditions to the reform of the Directive were satisfied and universal service were extended to broadband, this could influence the financing of strategies aimed at closing the "digital divide", and provide support to investors through specific funds financed by market players.

Even if they are scrutinised by the Commission, national policies are rather well perceived in the context of state aids controls and are sometimes complemented by EU structural funds. As a result, broadband network is already likely to be more and more pervasive. Nevertheless, Europe runs the risk of leaving people behind on its way towards a knowledge-based society. By allowing Member States to share out the cost of US between providers, an extension of USO to broadband would offer more options for the funding of projects in unprofitable areas and could give a real boost to the project of extending the broadband reach in Europe. The special nature of a comprehensive deployment of broadband, as source of "network effect", justifies that the financial burden of

initiatives is shared, at least partly, between private actors. This is especially the case as the rules of the Internal Market prevent governments from simply substituting market forces without strict compliance with European competition Law.

Moreover, if the EU wants to give a new impetus to the development of high speed Internet, the extension of the universal service could provide a good incentive to firms to invest. Even a relatively low target such as a universal access to broadband at 2 Mbps could be a step in the right direction, giving USO the chance to be a factor of economic and social progress.

The coming months are likely to see lively discussions on the impact of a change, animated by economic and political considerations. Those who support the reform rely heavily on the idea that Internet is much more than a commercial platform or a new medium, that it belongs to the ranks of essential services which can empower and transform parts of a society. This “information society” exists however only in the arena of political debate, and whether or not it becomes a reality depends on how decision makers use this idea. In fact, the question driving the extension of universal service to broadband is not so much what constitutes a safety net in the information society, but rather “whether the safety net should be a springboard in the future”¹³³.

133 C. BLACKMAN, S.FORGE "The future of universal service in Europe" (2008) 10 *The journal of policy, regulation and strategy for telecommunications* p.157

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