

The Metamorphoses of Universal Service in the European Telecommunications and Energy Sector: A Trans-Sectoral Perspective

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A. Introduction

Universal service has a pivotal role in market liberalization and competition on both sides of the Atlantic. It is central to the European thinking on markets and public service and is an inevitable element of market liberalization and sectoral competition rules. The universal service aims at preserving the public service in a competitive environment. The paper analyzes this cornerstone of the European thinking from a comparative and trans-sectoral perspective, demonstrating that the concept of universal services should be fundamentally re-conceptualized in EU electronic communications and energy regulation.

Currently, there is a lively global debate on whether and how to expand universal service in electronic communications. Recently, in 2011, the U.S. Federal Communications Commission (FCC) expressly endorsed broadband and mobile networks as a universal service. On the other side of the Atlantic, the broadband revolution is still awaited: In 2011, the European Commission ("Commission") refused to recognize broadband as a universal service.¹ The broadband revolution, however, seems to be fast approaching. Finland, as the pioneer of European regulation, made broadband part of universal service in 2010. This change was followed by Spain and Malta.² It is noteworthy that, notwithstanding these developments, the foregoing countries still fell behind Niue (an

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¹ Eur. Comm'n, *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*, at 4-5, COM (2011) 795 final (Nov. 23, 2011).

² See *id.* at 3.

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.

The paper conceptualizes 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 and to the EU energy sector (electricity and natural gas). As to the energy sector it is to be noted that although EU law introduced the notion of universal service only in the electricity industry, some Member States also introduced this regulatory concept in the natural gas sector. The purpose of the paper’s analysis is mainly two-fold. The paper 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”). Furthermore, it examines and evaluates the transplantation of universal service, a telecommunications concept, to the EU energy sector.

The paper 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.

Furthermore, the paper also demonstrates that the pre-conditions of universal service are not met for energy products—supply of electricity and natural gas. Notably, EU internal electricity market law provides that consumers, as part of the universal service package, have the right to be supplied with electricity at reasonable prices. End-user prices in the household sector are regulated in more than half of the Member States. In the electricity sector, regulated Universal Service Providers (or suppliers of last resort) subject to price control have been appointed in, for instance, France, Hungary, Italy, Slovakia, Spain, and Portugal. Therewith, although natural gas is not regarded as universal service in EU natural gas market law, a similar system was introduced in a few national markets, e.g. Hungary, Spain, and Portugal. The paper argues that with respect to energy supply (contrary to network services, i.e. “transportation” of energy) there are no positive consumer externalities and there is no cost-diversity; the regulation of the end-user (retail) prices of the “energy product” qualifies as monopoly regulation and should be transitory (i.e. it is to be sustained until there is no workable competition); this proposition is certainly not applicable to the energy network, which the EU directives treat as a natural monopoly.

B. 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 society³ (whatever the expectations may be).⁴ 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 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.⁵ 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. 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.⁶ Although this

³ Steve B. Parsons & James Bixby, *Universal Service in the United States: A Focus on Mobile Communications*, 62 FED. COMM. L.J. 119, 133-34 (2010); CHARLES WOLF, *MARKETS OR GOVERNMENTS: CHOOSING BETWEEN IMPERFECT ALTERNATIVES* (2d ed. 1988); Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 34 (1960).

⁴ Of course, the state may intervene also in cases where it is not supposed to.

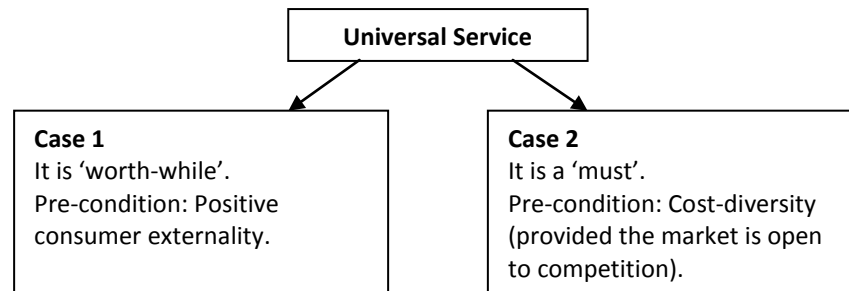
⁵ Cf. Mira B. Nenova, *The New Concept of Universal Service in a Digital Networked Communications Environment*, (2007) 3 J.L. & POL'Y INFO. Soc'Y 117, 131-32 (2010) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1120282 and <http://dx.doi.org/10.2139/ssrn.1120282> (last visited July 23, 2013) (The major justifications of "public intervention in the economy [are], in particular[,] market failures and redistributive considerations.").

⁶ FED. COMM'NS COMM'N, *CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 21* (2010) available at <http://www.broadband.gov/download-plan/> (last visited July 23, 2013) ("The desire for equal opportunity has

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.⁷ Nonetheless, 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).⁸



The provision of universal service may be economically “worth-while.”⁹ 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

long guided our efforts to make access to technologies universal, from electricity to telephony, from television to radio.”).

⁷ Eur. Comm’n, *Green Paper on Services of General Interest*, ¶ 5, COM (2003) 270 final (May 21, 2003), available at http://eur-lex.europa.eu/LexUriServ/site/en/com/2003/com2003_0270en01.pdf (last visited July 23, 2013) (“[T]o guarantee access for everyone, whatever the economic, social or geographical situation, to a service of a specified quality at an affordable price.”).

⁸ Cf. Nenova, *supra* note 5, at 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).”).

⁹ For a detailed analysis see Parsons & Bixby, *supra* note 3, at 133–41.

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 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).¹⁰

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 pre-requisite 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 entitlement¹¹ irrespective of where they live.¹² 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 characterized by universal service at all. If the reason why the market is not living up to the society’s expectations is that the market

¹⁰ See, e.g., JOHN T. WENDERS, *THE ECONOMICS OF TELECOMMUNICATIONS: THEORY AND POLICY* 29 (1987); LESTER D. TAYLOR, *TELECOMMUNICATIONS DEMAND IN THEORY AND PRACTICE* 9 (1994); INGO VOGELSANG & BRIDGER M. MITCHELL, *TELECOMMUNICATIONS COMPETITION: THE LAST TEN MILES* 51 (1997); HARALD GRUBER, *THE ECONOMICS OF MOBILE TELECOMMUNICATIONS* 191 (2005); Parsons & Bixby, *supra* note 3, at 134–35.

¹¹ See ALAN MCKENNA, *A HUMAN RIGHT TO PARTICIPATE IN THE INFORMATION SOCIETY* (2011).

¹² See Case C-320/91, Paul Corbeau, 1993 E.C.R. I-2563, ¶¶ 17-18.

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, 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 pre-requisite when universal service is based solely on supra-competitive considerations (i.e. there are no positive consumer externalities) and the market is liberalized. 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).¹³ 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 seems to be inconceivable, by way of example, in the energy sector.

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.

¹³ See Council Directive 2002/22, Annex V, 2002 O.J. (L108) 51, 74 (EC); 47 U.S.C. § 254(b) (2012).

The most efficient arrangement is if the market 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;¹⁴ 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.¹⁵

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).

C. Universal Service in Electronic Communications: Past, Present, and Future

I. Historical Roots

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.¹⁶ The phrase itself is attributed

¹⁴ See Wolf Sauter, *Services of General Economic Interest and Universal Service in EU Law*, 33 EUR. L. REV. 167, 179–80 (2008), available at <http://arno.uvt.nl/show.cgi?fid=93577> (last visited July 23, 2013).

¹⁵ Eur. Comm'n, *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*, at 6–7, COM (2008) 572 final (Sept. 25, 2008), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0572:FIN:EN:PDF> (last visited July 23, 2013).

¹⁶ See CHRISTOPHER H. STERLING, PHYLLIS W. BERT & MARTIN B.H. WEISS, *SHAPING AMERICAN TELECOMMUNICATIONS: A HISTORY OF TECHNOLOGY, POLICY, AND ECONOMICS* 197 (2006); MILTON L. MUELLER, *UNIVERSAL SERVICE: COMPETITION, INTERCONNECTION, AND MONOPOLY IN THE MAKING OF THE AMERICAN TELEPHONE SYSTEM* 101 (1997); Gamham, *Universal Service*, in *TELECOM REFORM: PRINCIPLES, POLICIES AND REGULATORY PRACTICES* 200 (William H. Melody ed., 1997) (Universal service was “mobilised as an attempted defence of the telephone monopoly.”).

to Theodore Vail, AT&T leader, who—with the introduction of the “*One Policy, One System, Universal Service*” slogan in 1907 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.¹⁷ 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.¹⁸ This plight was characterized much more by network externalities (external economic effects) than by the right to public service.¹⁹

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 U.S. Constitution in 1787 provided that “the Congress shall have power to establish post offices and post roads;” today this is called (postal) universal service.²⁰

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 U.S. 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.²¹ The 1996 U.S. Telecommunications Act was the first that codified universal service on the level of statutory language and terminated the (until then) implicit and intransparent system of cross-subsidization²² where distance calls supported local calls, household customers’ fees were subsidized from the fees of business customers, and rural telephone services from the fees of urban calls.²³ The new rules were

¹⁷ HELMUTH CREMER, FARID GASMI, ANDRÉ GRIMAUD & JEAN-JACQUES LAFFONT, *THE ECONOMICS OF UNIVERSAL SERVICE: PRACTICE 1* (1998), available at <http://info.worldbank.org/etools/docs/library/64601/practice.pdf> (last visited July 23, 2013); Nenova, *supra* note 5, at 121.

¹⁸ Mark Young, *The Future of Universal Service. Does it Have One?*, 13 INT’L J.L. & INFO. TECH. 188, 189 (2005); MUELLER, *supra* note 16, at 4; Parsons and Bixby, *supra* note 3, at 123–24.

¹⁹ See Fabrizio Cugia di Sant’Orsola, *Universal Service Obligation: Oh Dear, I Shall Be Late! Said the White Rabbit*, 4 Convergence 31, 34 (2008).

²⁰ See, e.g., U.S. POSTAL SERV., *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> (last visited July 23, 2013); U.S. POSTAL SERV., *REPORT ON UNIVERSAL POSTAL SERVICE AND THE POSTAL MONOPOLY* (2008), available at <http://about.usps.com/universal-postal-service/usps-uso-report.pdf> (last visited July 23, 2013).

²¹ STERLING, BERNT & WEISS, *supra* note 16, at 197.

²² Pál Valentiny, *Az univerzális szolgáltatás és a közszolgáltatások értelmezéséről az Európai Unióban*, 47 KÖZGAZDASÁGI SZEMLE 341, 350 (2000), available at <http://epa.oszk.hu/00000/00017/00059/pdf/valentiny.pdf> (last visited July 23, 2013).

²³ STERLING, BERNT & WEISS, *supra* note 16, at 198; Fed.-State Joint Bd. on Universal Serv., 97 FCC Rcd. 157, ¶ 12 (1997), available at http://www.e-ratecentral.com/FCC/fcc_97-157.pdf (last visited July 23, 2013).

meant to transmit universal service in the world of competitive market and to make its financing explicit and transparent.²⁴

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.²⁵ 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 pre-requisites of the exercise of certain civil and political rights.²⁶

Similar to the U.S., 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.”²⁷ 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).

II. 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 products.²⁸ It is submitted that the scope of

²⁴ See Kathleen Q. Abernathy, *Preserving Universal Service in the Age of IP*, 3 J. TELECOMM. & HIGH TECH. L. 409, 410-11 (2005).

²⁵ Young, *supra* note 18, at 191–92. As to the social considerations see Harmeet Sawhney, *Universal Service: Prosaic Motives and Great Ideals*, 38 J. BROAD. & ELEC. MEDIA 375, 380 (1994); Brian Regan, *Ushering Universal Service Reform: Politically Feasible Legislative Principles*, 16 COMM.LAW CONSPICUOUS 471 (2008).

²⁶ See THOMAS H. MARSHALL, *CITIZENSHIP AND SOCIAL CLASS* (1950); Paschal Preston & Roderick Flynn, *Rethinking Universal Service: Citizenship, Consumption Norms, and the Telephone*, 16 INFO. SOC’Y 91, 95 (2006). For a criticism on the theoretical foundations of universal service see MUELLER, *supra* note 16.

²⁷ Eur. Comm’n, *supra* note 7, ¶ 50.

²⁸ See Nenova, *supra* note 5, at 131, 134–36.

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.²⁹ “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.”³⁰

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). 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.”³¹

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 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

²⁹ 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).

³⁰ Council Directive 2002/22, *supra* note 13, art. 3(1), at 59.

³¹ Eur. Comm’n, *supra* note 1, at 3. See Council Directive 2002/22, *supra* note 13, ¶ 8, at 52.

on packet-switching and internet protocol. This technology enables the transmission of data and voice in the same network.³² 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.³³

In the EU, the scope of universal service has been revised twice, in 2005/2006 and in 2008. 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 adequate quality.³⁴ 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 burden.³⁵ 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 service³⁶ and it

³² ORG. FOR ECON. CO-OP. & DEV., *RETHINKING UNIVERSAL SERVICE FOR A NEXT GENERATION NETWORK ENVIRONMENT 5* (2005), available at <http://www.oecd.org/dataoecd/59/48/36503873.pdf> (last visited July 23, 2013).

³³ Cf. Neno, *supra* note 5, at 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.”).

³⁴ See Eur. Comm’n, *supra* note 1, at 7-9.

³⁵ Eur. Comm’n, *Report Regarding the Outcome of the Review of the Scope of Universal Service in Accordance with Article 15(2) of Directive 2002/22/EC*, ¶ 4, COM (2006) 163 final (July 4, 2006), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52006DC0163:EN:HTML> (last visited July 23, 2013).

³⁶ *Id.* ¶ 3.3.

was not predictable how the introduction of universal service regulation would affect the evolution and penetration of broadband in the market.³⁷

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.³⁸ 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.”³⁹ At the same time, the Commission also questioned whether universal service regulation was the proper tool to get results in this field,⁴⁰ because the extension of universal service to broadband would significantly increase “the need for sectoral funding and ‘cross-subsidisation’ between groups of consumers.”⁴¹ Nonetheless, Member States are free to extend universal service to broadband (as Finland, Spain, and Malta did).⁴²

The above developments parallel the contemporary history of U.S. 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 health care providers.⁴³

In the U.S., the universal service policy results in a redistribution volume that may seem extraordinary to Europeans.⁴⁴ 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.⁴⁵ The financing of the

³⁷ *Id.*

³⁸ Eur. Comm’n, *supra* note 15, at 9; Eur. Comm’n, *supra* note 1, at 7.

³⁹ Eur. Comm’n, *supra* note 1, at 4.

⁴⁰ Eur. Comm’n, *supra* note 15, at 12.

⁴¹ Eur. Comm’n, *supra* note 1, at 4–5.

⁴² *Id.* at 3.

⁴³ Fed.-State Joint Bd. on Universal Serv., 97 FCC Rcd. 157, §§ VII-XI (1997). For a description of the operation of the above mechanisms, see Regan, *supra* note 25, at 471-502.

⁴⁴ See Rob 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*, 24 CARDOZO ARTS & ENT. L.J. 447 (2006).

⁴⁵ FED. COMM’NS COMM’N, TRENDS IN TELEPHONE SERVICE 19-5 (2010), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301823A1.pdf (last visited July 23, 2013) (showing that in 2007, this was 6.955 billion USD, in 2006 7.106 billion USD).

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.⁴⁶ 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%⁴⁷ 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."⁴⁸ 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 telecommunications networks by telecommunications carriers; and (D) are consistent with the public interest, convenience, and necessity.⁴⁹

⁴⁶ FED. COMM'NS COMM'N, 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 visited July 23, 2013).

⁴⁷ FED. COMM'NS COMM'N, PROPOSED FIRST QUARTER 2001 UNIVERSAL SERVICE CONTRIBUTION FACTOR 3 (2000), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-00-2764A1.pdf (last visited July 23, 2013); FED. COMM'NS COMM'N, PROPOSED FIRST QUARTER 2006 UNIVERSAL SERVICE CONTRIBUTION FACTOR 1 (2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-3203A1.pdf (last visited July 23, 2013). On the funding of universal service in the U.S., see Allen S. Hammond IV, *Universal Service: Problems, Solutions, and Responsive Policies*, 57 FED. COMM. L.J. 187, 187-200 (2005).

⁴⁸ 47 U.S.C. § 254(c)(1) (2012).

⁴⁹ *Id.*

Proceeding from this statutory basis, the FCC included the following elements in its definition of “universal service”:⁵⁰ (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) signaling 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).⁵¹ The universal service mechanism follows the principle of technological neutrality.⁵²

The FCC’s enumeration diverges from the European list of service elements set out above. For example, the U.S. universal service does not encompass public pay telephones (pay-phones). Although the FCC’s above definition did not embrace internet access,⁵³ 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.”⁵⁴ 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 internet access may advance education and public health, this was not essential to advancing education and

⁵⁰ 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.

⁵¹ Fed.-State Joint Bd. on Universal Serv., 97 FCC Rcd. 157, ¶ 22 (1997).

⁵² *Id.* ¶¶ 26-27, 46-48; *Alenco Commc’ns, Inc. v. FCC*, 201 F.3d 608 (5th Cir. 2000).

⁵³ STERLING, BERNT & WEISS, *supra* note 16, 272.

⁵⁴ Fed.-State Joint Bd. on Universal Serv., 97 FCC Rcd. 157, ¶ 83 (1997).

public health.⁵⁵ The exclusion of mobile telephony and broadband was reaffirmed by the FCC in 2003.⁵⁶

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 mechanism⁵⁷ as well as the introduction of three separate support funds: Landline telephony, wireless telephony, and broadband.⁵⁸ This recommendation was rejected by the FCC.⁵⁹ The Joint-Board reiterated its recommendation in 2010.⁶⁰ 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.”⁶¹ The National Broadband Plan⁶² 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.⁶³ In October 2011, broadband and mobile networks were expressly designated as a universal service by the FCC.⁶⁴ The FCC adopted the following goals:

⁵⁵ *Id.*

⁵⁶ Fed.-State Joint Bd. on Universal Serv., 03 FCC Rcd. 170, ¶¶ 9-11 (2003), available at http://www.universalservice.org/_res/documents/about/pdf/fcc-orders/2003-fcc-orders/FCC-03-170.pdf (last visited July 23, 2013). For an analysis of universal service from the perspective of mobile communications, see Parsons & Bixby, *supra* note 3.

⁵⁷ High-Cost Universal Serv. Support, 07J FCC Rcd. 4, ¶ 4 (2007), available at <http://www.acuta.org/wcm/acuta/legreg/l158.pdf> (last visited July 23, 2013).

⁵⁸ *Id.* ¶¶ 11-23

⁵⁹ High-Cost Universal Serv. Support, 08 FCC Rcd. 262, ¶ 13 (2008), available at <http://www.fcc.gov/fcc08262/FCC-08-262A1.pdf> (last visited July 23, 2013).

⁶⁰ Lifeline & Link Up Reform & Modernization, 11 FCC Rcd. 32 (2011), available at http://www.universalservice.org/_res/documents/about/pdf/fcc-orders/2011-fcc-orders/FCC-11-32.pdf (last visited July 23, 2013).

⁶¹ 47 U.S.C. § 1305(k)(2) (2012).

⁶² FED. COMM’NS COMM’N, *supra* note 6, at 21.

⁶³ Connect America Fund, 11 FCC Rcd. 13, ¶ 18 (2011), available at http://www.universalservice.org/_res/documents/about/pdf/fcc-orders/2011-fcc-orders/FCC-11-13.pdf (last visited July 23, 2013).

⁶⁴ Connect America Fund, 11 FCC Rcd. 161, ¶¶ 43-73 (2011), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0206/FCC-11-161A1.pdf (last visited July 23, 2013).

(1) Preserve and advance universal availability of voice service; (2) ensure universal availability of modern networks capable of 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.⁶⁵

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. 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."⁶⁶

D. The Scope of Universal Service in EU Energy Regulation: Electricity and Natural Gas

The concept of universal service was likely born in postal regulation, where the postal fees were far from being directly proportional to the distance the mail had to travel. This concept was made explicit in the telecommunications industry, and subsequently influenced, among others, the energy industry. Although access and affordability are general requirements in both the telecommunications and the energy sectors, the latter's structure diverges considerably from the telecommunications industry and this makes the direct adaptability of the telecommunications universal service concept questionable. One of the reasons for introducing universal service in telecommunications was the presence of significant positive consumer externalities, although supra-competitive desires were also present. In contrast, positive consumer externality is not significant in regard to "energy products" (supply of electricity and natural gas). Additionally, in telecommunications, the costs of the service are not uniform (cost-diversity); there are low-cost and high-cost

⁶⁵ *Id.* ¶ 17.

⁶⁶ Kevin Werbach, *Connections: Beyond Universal Service in the Digital Age*, 7 J. TELECOMM. & HIGH TECH. L. 67, 71–72 (2009).

territories. In contrast, the costs of “energy products” are essentially the same irrespective of geographical location. All these comparisons raise the question of whether the energy sector is eligible for universal service to the extent this concept is used in these industries.

I. Electricity

Article 3(3) of the current Internal Electricity Market Directive,⁶⁷ in line with its predecessor,⁶⁸ includes the following components in the electricity universal service: (1) connection to the electricity network under regulated terms, conditions and tariffs⁶⁹ (distribution companies are obliged to connect customers to their network);⁷⁰ (2) availability of the “electricity product” (the right to be supplied with electricity); (3) affordability of electricity prices (reasonable, easily and clearly comparable, transparent, and non-discriminatory prices); (4) adequate service quality (electricity of a specified quality); and (5) continuity of the electricity supply—short-run security of supply (supplier of last resort in the narrower sense).⁷¹

The Directive does not give guidance as to the “reasonableness” of prices; thus, Member States have wide discretion in this regard.⁷² On 1 January 2010, there was some form of household price-regulation in 16 out of 27 Member States.⁷³ Universal service prices are normally provided to the beneficiaries through appointing a Universal Service Provider (or

⁶⁷ Council Directive 2009/72, 2009 O.J. (L211) 55 (EC).

⁶⁸ Council Directive 2003/54, 2003 O.J. (L176) 37 (EC).

⁶⁹ The right to be connected is not restricted to household customers; distribution companies are obliged to connect all customers to the network. According to Article 2(7), the term “customer” includes both wholesale and final customers. Council Directive 2009/72, *supra* note 67, art. 2(7), at 63.

⁷⁰ See Council Directive 2009/72, *supra* note 67, art. 3(3), at 64.

⁷¹ *Id.* The general deadline for implementation of Directive 2009/72 was March 3, 2011. It replaced Directive 2003/54, which defined the scope of electricity universal service in Article 3(3) in the same way. Cf. CREMER, GASMI, GRIMAUD & LAFFONT, *supra* note 17, at 7. On the scope of universal service in EU electricity law see Thomas von Danwitz, *Regulation and Liberalization of the European Electricity Market—A German View*, 27 ENERGY L.J. 423, 438–39 (2006); EURELECTRIC, REPORT ON PUBLIC SERVICE OBLIGATIONS 12–13 (2004), available at <http://www.google.hu/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CEAQFjAD&url=http%3A%2F%2Fwww.eurelectric.org%2FDownload%2FDownload.aspx%3FDocumentID%3D14841&ei=P1QaUNDRENHgtQbZ5IGYBg&usq=AFQjCNEC4yM8VhSA9UW7p1DHFRnGJhaaxw> (last visited July 23, 2013).

⁷² See Peter D. Cameron, *Completing the Internal Market in Energy: An Introduction to the New Legislation*, in LEGAL ASPECTS OF EU ENERGY REGULATION 25, ¶ 2.48 (Peter D. Cameron ed., 2005).

⁷³ EUR. REGULATORS GRP. FOR ELEC. & GAS, STATUS REVIEW OF END-USER PRICE REGULATION AS OF 1 JANUARY 2010 14–15 (2010), available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Customers/Tab1/E10-CEM-34-03_price%20regulation_8-Sept-2010.pdf (last visited July 23, 2013). For the definition of ‘end-user regulated price’ as used in the Status Review, see *id.* at 11.

supplier of last resort, public service provider) and subjecting it to regulated (capped) prices.

Regulated end-user prices exist for household customers in Poland.⁷⁴ In France,⁷⁵ electricity supply (*fourniture d'électricité*) is regarded as part of the electricity public service;⁷⁶ this implies the requirement that regulated prices are available to household customers.⁷⁷ The French regulation takes account of the fact that the Universal Service Provider may suffer loss due to supplying electricity in the form of public service, i.e. at regulated prices, and provides for compensation of these losses.⁷⁸ Although in Spain regulated retail prices were abolished starting 1 July 2009, cost-based “supplier of last resort” tariffs remain available for small customers.⁷⁹ Retail “supplier of last resort” prices did not follow the price increases on the wholesale level, and price regulation caused loss to the enterprises, which is to be financed by the government.⁸⁰ A similar system (supplier of last resort as default supplier) was adopted in Portugal.⁸¹ In Hungary, Act LXXXVI of 2007 on Electricity provides that the Hungarian Energy Office shall, on the basis of a public

⁷⁴ INT'L ENERGY AGENCY, ENERGY POLICIES OF IEA COUNTRIES: POLAND 2011 REVIEW 14 (2011); PRESIDENT OF THE ENERGY REGULATORY OFFICE IN POLAND, NATIONAL REPORT TO THE EUROPEAN COMMISSION 10–11, 40, 103–05 (2011), available at www.ure.gov.pl/download/2/245/National_Report_2011.pdf (last visited July 23, 2013).

⁷⁵ See INT'L ENERGY AGENCY, ENERGY POLICIES OF IEA COUNTRIES: FRANCE 2009 REVIEW 111, 114–17 (2010).

⁷⁶ Code de l'énergie [C. Éner.] art. L121-1 (Fr.) (“[L]e service public de l'électricité assure les missions de développement équilibré de l'approvisionnement en électricité, de développement et d'exploitation des réseaux publics de transport et de distribution d'électricité ainsi que de fourniture d'électricité, dans les conditions définies à la présente section.”).

⁷⁷ Code de l'énergie [C. Éner.] art. L121-5 (Fr.) (“La mission de fourniture d'électricité consiste à assurer, en favorisant la maîtrise de la demande, la fourniture d'électricité, sur l'ensemble du territoire, aux clients bénéficiaires des tarifs réglementés de vente dans les conditions prévues aux articles L. 337-4 à L. 337-9. L'électricité est fournie par le raccordement aux réseaux publics ou, le cas échéant, par la mise en œuvre des installations de production d'électricité de proximité mentionnées à l'article L. 222.4-33 du code général des collectivités territoriales.”).

⁷⁸ Code de l'énergie [C. Énergy] arts. L121-6, L121-8 (Fr.).

⁷⁹ INT'L ENERGY AGENCY, ENERGY POLICIES OF IEA COUNTRIES: SPAIN 2009 REVIEW 115 (2009).

⁸⁰ *Id.* at 117; COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 8–9 (2010), available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National%20Reporting%202010/NR_En/E10_NR_Spain-EN.pdf (last visited July 23, 2013); COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 48–49, 120–22 (2011), available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National%20Reporting%202011/NR_En/C11_NR_Spain-EN.pdf (last visited July 23, 2013).

⁸¹ ENTIDADE REGULADORA DOS SERVIÇOS ENERGÉTICOS, ANNUAL REPORT TO THE EUROPEAN COMMISSION 19 (2011) (Pt.), available at http://www.erse.pt/pt/uniao-europeia/Documents/Annual_Report_EC_2011.pdf (last visited July 23, 2013).

tender, appoint Universal Service Providers; it also states that the entire country is to be covered by universal service.⁸² According to the Act, Universal Service Providers have to supply electricity at regulated prices.⁸³ Likewise, regulated prices are available for household customers in Slovakia.⁸⁴ In Italy, protected service (*mercato tutelato* or universal service) is available for household customers and small enterprises that have not entered a supply contract in the free market. Enterprises are appointed for the provision of the protected service and are subject to price and quality requirements set by the regulatory authority.⁸⁵ Furthermore, “customers not eligible for access to the protected-tariff service and who, even temporarily, are without an electricity supply contract in the free market, are eligible for the safeguard service. Since 1 May 2008, this service has been provided by retail companies selected by auction.”⁸⁶

Although end-user prices are not regulated in the Netherlands, the Dutch Electricity Act of 1998 establishes a safety net. The regulatory authority has to inquire whether the prices charged to small consumers are reasonable. Retail prices are to be approved in advance and the authority has the power to impose a price on the supplier if the price proposed is unreasonable.⁸⁷ Nonetheless, it should be noted that the authority has never used this power,⁸⁸ presumably because competition in the market has ensured that retail prices have conformed to the universal service requirements; thus, no direct regulatory intervention has been needed.

⁸² 273/2007. (X.19.) Korm. rendelet a villamos energiáról szóló 2007. évi LXXXVI. törvény egyes rendelkezéseinek végrehajtásáról (Government Decree No. 273/2007 (X.19.) on the Implementation of Act No. LXXXVI of 2007 on Electric Energy) (Hung.).

⁸³ *Id.*

⁸⁴ ÚRAD PRE REGULÁCIU SIEŤOVÝCH ODVETVÍ, NATIONAL REPORT REGULATORY OFFICE FOR NETWORK INDUSTRIES SLOVAK REPUBLIC 33–34 (2010), available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National%20Reporting%202010/NR_En/E10_NR_Slovakia-EN.pdf (last visited July 23, 2013).

⁸⁵ INT’L ENERGY AGENCY, ENERGY POLICIES OF IEA COUNTRIES: ITALY 2009 REVIEW 84 (2010); AUTORITÀ PER L’ENERGIA ELETTRICA E IL GAS, ANNUAL REPORT ON THE STATE OF SERVICES AND REGULATORY ACTIVITIES: 2. STRUCTURE, PRICES AND QUALITY IN THE ELECTRICITY SECTOR 73, available at http://www.autorita.energia.it/allegati/relaz_ann/10/voll_%20cap2_en.pdf (last visited July 23, 2013).

⁸⁶ AUTORITÀ PER L’ENERGIA ELETTRICA E IL GAS, *supra* note 85, at 79.

⁸⁷ See Dutch Electricity Act of 1998 § 95b(3). This price control is applicable to the supply to small consumers, that is, “customers with a connection to a grid with a total maximum transmission value of less than 3·80 A.” See *Id.* § 95a(1).

⁸⁸ INT’L ENERGY AGENCY, ENERGY POLICIES OF IEA COUNTRIES: THE NETHERLANDS 2008 REVIEW 102 (2009).

II. Natural Gas

The current Internal Natural Gas Market Directive,⁸⁹ in line with its predecessor,⁹⁰ does not provide for universal service—probably because natural gas is not used by the majority of European consumers⁹¹—but rather sets out certain public service obligations in Article 3(2)⁹² and consumer protection requirements in Article 3(3)⁹³. These provisions may enable Member States to introduce universal service in the national natural gas sector.

It should be noted that in *Federutility and Others v Autorità per l'energia elettrica e il gas*,⁹⁴ the Court of Justice of the European Union (CJEU) held that although Member States may introduce retail price regulation in the natural gas sector after the sector's full liberalization—that is, after 1 July 2007⁹⁵—they have to meet certain conditions. In this case, Italy introduced industry-wide price regulation by determining reference prices; the intervention was justified by the lack of workable competition and the protection of the final consumers. According to the Court, such regulatory intervention must be justified in the general economic interest⁹⁶ and must comply with the principle of proportionality. The latter requirement implies that the public service obligations “may compromise the freedom to determine the price for the supply of natural gas only in so far as is necessary to achieve the objective in the general economic interest which they pursue and, consequently, for a period that is necessarily limited in time.”⁹⁷

Nonetheless, it should be stressed that in *Federutility* a general (i.e. industry-wide) price regulation was introduced—applicable to a group of enterprises—and not universal service prices proper, which imply that the Member State appoints a Universal Service Provider (supplier of last resort, default supplier, public service provider), the prices of which are fixed or capped. The CJEU's judgment refers to cases where the “freedom to determine the price for the supply of natural gas”⁹⁸ can be restricted and not to cases where the state,

⁸⁹ Council Directive 2009/73, 2009 O.J. (L211) 94 (EC).

⁹⁰ See Council Directive 2003/55, art. 3(3), 2003 O.J. (L176) 57, 62 (EC).

⁹¹ See CREMER, GASMI, GRIMAUD & LAFFONT, *supra* note 17, at 7.

⁹² Council Directive 2009/73, *supra* note 89, art. 3(2), at 103.

⁹³ *Id.* art. 3(3), at 103.

⁹⁴ Case C-265/08, *Federutility and Others v. Autorità per l'energia elettrica e il gas*, 2010 ECR I-03377.

⁹⁵ *Id.* ¶¶ 17–24.

⁹⁶ *Id.* ¶¶ 26–32.

⁹⁷ *Id.* ¶ 33. For a detailed analysis of the requirement of proportionality, see *id.* ¶¶ 35–47.

⁹⁸ *Id.* ¶ 33.

through the appointment of a Universal Service Provider, ensures the availability of natural gas at a certain price level. Furthermore, although the CJEU's judgment provides that general price regulation has to be temporally limited in the sense that it can be maintained only as long as it is justified, Member States may maintain industry-wide price regulations until market prices become reasonable (whatever this may mean).

Be the interpretation of the *Federutility* judgment as it may, some Member States regard natural gas as a universal service, which raises the question of whether it is reasonable to introduce the regulatory concept of universal service in the natural gas sector. It is worth referring to the aftermath of *Federutility*: Italian law's system of reference prices has been maintained and is still applicable.⁹⁹

Hungary introduced universal service in the natural gas sector, as this is used by the vast majority of the heating systems in the household segment. Act XL of 2008 on Natural Gas reproduces the rules of electricity universal service¹⁰⁰ except that, in the natural gas sector, universal service is confined to customers who are already connected to the gas system.¹⁰¹

Likewise, in Spain, natural gas is treated as a universal service and is brought under universal service price regulation. Although regulated retail prices were abolished in Spain starting 1 July 2008, cost-based "supplier of last resort" tariffs are available for small customers.¹⁰²

It should be stressed that the CJEU's judgment in *Federutility* does not provide guidance on the interpretation of the electricity universal service because the Internal Natural Gas Market Directive contains no provisions regarding universal service. The Court interpreted Article 3(2) of this Directive, which is the counterpart of Article 3(2) of the Internal Electricity Market Directive; however, the universal service provisions are included in Article 3(3) of the Internal Electricity Market Directive. As noted, these provisions have no counterpart in the Internal Natural Gas Market Directive. This results in remarkable differences; for example, the right to universal service is a categorical entitlement and, therefore, such measures, as opposed to general public service obligations, do not need to be justified as being in the general economic interest.¹⁰³

⁹⁹ See Pietro Cavasola & Matteo Ciminelli, *Italy*, in GAS REGULATION IN 32 JURISDICTIONS WORLDWIDE 111, 114 (Florence Ninane, Alexandre Ancel & Liliana Eskenazi eds., 2012).

¹⁰⁰ 2008. évi XL. törvény a földgázellátásról (Act XL of 2008 on Natural Gas Supply) §§ 32-40 (Hung.).

¹⁰¹ *Id.* § 34(1).

¹⁰² INT'L ENERGY AGENCY, *supra* note 79, at 64, 70; COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 12-13 (2010); COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 124-26 (2011).

¹⁰³ Unfortunately, this fundamental regulatory difference is, in certain instances, not adequately taken into account, creating the deceptive impression that *Federutility* is directly applicable to the electricity sector. See,

III. Universal Service and the Supply of Energy

In the energy sector, the only segment where the concept of universal service can be reasonably applied is the network infrastructure (transportation of the energy product), which is regarded as a natural monopoly by sectoral regulation. In contrast, the pre-conditions of universal service are not met as to “energy products” (supply of electricity and natural gas). The consumption of the “energy product” generates no positive consumer externalities. This is why the aspect generally inquired about in electronic communications (whether the service is used by the majority of the consumers)¹⁰⁴ is inconceivable in the energy sector. Furthermore, the costs of the energy product (e.g. electricity, natural gas molecules) are, for the most part, the same irrespective of geographical location.

All in all, it seems that contrary to the energy infrastructure, the pre-conditions of universal service are not met in regard to “energy products.” In traditional telephony, the more subscribers the network had, the more valuable it was. If an additional user was connected to the system, a positive external effect accrued to all users of the telephone network; the system they were connected to became more valuable because they could reach more users. This positive consumer externality is not present in respect to energy products; no value accrues to the consumer if another user consumes the energy product. In this sector, the reason for regulatory intervention is not that it is “worthwhile” but that it is a “must.” According to contemporary society, energy supply is one of the most fundamental components of maintaining satisfactory living conditions. Therefore, it should be possible for everyone to be supplied with electricity at reasonable prices. Nonetheless, because there is no cost-diversity with respect to the energy product, it is questionable whether electricity and natural gas universal service can maintain its current breadth in a competitive environment. Although it is a perfectly legitimate desire to protect household customers from retail market power (including excessive prices) during the transitory period before the market becomes competitive, this desire is not actually related to universal service but rather to monopoly-regulation. In contrast, the energy network, due to cost-diversity, may be more obviously eligible for universal service regulation.

e.g., ENERGY CMTY. SECRETARIAT, REGULATED ENERGY PRICES IN THE ENERGY COMMUNITY—STATE OF PLAY AND RECOMMENDATIONS FOR REFORM 5–6 (2012), available at <http://www.energy-community.org/pls/portal/docs/1568177.PDF> (last visited July 23, 2013).

¹⁰⁴ See Council Directive 2002/22, *supra* note 13, Annex V, at 74; 47 U.S.C. § 254(b).

E. Conclusions

This paper 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 externalities 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 paper applied this proposition to EU electronic communications and the EU energy sector, and concluded that, in the electronic communications sector, technological developments call for the reconsideration of universal service, while in the energy sector (electricity and natural gas), the pre-conditions of universal service are not met as to all elements that come under the scope of universal service.

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.¹⁰⁵ 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 one of many available services.¹⁰⁶ 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).

Although universal service was “invented” in the telecommunications sector, after some decades it was incorporated into other sectors as well—including electricity and natural gas, which often use this term to designate some of their old notions. Nevertheless, there are certain sectors where the universal service logic cannot be applied in the way it was applied in the telecommunications sector.

¹⁰⁵ For further discussion of the debate in Germany regarding whether broadband should be included in the scope of universal service, see Ludwig Gramlich, *Next Generation Universal Service in the Field of Electronic Communications? Some Lessons from the Debate on Countrywide Broadband Service in Germany*, 3 *MASARYK U. J.L. & TECH.* 345 (2009).

¹⁰⁶ *Contra* Nenova, *supra* note 5, at 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.”).

The transplantation of the concept of universal service to the EU energy sectors (electricity and natural gas) seems to be limping due to the inclusion of the “energy products” in the universal service package; not all the reasons supporting the preservation of the universal service in telecommunications are present here. In the telecommunications sector, universal service was, among others, introduced to tackle problems of externality, including network externality and positive consumption externality. In contrast, this argument seems not to be valid as to “energy products” (supply of electricity and natural gas), contrary to “energy transportation” (energy network), which is still treated as a natural monopoly. While externalities may certainly pertain to the network segments, this is not the case regarding energy as a commodity; the consumption of energy causes no palpable positive consumer externality on other consumers. This is why, in the energy sector, there is no point in examining whether the majority of the consumers use the energy product at stake. This is in direct contrast to the telecommunications sector, where exclusion from the communications system used by the majority may imply exclusion from social life.

Universal service may be justifiable in the absence of external economic effects, provided there is cost-diversity (i.e. there are high-cost and low-cost areas). While this variability in terms of cost is present in electronic communications and the postal sector, the costs of “energy products” (electricity, natural gas) are roughly uniform (contrary to their “transportation”). Hence, there is a risk that ensuring universal service retail prices—in the absence of averaging—would function as monopoly-regulation and not as universal service. A poisoned tree yields poisoned fruits. A conceptually flawed approach entails a conceptually flawed methodology: The regulator may try to push down prices to the reasonably “affordable” level, and this may lead to infra-competitive prices (i.e., universal service or “supplier of last resort” prices may be lower than market prices). In some Member States, the provider of this public service may even be eligible for compensation for the loss it suffers due to its public service (universal service) obligations.¹⁰⁷ In other Member States, price regulation ostensibly aims at cost-based prices—though there are different cost tests—and, hence, the possibility of compensation is out of question.¹⁰⁸ As they say, the road to Hell is paved with good intentions: Depreciated prices may discourage potential new entrants and, at the end of the day, this approach may preserve

¹⁰⁷ E.g., for France, see Code de l'énergie [C. Énergie] arts. L121-6, L121-8. For Spain, see INT'L ENERGY AGENCY, *supra* note 79, at 117; COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 8–9 (2010); COMISIÓN NACIONAL DE ENERGÍA, SPANISH ENERGY REGULATOR'S ANNUAL REPORT TO THE EUROPEAN COMMISSION 48–49, 120–22 (2011).

¹⁰⁸ E.g., for Hungary, see 273/2007. (X.19.) Korm. rendelet a villamos energiáról szóló 2007. évi LXXXVI. törvény egyes rendelkezéseinek végrehajtásáról (Government Decree No. 273/2007 (X.19.) on the Implementation of Act No. LXXXVI of 2007 on Electric Energy).

the monopoly position of the incumbent in the non-industrial (household) segment, while producing questionable social value.¹⁰⁹

¹⁰⁹ See EURELECTRIC, REFERENCE 'RETAIL MARKET MODEL': BRINGING THE BENEFITS OF COMPETITIVE ELECTRICITY MARKETS TO THE CUSTOMER 10–11 (2007), available at <http://www.eurelectric.org/Download/Download.aspx?DocumentID=22565> (last visited July 23, 2013); Eur. Comm'n, *Prospects for the Internal Gas and Electricity Market*, at 6, COM (2006) 841 final (January 10, 2007), 6; ENERGY CMTY. SECRETARIAT, *supra* note 103, at 7–9.