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The New Concept of Universal Service in a Digital Networked Communications Environment

ABSTRACT: Digitization, sophisticated fiber-optic networks, and the resultant convergence of the media, communications and information technology industries have completely transformed the communications landscape in the last couple of decades. New contingent business and social models were created that have been mirrored in the amended communications regimes. Yet, despite an overhaul of the communications regulation paradigm, the status of, and the rules on universal service have remained surprisingly intact, both during and after the liberalization exercise. The present paper looks into this paradox and examines the sustainability of the existing concept of universal service. It suggests that there is a need for a novel concept of universal service in the digital networked communications environment, whose objectives go beyond the conventional internalizing and redistributive rationales, and concentrate on communication and information networks as a public good, where not only access to infrastructure but also access to content may be essential.

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I. INTRODUCTION

Universal service is a convoluted concept. On one hand, it may seem as simple as the goal of providing a “telephone in every home,”¹ while, on the other hand, it may be indefinitely complex if construed in the context of human rights and/or the role of the state. The concept of universal service may also be a misleading one. Indeed, it is endowed with different meanings in different contexts, particularly in the political (if not in the academic) domain. It is used simultaneously to connote a public policy objective and a public policy instrument for the achievement of other policy goals. Universal service is not a concept that exists independently from other concerns. It entails a number of heterogeneous objectives and, as we shall see below, these may evolve over time. Moreover, universal service is in constant (more or less direct) interaction with a plethora of other government policies and with the actions of state agencies and private parties with regard to both its formulation and its implementation. The definition of universal service and its mix of ingredients also vary from sector to sector and from country to country, although certain common patterns are discernible.²

This already fuzzy picture is complicated by the fact that universal service is set in an environment that is in a state of perpetual flux. This is especially true for the communications sector, which has undergone radical changes in the last two decades in terms of rapid technological advances and market developments. Digitization, sophisticated fiber-optic networks, and the resultant convergence of the media, communications, and information technology industries have completely transformed the communications landscape.³ New contingent business and social models were created, which have been mirrored in the amended communications regimes. Yet, despite an overhaul of the communications regulation paradigm the status of, and the rules on universal service have remained surprisingly intact both

¹ Colin R. Blackman, “Universal Service: Obligation or Opportunity?” *Telecommunications Policy* 19, no. 3 (1995): 171.

² European Commission, “Liberalisation of Network Industries: Economic Implications and Main Policy Issues,” *Report of the DG for Economic and Financial Affairs*, no. 4 (Brussels, 1999), 185-188.

³ See, e.g., Christopher T. Marsden, ed., *Regulating the Global Information Society* (London/New York: Routledge, 2000).

during and after the liberalization and reregulation of the communications markets.

One of the tasks of this paper is to look into this alleged paradox of why the rules remain static in such a dynamic environment. The second and core task is to identify the concept of universal service, its nature, and precise contours beyond “the stuff of myth, [the] slippery and ideological concept which has been used and manipulated by different parties to support their own case for special treatment.”⁴ Based upon observations on previous conceptualizations of universal service and the developments of communications markets and their societal repercussions, this paper will draw conclusions on the need for a novel concept of universal service in a digital networked communications environment. We shall not delineate the specific parameters and contents of future universal service policies. Instead, we propose a readjustment of the debate on the universal service concept as part of the broader governance discussions on the appropriate regulatory model(s) for electronic communications.

The paper addresses the above issues in four parts. The first part outlines with a few broad brushstrokes the stages in the development of the universal service concept with a focus on the European Community (“EC”) legal framework.⁵ The second part draws upon this historical background, the current state of the EC universal service regime, and the proposed changes thereto to elaborate on the nature and the dynamics of the concept of universal service. Part three of the paper analyzes the sustainability of this concept and argues the need for its reformulation. Part four draws conclusions and suggests a new approach toward universal service issues.

Before proceeding, a few caveats regarding our analysis are necessary. First, we shall limit our investigation to the *concept* of universal service and shall not elaborate on the various present or future mechanisms for implementing or funding universal service obligations (“USOs”).⁶ Although the question of “how” is critical, we

⁴ Blackman, “Universal Service,” *supra* note 1, at 171.

⁵ For a detailed analysis of universal service in the EC context and a comprehensive comparison between the old and the new regimes, see Paul Nihoul and Peter Rodford, *EU Electronic Communications Law* (Oxford: Oxford University Press, 2004), 5.01-5.350.

⁶ For an overview of the implementation and funding approaches, see European Commission, “Liberalisation of Network Industries,” *supra* note 2, at 178-184. See also Michael Tyler, William Letwin, and Christopher Roe, “Universal Service and Innovation in Telecommunication Services,” *Telecommunications Policy* 19, no. 1 (1995): 3-20. Jayakar and Sawhney present an excellent overview of the different options for designing future universal services obligations, in particular with regard to the distribution and financing of the

attempt to answer the “what” and “why” questions. Second, the analysis is based on the law and practice of universal service of the European Union (“EU”) with occasional reference to developments in the United States, which essentially means that our perspective will be confined to that of developed countries.⁷ Finally, note that we should analyze universal service and *not* the broader concept of public service. Although related, the two concepts are by no means synonymous. As we shall see below, they might have had similar origins, but they also reflect different attitudes of policymakers and have essentially different contents.⁸

II. THE CONCEPT OF UNIVERSAL SERVICE

A. THE ROOTS OF UNIVERSAL SERVICE POLICIES

The concept of universal service has its roots in some almost notorious developments in the United States at the dawn of the twentieth century.⁹ As the legend goes, it was Theodore Vail, then Chairman of the American Telephone and Telegraph Company (“AT&T”), who convinced the government that a regulated monopoly with universal service obligations was a better model to adopt than a system of traffic interexchange among competing networks.¹⁰ Vail called for the creation of a single, common, uniform, and nationwide telecommunications network whose services would be available to all

universal service obligations. See Krishna P. Jayakar and Harmeet Sawhney, “Universal Service: Beyond Established Practice to Possibility Space,” *Telecommunications Policy* 28, no. 3-4 (2004): 346-349.

⁷ See, e.g., Farid Gasmî, Jean-Jacques Laffont, and William W. Sharkey, “Competition, Universal Service and Telecommunications Policy in Developing Countries,” *Information Economics and Policy* 12, no. 3 (2000): 221-248; Xinzhu Zhang, Jean-Jacques Laffont, and Antonio Estache, “Universal Service Obligations in Developing Countries,” *World Bank Policy Research Working Paper Series* no. 3421 (2004).

⁸ European Commission, “Liberalisation of Network Industries,” *supra* note 2, at 168-170.

⁹ An excellent reference on the development of the US telecommunications system and universal service is Milton L. Mueller, *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System* (Cambridge, MA: MIT Press, 1997). See also Milton L. Mueller, “Universal Service in Telephone History: A Reconstruction,” *Telecommunications Policy* 17, no. 5 (1993): 352-369.

¹⁰ These networks were locally developed by some 6000 independents across the US after the expiration of AT&T’s telephone patents. The local networks varied in standards and quality and were (willingly or not) most often incompatible with one another.

users in all locations.¹¹ The subsequent adoption of the Willis-Graham Act in 1921 marked the end of the competitive era in U.S. telecom markets. By exempting telephone companies from the Sherman Act, the Willis-Graham Act opened the way to monopoly, which was supposed to cater for universal service provision. The 1934 Communications Act affirmed the subsidized universal penetration model. Although it made no explicit reference to universal service as such, it charged the Federal Communications Commission (“FCC”) with the task of giving all U.S. citizens a national and global telecommunications service, provided by AT&T at an affordable price.¹² Despite the appealing grandeur of this history, it should be noted that what Vail intended at that time was the creation of a nationally interconnected and interoperable telephone system, rather than a service for everyone¹³ as we would construe it today.

In the EC as a supranational entity, the conceptualization of universal service and the need for formulating a comprehensive policy in this respect came understandably much later than in the United States, with the commencement of liberalization of the telecom sector. Until then, in the landscape of strictly national monopolies, there was no need for such a policy at the European level. Universal service obligations *did* exist but were considered a national matter of the member states. The pre-liberalization Post, Telegraph, and Telephone (“PTT”) monopoly model¹⁴ had, as one of its core objectives, and indeed as its justification, the provision of universal service as part of

¹¹ The campaign launched by Theodore Vail was under the slogan “One Policy, One System, Universal Service.” The original document is available at AT&T, “One Policy, One System, Universal Service,” Advertisement, http://www.att.com/history/milestone_1908.html (accessed October 1, 2006).

¹² “For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges . . .” See *Communications Act of 1934, U.S. Code 47* (2000), § 151.

¹³ Milton L. Mueller, “Universal Service in Telephone History: A Reconstruction,” *supra* note 9.

¹⁴ On the PTT model, see Oliver Stehmann, *Network Competition for European Telecommunications* (Oxford: Oxford University Press, 1995), 78-79; see also Damien Geradin and Michel Kerf, *Controlling Market Power in Telecommunications* (Oxford: Oxford University Press, 2003), 6-7.

the public service.¹⁵ It was widely assumed at the time that state ownership was sufficient to guarantee PTT action in the public interest. “[T]he state was seen as a ‘stopgap’ for tasks that the private sector could not provide”¹⁶ and the PTTs were viewed accordingly “as instruments of government policy contributing to macroeconomic and microeconomic policy goals, including the provision of universal service.”¹⁷

In reality, most PTTs never came close to providing *universal* service in the sense of access to the public telephone network to all locations. The PTTs’ levels of economic efficiency and their responsiveness to customer needs were poor and in almost all aspects, the “idealistic theory of public service failed dramatically in practice.”¹⁸ Similarly, in the United States, while AT&T provided local telephony below cost through cross-subsidization between long-distance and local traffic, it did not achieve universal geographical rollout of its services. In fact, it took until the 1960s for appropriate levels of penetration to be reached due mostly to a reduction in connection costs and a vigorous market demand.¹⁹

¹⁵ Public service is a term usually used to describe services provided by a government to its citizens, either directly (through the public sector) or by financing private provision of services. The term is widely associated with the common consensus that certain services should be available to all, regardless of income. On public service in Europe, see Tony Prosser, *The Limits of Competition Law: Markets and Public Services* (Oxford: Oxford University Press, 2005), 96-173. For a comparison between public service and universal service, see Nihoul and Rodford, *EU Electronic Communications Law*, *supra* note 5, at 5.318-5.324.

¹⁶ Johannes M. Bauer, “Universal Service in the European Union” *Government Information Quarterly* 16, no. 4 (1999): 332.

¹⁷ *Ibid.*

¹⁸ William H. Melody, “Policy Objectives and Models of Regulation,” in *Telecom Reform: Principles, Policies and Regulatory Practices*, William H. Melody, ed. (Lyngby: Technical University of Denmark, 1997), 17.

¹⁹ See Paschal Preston and Roderick Flynn, “Rethinking Universal Service: Citizenship, Consumption Norms and the Telephone,” *The Information Society* 16, no. 2 (2000): 92-93, as referred to by Seamus Simpson, “Universal Service Issues in Converging Communications Environments: The Case of the UK,” *Telecommunications Policy* 28, no. 3-4 (2004): 235. See also Nicholas Garnham, “Universal Service,” in Melody, *Telecom Reform*, *supra* note 18, at 200.

B. UNIVERSAL SERVICE IN A POST-LIBERALIZATION ERA

It is now beyond doubt that competition in telecommunications (both in the sense of opening of markets and privatization of the telecommunications operator) is beneficial²⁰ and does not endanger the provision of universal service.²¹ The liberalization of the telecommunications markets and the related reform of the state intervention model were, however, not a work of magic following a sudden neo-liberal realization of the positive effects of market mechanisms. The transformation of the communications industry was made possible through “a series of steps, each controversial and painful”²² and took almost fifteen years to complete. It was driven by the technological breakthroughs in the telecommunications industry that can be summarized under the three broad headings of: (i) digitization; (ii) invention and upgrading of the transistor; and (iii) perfection of the optical fiber.²³ These had a profound impact on the telecommunications markets and their organization, necessitating an appropriate regulatory framework.²⁴ In the concrete context of examining universal service, the liberalization of telecommunications markets meant that the previously existing public service type of regulation of the sector needed modification and the contours of USOs were to be set anew.

²⁰ For examples on the beneficial role of competition, see Stephen Davies, Heather Coles, Matthew Olczak, Christopher Pike, and Christopher Wilson, “The Benefits from Competition: Some Illustrative UK Cases,” *DTI Economics Paper*, no. 9 (July 2004). For the benefits of deregulation in telecommunications, see J. Gregory Sidak and Daniel F. Spulber, “Deregulation and Managed Competition in Network Industries,” *Yale Journal on Regulation* 15, no. 1 (1998): 117-147.

²¹ Economic Policy Committee, *Annual Report on Structural Reforms 2002*, ECFIN/EPC/117/02-EN (Brussels, March 5, 2002). See also Swiss Federal Council, *Botschaft zur Bundesbeteiligung am Unternehmen Swisscom AG*, BB1 2006 3763 (April 2006) (Message of the Federal Council on the Federal Participation in the Swisscom Corporation).

²² Eli M. Noam, *Interconnecting the Network of Networks* (Cambridge, MA: MIT Press, 2001), 1.

²³ See Milton L. Mueller, “Digital Convergence and Its Consequences,” (1999): 2, <http://dcc.syr.edu/miscarticles/rp1.pdf> (accessed October 1, 2006); David Gillies and Roger Marshall, *Telecommunications Law* 1, 2nd ed. (London: Butterworths LexisNexis, 2003), 9.

²⁴ See, e.g., European Commission, *Fifth Report on the Implementation of the Telecommunications Regulatory Package*, COM(99) 537 final, 1999, 5. For a detailed analysis, see Mira Burri Nenova, EC, *Electronic Communications: Can Competition Law Do It All?*, chap. 1 (forthcoming 2007; on file with the author).

As mentioned above, the EC did not have a clear-cut universal service policy because the EC deemed the provision of public services a national matter until the opening of telecommunications to competition. With the formulation of *European* telecommunications policy, however, which commenced with the Green Paper on the Development of the Common Market for Telecommunications Services and Equipment²⁵ in 1987, the idea of providing certain “basic services” was taken into consideration.²⁶ The preservation of universal service at the Community level was indeed an important bargaining chip, which the European Commission used *vis-à-vis* the member states in order to efficiently implement its ambitious deregulation plan.²⁷

Within the Open Network Provision (“ONP”) model, which provided for asymmetric sectoral rules that assisted the liberalization of EC telecommunications,²⁸ universal service was for the first time regulated at the Community level. It rested on three major principles:

- (i) *equality*, i.e., access must be offered independently of location to all;
- (ii) *continuity*, i.e., a specified quality²⁹ must be offered all the time; and

²⁵ European Commission, *Green Paper on the Development of the Common Market for Telecommunications Services and Equipment: Towards a Dynamic European Economy*, COM(87) 290 final, 1987.

²⁶ *Ibid.*, 42. The document did not mention universal service as such, but it discussed the possibility of maintaining exclusive or special rights with respect to the provider of a limited number of basic services. It built on previous discussions: see European Commission, *Communication on the Consultation on the Review of the Situation in the Telecommunications Services Sector*, COM(93) 159 final, 1993; European Commission, *Developing Universal Service for Telecommunications in a Competitive Environment*, COM(93) 543, 1993, 4.

²⁷ On the pro-active role of the European Commission, see, e.g., Herbert Ungerer, “Access Issues under EU Regulation and Antitrust Law: The Case of Telecommunications and Internet Markets,” (working paper, Program on Information Resources Policy, Harvard University, Cambridge, MA, July 2000), 12-13, <http://www.pirp.harvard.edu/publications/pdf-blurb.asp?id=479> (accessed October 1, 2006). For an excellent analysis of the EC telecommunications regime and its evolution, see Pierre Larouche, *Competition Law and Regulation in European Telecommunications* (Oxford/Portland, OR: Hart, 2000), 1-36.

²⁸ On the ONP framework, see Larouche, *Competition Law*, *supra* note 27, at 25-32.

²⁹ Pursuant to parameters and methodologies specified by the European Telecommunications Standards Institute.

(iii) *affordability*, i.e., a certain price level for basic services affordable for all must be assured.³⁰

Following these principles, Directive 97/33/EC³¹ and Directive 98/10/EC³² identified “universal service” as “a defined minimum set of services of specified quality which is available to all users independent of their geographic location and, in the light of specific national conditions, at an affordable price.”³³ This “minimum set of services” included at the time of liberalization: (i) access to the fixed public telephone network at a fixed location; (ii) access to fixed public telephone services enabling users to make and receive national and international calls, supporting speech, facsimile and/or data communications; (iii) directory services; (iv) public pay phones; and (v) certain measures for disabled users and users with special social needs.³⁴ The implementation of these provisions secured, during the arguably turbulent and unstable process of liberalization the availability and affordability of telecommunications services of certain quality.

³⁰ In the EC context, “affordable price” means a price defined by the member states at national levels in the light of specific national conditions and may involve setting common tariffs irrespective of location or special tariff options to deal with the needs of low-income users. The affordability of telephone service is related to the information, which users receive regarding telephone usage expenses, as well as the relative cost of telephone usage compared to other services, and is also related to their ability to control expenditure. Affordability, therefore, means also giving power to consumers through obligations imposed on undertakings designated as USOs providers (*e.g.*, a specified level of itemized billing or the possibility for consumers selectively to block certain calls, such as high-priced calls to premium services). For details regarding the current EC regime, see Article 9 of 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, Eur. O.J. L108/51 (April 24, 2002).

³¹ Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on Interconnection in Telecommunications with Regard to Ensuring Universal Service and Interoperability through Application of the Principles of the Open Network Provision (ONP), Eur. O.J. L199/32 (July 26, 1997) (hereinafter “Directive 97/33/EC”).

³² Directive 98/10/EC of the European Parliament and of the Council of 26 February 1998 on the Application of Open Network Provision (ONP) to Voice Telephony and on Universal Service for Telecommunications in a Competitive Environment, Eur. O.J. L101/24 (April 1, 1998) (hereinafter “Directive 98/10/EC”).

³³ Directive 97/33/EC, Article 2(1)(g), and Directive 98/10/EC, 2(2)(f).

³⁴ Directive 98/10/EC, Articles 5-8. *See also* Directive 97/33/EC, Annex I.

The accomplishment of the liberalization process was, however, not an end in itself. Indeed, due to its success there was a need for a fresh regulatory approach that would reflect the new competitive communications environment and the pronounced trends of convergence and globalization.³⁵ With the benefit of hindsight, one can even say that the post-liberalization system proved to be a much harder regulatory puzzle than the transition system, since it required the establishment of a sustainable regulatory model. The 2002 EC framework for electronic communications networks and services³⁶ was the response to this need and attempted to meet the challenge. It envisaged a few novel regulatory solutions, the most prominent of which were: (i) the clear separation of network/transmission from content in the regulatory structure;³⁷ (ii) the alignment of the sector-

³⁵ The 1999 Communications Review, which was in essence the proposal of the European Commission for a new regulatory framework for electronic communications, identified the following issues that needed to be considered in the new regime: (i) convergence of telecommunications, broadcasting, and information technology sectors; (ii) globalization of technologies and markets; (iii) mergers and acquisitions changing the nature of the industry and relationships between key players; (iv) the role of the Internet in overturning traditional market structures and blurring the distinction between voice and data transmission; (v) improvements in processing, access and basic technologies, in particular wave division multiplexing on optical fibers and digital subscriber loops; (vi) the emergence of wireless applications; (vii) software re-configurable technologies designed to meet the specific local market requirements; and (viii) the development of new technologies within the media sector, in particular digital TV. See European Commission, *Towards a New Framework for Electronic Communications Infrastructure and Associated Services: the 1999 Communications Review*, COM(99) 537 final, 1999, 1-2.

³⁶ See Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a Common Regulatory Framework for Electronic Communications Networks and Services, Eur. O.J. L108/33 (April 24, 2002) (hereinafter the "Framework Directive"); Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the Authorization of Electronic Communications Networks and Services, Eur. O.J. L108/21 (April 24, 2002); Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on Access to, and Interconnection of, Electronic Communications Networks and Associated Facilities, Eur. O.J. L108/7 (April 24, 2002); 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, Eur. O.J. L108/51 (April 24, 2002) (hereinafter the "Universal Service Directive"); Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 Concerning the Processing of Personal Data and the Protection of Privacy in the Electronic Communications Sector, Eur. O.J. L201/37 (April 24, 2002). See also Commission Directive 2002/77/EC of 16 September 2002 on Competition in the Markets for Electronic Communications Networks and Services, Eur. O.J. L249/21 (Sept. 17, 2002) (hereinafter the "Commission Competition Directive").

³⁷ The regime regulates only electronic communications services, electronic communications networks, associated facilities, and associated services, as defined in Article 2 of the

specific rules with the methodology and practice of EC antitrust, including market-by-market sunset clauses triggering the withdrawal of sectoral rules;³⁸ and (iii) the introduction of the principle of technological neutrality.³⁹

The 2002 package also featured a new Universal Service Directive which remained true to the principles of equality, continuity, and affordability and defined the scope of the USOs as encompassing: (i) access location to the public telephone network; (ii) access to publicly available telephone services at a fixed location to enable end-users to make and receive local, national, and international telephone calls, as well as facsimile and data communications; (iii) directory services; (iv) public pay telephones; and (v) certain specific measures for disabled users such as those with low income or special social needs.⁴⁰

If one compares the above USO definition with the pre-liberalization USO scope previously outlined above, it is striking how little has changed.⁴¹ The parameters of the USOs are practically the same. Legitimate questions that arise are what has changed since the liberalization? Have the introduction of competition and the “new” telecom order changed anything *at all*? Most notably, these questions will remain relevant even after the forthcoming review of the EC communications regime that is to take place by the end of 2006,⁴²

Framework Directive. Broadcasting content, financial services, and certain information society services remain beyond its scope of application.

³⁸ On the new mechanism for regulating dominance (the Significant Market Power regime), see Articles 14-16 of the Framework Directive, *supra* note 36. See also Alexandre de Stree, “The Integration of Competition Law Principles in the New European Regulatory Framework for Electronic Communications,” *World Competition* 26, no. 3 (2003): 489-514; Martin Cave, “Economic Aspects of the New Regulatory Regime for Electronic Communications Service,” in *The Economics of Antitrust and Regulation in Telecommunications*, ed. Pierre A. Buigues and Patrick Rey, 27-41 (Cheltenham, UK: Edward Elgar, 2004); Nihoul and Rodford, *EU Electronic Communications Law*, *supra* note 5, at 3.213-3.316.

³⁹ Framework Directive, *supra* note 36, at Article 8(1). See also Nihoul and Rodford, *EU Electronic Communications Law*, *supra* note 5, at 7.128-7.129.

⁴⁰ Universal Service Directive, *supra* note 36, at Articles 4-9.

⁴¹ If one carefully compares the two definitions, the only difference is the deletion of “fixed” under point (i). There were no changes in practical terms either. See Economic Policy Committee, *Annual Report on Structural Reforms 2002*, *supra* note 21, at 17.

⁴² European Commission, *On the Review of the EU Regulatory Framework for Electronic Communications Networks and Services*, COM(06) 334 final, 2006.

since despite the breadth of the discussions and the acknowledgement of the transformed communications system, there are *no* projected material changes to the USO.⁴³

C. INTERIM OBSERVATIONS ON THE EVOLUTION OF UNIVERSAL SERVICE

The situation outlined above may be described as a paradox where, upon significant changes in both the regulated environment and the regulation itself, a single institute, namely that of universal service, remains intact. This paradox may be best explained by the politics behind universal service conceptualization, or to put it radically, in the words of Nicholas Garnham, that universal service rationale has been “mobilised as an attempted defence of the telephone monopoly.”⁴⁴ Indeed, the “universal service” justification is still a strong political argument, and one that enjoys surprisingly broad (almost automatic) support even now that the liberalization exercise is complete. In Switzerland, for instance, universal service was recently successfully used as a defense of state control and against the withdrawal of the Federal participation in the Swiss telecommunications incumbent.⁴⁵ Yet we argue that, although seemingly little has been altered, a few key “ingredients” of the overall universal service policy have certainly changed. First, in the context of competitive communications, there are new tools for the provision of USOs. There is, above all, an emphasis on the role of the market in the achievement of the defined universal service objectives. The priority role of the market takes different dimensions depending on the situation. In the EC context for instance, member states are obliged to “determine the most efficient

⁴³ European 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(06) 163 final, 2006, 5. Although the findings of the European Commission are that the scope of the universal service should remain unchanged, it put forward for discussion some interesting long-term issues related to the redefinition of the USOs (e.g. exclusion of public payphones and directory services or separation of access to infrastructure from access to services).

⁴⁴ Garnham, “Universal Service,” *supra* note 19, at 200. See also Thomas Hart, “A Dynamic Universal Service for a Heterogenous European Union,” *Telecommunications Policy* 22, no. 10 (1998): 840; Jean-Jacques Laffont and Jean Tirole, *Competition in Telecommunications: Munich Lectures in Economics* (Cambridge, MA: MIT Press, 2000), 218.

⁴⁵ See, e.g., Christian Levrat, “Der Bund ist der richtige Swisscom-Aktionär” (The Federation is the Right Swisscom Shareholder), *Neue Zürcher Zeitung* (Dec. 2005); Swiss Federal Council, *Botschaft*, *supra* note 21, at 3770.

and appropriate approach for ensuring the implementation of universal service, while respecting the principles of objectivity, transparency, non-discrimination and proportionality⁴⁶ and to seek a minimization of market distortions.⁴⁷ Consequently, no market player is *a priori* excluded from designation for provision of universal service,⁴⁸ and all undertakings present on the communications markets are eligible under an efficient, objective, transparent, and non-discriminatory designation mechanism.⁴⁹ Further, appointed operators must not necessarily be nationals of the member state, and undertakings from other geographic markets (e.g., U.S. or Swiss companies) or other sectors (e.g., from the electricity industry⁵⁰) could enter the designation procedures.

A second element added to the post-liberalization universal regime that is linked to the above, but may also be considered distinctly, is its built-in flexibility. For instance, EC member states may now designate more than one undertaking, or designate different undertakings or sets of undertakings, to provide different elements of the universal service, or to cover different parts of the national territory.⁵¹ This fragmentation of the mandate allows for competition between undertakings in the provision of universal service and therefore greater efficiency. In view of the inherent dynamism of communications, the flexibility of the new EC regime is further ensured by the periodic review of the scope of USO.⁵² The review is to be undertaken “in the light of social, economic and technological developments, taking into account, *inter alia*, mobility and data rates in the light of the prevailing technologies used by the majority of

⁴⁶ Universal Service Directive, *supra* note 36, at Article 3(2).

⁴⁷ *Ibid.*; *see also* Commission Competition Directive, *supra* note 36, at Article 6.

⁴⁸ Contrary to the previous regime. *See* Article 4(c)(1) of Commission Directive 90/388 on Competition in the Markets for Telecommunications Services, Eur. O.J. L192/10 (July 24, 1990); Directive 97/33/EC, Article 5(1).

⁴⁹ Universal Service Directive, *supra* note 36, at Article 8(2).

⁵⁰ *See* European Commission, “High-speed Internet Access via the Electricity Grid: Commission Seeks to Create New Market Opportunities,” Press Release IP/05/403, Brussels, April 8, 2005. *See also* European Commission, Draft Commission Recommendation of 6 April 2005 on Broadband Electronic Communications through Powerlines, C(05) 1031, 2005.

⁵¹ Universal Service Directive, *supra* note 36, at Article 8(1).

⁵² *See* Universal Service Directive, *supra* note 36, at Article 15(1).

subscribers.”⁵³ The review process could thus, accounting for new developments in society in terms of needs for and spread of technologies, and considering the developments in technology itself, adjust the parameters of universal service at the EC level.⁵⁴

On a more general level, a third conclusion that could be drawn from the development of EC communications law is that the generic benefits of competition, i.e., the pure economic rationales of competition for achieving efficiency,⁵⁵ have come to the forefront. As already mentioned, this means in essence that the overall thrust of the EC liberalization model is upon the market. This “economic turn,”⁵⁶ reflecting the conventional Western economies’ wisdom is, however, to be seen together with a certain “public turn,” whereby certain public interest objectives are clearly defined and pursued.⁵⁷

In conclusion, we suggest that there has been some readjustment. However, we cannot exaggerate its magnitude: it is just a “bunny-hop” and not a giant leap. Besides the realization that communications markets, the technology, and the needs of the consumers have changed, the concept of universal service remains relatively sticky and there has been no real breakthrough in the pre-liberalization thinking. While the talks on the new nature of universal service and the need for adaptation have been going on for more than ten years,⁵⁸ both in

⁵³ Universal Service Directive, *supra* note 36, at Article 15(2). *See also* Annex V thereof.

⁵⁴ *See* European Commission, *Report Regarding the Outcome*, *supra* note 43, at 6.

⁵⁵ The consumer welfare approach sees competition as ensuring allocative, productive, and dynamic efficiency in the economy. Collectively, these generic benefits of competition provide maximization of wealth at the lowest possible cost to society, the consumer being the ultimate beneficiary of the competitive market forces.

⁵⁶ On the economic turn of EC competition law, for instance, see Mel Kenny, *The Transformation of Public and Private EC Competition Law* (Berne: Staempfli, 2002), 101-218. *See also* Advisory Group for Competition Policy (EAGCP), “DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses,” *EAGCP Report for DG COMP* (July 2005), <http://ec.europa.eu/comm/competition/antitrust/others/discpaper2005.pdf> (accessed October 1, 2006).

⁵⁷ A similar “public turn” observation has been made by Herbert Burkert in the context of EC telecommunications policy. *See* Herbert Burkert, “The Post-Deregulatory Landscape in International Telecommunications Law: A Unique European Union Approach,” *Brooklyn Journal of International Law* 27, no. 3 (2002): 739-816.

⁵⁸ *See, e.g.*, Robert H. Anderson et al., *Universal Access to E-mail: Feasibility and Societal Implications* (Santa Monica, CA: RAND, 1995); Blackman, “Universal Service,” *supra* note 1, at 171-175.

academia and policy circles, they have largely remained just talks. Policymakers have stuck to the classical paradigm of universal service, but the solutions offered are barely sustainable and begin “to look increasingly like ‘band-aid’ solutions that cover up the internal contradictions.”⁵⁹ In the following sections, we argue that a more radical readjustment is needed that relates, above all, to the *concept* of universal service.

III. READJUSTING THE UNIVERSAL SERVICE DEBATE

For readjusting the focus of the universal service debate we suggest that one should not equate the universal service regimes (previous, current, or future) with the *societal goals* behind USO.⁶⁰ “It is important to understand [...] history and how, at different stages of development of telecommunications networks, universal service will have different meanings and emphases.”⁶¹ Upon closer examination of these different stages,⁶² it is apparent that, although the meaning of universal service and how it is pursued vary, there is “an underlying unity of aim.”⁶³ Equity, continuity, and affordability certainly remain as its defining principles. They are, however, not ends in themselves, but must be seen in the broad context of state intervention and the public interest. In this context, they reflect the major justifications of public intervention in the economy, in particular market failures and redistributive considerations. Historically these validations stem from the *service public* tradition, which is well established in all European

⁵⁹ Jayakar & Sawhney, “Universal Service,” *supra* note 6, at 346.

⁶⁰ See, e.g., Milton L. Mueller, “Universal Service Policies as Wealth Distribution,” *Government Information Quarterly* 16, No. 4 (1999): 353-358; Garnham, “Universal Service,” *supra* note 19, at 199-204.

⁶¹ Blackman, “Universal Service,” *supra* note 1, at 172. See also Jayakar and Sawhney, “Universal Service,” *supra* note 6, at 341-342.

⁶² Claire Milne, “Stages of Universal Service Policy,” *Telecommunications Policy* 22, no. 9 (1998): 776.

⁶³ *Ibid.*, 777. Claire Milne identifies the following common elements: (i) universal service is desired for social or political reasons and includes a notion of “equity;” (ii) achievement of universal service is apparently not commercially viable; (iii) it is recognized that definitions will change as society and technology change; (iv) definitions cover what are seen as “basic telecom services” i.e., well established, relatively cheap, and very important to ordinary people; (v) adequate quality of service is defined or understood; and (vi) service must be affordable by those for whom it is designed.

countries⁶⁴ and linked to the notion of citizenship.⁶⁵ While the institute of universal service is more limited in scope than that of public service and does not address considerations like the long-term impact of investment decisions or environmental effects, it does contribute to the achievement of certain “public service” objectives. These can be broadly summarized under three categories: (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).⁶⁶ We advocate in this line construing universal service as a *tool* for the achievement of the societal goals within the above triangle of economic and welfare goals, and not as a goal in itself, simply equated to a “telephone in every home.”⁶⁷

A second element of the readjustment exercise is the realization that universal service is a dynamic concept prone to evolution⁶⁸ and could accommodate, depending on the political environment, different concrete sub-objectives framed within the above value-triangle.⁶⁹ We can thus think of it as an “empty” concept that may (and hopefully will) be filled in the future with content other than telephony.⁷⁰ This is not to say that regulators cannot be pragmatic. On the contrary, the flexibility of the universal service concept allows the construction of supplier hybrid models. Universal service policies would still be constrained by the recognition that USOs must be specifically defined

⁶⁴ See, e.g., Prosser, *The Limits of Competition Law*, *supra* note 15.

⁶⁵ See *ibid.*, 28-38, 102-106; Nihoul and Rodford, *supra* note 5, at 5.319. See also Giuliano Amato, “Citizenship and Public Services: Some General Reflections,” in *Public Services and Citizenship in European Law*, ed. Mark Freedland and Silvana Sciarra (Oxford: Oxford University Press, 1998), 145-156.

⁶⁶ European Commission, “Liberalisation of Network Industries,” *supra* note 2, at 170.

⁶⁷ See Blackman, “Universal Service,” *supra* note 1. A similar, albeit more radical, “zero-based policy” approach is suggested by Pisciotta. See Aileen Amarandos Pisciotta, “Telecom Policy for Information Economies: Unregulation Is Not Enough,” in *Networking Knowledge for Information Society: Institutions and Intervention*, ed. Robin Mansell, Rohan Samarajva, and Amy Mahan (Delft: DUP Science 2002), 88.

⁶⁸ Nihoul and Rodford, *EU Electronic Communications Law*, *supra* note 5, at 5.78.

⁶⁹ For a critique of the possibility for pursuit of other political objectives, see Mueller, “Universal Service Policies as Wealth Distribution,” *supra* note 60; Garnham, “Universal Service,” *supra* note 19, at 199-204.

⁷⁰ See, e.g., “Hearing Voices,” *The Economist* (October 28, 2004): 21-23.

and targeted, transparent, cost-effective, and competitively and technologically neutral.⁷¹

A third element of the shift in the universal service discussion, which is logically interlinked with the previous issue, relates to the need to understand the profound changes in the communications environment, where universal service policies are to be implemented. In the next section we briefly elaborate upon the new nature of the communications system and cautiously draw the contours of a fitting concept of universal service in a digital networked communications environment that emphasizes the “*public good*” dimension of communication and information networks.

IV. THE NEW CONCEPT OF UNIVERSAL SERVICE IN A DIGITAL NETWORKED COMMUNICATIONS ENVIRONMENT

As we have already mentioned, the telecommunications sector has changed. However, these changes have not been confined within the boundaries of the sector. The evolution of electronic communications and “the continuing development of new technologies for the transmission and storage of information [have led] to organisational, commercial, technical and legal innovations that are having a profound impact on society in general.”⁷² Furthermore, “[a]s the use of ICT [information and communication technology] grows, so does its impact on society.”⁷³ Thus, both the quantitative and the qualitative ICT-based ramifications are clearly immense. If, however, we wish to observe the changes in the “big picture” and talk of *Information Society* as a general societal phenomenon, it would be rather superficial (and largely untrue) to relate its creation and development solely to the advances in ICTs.⁷⁴ We should take into account the

⁷¹ OECD, “Rethinking Universal Service for a Next Generation Network Environment,” *Report of the Working Party on Communication and Information Services Policies*, DST/ICCP/TISP(2005)5/final (April 18, 2006).

⁷² Council of the European Union, “Council Resolution on the Consumer Dimension of the Information Society,” Eur. O.J. C23/1 (Jan. 28, 1999), at Recital 1.

⁷³ European Commission, *i2010 – A European Information Society for Growth and Employment*, COM(05) 229 final (June 1, 2005), 9.

⁷⁴ “The Information Technology Revolution DID NOT create the network society. But without technology, the Network Society would not exist.” Manuel Castells, “An Introduction to the Information Age,” in *The Information Society Reader*, ed. Frank Webster (London: Routledge, 2004), 139 (upper case in the original).

wider social, political, and cultural processes that have led (and continue to lead) to the networked, knowledge-based environment in which we live.

Although it is almost commonplace now to speak of the Information Society,⁷⁵ there is no single and universally accepted theory of its nature and characteristics. Instead of attempting an examination of all the theories,⁷⁶ we shall use a simplified “working” definition of the Information Society, with emphases on its spatial and cultural aspects⁷⁷ and their implications for communications regulation. With this caveat in mind, we can define Information Society as a society in which the creation, distribution, and manipulation of information⁷⁸ has become the most significant economic and cultural activity. In its spatial aspect, the Information Society could then be construed as *information networks*, “which connect locations and in consequence have dramatic effects on the organisation of time and space.”⁷⁹ These effects could be seen as stemming from both the globalization of marketplaces⁸⁰ and from the

⁷⁵ The concept of “Information Society” allegedly came into being some forty years ago: the economist Fritz Machlup, while examining the U.S. patent system postulated the existence of a “knowledge economy” and stressed the role of information. See Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton, NJ: Princeton University Press, 1962).

⁷⁶ See Daniel Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting* (1973; repr., New York: Basic Books, 1999); Manuel Castells, *The Information Age: Economy, Society and Culture*, vol. 1, *The Rise of the Network Society* (Oxford: Blackwell, 2000). For a critique, see Nicholas Garnham, “Information Society Theory as Ideology: A Critique,” *Studies in Communications Sciences* 1 (2001): 129-166. For an overview of the different theories, see Frank Webster, *Theories of Information Society* (London: Routledge, 1995); Frank Webster, ed., *The Information Society Reader* (London: Routledge, 2004). See also Alistair S. Duff, *Information Society Studies* (London: Routledge, 2001); Christopher May, *The Information Society: A Sceptical View* (Cambridge: Polity Press, 2002).

⁷⁷ Building upon the analysis of Frank Webster, who identifies five definitions of an Information Society, namely: (i) technological; (ii) economic; (iii) occupational; (iv) spatial and (v) cultural. See Webster, *Theories of Information Society*, *supra* note 77, at 6-10.

⁷⁸ That is information also in the sense of knowledge. See William H. Dutton, *Social Transformation in an Information Society: Rethinking Access to You and the World* (Paris: UNESCO, 2004), 27.

⁷⁹ Webster, *Theories of Information Society*, *supra* note 76, at 18.

⁸⁰ On globalization (in particular economic globalization), see Peter van den Bossche, *The Law and Policy of the World Trade Organization* (Cambridge: Cambridge University Press, 2005), 3-21. For an excellent collection of contributions on globalization, see David Held and

technologies allowing instant communications and data transfer, which result ultimately in a “shrinking world.”⁸¹ These “time/space compressions”⁸² have multiple repercussions and most notably in our context lead to increasing *interconnectedness* within the information networks. The emergence of all-encompassing global networks underlines at the same time the significance of the *flow of information*,⁸³ i.e., the content that is spread through them. The global reach and technological potency of the infrastructures have allowed for vast amounts of information to be disseminated. Now that digitization has become ubiquitous, all types of content (audio, video, or text) expressed in ones and zeros can be distributed over any network (telephone, cable, or mobile) at the speed of light. New forms of communication are emerging (e.g., weblogs⁸⁴ or online social networking platforms⁸⁵) and these developments, taken together, are leading to a fundamental shift in the traditional channels of content distribution.⁸⁶

Anthony McGrew, eds., *The Global Transformations Reader*, 2nd ed. (Cambridge: Polity Press, 2003).

⁸¹ See “The Shrinking World: The Impact of Transportation Technology on Effective Distance” in Anthony G. Oettinger, “Information Technologies, Government and Governance: Some Insights from History,” (Incidental Paper, Program on Information Resources Policy, Harvard University, September 1998), <http://www.pirp.harvard.edu> (accessed October 1, 2006). See also John B. Thompson, “The Globalization of Communication,” in Held and McGrew, *The Global Transformations Reader*, *supra* note 81, 246-259.

⁸² As referred to by Anthony Giddens. See Anthony Giddens, *Modernity and Self-Identity: Self and Society in the Late Modern Age* (Cambridge: Polity Press, 1991). On the “Age of Simultaneity,” see, e.g., Neal M. Rosendorf, “Social and Cultural Globalization: Concepts, History, and America’s Role,” in *Governance in a Globalizing World*, ed. Joseph S. Nye and John D. Donahue (Washington, D.C.: Brookings Institution Press, 2000), 109-134.

⁸³ Webster, *Theories of Information Society*, *supra* note 76, at 19, referring to Manuel Castells, *The Informational City: Information Technology, Economic Restructuring, and the Urban Regional Process* (Oxford: Blackwell, 1989).

⁸⁴ See, e.g., Dan Gillmor, *We the Media: Grassroots Journalism by the People, for the People, Sebastopol* (CA: O’Reilly Media, 2004). See also PEW Internet & American Life Project, “Bloggers: A Portrait of the Internet’s Storytellers,” July 19, 2006, <http://www.pewinternet.org/> (accessed October 1, 2006).

⁸⁵ See, e.g., “MySpace,” <http://www.myspace.com>; see also “Facebook,” <http://www.facebook.com>.

⁸⁶ See, e.g., “Net Dreams: Traditional Media Companies Are Making a Huge Push onto the Internet,” *The Economist* (March 16, 2006): 61-62.

The means of distribution have accordingly changed the *content* being distributed. The emergence of transnational communication conglomerates as key players in the global system of communication and information diffusion⁸⁷ has led to a transformation of the type and variety of content being distributed. Formats and contents of television programs, films, and shows have become increasingly homogeneous.⁸⁸ Although this “uniformization” of content does not necessarily mean a cultural wasteland,⁸⁹ it does lead to us being faced with a completely altered media and communications environment⁹⁰ — an environment that has the potential to acutely affect our *culture*.⁹¹ To use the words of Manuel Castells,

[f]or all the science fiction ideology and commercial hype surrounding the emergence of the so-called ‘information superhighway,’ we can hardly underestimate its significance. The potential integration of text, images, and sounds in the same system, interacting from multiple points, in chosen time (real and delayed) along a global network, in conditions of open and affordable access, does fundamentally change the character of communication. And communication decisively shapes culture, because, as Postman writes, ‘we

⁸⁷ See, e.g., Robert W. McChesney, “The New Global Media,” in Held and McGrew, *The Global Transformations Reader*, *supra* note 80, at 278-285; Christoph Beat Graber, *Handel und Kultur im Audiovisionsrecht der WTO. Völkerrechtliche, ökonomische und kulturpolitische Grundlagen einer globalen Medienordnung* (Berne: Staempfli, 2003), 45-50.

⁸⁸ For a critique of the cultural industries and on the homogeneity of content, see Graber, *Handel und Kultur*, *supra* note 88, at 18-21.

⁸⁹ See, e.g., Herbert Schiller, “Striving for Communication Dominance: A Half-Century Review,” in *Electronic Empires: Global Media and Local Resistance*, ed. Daya Kishan Thussu (London: Edward Arnold, 1998), 17-26.

⁹⁰ John B. Thompson, “The Globalization of Communication,” in Held and McGrew, *The Global Transformations Reader*, *supra* note 80, at 246-259. Thompson suggests notably that, “the appropriation of globalized symbolic materials involves [...] *the accentuation of symbolic distancing from the spatial-temporal contexts of everyday life.*” *Ibid.*, 256 (emphasis in the original). See also Graber, *Handel und Kultur*, *supra* note 87, at 22-27.

⁹¹ Castells, *The Information Age*, *supra* note 76, at 357 (emphasis added). For a comprehensive analysis of the concept of culture, see Graber, *Handel und Kultur*, *supra* note 87, at 11-36. See also Nicholas Garnham, *Emancipation, the Media, and Modernity: Arguments about the Media and Social Theory* (Oxford: Oxford University Press, 2000), 140-164; Anthony D. Smith, “Towards a Global Culture,” in Held and McGrew, *The Global Transformations Reader*, *supra* note 80, 278-285.

do not see ... reality ... as 'it' is, but as our languages are. And our languages are our media. Our media are our metaphors. Our metaphors create the content of our culture.'⁹²

As a conclusion to the above account of some implications of the Information Society, we identify two points of significance in our specific context. First, communications should be thought of not only as "transmission systems,"⁹³ but also in terms of their special role as channels carrying and disseminating information and content. Second, it must be acknowledged that changes in the telecommunications industry induce profound socio-economic changes and that these two sets of changes are interdependent.⁹⁴

Against the complex background, noted above, we should now try to apply our "empty concept" of universal service. This exercise is in line with the approach suggested by Jayakar and Sawhney of examining universal service options in terms of a *possibility space*, where policy innovations can take place.⁹⁵ In that sense, our "objective is not so much to identify a list of possible instruments, but to expose our self-imposed boundaries and to suggest new possibilities for universal service."⁹⁶

⁹² Castells, *The Information Age*, *supra* note 76, at 356, referring to Neil Postman, *Amusing Ourselves to Death: Public Discourse in the Age of Show Business* (New York: Penguin, 1985), 15 (abridged in the original). See also Ludwig Wittgenstein, *Tractatus Logico-Philosophicus* (London: Routledge, 1999), <http://www.gutenberg.org/etext/5740> (accessed October 1, 2006) (he famously noted, at 5.6, that: "The limits of my language mean the limits of my world" (in the original: "Die Grenzen meiner Sprache bedeuten die Grenzen meiner Welt"))).

⁹³ Framework Directive, *supra* note 36, at Article 2(a).

⁹⁴ Knud Erik Skouby, "Information Societies: Toward a More Useful Concept," in Mansell, Samarajva, and Mahan, eds., *Networking Knowledge*, *supra* note 7, at 176, referring to the work of William H. Melody. See, e.g., William H. Melody, "Technological, Economic and Institutional Aspects of Computer/Telecommunications Systems," in OECD, *Applications of Computer/Telecommunications Systems* (Paris: OECD, 1975); William H. Melody, "Identifying Priorities for Building Distinct Information Societies," *The Economic and Social Review* 28, no. 3 (1996): 177-184; William H. Melody, "Policy Research in the Information Society," in *Information and Communication Technologies: Visions and Realities*, ed. William H. Dutton (Oxford: Oxford University Press, 1996), 303-317; William H. Melody, "Human Capital in Information Economies," *New Media and Society* 1, no. 1 (1999): 39-46.

⁹⁵ Jayakar and Sawhney, "Universal Service," *supra* note 6, at 340 (emphasis added). For an excellent overview of the emerging of proposals, see *ibid.*, 351-354.

⁹⁶ *Ibid.*, 340.

A. BEYOND THE TELEPHONE

As telecommunication networks reach saturation, as multimedia platforms proliferate, and as the concept of scarcity is being reformulated, it is clear that universal access in the form of POTS (plain old telephone service) is becoming inadequate. While some hold that universal service policies should simply be abolished,⁹⁷ a strong group of voices is calling for a “next generation” universal service, albeit they are doing so with little coherence.⁹⁸

The importance of “being connected” to a network as a means of communication is likely to remain unchanged,⁹⁹ or may even increase in response to the more intensive interconnectedness and its value in the Information Society. We deem however competitive telecommunications markets as sufficient to guarantee the ubiquity of and inclusion in the network. The POTS definition of USO will be, pursuant to the principles of technological and network neutrality, reformulated as “access to networks,” rather than access to particular services.¹⁰⁰ The stress within the triangle of equality, continuity, and affordability is likely to shift towards the last of the three values. Beyond the internalizing and redistributive considerations, in the context of increasing the value of the communications network as a public good, there may be a need to re-think the accessibility and functionality of networks.¹⁰¹ “First mile”¹⁰² issues, in the sense of how

⁹⁷ See, e.g., Roberta G. Lentz, “The E-volution of the Digital Divide in the US: A Mayhem of Competing Metrics,” *info* 2, no. 4 (2000): 355-377; Benjamin M. Compaine, “Information Gaps: Myth or Reality?” in *The Digital Divide: Facing a Crisis or Creating a Myth?*, ed. Benjamin M. Compaine (Cambridge, MA: MIT Press, 2001), 105-118.

⁹⁸ Jayakar and Sawhney, “Universal Service,” *supra* note 6, at 340.

⁹⁹ On the social and economic effects of being connected, see Benjamin M. Compaine and Mitchell J. Weinraub, “Universal Access to Online Services; An Examination of the Issue,” *Telecommunications Policy* 21, no. 1 (1997): 15-33, referring also to Ithiel de Sola Pool, *The Social Impact of the Telephone* (Cambridge, MA: MIT Press, 1977); Ithiel de Sola Pool, *Forecasting the Telephone: A Retrospective Technology Assessment of the Telephone* (Norwood, NJ: Ablex, 1983). See also European Commission, “Liberalisation of Network Industries,” *supra* note 2, at 172-176.

¹⁰⁰ A proposal that was also considered by the European Commission. See European Commission, *Report Regarding the Outcome*, *supra* note 43, at 6.

¹⁰¹ Gerard Goggin and Christopher Newell, “An End to Disabling Policies?: Towards Enlightened Universal Service,” *The Information Society* 16, no. 2 (2000): 127-133.

¹⁰² A phrase used by Sharon Strover. See Sharon Strover, “The First Mile,” *The Information Society* 16, no. 2 (2000): 151-154.

connectivity is perceived from the subscriber's perspective, could also become essential. Connectivity in this broader sense may encapsulate network interface devices, software and training, as well as incentives to create content and contribute to the community.¹⁰³ It corresponds to the implications of the contemporary Information Society as elaborated in the preceding section. In this context and going beyond the telephone, we consider two elements as particularly critical for the future shape of universal service policies. These are *innovation* and *content* and are outlined below.

B. INNOVATION

There is a three-way connection between innovation¹⁰⁴ and universal service. First, innovation and the resulting technological advances in telecommunications "reduce the cost and accelerate the timescale of progress towards universal services goals, which tends to be a slow and costly process."¹⁰⁵ Second, innovation "affects the ways individuals and households organize their lives, and the ways government and business conduct their activities."¹⁰⁶ Some technologies, such as digitization, as we have argued above, may trigger processes that go beyond the availability of more gadgets and profoundly change the face of the industry and our lives. In that sense, innovation instigates the formulation of new contents for universal service, since "innovations in telecommunication services affect the specific meaning that people attach to the concept of universal service, so that kinds of telecommunication service now regarded as necessities [...] include features that were previously considered to be luxuries."¹⁰⁷ This stresses the need for constant awareness of the

¹⁰³ Ibid.; On the importance of training, see, e.g., Sharon Eisner Gillett, "Universal Service: Defining the Policy Goal in the Age of the Internet," *The Information Society* 16, no. 2 (2000): 147-149.

¹⁰⁴ Innovation is understood here in its broadest meaning of research and development, invention and creation of new technologies, products and services (endogenous innovation), as well as the adoption of these by the relevant markets (exogenous innovation).

¹⁰⁵ Michael Tyler, William Letwin, and Christopher Roe, "Universal Service and Innovation in Telecommunication Services," *Telecommunications Policy* 19, no. 1 (1995): 3-20; Ibid., 18.

¹⁰⁶ Ibid., 19. See also PEW Internet & American Life Project, *Internet Penetration and Impact* (April 26, 2006), <http://www.pewinternet.org/> (accessed October 1, 2006).

¹⁰⁷ Tyler, Letwin, and Roe, "Universal Service and Innovation," *supra* note 105, at 3. Mobile telephony is a lucid example in this regard.

dynamism of universal service, which in practical terms means providing for mechanisms for reviewing the scope of USOs, as the example of the EC universal service regime shows.¹⁰⁸

Third, and more unusually, USOs could be seen as a driver of innovation.¹⁰⁹ Increasingly endowed with a critical role in modern economies, innovation is linked to the goal of governments to achieve sustainability.¹¹⁰ As the history of the telecommunications industry reveals, innovation has been its driving force from the outset.¹¹¹ Furthermore, communications markets exhibit network effects,¹¹² which make the innovation cycle uneven, since the adoption of a certain technology by the end-users is highly dependent on their expectations of the size of the future network. Under such circumstances, the demand *for*, and the adoption *of*, new technologies which are an essential part of the innovation process, could be predetermined by the lock-in effects¹¹³ of existing large networks (the

¹⁰⁸ See European Commission, *Report Regarding the Outcome*, *supra* note 43.

¹⁰⁹ François Bar and Annemarie Munk Riis, "From Welfare to Innovation: Toward a New Rationale for Universal Service" (Conference Paper, the 26th Telecommunications Policy Research Conference, Alexandria, VA, October 3-5, 1998), <http://tprc.org/agenda98.htm> (accessed July 11, 2006). See also François Bar and Annemarie Munk Riis, "Tapping User-Driven Innovation: A New Rationale for Universal Service," *The Information Society* 16, no. 2 (2000): 99-108.

¹¹⁰ See, e.g., Robert N. Stavins, Alexander Wagner, and Gernot Wagner, "Interpreting Sustainability in Economic Terms: Dynamic Efficiency Plus Intergenerational Equity" (*Regulatory Policy Program Working Paper RPP-2002-02*, Cambridge, MA: John F. Kennedy School of Government, Harvard University, May 2002). See also Marc Bourreau and Pinar Doğan, "Regulation and Innovation in the Telecommunications Industry," *Telecommunications Policy* 25, no. 3 (2001): 167-168.

¹¹¹ For evidence, see Knut Blind, et al., "New Products and Services: Analysis of Regulations Shaping New Markets," *Fraunhofer Institute Systems and Innovation Research Study funded by the European Commission* (Karlsruhe, February 2004), 76; Bourreau and Doğan, "Regulation and Innovation," *supra* note 111, at 169.

¹¹² On network effects, see Stanley J. Liebowitz and Stephen E. Margolis, "Network Externality: An Uncommon Tragedy," *Journal of Economic Perspectives* 8, no. 2 (1994): 1-26; Stanley J. Liebowitz and Stephen E. Margolis, "Are Network Externalities a New Source of Market Failure?" *Research in Law and Economics* 17 (1995): 1-22; Carl Shapiro and Hal R. Varian, *Information Rules* (Boston, MA: Harvard Business School Press, 1999); Nicholas Economides, "The Economics of Networks," *International Journal of Industrial Organization* 16, no. 4 (1996): 673-699; Heli Koski and Tobias Kretschmer, "Survey on Competing in Network Industries: Firm Strategies, Market Outcomes, and Policy Implications," *Journal of Industry, Competition and Trade (Bank Papers)* (2004): 5-31.

¹¹³ Victor Stango defines a "lock-in" as "a situation in which economic agents' equilibrium decisions regarding standards adoption yield lower social welfare than an alternative." See

most notorious example of which is the Windows operating system¹¹⁴). A path dependent of adoption¹¹⁵ emerges in that regard, which is difficult to overcome (including in a case of availability of a superior technology¹¹⁶) and influences the stimuli for innovation. In that context, universal service policy could “foster linked objectives”¹¹⁷ and “stimulate the creation of a broad-based society of lay users for advanced ICT, whose participation in successful interaction with suppliers is key to the breadth of the ICT innovation process [...] increas[ing] the total range and number of information technology innovations and at the same time decreas[ing] the proportion of ‘unsatisfactory innovations.’”¹¹⁸ To put it simply, this means that the government can either stimulate the adoption of certain technologies (which is, however, not technologically neutral) or may increase the awareness and the knowledge as to how available and/or new advanced technologies could be applied. This would also contribute to the various governmental projects on Information Society linked to the instrumentalization of ICTs for the achievement of a variety of public interest goals, such as inclusion, growth, and improved public services.¹¹⁹

Victor Stango, “The Economics of Standards Wars,” *Review of Network Economics* 1, no. 1 (2004): 4. See also Shapiro and Varian, *Information Rules*, *supra* note 113, at 103-171.

¹¹⁴ See Commission Decision of 24 March 2004 relating to a proceeding under Article 82 of the EC Treaty, Case COMP/C-3/37.792 *Microsoft*, COM(04) 900 final and Order of the President of the Court of First Instance, Proceedings for interim relief – Article 82 EC in Case T-201/04 R *Microsoft v. Commission of the European Communities* (Dec. 22, 2004), Eur. O.J. C69/16 (March 19, 2005).

¹¹⁵ Stango, “The Economics of Standards Wars,” *supra* note 113, at 5.

¹¹⁶ See, e.g., Paul A. David, “Clio and the Economics of QWERTY,” *American Economic Review* 75, no. 2 (1985): 332-337; Paul A. David, “Path Dependence and the Quest for Historical Economics: One More Chorus of the Ballad of QWERTY,” *University of Oxford Discussion Papers in Economic and Social History*, no. 20 (1997).

¹¹⁷ A phrase used by Tyler and Letwin and Roe in “Universal Service and Innovation in Telecommunication Services,” *supra* note 106.

¹¹⁸ Bar and Riis, “From Welfare to Innovation,” *supra* note 109, at 17.

¹¹⁹ Such types of project are prominent in the European regulatory space (for the current project, see European Commission, *i2010 – A European Information Society for Growth and Employment*, *supra* note 73), but not exclusively European (see, e.g., Castells, *The Information Age*, *supra* note 76, at 394-395).

C. ACCESS TO CONTENT

Besides the newly formulated tasks of universal service in terms of access to networks and innovation, we argue that in the longer-term evolution of the Information Society, the idea of universal access will need to be extended to include *content*. This may have different dimensions. One dimension may address access to basic information, such as certain kinds of public information regarding health, education, transportation, or government informational resources.¹²⁰ In the context of ongoing and increasing convergence¹²¹ between the telecommunications and media sectors, it may also be essential to consider the possibilities of addressing universal service issues in these domains simultaneously.¹²² However in acknowledging the difference between information and communication resources,¹²³ one should not overstate the issues related to access to information. As Compaine and Weinraub lucidly point out,

[a]lthough news about the society around them is considered by many to be vital to every voting citizen in a democratic society, here too there has never been a serious movement to subsidize a newspaper on every doorstep or a radio on every kitchen table. In this case, most societies have chosen to

¹²⁰ See Robin Mansell, "Designing Networks to Capture Customers: Policy and Regulation Issues for the New Telecom Environment," in Melody, "Policy Objectives and Models of Regulation," *supra* note 18, at 85-86.

¹²¹ On convergence, see Colin R. Blackman, "Convergence between Telecommunications and Other Media," *Telecommunications Policy* 22, no. 3 (1998): 163-170; P.H. Longstaff, "New Ways to Think about the Visions Called 'Convergence': A Guide for Business and Public Policy," *Program on Information Resources Policy* (Harvard University, April 2000); OECD, *The Implications of Convergence for Regulation of Electronic Communications*, DST/ICCP/TISP(2003)5/final (July 12, 2004); Damien Geradin and David Luff, eds., *The WTO and Global Convergence in Telecommunications and Audio-Visual Services* (Cambridge: Cambridge University Press, 2004); Milton L. Mueller, "Convergence: A Reality Check," in *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, ed. Damien Geradin and David Luff, 311-322; Pierre Larouche, "Dealing with Convergence at the International Level," in *The WTO and Global Convergence in Telecommunications and Audio-Visual Services*, ed. Damien Geradin and David Luff, 390-422.

¹²² See Simpson, "Universal Service Issues," *supra* note 19.

¹²³ Compaine and Weinraub, "Universal Access to Online Services," *supra* note 99, at 32-33.

post the daily newspaper in a public space, either in the town center or the public library.¹²⁴

In that sense, following our previous elaborations and the suggestions by Harmeet Sawhney, hybrid models may be created where uniform solutions are formulated for resources used in the communication mode, while a segmented approach is applied for resources in the information access mode.¹²⁵

An arguably more vital dimension of access relates to the broader context of human rights and, in particular, to the freedom of expression.¹²⁶ As we have argued above, in the Information Society, information has become the single most important element. Therefore, greater participation in the production and processing of information needs to be expedited. For instance, the latest Pew Internet Report shows that as of March 2006 forty-two percent of all American adults had a high-speed Internet connection at home,¹²⁷ and thirty-five percent of all Internet users have posted content there, the large majority of them being *home* broadband users.¹²⁸ Following this line of reasoning,¹²⁹ we argue that there is a new type of *participatory culture* emerging and it is crucial that a certain minimum of access is provided for all. This relates not only to freedom of expression as a

¹²⁴ *Ibid.*, 31.

¹²⁵ Harmeet Sawhney, "Universal Service: Separating the Grain of Truth from the Proverbial Chaff," *The Information Society* 16, no. 2 (2000): 161-164.

¹²⁶ The right of freedom of opinion and expression is safeguarded in the majority of national constitutions. On the international level, it is formulated in Article 19 of the Universal Declaration of Human Rights, GA Resolution 217 A(iii), UN Doc.A/810 (December 10, 1948), as including "freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." It is reiterated in Article 19 of the International Covenant on Civil and Political Rights, GA Resolution 2200 A(xxi), UN Doc.A/6316 (1966), thereby making it binding to the parties. As of September 19, 2006, 157 countries were parties to the Covenant.

¹²⁷ Which is a 40 percent increase in numbers of Americans with high-speed Internet (compared to the 30 percent growth of 2005).

¹²⁸ See PEW Internet & American Life Project, "Home Broadband Adoption 2006," (May 28, 2006), <http://www.pewinternet.org/> (accessed October 1, 2006).

¹²⁹ See, e.g., Urs Gasser and Silke Ernst, "From Shakespeare to DJ Danger Mouse: A Quick Look at Copyright and User Creativity in the Digital Age," *Berkman Center for Internet and Society Research Publication*, no. 2006-05 (June 2006). See also PEW Internet & American Life Project, *supra* note 84.

fundamental right that in its institutional aspect¹³⁰ needs to be secured by the state, but also to freedom of expression as guaranteeing and enabling cultural diversity,¹³¹ the protection of which is critical in light of the implications of the changed communications environment sketched above.¹³² The so-construed “access to content” is distinct from the conventional question of whether USOs should include broadband.¹³³ Although the inclusion of broadband in the scope of USOs allowing unlimited access to the Internet will clearly facilitate access to content, the mere availability and affordability of broadband does not exhaust the issues of access to content in the above-mentioned contexts of access to public information and cultural diversity.

¹³⁰ Graber, *Handel und Kultur*, *supra* note 87, at 100.

¹³¹ See Article 4(1) of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, adopted at the 33rd Session of the General Conference of UNESCO (October 20, 2005). On cultural diversity, see, e.g., Joost Smiers, *Arts under Pressure* (New York: Zed Books, 2004); the collection of contributions in Christoph Beat Graber, Michael Girsberger, and Mira Nenova, eds., *Free Trade versus Cultural Diversity* (Zurich: Schulthess, 2004); Christoph Beat Graber, “The New UNESCO Convention on Cultural Diversity: A Counterbalance to the WTO?” *Journal of International Economic Law* 9, no. 3 (2006): 553-574.

¹³² “Freedom of expression, media pluralism, multilingualism, equal access to art and to scientific and technological knowledge, including in digital form, and the possibility for all cultures to have access to the means of expression and dissemination are the guarantees of cultural diversity.” See Article 2(1) of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, *supra* note 132.

¹³³ See, e.g., European Commission, *Report Regarding the Outcome*, *supra* note 43. Currently, in the EC, although universal service includes a connection to the public telephone network at a fixed location, this requirement is limited to a single narrowband network connection, the provision of which may be restricted by member states to the end-user's primary location/residence and does not extend to the Integrated Services Digital Network (ISDN). Connections to the public telephone network (wired or wireless) at a fixed location should however be capable of supporting speech and data communications at rates sufficient for access to online services, such as those provided via the public Internet. The speed of Internet access experienced by a given user may depend on a number of factors, including the provider(s) of Internet connectivity, as well as the given application for which a connection is being used. The data rate that can be supported by a single narrowband connection to the public telephone network depends on the capabilities of the subscriber's terminal equipment, as well as the connection. For this reason, the EC has not mandated a specific data or bit rate at the Community level. In specific cases, where the connection to the public telephony network is clearly insufficient to support satisfactory Internet access, member states should be able to require the connection to be brought up to the level enjoyed by the majority of subscribers so that it supports data rates sufficient for access to the Internet. See *Universal Service Directive*, *supra* note 36, at Recital 8.

IV. CONCLUSION

Universal service programs are not outdated and remain necessary in the digital networked environment. Past rationales for universal service policies were based primarily on welfare and network externalities. In the new communications system, however, there are new justifications and a new potential for universal service packages. This does not mean that universal service should be simply expanded beyond POTS to include PANS (pretty amazing new stuff). This would be contrary to the fundamental notion of universal service as resting upon the principles of equality, continuity, and affordability and stemming from the fundamental rights of the citizens. We deem it most important in the discussions of future universal service models to go back to precisely these underlying ideas and let go of the telephony legacy, which is heavily loaded with lobbyists' arguments and is becoming increasingly inadequate. The conceptualization of communications and information networks as a public good could be of particular importance in the debates of universal service – citizens are to be thought of not only as consumers but also members of the political society.¹³⁴

We should be pragmatic, however, and not expect brave new USO models. "In fact, there are many reasons favoring a go slow policy that involves economics, the rate of technological change, and political reality."¹³⁵ The question of who pays will also certainly remain core to the discussion, although one should not equate the benefits of universal service policy with its costs.¹³⁶

During the debates that will ultimately lead to the political will for transforming the contents and/or mechanisms of universal service, it is vital that the developments within the communications sector

¹³⁴ Mark Freedland, "Law, Public Services, and Citizenship – New Domains, New Regimes?" in *Public Services and Citizenship*, ed. Freedland and Sciarra, *supra* note 65, at 8-11.

¹³⁵ Compaine and Weinraub, "Universal Access to Online Services," *supra* note 99, at 27. Eli Skogerbø and Tanja Storsul, for instance, analyze telecommunications policies in Denmark, the Netherlands, and Norway and show that business actors are well networked and are pressing for a minimal definition of universal service, while actors supporting an extended definition are less coordinated and less successful. The authors conclude that it is unlikely that universal services will be defined more extensively in the future. See Eli Skogerbø and Tanja Storsul, "Prospects for Expanded Universal Service in Europe: The Cases of Denmark, the Netherlands, and Norway," *The Information Society* 16, no. 2 (2000): 135-146.

¹³⁶ See European Commission, "Liberalisation of Network Industries," *supra* note 2, at 176-178.

(technologies, market restructuring, and private actors' actions¹³⁷) and within the broader Information Society as complex adaptive systems¹³⁸ are vigilantly observed. While market forces should be given priority, the potential of universal service as a tool of state intervention for safeguarding public interest objectives in increasingly deregulated communications markets should be appropriately assessed.¹³⁹

¹³⁷ For instance, Google's role in providing wireless access to Internet (Wi-Fi) in the city of San Francisco. See "Google Offers San Francisco Wi-Fi for Free: Company's Bid Is One of Many in Response to Mayor's Call for Universal Online Access," *San Francisco Chronicle*, October 1, 2005. See also Robin Finn, "A Visionary Seeking to Connect the World, Wirelessly," *The New York Times*, July 14, 2006.

¹³⁸ On communications as a complex adaptive system, see P.H. Longstaff, *The Communications Toolkit* (Cambridge, MA: MIT Press, 2002), 16 *et seq.*; P.H. Longstaff, "Competition in the Communications Sector: Can Predictability Be Regulated" (Program on Information Resources Policy, Harvard University, April 2003), 14 *et seq.*, <http://www.pirp.harvard.edu> (accessed October 1, 2006); P.H. Longstaff, "The Puzzle of Competition in the Communications Sector: Can Complex Systems be Regulated or Managed?" (Program on Information Resources Policy, Harvard University, July 2003), 15-17, 20 *et seq.*, <http://www.pirp.harvard.edu> (accessed October 1, 2006).

¹³⁹ In that context, universal service could be an advantageous way of preserving a certain layer of regulation for achieving economic and societal objectives. In the framework of EC law, for instance, universal service is undoubtedly better suited than "services of general economic interest," which is arguably another instrument that could be applied for the achievement of public interest goals. Notably, in contrast to "services of general economic interest," universal service involves no derogation from EC or national competition rules and thus remains within the market mechanism. See EC Treaty, Article 86(2). See also Nihoul and Rodford, *EU Electronic Communications Law*, *supra* note 5, at 5.265-5.336; Vito Aurucchio, "Services of General Economic Interest and the Application of EC Competition Law," *World Competition* 24, no. 1 (2001): 65-91; Prosser, *The Limits of Competition Law*, *supra* note 15, at 125-141.