Chapter 7:

Universal Service in Electronic Communications: Pouring New Wine into Old Bottles?

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1. Introduction

Universal service is a central element in the European thinking on the relationship of market competition and public services. In the age of market liberalization, the purpose of universal service is to preserve the public service in a competitive environment. This Chapter examines universal service from a comparative perspective with the purpose of showing that this concept should be fundamentally re-conceptualised in EU electronic communications.

Technological development has touched the purview of universal service on both sides of the Atlantic. In 2011, the US Federal Communications Commission (FCC) expressly endorsed broadband and mobile networks as universal service. While the European Commission (hereinafter the Commission) rejected the extension of universal service to broadband three times,[1] recently, it proposed making broadband part of the EU universal service package.[2] Indeed, the

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1 Last time in 2011, in the third review of electronic communications universal service. Commission, Universal Service in E-communications: Report on the Outcome of the Public Consultation and the Third Periodic Review of the Scope in Accordance with Article 15 of Directive 2002/22/EC, COM/2011/795 final, 4-5.

2 Commission, Proposal for a Directive of the European Parliament and of the Council Establishing the European Electronic Communications Code (Recast), COM/2016/590.

broadband revolution seems to be on its way. Finland, as the pioneer of European regulation, made broadband part of universal service already in 2010, followed by Spain and Malta.[3] It is noteworthy that, notwithstanding these developments, the foregoing countries still fell behind Niue (an island-state in the Pacific), which can take pride in being the first 'Wi-Fi nation' of the world: the entire island has been provided with free Wi-Fi internet coverage since 2003.

This Chapter conceptualises the general theory of universal service and establishes the pre-conditions of universal service regulation; then, it applies this general theory to the recent developments of electronic communications. The Chapter inspects how and in which direction this regulatory concept is evolving in EU electronic communications, taking into account the phenomenon of Next Generation Networks (NGN).

The Chapter argues that a service may qualify as universal, i.e. it is reasonable to subject it to universal service regulation, either if positive consumer externalities are present (the universal service is 'worth-while' – Case 1), or the consumption of the service qualifies as a 'fundamental entitlement' in the eyes of the society (the provision of the universal service is a 'must') and there is cost-diversity in the provision of the service (Case 2); or the conditions of both Case 1 and Case 2 are simultaneously met. It is submitted that technological development in electronic communications (broadband, NGN) should reshape the scope of universal service, because the pre-conditions of universal service will be met only in respect of the network connection, thus converting the right to universal service into a general right to get connected to the electronic communications 'highway', functioning as the nervous system of the society.

2. State, Market, Public Service, and Universal Service

In a market economy, human needs are normally satisfied by the market. The state is supposed to intervene only if the market does not yield the result wanted by the society[4] (whatever the expectations may be).[5] A market does not yield a desired result essentially for two reasons: either competition is not functioning properly (corrective intervention), or the society's expectations are excessive (supra-competitive intervention). Accordingly, the legitimacy

3 Commission, Universal Service in E-communications, note 1, 3.

4 S.B. Parsons and J. Bixby, 'Universal Service in the United States: A Focus on Mobile Communications', (2010) 62 Federal Communications Law Journal, 119, 133-34; C. Wolf, *Markets or Governments: Choosing between Imperfect Alternatives*, (2nd ed., The Rand Corporation, 1988); R.H. Coase, 'The Problem of Social Cost', (1960) 3 Journal of Law and Economics (1), 34.

5 Of course, the state may intervene also in cases where it is not supposed to.

of state intervention may be based either on a market failure (market power, information asymmetry, phenomenon of public goods, etc.) or on a public service requirement.[6] In this sense, competition is not an end in itself but a tool to ensure the most efficient use of the society's scarce resources. The society may have numerous supra-competitive expectations against the market: e.g. participation in social life, equality, social justice (or distributory justice), or the requirement of fair balance in media law. Of course, the distinction between the foregoing aspects is, to some extent, an over-simplification and in real life cases it is often very difficult to distinguish the two facets as they are jointly present.

At first glance, it may seem that it is the nature of the service (i.e. whether it is fundamental or not) that determines whether state intervention is needed or not. This is partially true; however, the vast majority of these needs are satisfied by the competitive market (e.g. financial services, insurance, and bread), and they are usually not regarded as public service by the law.[7] For instance, if certain remote settlements had no food supply, the society would demand state intervention; nonetheless, because the food supply is normally secured by the market, it generally does not qualify as a public service.

In general, the starting point of universal service is the citizens' entitlement to a particular service. The tension between the market and universal service is that the latter proceeds from what the citizens need and not from what the market is capable of ensuring. According to the concept of universal service, citizens have the right to a particular set of services, irrespective of geographic location and economic considerations.[8] Although this right is generally not legally enforceable, it is, on the part of the society, a social expectation towards the state.

The regulatory notion of universal service, essentially, encompasses three core requirements: availability, affordability, and adequate quality.[9] Nonetheless,

6 Cf. M.B. Nenova, 'The New Concept of Universal Service in a Digital Networked Communications Environment', (2007) 3 Journal of Law and Policy for the Information Society, 227, 231-32. The major justifications of "public intervention in the economy [are], in particular [,] market failures and redistributive considerations."

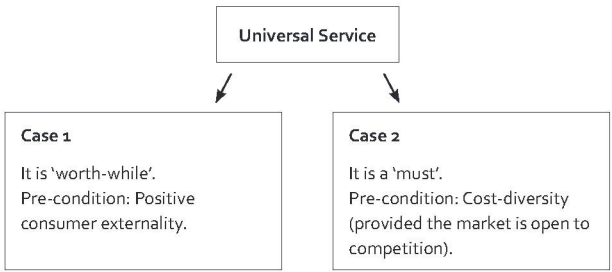
7 Cf. W. Sauter, 'Services of General Economic Interest (SGEI) and Universal Service Obligations (USO) as an EU Law Framework for Curative Health Care', (September 2007) TILEC Discussion Paper No. 2007-02, available on SSRN at: https://ssrn.com/abstract=1013261, 19-2.

8 Federal Communications Commission, Connecting America: The National Broadband Plan, 21, (2010), available at: www.broadband.gov/download-plan/ (last accessed :1 October 2017). "The desire for equal opportunity has long guided our efforts to make access to technologies universal, from electricity to telephony, from television to radio."

9 Commission, Green Paper on Services of General Interest, COM/2003/270 final, para 5. "[T]o guarantee access for everyone, whatever the economic, social or geographical situation, to a service of a specified quality at an affordable price."

from an economic perspective, these elements may be reduced to the question of price: the market is ready to provide the service to anyone in any quality as far as the proper price is paid. The lack of availability is, at least in economic terms, the charging of a prohibitive price (constructive unavailability). Accordingly, the chief problem is not that the market is disinclined to provide the service, but that there is no demand for the service at the price the market would charge.

Universal service may be explained with both corrective (Case 1) and supra-competitive considerations (Case 2).[10]



The provision of universal service may be economically 'worth-while'.[11] External economic effects may pertain to certain market arrangements, which may be either positive or negative. If a consumer decides not to consume a product, his choice may be rational and socially optimal, because he may spend his money on another product that is more valuable for him (the utility of which is higher). Nevertheless, if consumer externality is significant, non-consumption may lead to market failure due to sub-optimal consumption. In such cases, consumer surplus (utility minus price) is negative on the individual level, while positive on the social level. Hence, universal service may aim at supporting the consumption of the product (service) in cases where there is negative individual but positive social consumer surplus, thus ensuring the optimal volume of consumption. By way of example, the value accruing to subscriber A increases if consumer B also gets connected to the telephone network through a subscription: A may

10 Cf. M.B. Nenova, note 6, 131–32. Universal service contributes to the achievement of the following objectives: "(i) internalization of network externalities; (ii) redistribution between users (of different locations and / or income groups); and (iii) the realization of some public goods (such as an all-encompassing communications network)."

11 For a detailed analysis see S.B. Parsons and J. Bixby, note 4, 133-41.

reach one more person on the basis of his telephone subscription, while his subscription fee remains unchanged (network externality). Hence, it may be reasonable for A to subsidize the subscription of B to some extent. Similarly, positive consumption externality emerges, by way of example, in the event that the calling party pays for the call but the call confers value also on the called party. In more general terms, a benefit may accrue to the party who is not paying for the call (call or use externality).[12]

Likewise, universal service may be justified by supra-competitive considerations as well (it is a 'must'): certain services are to be made available to all consumers irrespective of location, at affordable prices and adequate quality even if there is no positive consumer externality. At the same time, it is to be noted that in the event that universal service is based solely on supra-competitive considerations (i.e. there are no positive consumer externalities) and the market is liberalized (i.e. the universal service operates in a competitive environment), it is a necessary prerequisite that the costs of the service are not uniform in respect of the individual geographic units or consumer groups ('cost-diversity').

Cost-diversity is a generally valid proposition, which lies at the heart of traditional universal service at large. In the textbook universal service scenario, the costs of the service are diverse, while the entitlement logic of universal service demands uniform (or uniformly capped) prices. Competition may provide adequate service in certain segments but not in others, while the citizens have the same fundamental entitlement,[13] irrespective of where they live.[14] If the costs of the service are the same everywhere and in respect to all consumers, the question emerges whether there is any need for universal service regulation, or whether the regulatory approach is characterised by universal service at all. If the reason why the market is not living up to the society's expectations is that the market is not performing well, e.g. there is market power, corrective intervention is needed. On the other hand, if the market is functioning well but it is still not living up to the society's expectations, this implies that the society's expectations are excessively high and the introduction of universal service brings forward a general state support mechanism that is not based on social conditions. It is hard to imagine a market economy that considers, for instance,

12 See e.g. J.T. Wenders, *The Economics of Telecommunications: Theory and Policy*, (Ballinger, 1987), 29; L.D. Taylor, *Telecommunications Demand in Theory and Practice*, (Springer, 1994), 9; I. Vogelsang and B.M. Mitchell, *Telecommunications Competition: The Last Ten Miles*, (AEI Press, 1997), 51; H. Gruber, *The Economics of Mobile Telecommunications*, (Cambridge University Press, 2005), 191; S.B. Parsons and J. Bixby, note 4, 234-235.

13 See A. McKenna, *A Human Right to Participate in the Information Society*, (Hampton Press, 2011).

14 See case C-320/91 *Paul Corbeau* [1993] ECLI:EU:C:1993:198, paras 17-18.

genuine competitive prices to be generally unsatisfactory (note that universal service grants entitlements to every citizen irrespective of social conditions).

While cost-diversity normally pertains to universal service whether or not it is justified by positive consumer externalities or by supra-competitive desires, it is a necessary prerequisite when universal service is based solely on supra-competitive considerations (i.e. there are no positive consumer externalities) and the market is liberalised. If the fruits of workable competition do not live up to the society's expectations in any of the geographic areas, it is highly dubious whether there is any point in introducing competition in the market. Otherwise, all segments of the market would be covered by universal service.

In electronic communications, a usual pre-condition of universal service is that the service's market penetration is high (i.e. it is used by the majority of the consumers).[15] This requirement is justified by the purpose of electronic communications universal service (i.e. the prevention of social exclusion). Only those communications systems involve the risk of social exclusion that are used by the majority but are not available to all members of the society. Nonetheless, this aspect of market penetration may not be conceivable in all other sectors which adopted the concept of universal service.

Of course, state intervention may also be warranted in cases where the costs of the service are uniform throughout the country (and in respect to all consumer groups), but consumers have different financial possibilities and society expects poor consumers not to be excluded from the service. This is, nevertheless, a question of social policy and does not come under the notion of universal service. Although both universal service and social support regimes involve wealth transfer and redistribution, there is a crucial difference between the two: social policy redistributes wealth from the rich to the poor in an environment where the market, presumably, performs well and provides the service at prices that may be regarded as generally affordable. Universal service implies that consumers have a certain entitlement irrespective of social status and the market, in the absence of state intervention, would not yield the optimal result in all segments, either because it cannot tackle the problem of positive consumer externality or because it fails to live up to the society's expectations.

It is noteworthy that intensive state intervention does not necessarily pertain to universal service. Whether intervention is necessary depends on the characteristics of the market. The most efficient arrangement is if the market

15 See Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on Universal Service and Users' Rights Relating to Electronic Communications Networks and Services (Universal Service Directive), [2002] OJ L 108/51, Annex V; 47 U.S.C. § 254(b) (2012).

provides the service in accordance with the requirements of universal service (availability, affordable prices, adequate quality, etc.). If this is the case, there is no need for state intervention;[16] the existence of workable competition may exclude the extension of universal service regulation to industries that would otherwise call for state intervention and to services that would qualify as fundamental. By way of example, the existence of workable competition was one of the reasons why the Commission did not extend the ambit of electronic communications universal service to mobile telephony in the European Union.[17]

Universal service is to be clearly distinguished from simple monopoly regulation. The latter is justified by the systematic presence of market power. The tackling of this market failure may warrant regulatory intervention (corrective intervention) where competition law seems to be unsuccessful. However, here, the rationale of the regulation is not to secure the citizens' entitlement to a particular service but to systematically protect consumers from abuses of market power. Once the market becomes competitive, the reasons for monopoly regulation evaporate; on the other hand, universal service regulation is not necessarily transitory and it may be needed also in cases where there is workable competition.

In sum, a service may qualify as universal (i.e. it is reasonable to subject it to universal service regulation) in the following two cases. First, positive consumer externalities are present. Second, the consumption of the service qualifies as a fundamental entitlement in the eyes of the society and the costs of the service are not uniform in respect of the individual geographical units or consumer groups (cost-diversity).

3. Historical Roots of Universal Service

The birth of the term *universal service* (but not that of the social notion) is intrinsically linked with the anti-competitive desire for legal monopoly.[18] The phrase itself is attributed to Theodore Vail, AT&T leader, who – with the introduction of the *"One Policy, One System, Universal Service"* slogan in 1907,

16 See W. Sauter, 'Services of General Economic Interest and Universal Service in EU Law', (2008) 33 European Law Review, 167, 179-80.

17 Commission, Communication 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, COM/2008/572 final, 6-7.

18 See C.H. Sterling, P.W. Bernt and M.B.H. Weiss, *Shaping American Telecommunications: A History of Technology, Policy, and Economics*, (Routledge, 2006), 197; M.L. Mueller, *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System*, (1997), 101; N. Garnham, 'Universal Service,' in W.H. Melody (ed), *Telecom Reform: Principles, Policies and Regulatory Practices*, (Lyngby, 1997), 200. Universal service was "mobilised as an attempted defence of the telephone monopoly."

and of the purpose of a uniform telephone system – tried to gain regulatory protection against antitrust law, and perhaps also against the possibly emerging competition.[19] The story had nothing to do with the citizens' fundamental entitlements. The requirement of universality did not relate to the service but to the infrastructure. New entrants (competing telephone companies) emerged, which did not interconnect, and a subscription with the local telephone company did not imply the automatic possibility of distance calls.[20] This plight was characterised much more by network externalities (external economic effects) than by the right to public service.[21]

Nevertheless, Vail poured old wine in a new bottle: the term 'universal service' was first used in 1907 (albeit not in the way it is used today), but the approach itself is much older. For instance, the US Constitution in 1787 provided that "the Congress shall have power to establish post offices and post roads"; today, this is called (postal) universal service.[22]

The term 'universal service' did not appear in statutory law for some time, although the concept was in fact present. By way of example, the 1934 US Communications Act did not use this phrase, but it was one of the Act's purposes to ensure, as far as possible, the nation-wide availability of electronic communications (wire and radio communication) services at reasonable prices.[23] The 1996 US Telecommunications Act was the first to codify universal service on the level of statutory language and terminated the (until then) implicit and intransparent system of cross-subsidisation[24] where distance calls supported local calls, household customers' fees were subsidised from the fees of business customers, and rural telephone services from the fees of urban calls.[25] The new

19 H. Cremer, F. Gasmi, A. Grimaud and J-J. Laffont, *The Economics of Universal Service: Practice*, (The Economic Development Institute of the World Bank, 1998), 1, available at: www.researchgate.net/publication/242231150_The_Economics_of_Universal_Service_Practice (last accessed: 1 October 2017). M.B. Nenova, note 6, 121.

20 M. Young, 'The Future of Universal Service. Does It Have One?', (2005) 23 International Journal of Law and Information Technology, 188, 189; M.L. Mueller, note 18; S.B. Parsons and J. Bixby, note 4, 123-24.

21 See F. Cugia di Sant'Orsola, 'Universal Service Obligation: Oh Dear, I Shall Be Late! Said the White Rabbit', (2008) 4 Convergence, 32, 34.

22 See e.g. US Postal Service, Universal Service and the Postal Monopoly: A Brief History, (2008), available at: http://about.usps.com/who-we-are/postal-history/universal-service-postal-monopoly-history.pdf; US Postal Service, Report on Universal Postal Service and The Postal Monopoly, (2008), available at: http://about.usps.com/universal-postal-service/usps-uso-report.pdf (last accessed: 1 October 2017).

23 C.H. Sterling, P.W. Bernt and M.B.H. Weiss, note 18, 197.

24 P. Valentiny, 'Az univerzális szolgáltatás és a közszolgáltatások értelmezéséről az Európai Unióban', (2000) 47 Közgazdasági Szemle, 341, 350, available at: http://epa.oszk.hu/00000/00017/00059/pdf/valentiny.pdf (last accessed: 1 October 2017).

25 C.H. Sterling, P.W. Bernt and M.B.H. Weiss, note 18, 198; Federal-State Joint Board on Universal Service, 97 FCC Rcd. 157, 12 (1997).

rules were meant to transmit universal service in the world of competitive market and to make its financing explicit and transparent.[26]

The justification of universal service in the telephone industry was two-fold: network externality (positive consumer externality) and considerations related to social entitlements were both present.[27] The first justified the existence and necessity of universal service with the special characteristics of the telecommunications network. The second justification is traced back to social considerations (social 'entitlement'). Here, the strongest argument seems to be the citizens' right to participate in social life that is one of the practical prerequisites of the exercise of certain civil and political rights.[28]

Similar to the situation in the US, the term 'universal service' has not appeared in the European integration's founding Treaties or their amendments. The term used instead is 'services of general economic interest', which is the container-concept of 'universal service'. The notion is amplified in the secondary sources: "the concept of universal service refers to a set of general interest requirements ensuring that certain services are made available at a specified quality to all consumers and users throughout the territory of a Member State, independently of geographical location and, in the light of specific national conditions, at an affordable price."[29] As noted above, the three main elements of universal service may be reduced to the question of price: the market is ready to provide the service to anyone in any quality as far as the proper price is paid. The lack of availability is, at least in economic terms, nothing but the charging of a prohibitive price (constructive unavailability).

4. The Present and Future of Universal Service in Electronic Communications

Connection and 'communications products' are bifurcating in electronic communications. The telecommunications infrastructure has the tendency of becoming a huge communications 'highway', where traditional voice-transmission services are not the only product but are one of the many available

26 See K.O. Abernathy, 'Preserving Universal Service in the Age of IP', (2005) 3 Journal on Telecommunications and High Technology Law, 409, 410-11.

27 M. Young, note 20, 191-192. As to the social considerations see H. Sawhney, 'Universal Service: Prosaic Motives and Great Ideals', (1994) 38 Journal of Broadcasting and Electronic Media, 375, 380; B. Regan, 'Ushering Universal Service Reform: Politically Feasible Legislative Principles', (2008) 16 Comm. Law Conspectus, 471.

28 See T.H. Marshall, *Citizenship and Social Class*, (1950); P. Preston and R. Flynn, 'Rethinking Universal Service: Citizenship, Consumption Norms, and the Telephone', (2006) 26 Information Society, 91, 95. For a criticism on the theoretical foundations of universal service, see M.L. Mueller, note 18, 101.

29 Commission, Green Paper on Services of General Interest, COM/2003/270 final, para 50.

products.[30] It is submitted that the scope of universal service should be gradually confined to (broadband) connection without specifying voice-transmission as one of the products covered by universal service.

In the EU, the scope of electronic communications universal service is determined mainly by Article 4 of Directive 2002/22/EC.[31] "Member States shall ensure that the services set out in (...) Chapter [II of the Directive] are made available at the quality specified to all end-users in their territory, independently of geographical location and, in the light of specific national conditions, at an affordable price."[32]

According to the currently effective provision, the fixed connection to a public communications network is the core of universal service. Certain requirements are applicable to this fixed connection (capacity of supporting voice and facsimile communications and functional internet access). Voice-transmission services (publicly available telephone services) are provided through this network connection. This provision slightly departs from the initial wording of Article 4 (which was amended by Directive 2009/136/EC).[33] The original wording of Article 4 enumerated certain communications products that were covered by universal service: fixed connection to the public telephone network and access to publicly available telephone services at a fixed location. Similar to the currently effective provisions, certain requirements were applicable to the quality of the fixed connection to the public telephone network: capacity of allowing telephone calls, facsimile communications, and functional internet access. It is to be stressed that while the initial text of Directive 2002/22/EC limited functional internet access to narrowband data rates, Directive 2009/136/EC "gave Member States the flexibility to define, where necessary, the data rates at national level, which may include broadband speeds."[34]

The distinction between *infrastructure* and *product* has been entailed by the technological and market developments the electronic communications sector saw in the last period. The transition to NGN reshaped the paradigm of electronic

30 See M.B. Nenova, note 6, 134–136.

31 Directive 2002/22, note 15, 51-77. Mainly but not exclusively: Universal service also embraces directory enquiry services and directories (Article 5), public pay telephones (Article 6) and special measures for disabled users (Article 7).

32 Article 3(1) of Council Directive 2002/22, note 15.

33 Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 Amending Directive 2002/22/EC on Universal Service and Users' Rights Relating to Electronic Communications Networks and Services, Directive 2002/58/EC Concerning the Processing of Personal Data and the Protection of Privacy in the Electronic Communications Sector and Regulation (EC) 2006/2004 on Cooperation between National Authorities Responsible for the Enforcement of Consumer Protection Laws, [2009] OJ L 337, 11-36.

34 Commission, Universal Service in E-communications, note 1.

communications. The NGN is not a uniform network but a new system, based on packet-switched technology. Here, a wide range of communications services are provided in a scheme where the service and the transmission technology are separated: the information (voice) is converted into packages and these packages are transported from one network point to another. This system differs from older circuit-switched networks where two network points were to be connected before starting the communication and this connection could be used solely for the communication between the two network points. The NGN's core feature is the integration of voice and data transmission into a simpler and more flexible network based on packet-switching and internet protocol. This technology enables the transmission of data and voice in the same network.[35] Once this NGN technique becomes a reality for the entire electronic communications system, it will change the conception of universal service, because, fundamentally, it separates the infrastructure from the product it transmits.

At the dawn of telecommunications, the network and the service were, from a consumer perspective, mainly the same. The consumer normally purchased a voice-transmission service that transported from one location to another. In this scenario, access (or connection) and service had no independent functions for end-users and they could not be sold to them separately. Network infrastructure may have had an independent value for other (probably competing) service providers who may have wanted to lease it in order to provide service to their own customers. Nevertheless, this does not change the proposition that the service perceived by the consumer was the transportation of voice from one point to another, and the voice itself was only rarely an independent product. This picture gradually changed when the telecommunications network became the 'highway' of numerous services.[36]

In the EU, the scope of universal service has been revised three times, in 2005 / 2006, in 2008 and in 2011. In the first review procedure, the Commission concluded that even if mobile telephone service qualified as universal in nature (taking into account its significance in social life), one of the pre-conditions of universal service was missing: thanks to the competitive market, mobile telephone services were available for consumers at affordable prices and in

35 OECD, Rethinking Universal Service for a Next Generation Network Environment, (2005), available at: www.oecd.org/dataoecd/59/48/36503873.pdf (last accessed: 1 October 2017), 5.

36 Cf. M.B. Nenova, note 6, 137. "[C]ommunications should be thought of not only as 'transmission systems', but also in terms of their special role as channels carrying and disseminating information and content."

adequate quality.[37] The Commission also noted that even if mobile telephone networks did not have 100% coverage (in most Member States this was between 98% and 100%), complete coverage would entail a disproportionate financial burden on the society.[38] Likewise, the Commission did not extend universal service to broadband; contrary to mobile telephone services, the reason here was not effective competition but restricted coverage. The available statistical data suggested that while the number of citizens with broadband internet access was dynamically increasing, the majority of the citizens were still not using this service[39] and it was not predictable how the introduction of universal service regulation would affect the evolution and penetration of broadband in the market.[40]

The 2008 review had similar results. The Commission stressed that although it is very close to being included in universal service, broadband had not reached the coverage and penetration required.[41] While, on average, fixed broadband networks are available to 95.1% of the population of the EU, "this figure is only 82.8% in rural areas across the EU and 60% or less in rural areas of Bulgaria, Slovakia, Poland, Romania, and Cyprus."[42] At the same time, the Commission also questioned whether universal service regulation was the proper tool to get results in this field,[43] because the extension of universal service to broadband would significantly increase "the need for sectoral funding and 'cross-subsidisation' between groups of consumers."[44] Nonetheless, Member States were free to extend universal service to broadband (as Finland, Spain, and Malta did).[45]

In 2011, the Commission concluded that due to the different levels of development of national networks it was not advisable to include broadband in

37 See Commission, Universal Service in E-communications, note 1, 7-9.
38 Commission, Report Regarding the Outcome of the Review of the Scope of Universal Service in Accordance with Article 15(2) of Directive 2002/22/EC, COM/2006/163 final, para 4.
39 Para 3.3.
40 Ibid.
41 Commission, Communication on the Second Periodic Review, note 17, 9; Commission, Universal Service in E-communications, note 1, 7.
42 Commission, Universal Service in E-communications, note 1, 4.
43 Commission, Communication on the Second Periodic Review, note 17, 12.
44 Commission, Universal Service in E-communications, note 1, 4-5.
45 Ibid, 3.

the universal service package on the EU level, though Member States remained free to make such an extension on the national level.[46]

Nonetheless, in 2016 the Commission submitted a proposal for a Directive establishing the European Electronic Communications Code, which finally makes broadband part of the EU universal service package.[47] Article 79 of the proposal reshapes the notion of functional internet access as an element of the universal service package, providing that "Member States shall define the functional internet access service (...) with a view to adequately reflect services used by the majority of end-users in their territory", which "shall be capable of supporting the minimum set of services set out in Annex V". However, Annex V contains a dynamic list of online services that appear to be effectively usable only over a broadband connection.[48]

The above developments parallel the contemporary history of US universal service. Under the 1996 Telecommunications Act, former incumbents were replaced by eligible telecommunications carriers (ETCs), which were allotted a particular area where they had to provide universal service. In exchange for this obligation, ETCs were entitled to universal service support. The FCC established four support mechanisms: support for rural, insular, and high-cost areas; support for low-income consumers; support for schools and libraries; and support for healthcare providers.[49]

46 Ibid,12. The Commission currently does not see a need to change the basic concept and principles of universal service as an instrument for preventing social exclusion. At this stage, it would not be appropriate to include mobility or mandate broadband at a specific data rate at EU level. The 2009 Telecom Package gives Member States the flexibility, in line with the principle of subsidiarity, to define the appropriate data rate for network connections delivering 'functional internet access' in the light of national conditions. Basic broadband access can therefore be part of USO at national level in justified cases, particularly where market forces and other policy tools and financing instruments have not led to universal broadband coverage. To minimise market distortions, Member States should take full account of public intervention tools other than USO to ensure broadband availability. Member States thus have the possibility, but no obligation, to include access to broadband connections within the scope of national USO.

47 Commission, note 2.

48 List of services which the functional internet access service shall be capable of supporting in accordance with Article 79(2): (1) E-mail, (2) search engines enabling search and finding of all type of information, (3) basic training and education online tools, (4) online newspapers / news, (5) buying / ordering goods or services online, (6) job searching and job searching tools, (7) professional networking, (8) internet banking, (9) eGovernment service use, (10) social media and instant messaging, (11) calls and video calls (standard quality).

49 Federal-State Joint Board on Universal Service, 97 FCC Rcd. 157, §§ VII-XI (1997). For a description of the operation of the above mechanisms, see B. Regan, note 27, 502.

In the US, the universal service policy results in a redistribution volume that may seem extraordinary to Europeans.[50] The payments of the Universal Service Administrative Corporation are steadily increasing. According to the FCC's 2010 Report, the Universal Service Fund has paid out approximately 7 billion USD per year.[51] The financing of the universal service shoulders a heavy burden on consumers as well. Although the contributions to the Universal Service Fund are paid by the service providers, they pass this burden on to their customers. For instance, in the third quarter of 2013 the payments to the Universal Service Fund operated as a 15.1% sales tax on final consumers.[52] The pace of the contributions' growth is also remarkable; in the first quarter of 2001, the universal service fee was 6.6827%, and in the first quarter of 2006, it was 10.2%;[53] between 2001 and 2013 the burden entailed by the universal service support mechanism increased by 8.4173%.

It should be noted that in the EU, notwithstanding the theoretical possibility of compensation for the provision of universal service, redistribution is generally minimal. In several Member States, although there are provisions regarding the compensation to be paid to Universal Service Providers, the latter have not been able to call in any considerable support.

The service elements of universal service are determined by the FCC. According to Section 254 of the Telecommunications Act, universal service represents "an evolving level of telecommunications services."[54] When defining the services that are supported by the federal universal service support mechanisms, the FCC "[s]hall consider the extent to which such telecommunications services (A) are essential to education, public health, or public safety; (B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers; (C) are being deployed in public

50 See R. Frieden, 'Killing with Kindness: Fatal Flaws in the $6.5 Billion Universal Service Funding Mission and What Should be Done to Narrow the Digital Divide', (2006) 24 Cardozo Arts and Entertainment Law Journal, 47.

51 Federal Communications Commission, Trends in Telephone Service, (2010), available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301823A1.pdf (last accessed: 1 October 2017), 19-5, (showing that in 2007, this was 6.955 billion USD, in 2006 7.106 billion USD).

52 Federal Communications Commission, Proposed Third Quarter 2013 Universal Service Contribution Factor 1, (2013), available at: http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0612/DA-13-1361A1.pdf (last accessed: 1 October 2017).

53 Federal Communications Commission, Proposed First Quarter 2001 Universal Service Contribution Factor 3, (2000), available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-00-2764A1.pdf (last accessed: 1 October 2017); Federal Communications Commission, Proposed First Quarter 2006 Universal Service Contribution Factor 1, (2005), available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-3203A1.pdf (last accessed: 1 October 2017). On the funding of universal service in the US, see A.S. Hammond IV, 'Universal Service: Problems, Solutions, and Responsive Policies', (2005) 57 Federal Communications Law Journal, 187, 187-200.

54 47 U.S.C. § 254(c)(1) (2012).

telecommunications networks by telecommunications carriers; and (D) are consistent with the public interest, convenience, and necessity."[55]

Proceeding from this statutory basis, the FCC included the following elements in its definition of 'universal service':[56] (1) connection to the telephone network (single-party service); (2) telephone voice-transmission service including the possibility of long-distance calls (voice grade access to the public switched network, with the ability to place and receive calls; Dual Tone Multi-frequency (DTMF) signalling or its functional equivalent; and access to interexchange services); (3) emergency calls (access to emergency services, including in some instances, access to 911 and enhanced 911 (E911) services); (4) customer service (access to operator services); (5) telephone directory (access to directory assistance); and (6) restriction of long-distance calls for low-income consumers (toll limitation services for qualifying low-income consumers).[57] The universal service mechanism follows the principle of technological neutrality.[58]

The FCC's enumeration diverges from the European list of service elements set out above. For example, the US universal service does not encompass public pay telephones (pay-phones). Although the FCC's above definition did not embrace internet access,[59] this was only an apparent difference; in effect, some kind of a 'functional internet-connection' was part of the system. The FCC's Universal Service Order explained that "voice grade access to the public switched network usually enables customers to secure access to an Internet Service Provider, and, thus, to the internet."[60] The Order explained that internet access consists of different components; besides the underlying information services, internet access also involves a network transmission component that connects the subscriber and the internet service provider. Thus, the connection to the telephone network normally involves the possibility of being connected to the internet; the information services going beyond this did not belong to the scope of universal service. The FCC determined that access to internet of higher quality than dial-up (voice grade access to the public switched network) was not to be included among the services supported under Section 254(c)(1) because it was not proved that a substantial majority of residential customers subscribed to higher quality internet access; furthermore, although high-quality

55 Ibid.

56 The above enumeration does not follow the structure established by the FCC but presents the elements of universal service in a scheme more familiar to Europeans. This implies some necessary simplification.

57 Federal-State Joint Board on Universal Service, 97 FCC Rcd. 157 (1997), para 22.

58 Ibid, paras 26-27, 46-48; *Alenco Commc'ns, Inc. v FCC*, 201 F.3d 608 (5th Cir. 2000).

59 C.H. Sterling, P.W. Bernt and M.B.H. Weiss, note 18, 272.

60 Federal-State Joint Board on Universal Service, 97 FCC Rcd. 157 (1997), para 83.

internet access may advance education and public health, this was not essential to advancing education and public health.[61] The exclusion of mobile telephony and broadband was reaffirmed by the FCC in 2003.[62]

Nonetheless, the policy towards broadband and mobile telephony recently changed. In 2007, the Federal-State Joint Board on Universal Service recommended including mobile telephony and broadband among the services supported by the universal service mechanism,[63] as well as the introduction of three separate support funds: landline telephony, wireless telephony, and broadband.[64] This recommendation was rejected by the FCC.[65] The Joint-Board reiterated its recommendation in 2010.[66] The American Recovery and Reinvestment Act of 2009 instructed the FCC to prepare a national broadband plan that "shall seek to ensure that all people of the United States have access to broadband capability."[67] The National Broadband Plan of 2010[68] recommended the reformation of universal service to include broadband, the transformation of the support fund for high-cost (rural, insular) areas into the Connect America Fund (CAF) to support the provision of affordable broadband and voice, and the creation of a Mobility Fund. In February 2011, the FCC, in conformity with the National Broadband Plan, proposed the inclusion of broadband into universal service and the transformation of the current high-cost programs into the Connect America Fund.[69] In October 2011, broadband and mobile networks were expressly designated as a universal service by the FCC.[70] The FCC adopted the following goals: (1) preserve and advance universal availability of voice service; (2) ensure universal availability of modern networks capable of

61 Ibid.

62 Federal-State Joint Board on Universal Service, 03 FCC Rcd. 170 (2003), paras 9-11, available at: www.universalservice.org/_res/documents/about/pdf/fcc-orders/2003-fcc-orders/FCC-03-170.pdf (last accessed: 1 October 2017). For an analysis of universal service from the perspective of mobile communications, see S.B. Parsons and J. Bixby, note 4, 119.

63 High-Cost Universal Service Support, 07J FCC Rcd. 4, (2007), para 4, available at: www.acuta.org/wcm/acuta/legreg/l158.pdf (last accessed: 1 October 2017).

64 Ibid, paras 11-23.

65 High-Cost Universal Service Support, 08 FCC Rcd. 262, (2008), para 13, available at: www.fcc.gov/fcc08262/FCC-08-262A1.pdf (last accessed: 1 October 2017).

66 Federal Communication Commission, Lifeline & Link Up Reform & Modernization, 11 FCC Rcd. 32, (2011), available at: www.universalservice.org/_res/documents/about/pdf/fcc-orders/2011-fcc-orders/FCC-11-32.pdf (last accessed: 1 October 2017).

67 47 U.S.C. § 1305(k)(2) (2012).

68 Federal Communications Commission, note 8.

69 Federal Communications Commission, Connect America Fund, 11 FCC Rcd. 13, (2011), para 18, available at: www.universalservice.org/_res/documents/about/pdf/fcc-orders/2011-fcc-orders/FCC-11-13.pdf (last accessed: 1 October 2017).

70 Federal Communications Commission, Connect America Fund, 11 FCC Rcd. 161, (2011), paras 43-73, available at: http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0206/FCC-11-161A1.pdf (last accessed: 1 October 2017).

providing voice and broadband service to homes, businesses, and community anchor institutions; (3) ensure universal availability of modern networks capable of providing advanced mobile voice and broadband service; (4) ensure that rates for broadband services and rates for voice services are reasonably comparable in all regions of the nation; and (5) minimize the universal service contribution burden on consumers and businesses.[71]

In sum, recent developments in electronic communications have appeared in the debates about the scope of universal service on both sides of the Atlantic. There are two main elements that are considered to be included in universal service: mobile telephony and broadband. As far as mobile telephony is concerned, in the EU, competition seems to have made the need for universal service regulation less relevant. The general perception is that competition is effective and performs well in this segment and that the society has no expectations going beyond what the competition yields.[72] Nevertheless, in the context of the above developments, it seems that broadband is not a new element but rather a new universal service itself. "Broadband provides an opportunity not simply to expand universal service, but to reinvent it."[73]

5. Conclusions

This Chapter demonstrated that a service may qualify as universal (i.e. it is reasonable to subject it to universal service regulation) in two cases. First, positive (consumer) external effects are present. Second, the consumption of the service qualifies as a fundamental entitlement in the eyes of contemporary society, and the costs of the service are not uniform with respect to the individual geographical units or consumer groups (cost-diversity).

The development of telecommunications technology calls for the reconsideration of universal service. The debate focuses on whether universal service should be extended to mobile telephony and broadband.[74] However, it seems that technological development does not simply raise the question of expansion, it also forces regulators to reinvent universal service. The 'Net' is gradually becoming a telecommunications 'highway' where voice services are only

71 Ibid, para 17.

72 See Commission, Universal Service in E-communications, note 1, 9.

73 K. Werbach, 'Connections: Beyond Universal Service in the Digital Age', (2009) 7 Journal on Telecommunications and High Technology Law, 67, 71–72.

74 For further discussion of the debate in Germany regarding whether broadband should be included in the scope of universal service, see L. Gramlich, 'Next Generation Universal Service in the Field of Electronic Communications? Some Lessons from the Debate on Countrywide Broadband Service in Germany', (2009) 3 Masaryk University Journal of Law and Technology, 345.

one of many available services.[75] The internet holds various communications, commercial, educational, social, political and entertainment possibilities. In this instance, universal service may become a question of access / connection, diminishing the relevance of the actual services available through the pipeline. The right to universal service has the potential to become a general right to be connected to the society's 'nervous system'. In this situation, the distinction between high-cost and low-cost territories would be confined to 'highway' coverage, while the costs of the services transported on this 'highway' would normally not vary geographically; a circumstance that excludes averaging (i.e. the method of setting the price at the average of the low-cost and high-cost territories).

75 *Contra* M.B. Nenova, note 6, 142-44. Arguing that "besides the newly formulated tasks of universal service in terms of access to networks and innovation, ... in the longer-term evolution of the Information Society, the idea of universal access will need to be extended to include content."