

UNIVERSAL SERVICE: WHEN TECHNOLOGIES
CONVERGE AND REGULATORY MODELS DIVERGE

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I. INTRODUCTION

The universal service mission in telecommunications¹ is bound to evolve as technological innovations allow communications service providers to offer faster, cheaper, better, and smarter applications. Cable modems, wideband satellite and terrestrial broadband services, asymmetric digital subscriber links, and other technologies provide high-speed access to such Information Age applications as “streaming” video delivered directly to desktop computers. Collectively, these technologies have triggered the transition from Plain Old Telephone Service (“POTS”) to Pretty Amazing New Stuff (“PANS”).

However, technological change raises daunting questions about how to shape legislative and regulatory policies to optimize consumer welfare while minimizing governmental intrusion into the marketplace. Innovations in communications technology challenge legislators and regulators to maintain a level playing field among competing telecommunications and information service providers while at the same time achieving primary universal service objectives that are no longer limited to bringing a dial tone to the hinterland and making telephone service affordable everywhere.

This paper addresses the impact on the universal service mission of the convergence of communications technologies and argues that existing regulatory models have failed to address this change. Technological convergence arises when innovation blends previously discrete technologies. Convergence poses a challenge for policymakers when long-standing, customized regulations governing the old technologies prove inappropriate for the resulting blended technology. For example, federal and state regulators traditionally have deemed local and long-distance telephone service to be common carriage — a public utility offering subject to significant economic regulation designed to achieve non-discriminatory and cost-effective universal service. However, many of the enhanced services created by technological innovation, which might become part of an expanded inventory of universal service elements, traditionally have qualified for unregulated or lightly regulated status. For example, Congress, state regulators, and the Federal Communications Commission (“FCC” or the “Commission”) have shared the view that

1. One working definition of the universal service mission is: “a public policy to spread telecommunications to as many members of society as possible, and to make available, directly or indirectly, the funds necessary to support the policy.” Eli M. Noam, *Will Universal Service and Common Carriage Survive the Telecommunications Act of 1996?*, 97 COLUM. L. REV. 955, 957 (1997).

cable television and value-added information services do not constitute common carriage and do not fit into a pervasively regulated communications category like telephony.

Regulatory dichotomies work when categories of technology remain discrete and absolute. However, they do not work when technological convergence results in porous service categories and diversification by providers. When cable television operators and Internet Service Providers ("ISPs") offer telephony services functionally similar to those of the traditional telephone companies, regulators cannot maintain the existing dichotomies between communications categories, particularly when the regulations favor one type of technology and service provider over others. For example, ISPs and other enhanced service providers enjoy exemptions from charges levied for accessing the Public Switched Telephone Network ("PSTN") and from contributions to universal service funding. These entities qualify for the exemptions because they do not offer telephone service, although some of their offerings require access to the PSTN, and consumers regard these services as the functional equivalent of telephony.

When ISPs offer telephone service equivalents, linking PSTN access to Internet-mediated telephony, they derive a competitive advantage from the existing regulatory exemptions. If a significant volume of telephony traffic migrates to routings exempt from the universal service contribution requirement, the total funds available to achieve the universal service mission will decline. The potential for a reduction in universal service funding has arisen just as Congress has articulated a broader and more ambitious universal service mission to benefit schools, libraries, and hospitals.

This Article examines the existing legal and regulatory models for telephony, cable television, and information services. It focuses on the long-standing common carrier model and assesses whether this model is viable when traditional services and technologies are blended. The Article then considers the consequences for the universal service mission and the viability of the current regulatory models when previously regulated common carriers enter non-common-carrier markets. It also suggests public policy initiatives for adjusting telecommunications and information processing policies in an era of technological convergence.

II. THE UNIVERSAL SERVICE MISSION

Ubiquitous and low-cost access to basic telecommunications services is a fundamental public policy objective comparable to access to other

basic infrastructure such as electricity and water supply.² "Telecommunications is not simply a connection between people, but a link in the chain of the development process itself."³ There is a correlation between economic development and access to telecommunications facilities and services.⁴ This means that efficient, effective, and widely available telecommunications can stimulate social and economic development by facilitating commerce, education, job training, and political discourse.

As a result of changing technologies and consumer expectations, the concepts of universal access and universal service are in flux. These concepts may be analyzed in terms of four components:

- Infrastructure: What should be the scope and nature of the network that serves users?
- Services: What constitutes basic "lifeline" service and to what other features should users have access at an additional price?
- Cost: Should users pay the full cost of service, or should some subset of the user base receive subsidies for non-recurring charges, such as installation fees, and recurring charges, such as monthly service fees?

2. See INTERNATIONAL TELECOMMUNICATION UNION, WORLD TELECOMMUNICATION DEVELOPMENT REPORT 1998, Chapter 4, Universal Access (1998).

3. Heather E. Hudson, *Access to the Digital Economy: Issues in Rural and Developing Regions*, in UNDERSTANDING THE DIGITAL ECONOMY (Eric Brynjolfsson & Brian Kahin eds., forthcoming June 2000), available at <<http://mitpress.mit.edu/ude.html>>.

4. See, e.g., BEN A. PETRAZZINI, THE POLITICAL ECONOMY OF TELECOMMUNICATIONS REFORM IN DEVELOPING COUNTRIES: PRIVATIZATION AND LIBERALIZATION IN COMPARATIVE PERSPECTIVE 28 (1995) (linking access to telecommunications and economic development); ROBERT J. SAUNDERS ET AL., TELECOMMUNICATIONS AND ECONOMIC DEVELOPMENT 4 (2d ed. 1993) (same); see also Christopher J. Sozzi, *Project Finance and Facilitating Telecommunications Infrastructure Development in Newly-Industrializing Countries*, 12 SANTA CLARA COMPUTER & HIGH TECH. L.J. 435, 436 (1996) ("[M]any countries are focusing upon the development and upgrade of telecommunications infrastructure in order to compete economically at the international level."). See generally WALTER T. MOLANO, THE LOGIC OF PRIVATIZATION: THE CASE OF TELECOMMUNICATIONS IN THE SOUTHERN CONE OF LATIN AMERICA (1997) (examining factors that affect privatization of telecommunications industry in certain Latin American countries); TELECOMMUNICATIONS POLITICS: OWNERSHIP AND CONTROL OF THE INFORMATION HIGHWAY IN DEVELOPING COUNTRIES (Bella Mody et al. eds., 1995) (containing essays discussing various economic and political issues in telecommunications industry); Ingo Vogelsang, *Micro-Economic Effects of Privatizing Telecommunications Enterprises*, 13 B.U. INT'L L.J. 313 (1995) (discussing possible benefits of privatizing a nation's telecommunications industry, using United Kingdom as example).

- **Maintenance and Upgrades:** What incentives must regulators create to ensure that universal service providers maintain and upgrade their networks?

The concept of universal access also includes the issue of physical proximity of individuals to the telecommunications infrastructure. Even in developed nations, some users must share telephone lines. In developing nations and in rural or high-cost service areas, shared access from the home or a public place might have to suffice in the short run. One cannot conclude that an entire nation has access to a telecommunications infrastructure simply because a satellite footprint illuminates that country. On the other hand, the universal service mission progresses significantly when the first few telephone lines become available in a locality. Accordingly, the first step in achieving the universal service mission may involve providing lines to public facilities, such as libraries, schools, clinics, post offices, and other government buildings.

A. Common Carriage Before Technologies Converged

In this information age, buzzwords like “convergence,” “digital,” “multimedia,” and “interactive” describe an environment in which technological innovations largely foreclose airtight legal and regulatory dichotomies among communications services. Until twenty years ago, it was possible for judges and regulators to create different rules and requirements for communications technologies based on the nature of the service and the characteristics of the provider. Something as apparently absolute as the First Amendment could apply with different force according to the communications medium involved. For example, the government could impose more burdensome restrictions on speech transmitted across the public airwaves than through the spoken or written word.⁵

In the pre-convergence age, regulators could extend the pre-existing public utility model of common carriage to create a single regulatory structure for telecommunications. The rights and responsibilities historically vested in common carriers ensured widespread public access

5. See, e.g., *Red Lion Broad. Co. v. FCC*, 395 U.S. 367, 400–01 (1969) (upholding the constitutionality of FCC regulation mandating right of reply for individuals subject to personal attack and articulating predominance of listeners’ rights over broadcasters’ rights given broadcasters’ use of scarce public spectrum). *But cf.* *CBS, Inc. v. Democratic Nat’l Comm.*, 412 U.S. 94, 121 (1973) (holding that broadcasters have no obligation to provide generalized right of access for discussion of controversial issues).

to essential services, established safeguards to protect consumers, and tempered the market power created when regulators authorized the operation of a "natural monopoly." Governments negotiated a regulatory compact with common carriers, providing the carriers with valuable insulation from competition and reduced civil and criminal liability in exchange for governmental authority to regulate prices, revenues, and many other aspects of a carrier's corporate and operational behavior.⁶ Historically, providers of neutral, transparent conduits did not have to monitor the content they carried, nor could they typically refuse access⁷ to their bottleneck⁸ facilities on the basis of content or customer location.⁹

6. See, e.g., *Western Union Tel. Co. v. Esteve Bros. & Co.*, 256 U.S. 566, 575 (1921) (holding that exculpatory clause in common carrier tariff filed with the Interstate Commerce Commission limited carrier's liability to refunding cost of carriage despite substantial financial damage resulting from transmission error). For an examination of exculpation of common carrier liability, see Christy Cornell Kunin, Comment, *Unilateral Tariff Exculpation in the Era of Competitive Telecommunications*, 41 CATH. U. L. REV. 907 (1992).

7. See, e.g., *MCI Telecomms. Corp. v. FCC*, 580 F.2d 590, 597-98 (D.C. Cir. 1978) (mandating access to local exchange facilities); *Establishment of Domestic Communication-Satellite Facilities by Nongovernmental Entities*, 22 F.C.C.2d 86, 97 (1970), *policy reaff'd*, 34 F.C.C.2d 9, 64-67 (1972) (Proposed Second Report and Order) (stating that domestic satellite policy mandates non-discriminatory, diverse, and flexible access to domestic satellites and earth station facilities), *adopted as amended*, 35 F.C.C.2d 844, 856 (1972) (retaining greater flexibility than in proposal); see also *Establishment of Policies and Procedures for Consideration of Application to Provide Specialized Common Carrier Servs.*, 29 F.C.C.2d 870, 940 (1971) (requiring AT&T to afford local exchange facility access to competing intercity carriers), *aff'd in part and petition for reconsideration denied in part*, 31 F.C.C.2d 1106 (1971), and *aff'd sub nom. Washington Utils. & Transp. Comm'n. v. FCC*, 513 F.2d 1142 (9th Cir. 1975).

8. See *Policy and Rules Concerning Rates for Competitive Common Carrier Servs. and Facilities Authorizations Therefor*, 85 F.C.C.2d 1, 21-22 (1980) (First Report and Order).

A firm controlling bottleneck facilities has the ability to impede access of its competitors to those facilities. We must be in a position to contend with this type of potential abuse. We treat control of bottleneck facilities as *prima facie* evidence of market power requiring detailed regulatory scrutiny.

Control of bottleneck facilities is present when a firm or group of firms has sufficient command over some essential commodity or facility in its industry or trade to be able to impede new entrants. Thus bottleneck control describes the structural characteristic of a market that new entrants must either be allowed to share the bottleneck facility or fail.

Id. (footnotes omitted). See also *Bell Tel. Co. v. FCC*, 503 F.2d 1250, 1282-83 (3d Cir. 1974) (requiring AT&T to furnish interconnection facilities to specialized carriers); *Inquiry into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Sys.*, 86 F.C.C.2d 469, 495-96 (1981) (requiring telephone companies to furnish interconnection to cellular systems on terms no less favorable than those offered to "cellular systems of affiliated entities or independent telephone companies"), *clarified*, 89 F.C.C.2d

The government could require the telecommunications common carrier to provide service to any customer within a geographical area who was ready, willing, and able to take service. Common carriers could not discriminate among "similarly situated" users, which in practice meant that they had a limited capacity to price service as a function of demand and marketplace conditions rather than being subject to a regulator-managed calculation of carrier costs and a fair rate of return.

On the other hand, non-common carriers could operate as private carriers when transporting content, whether over spectrum, such as satellite operators,¹⁰ or over closed-circuit media, such as cable television operators.¹¹ This regulatory status derived from the perception that non-common carriers did not operate essential facilities and that, having chosen to select and monitor content, those carriers had to assume a greater risk of liability for the content they carried, published, or distributed.¹² The potential for civil and criminal liability was warranted because these non-common carriers actively decided whether or not to carry a particular message or type of content.¹³

Recently, regulators and courts have considered the extent to which such carriers can decide what content to carry, i.e., the extent to which they are electronic publishers whose editorial discretion permits them to decide whether and how to carry particular content. The dichotomy between common carriers and private carriers has grown murky for several reasons:

58, 80–82 (1982), *further clarified*, 90 F.C.C.2d 571, 576–77 (1982).

9. In *Sable Communications, Inc. v. FCC*, 492 U.S. 115 (1989), the Supreme Court upheld a federal statute prohibiting interstate commercial obscene telephone messages but overturned the statute's absolute denial of adult access, via telecommunications common carriers, to indecent messages that are entitled to First Amendment protection. *See id.* at 131.

10. *See World Communications, Inc. v. FCC*, 735 F.2d 1465, 1474 (D.C. Cir. 1984) (approving sale of satellite transponders to non-common carriers).

11. *See Midwest Video Corp. v. FCC*, 571 F.2d 1025, 1036 (8th Cir. 1978), *aff'd*, 440 U.S. 689 (1979) (holding that cable television is not common carriage).

12. *See Stratton Oakmont, Inc. v. Prodigy Servs. Co.*, No. 31063/94, 1995 WL 323710, at *4 (N.Y. Sup. Ct. May 24, 1995), *superseded by* 47 U.S.C. § 230(c) (Supp. III 1997).

13. For a discussion of the civil liability of ISPs, see Anne Wells Branscomb, *Anonymity, Autonomy, and Accountability: Challenges to the First Amendment in Cyberspaces*, 104 YALE L.J. 1639 (1995).

- Legislative and regulatory tinkering with the common carrier model;¹⁴
- Technological innovations;
- A growing body of cases articulating robust First Amendment speaker rights of common carriers; and
- Cases imposing quasi-common-carrier obligations on private carriers (e.g., the duty of cable television operators to carry broadcast television signals¹⁵) and quasi-publisher duties on common carriers (e.g., the duty to inquire and disclose whether content is obscene or indecent).

The blurring of the line between common carriers and private carriers has made it increasingly difficult for regulators to impose traditional common-carrier requirements on some providers while enterprises providing functionally equivalent services bear no such burdens. Legislators and regulators have not regarded the services provided by private carriers to be so essential that those carriers should participate in the universal service mission, either as partial underwriters — i.e., liable for the fees used to subsidize universal service — or as recipients of universal service subsidies. Increasingly, however, private carriers offer both competitive alternatives to basic services offered by regulated common carriers (e.g., wireless telephone services) and new services that arguably should constitute part of a revised and bolstered universal service mission.

B. Common Carriage and the Universal Service Mission

The common carrier regulatory regime enables policymakers to execute the universal service mission. Regulators can compel common carriers to provide unprofitable service in two key ways. First, regulators can impose costs on common carriers by forcing rate averaging and cross-subsidization as a public interest dividend extracted in exchange for the carrier's insulation from competition and some types of criminal and civil liability. Second, regulators can more easily engineer a financial cross-subsidy mechanism for underwriting universal service programs when a limited number of large enterprises can orchestrate the collection and

14. See generally Robert M. Frieden, *Contamination of the Common Carrier Concept in Telecommunications*, 19 TELECOMMUNICATIONS POL'Y 685 (1995).

15. See *Turner Broad. Sys., Inc. v. FCC*, 520 U.S. 180, 193 (1997) (finding that the Cable Television Consumer Protection Act of 1992 showed that Congress intended no significant diminution of multiplicity of broadcast stations).

distribution of universal service funds by adjusting service rates above and below actual cost plus a reasonable return.

Telecommunications common carriers have accepted their regulatory status based on a rational cost-benefit analysis. They trade profitability for protection from open markets and below-market rates of return. While regulator-granted franchises may not expressly have conferred market exclusivity, most telecommunications common carriers enjoyed monopoly status. Perhaps incumbent operators grew to expect exclusivity as part of the deal. Notwithstanding such expectations, the barriers to market entry have dropped because of technological innovations and the increasing reluctance of regulators to deny market-entry opportunities. To make matters worse for incumbents, market entrants typically operate with fewer regulatory burdens, including non-common carrier status.

The ability and inclination of incumbent common carriers to pursue universal service objectives may decline in a competitive marketplace, particularly one with asymmetrical regulation — i.e., burdensome common-carrier regulation of incumbents and light or nonexistent regulation of market entrants. Incumbent operators may have to reduce rates for services, particularly in localities where they face competition, which in turn would reduce internally generated funds available for voluntary cross-subsidization of services not facing competition and downward rate pressure. Similarly, incumbent carriers may need to reallocate infrastructure investments to localities, such as cities, where they have to match the diversified services available from new competitors.

However, the common carrier classification may limit incumbent operators' ability to adjust rates in response to competition. Rate rebalancing has no net financial impact on the incumbent carrier's revenues or rate of return, but it typically results in reduced rates for competitive, urban services and raised rates for hinterland services. Such rebalancing comes across to rural residents as a discriminatory rate hike and may have an adverse impact on universal service by making POTS and PANS more expensive in certain areas in the absence of redirected or increased subsidies.

The common carrier classification best serves universal service objectives when regulators can leverage the carrier's commitment to serve unprofitable locales and customer categories in exchange for some degree of insulation from competition and liability. When non-common carriers can offer functionally equivalent services, incumbent common carriers have a legitimate concern that they will remain the carrier of last resort for unprofitable customers even as they lose revenue and market share to the newcomers.

Market entrants predictably target the most profitable and easiest-to-serve customers, typically large-volume business users in cities. Incumbent carriers consider this market strategy unfair “cherry picking” and “cream skimming.” Whether or not such selective targeting of customers constitutes unfair competition, it may have an immediate and adverse effect on universal service for two reasons. First, all universal service funding probably will have to come from consumers, without any local exchange carrier (“LEC”) voluntary cross-subsidies. This means that consumers will incur higher charges, either directly through additional long-distance charges or indirectly through above-cost access charge payments passed through by interexchange carriers (“IXCs”). Second, incumbent local exchange carriers (“ILECs”) will have increased incentives to “de-average” rates, i.e., to seek permission to subdivide service territories, such as entire states, into smaller service regions based on the traffic density and degree of competition in each region.

C. Internet Access and the Universal Service Mission

The Internet means different things to different people. On a macro, technological level, it constitutes a “network of networks” in the sense that ISPs purposefully link their individual networks with other networks to achieve global connectivity. ISPs provide consumers with “seamless” access to most of the individual networks that comprise the Internet, often with a contract covering only the first or last of many network connections. The packet-switched nature of the Internet, coupled with switching and routing protocols, provides robust and diverse network access without the need for each ISP to negotiate interconnection terms with every other operator. Telecommunications carriers achieve similar connectivity with greater effort and specificity through the accumulation of separate operating agreements.

Internet users benefit from the technological ease of switching and routing traffic, but such seamlessness generates a host of legal and regulatory problems. For example, the lack of contract privity between each and every ISP raises liability questions when an ISP inadvertently provides a conduit for a criminal transaction (e.g., transmitting obscenity, providing a forum for libel, or serving as a delivery mechanism for fraudulent securities transactions). The legal and regulatory models created for telecommunications carriers provide near-absolute exculpation. As neutral and transparent common carriers, telecommunications service providers lack liability or culpability even when serving as the conduit for the commission of a crime. On the other hand, ISPs do not operate as common carriers. They benefit by escaping

the duty of common carriers to provide service without discrimination to any and all users in a particular geographical region. Until the creation of a legislative remedy,¹⁶ however, ISPs ran the risk of liability for damages caused by the content they carried.¹⁷ In the absence of Internet-specific legal and regulatory models, courts and other decision makers have applied and extrapolated from models developed for more established media. Over the long run, however, the use of analogies and extrapolations does not work well for two primary reasons. First, in the absence of a unitary jurisprudential and regulatory model, ISPs lack certainty as to the standard of care and of content scrutiny they must exercise. Some may “chill” speech by overzealousness, while others may incur substantial financial liability if they fail to establish sufficient self-regulation. Second, many of the proliferating services, features, and functions available via the Internet defy compartmentalization into traditional print, broadcast, and common carrier models. An ISP does not necessarily become a newspaper publisher simply because it delivers the electronic edition of a newspaper, nor does it become a radio station simply by simulcasting a radio station’s content.

16. A portion of Title V of the Telecommunications Act of 1996, also known as the Communications Decency Act of 1996 (“CDA”), Pub. L. No. 104-104, § 509, 110 Stat. 56, 137–39 (codified at 47 U.S.C. § 230), modified Title II of the Communications Act of 1934, 47 U.S.C. §§ 201–276 (1994 & Supp. III 1997), by adding a section that limits the liability of ISPs when they serve as unknowing conduits for slander and libel propagated by third parties. Under this “Good Samaritan” provision, an ISP is not “treated as the publisher or speaker” of third-party content and may not be held liable for slanderous or libelous material posted on its service or for wrongfully removing material in good faith. *See, e.g., Zeran v. America Online, Inc.*, 129 F.3d 327, 331 (4th Cir. 1997) (explaining that Congress granted tort immunity to ISPs because of impossibility of screening millions of electronic postings); *Ben Ezra, Weinstein and Co., Inc. v. America Online, Inc.*, No. 97-485 LH/LFG, 1999 WL 727402, at *2–*3 (D.N.M. Mar. 1, 1999) (holding that CDA barred claims against America Online for negligently posting inaccurate stock quotes), *aff’d*, No. 99-2068, 2000 WL 275543 (10th Cir. Mar. 14, 2000); *and Blumenthal v. Drudge*, 992 F. Supp. 44, 52–53 (D.D.C. 1998) (holding that CDA protected America Online against defamation claims stemming from its dissemination of gossip column).

Additionally, as part of the Digital Millennium Copyright Act of 1998, Congress limited ISP liability for carriage of material that infringes copyright. *See Online Copyright Infringement Liability Limitation Act*, Pub. L. No. 105-304, §§ 201–203, 112 Stat. 2860, 2877–86 (codified as amended at 17 U.S.C. § 512 (Supp. IV 1998)).

17. *See, e.g., Stratton Oakmont, Inc. v. Prodigy Servs. Co.*, No. 31063/94, 1995 WL 323710, at *1 (N.Y. Sup. Ct. May 24, 1995) (holding that ISP was “publisher” of allegedly defamatory information when subscriber posted message on ISP’s bulletin board alleging that president of securities investment banking firm committed criminal and fraudulent acts), *superseded by* 47 U.S.C. § 230(c) (Supp. III 1997).

III. IMPACT OF THE TELECOMMUNICATIONS ACT OF 1996

The Telecommunications Act of 1996¹⁸ (the "Telecommunications Act") amended the Communications Act of 1934 to establish an explicit mandate for the FCC to promote universal access to telecommunications services.¹⁹ The Telecommunications Act directed the FCC to commence a proceeding to implement sections 214(e) and 254 of the Communications Act and to refer the proceeding to a Federal-State Joint Board (the "Joint Board") comprised of commissioners from the FCC and state regulatory agencies.²⁰ The Joint Board was given nine months to make recommendations to the FCC, including a definition of the services to be supported by federal universal service support mechanisms and a timetable for the implementation of its recommendations. The FCC initiated the Joint Board proceeding in March 1996,²¹ and the Joint Board issued its *Recommended Decision* in November of that year.²²

The Telecommunications Act established several requirements for federal universal service support mechanisms. It directed the Joint Board and the FCC to base the preservation and advancement of universal service on six general principles, but stipulated that additional principles might be considered. These six principles are as follows:

1. Quality services should be available at just, reasonable, and affordable rates;
2. Access to advanced services should be available in all regions of the nation;
3. Access to basic and advanced services should be available to customers in rural and high-cost areas and to low-income consumers at rates comparable to those in urban areas;

18. Pub. L. No. 104-104, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.).

19. See 47 U.S.C. § 254 (Supp. III 1997).

20. See *id.* For one argument about how the FCC should implement the Telecommunications Act, see Christopher Wyeth Kirkman, *Busting the Administrative Trust: An Experimentalist Approach to Universal Service Administration in Telecommunications Policy*, 98 COLUM. L. REV. 620 (1998).

21. See Federal-State Joint Board on Universal Service, 61 Fed. Reg. 10,499 (FCC 1996) (to be codified at 47 C.F.R. pts. 36, 69) (proposed Mar. 14, 1996) [hereinafter Universal Service NPRM].

22. See Federal-State Joint Board on Universal Service, 12 F.C.C.R. 87 (1996) (Recommended Decision) [hereinafter Recommended Decision]; see also Federal-State Joint Board on Universal Service, 13 F.C.C.R. 24744 (1998) (Second Recommended Decision).

4. All telecommunications providers should make equitable and non-discriminatory contributions to the preservation and advancement of universal service;
5. Specific and predictable universal service support mechanisms should exist at both the federal and the state levels; and
6. Schools, libraries, and health care facilities should have access to advanced telecommunications services.²³

After receiving the recommendations of the Joint Board, the Commission had to identify specific services for federal universal service support²⁴ and to target subsidies for the provision, maintenance, and upgrading of the identified facilities and services.²⁵ Such support is to be available to all telecommunications carriers eligible to receive universal service subsidies.²⁶ The legislation requires explicit universal service funding²⁷ and mandates equitable and non-discriminatory sharing of the financial burden among all telecommunications carriers providing interstate telecommunications services.²⁸

In its *Recommended Decision*, the Joint Board concluded that several universal service mechanisms currently implemented through jurisdictional separation, the allocation of network costs between intrastate and interstate services, and IXC access charge structures must be replaced or modified to meet the requirement of the amended Communications Act that support mechanisms be explicit, specific, predictable, and sufficient to preserve and advance universal service.²⁹ Accordingly, the Joint Board recommended that changes be made to the high cost assistance fund³⁰ and that the Dial Equipment Minutes (“DEM”) weighting program³¹ and Long Term Support (“LTS”)³² be phased out and

23. See 47 U.S.C. § 254(b) (Supp. III 1997).

24. See *id.* § 254(c).

25. See *id.* § 254(e), (k).

26. See *id.* §§ 214(e), 254(e); see also Recommended Decision, *supra* note 22, ¶¶ 155–62; Joint Explanatory Statement of the Committee of Conference, in S. CONF. REP. NO. 104-230, at 131 (1996) (stating the conferees’ intention that “only eligible telecommunications carriers should receive support from specific Federal universal service support mechanisms”) [hereinafter Joint Explanatory Statement].

27. See 47 U.S.C. § 254(e) (Supp. III 1997); see also Joint Explanatory Statement, *supra* note 26, at 131 (describing mandate in § 254(e) that universal service support “should be explicit” as reflection of conferees’ intent to “clearly identify” such support).

28. See 47 U.S.C. § 254(d) (Supp. III 1997).

29. See Recommended Decision, *supra* note 22, ¶ 2.

30. See 47 C.F.R. §§ 36.601, .611–.613, .621–.622, .631, .641 (1999).

31. See *id.* § 36.125(b).

32. See *id.* §§ 54.303, 69.105, 69.603(e), 69.612 (1998).

replaced by a new explicit universal service mechanism.³³ The Joint Board's recommendations have obliged the FCC to revise its IXC access charge rules³⁴ to eliminate any implicit universal service subsidization, to prevent ILECs from recovering the same costs twice from both LECs and IXCs, and to provide the same subsidies to non-incumbent LECs as are provided to ILECs for serving high-cost or low-income subscribers.

In its *Universal Service NPRM*, the FCC asked whether the charges imposed on IXCs contained an implicit universal service support mechanism.³⁵ While the Joint Board did not reach this question, it suggested that it would be desirable for LECs to recover non-traffic-sensitive costs that do not vary with use on a flat-rate basis rather than the economically inefficient per-minute basis.³⁶

The Telecommunications Act identified specific beneficiaries of the universal service mission: schools, libraries, and health care facilities.³⁷ Additionally, the statute directs the FCC and state commissions to promote services in all regions of the nation "that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."³⁸ The Telecommunications Act established the principle that some set of telecommunications services must be guaranteed to all at affordable rates, and required the FCC to articulate what this universal service package will contain and how it will evolve over time to take account of advances in telecommunications and information technologies and services.³⁹

33. See Recommended Decision, *supra* note 22, ¶¶ 268–282.

34. See Federal-State Joint Board on Universal Service, 12 F.C.C.R. 8776 (1997) (Report and Order) [hereinafter *Universal Service Order*], *aff'd in relevant part sub nom. Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393 (5th Cir. 1999) (affirming *Universal Service Order* in part and reversing and remanding on unrelated grounds), *petition for cert. filed*, 68 U.S.L.W. 3496 (U.S. Jan. 26, 2000) (No. 99-1249), *and modified*, 15 F.C.C.R. 1679, FCC 99-290, 1999 WL 809713 (F.C.C. Oct. 8, 1999), *and review denied*, *Alenco Communications, Inc. v. FCC*, 201 F.3d 608 (5th Cir. 2000); *Access Charge Reform*, 12 F.C.C.R. 15,982 (1997) (First Report and Order), *aff'd sub nom. Southwestern Bell v. FCC*, 153 F.3d 523 (8th Cir. 1998).

35. See *Universal Service NPRM*, *supra* note 21, ¶¶ 113–114.

36. See Recommended Decision, *supra* note 22, ¶¶ 775–776.

37. See 47 U.S.C. § 254(b)(6) (Supp. III 1997).

38. *Id.* § 254(b)(3).

39. See *id.* § 254(c)(1).

A. Universal Service Order and Reconsideration

On May 8, 1997, the FCC issued a Report and Order on universal service that largely adopted the Joint Board recommendations.⁴⁰ The FCC determined that the following services required subsidization to achieve ubiquity:

- Voice-grade access to the public switched network, with the ability to place and receive calls;
- Dual Tone Multifrequency (“touch tone”) signaling or its functional equivalent;
- Single-party service;
- Access to emergency services, including 911 and Enhanced 911 (which identifies a caller’s location);
- Access to interexchange services;
- Access to directory assistance; and
- Lifeline and Link Up services for qualifying low-income consumers.

As recommended by the Joint Board, the FCC required eligible carriers⁴¹ seeking universal service subsidization to offer each of the designated services. The FCC will allow a transition period for carriers currently unable to provide single-party service, Enhanced 911 service, and toll limitation services. Additionally, as recommended by the Joint Board, the FCC will convene another Federal-State Joint Board to review the definition of universal service on or before January 1, 2001.

The FCC accepted the Joint Board’s recommendation that states should monitor rates and non-rate factors, such as subscribership levels, to ensure that local telephone service remains affordable.⁴² The Report and Order noted that subscribership levels are correlated with affordability.⁴³ To achieve universal service, the FCC concluded, eligible

40. See Federal-State Joint Board on Universal Service, 12 F.C.C.R. 8776 (1997) (Report and Order) [hereinafter 1997 Universal Service Report and Order].

41. Section 214(e) of the Communications Act of 1934, as amended, defines eligible telecommunications carriers as common carriers eligible to receive universal service support in accordance with Section 254 based on their designation of eligibility by state commissions for intrastate service and by the FCC for unserved interstate services. See 47 U.S.C. § 214(e) (Supp. III 1997).

42. See 1997 Universal Service Report and Order, *supra* note 40, ¶ 110.

43. “We agree with the Joint Board that there is a correlation between subscribership and affordability and we further agree that joint examination by the Commission and the states of the factors that may contribute to low penetration is warranted in areas, such as insular areas, where subscribership levels are particularly low.” 1997 Universal Service

telecommunications carriers should be free to use any available technology to achieve universal service, including wireless options. As for service to rural, insular, and high-cost areas, the FCC found that carriers should use forward-looking economic costs, but that the cost estimation methodologies presented thus far had not proved sufficiently reliable.⁴⁴ Pending completion of an additional proceeding on costing methodologies, the FCC offered states the option of using the Commission's existing cost allocation mechanisms or their own forward-looking cost studies for determining universal service support. Until the FCC releases a new forward-looking costing mechanism, non-rural carriers will continue to receive high-cost loop support and long-term support based on existing universal service mechanisms.

Consistent with the Joint Board's recommendation, rural carriers will continue to receive the full level of support they enjoy under the current mechanism, with some minor modifications.⁴⁵ The FCC contemplates working with the Joint Board to develop an appropriate forward-looking mechanism for rural carriers, and recommended that the Joint Board establish a task force to start working on it.⁴⁶ Because a forward-looking methodology will generate lower funding to support universal service in high-cost areas, the FCC established a mechanism by which interstate and intrastate carriers will share the difference between the actual funding level and a national benchmark level.⁴⁷ In the interest of fairness between rural and urbanized states, the FCC decided that states should be free to develop their own universal service programs.⁴⁸ Additionally, the FCC will refer this issue to the Joint Board for further review. As recommended by the Joint Board, the FCC will continue to explore the use of competitive bidding as a mechanism to provide universal service.⁴⁹

The 1997 Universal Service Report and Order modifies the Lifeline program, which uses matching federal and state funds to reduce monthly telephone charges for qualified low-income consumers. The related Link Up program, currently funded by contributions from IXC's, reduces initial ILEC connection charges by up to one half for qualified low-income consumers. The Report and Order expanded the Lifeline program, making it available in every state and territory⁵⁰ and increasing the Lifeline

Report and Order, *supra* note 40, ¶ 23.

44. *See id.* ¶¶ 199–207.

45. *See id.* ¶¶ 203–204.

46. *See id.* ¶¶ 252–253.

47. *See id.* ¶¶ 257–272.

48. *See id.* ¶ 206.

49. *See id.* ¶ 325.

50. *See id.* ¶ 348.

support amount to \$5.25 per month in federal funding, with an additional \$1 for every \$2 of state support up to a maximum of \$1.75, resulting in a maximum federal support for each qualified customer of \$7 per month.⁵¹ The Report and Order also makes the contribution and distribution of low-income support competitively and technologically neutral by requiring all providers of interstate telecommunications services to contribute, including non-common carriers and payphone aggregators, and by allowing all eligible telecommunications carriers (including, for example, wireless carriers) to receive support for offering Lifeline and Link Up services.⁵²

The FCC also adopted the Joint Board's recommendations for providing eligible schools and libraries with discounts on the purchase of all commercially available telecommunications services, Internet access, and internal connections. Eligible schools will qualify for discounts ranging from twenty percent to ninety percent, with the higher discounts available to the most disadvantaged schools and libraries and to those in high-cost areas.⁵³ The FCC capped total expenditures for universal service support for schools and libraries at \$2.25 billion per year, with a roll-over into following years, if necessary, for funds not disbursed in any given year.⁵⁴

Additionally, all public and not-for-profit health care providers located in rural areas will receive universal service support not to exceed an annual cap of \$400 million.⁵⁵ A health care provider may obtain telecommunications service at a transmission capacity up to and including 1.544 megabits per second, the bandwidth equivalent of a T-1 line, at rates comparable to those paid for similar services in the nearest urban area with more than 50,000 residents within the state in which the rural health care provider is located.⁵⁶ Rural health care providers also will receive support for both distance-based charges and a toll-free connection to an ISP. Each health care provider that lacks toll-free access to an ISP may also receive the lesser of 30 hours of Internet access at local calling rates per month, or \$180 per month in toll charge credits for toll charges imposed for connecting to the Internet.⁵⁷

As the Joint Board recommended and in light of concerns about affordability, the FCC decided not to raise the monthly subscriber line

51. *See id.* ¶¶ 350–352.

52. *See id.* ¶¶ 364–365 (Lifeline), 379–380 (Link Up).

53. *See id.* ¶ 425.

54. *See id.*

55. *See id.* ¶ 608.

56. *See id.*

57. *See id.* ¶ 745.

charge⁵⁸ for primary residential and single-line business lines to pay for the increased universal service requirements.⁵⁹ Additionally, the FCC endorsed the Joint Board's conclusion that a mechanism used to balance carrier common line ("CCL") charges among ILECs constituted an implicit support mechanism and therefore must be removed from CCL charges.⁶⁰

B. ISPs Are Exempt from Access Charges

The FCC has exempted ISPs and other "enhanced service providers" from paying access charges in addition to their ordinary line rental fees. In 1983, the FCC classified enhanced service providers as "end users"

58. The Subscriber Line Charge ("SLC") recovers from telephone subscribers most of the costs incurred by LECs to provide access to and from IXCs. Because the FCC did not want the imposition of an SLC to reduce telephone service subscribership, the Commission initially set the rate at less than the full per-subscriber cost. The shortfall was recovered from IXCs through a per-minute Carrier Common Line Charge ("CCLC"). Generally, the FCC does not want carriers to apply or incur usage-sensitive rates to recover costs that do not vary with usage (e.g., sunk plant investments that carriers make regardless of customer usage). Accordingly, the FCC subsequently authorized price-cap-regulated LECs with a means to recover some of the loop costs they previously recovered through the CCLC. The Commission raised the price-cap-regulated LECs' SLC caps for non-primary residential lines and multi-line business lines, but chose not to raise those LECs' SLC caps for primary residential lines and single-line business lines. *See* Access Charge Reform, CC Docket No. 96-262, Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, Transport Rate Structure and Pricing, CC Docket No. 91-213, End User Common Line Charges, CC Docket No. 95-72, 12 F.C.C.R. 15982, 15999-16000, 16004-05, 16008-17 (1997) (Report and Order). Even with a higher SLC for second residential lines and for business services, a shortfall remains. The FCC authorized LECs to recover most of this amount through a monthly Primary Interexchange Carrier Charge ("PICC") imposed on IXCs based on long-distance customers' selection of an IXC for direct-dialed long-distance service. *See id.* at 16004-05, 16020, 16022. *See also* 47 C.F.R. § 69.153(c)-(e) (1998). *See* 47 C.F.R. § 69.152(b), (d), (e), (k) (1998) (providing means for price-cap-regulated LECs to calculate the SLC caps for primary and non-primary residential lines, and single-line and multi-line business lines); 47 C.F.R. § 69.153(c)-(e) (1998) (providing means for price-cap-regulated LECs to calculate the PICC caps for primary and non-primary residential lines, and single-line and multi-line business lines). For 1999, the SLC cap for price-cap-regulated LECs was \$3.50 per month for each primary residential and single-line business line, \$6.07 per month for each non-primary residential line, and \$9.20 per month for each multi-line business line. Through June 30, 1999, the PICC cap was \$0.53 per month for each primary residential and single-line business line, \$1.50 per month for each non-primary residential line, and \$2.75 per month for each multi-line business line. The PICC increased in the latter part of 1999 as a function of a complex cost recovery formula.

59. 1997 Universal Service Report and Order, *supra* note 40, ¶ 752.

60. *See* Federal-State Joint Board on Universal Service, Seventh Report & Order and Thirteenth Order on Reconsideration in CC Docket No. 96-45, Fourth Report & Order in CC Docket No. 96-262, and Further Notice of Proposed Rulemaking, 14 F.C.C.R. 8078 (1999).

rather than “carriers” for purposes of the access charge rules.⁶¹ The FCC tentatively concluded that ISPs should not be subject to access charges as currently constituted,⁶² i.e., that these providers should only have to pay “business line rates and the appropriate subscriber line charge, rather than interstate access rates.”⁶³ However, the FCC did note that “usage continues to grow, [and that] such services may have an increasingly significant effect on the public switched network.”⁶⁴

The FCC has chosen to consider the application of access charge rules to ISPs in broad terms, taking into account the need to “provide incentives for investment and innovation in the underlying networks that support the Internet and other information services,”⁶⁵ rather than taking a narrow view on whether enhanced and Internet service providers should pay access charges.⁶⁶ With that perspective in mind, the Commission noted:

61. According to the FCC:

In 1983 we adopted a comprehensive ‘access charge’ plan for the recovery by local exchange carriers (LECs) of the costs associated with the origination and termination of interstate calls [citing MTS and WATS Market Structure, Memorandum Opinion and Order, 97 F.C.C.2d 682 (1983)]. At that time, we concluded that the immediate application of this plan to certain providers of interstate services might unduly burden their operations and cause disruptions in provision of service to the public. Therefore, we granted temporary exemptions from payment of access charges to certain classes of exchange access users, including enhanced service providers.

Amendments of Part 69 of the Commission’s Rules Relating to Enhanced Serv. Providers, 2 F.C.C.R. 4305 (1987) (Notice of Proposed Rulemaking) (proposing to impose access charges on enhanced service lines), *terminated*, Amendments of Part 69 of the Commission’s Rules Relating to Enhanced Service Providers, 3 F.C.C.R. 2631 (1988) (Order) (abandoning proposal despite apparent discrimination in charges because “a period of change and uncertainty” besetting the enhanced services industry justified ongoing exemption from access charges).

62. *See* Access Charge Reform, CC Docket No. 96-262, Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, Transport Rate Structure and Pricing, CC Docket No. 91-213, Usage of the Public Switched Network by Information Service and Internet Access Providers, CC Docket No. 96-263, 11 F.C.C.R. 21354, ¶ 283 (1996) (Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry).

63. *Id.* ¶ 285.

64. *Id.* ¶ 282.

65. *Id.* ¶ 283.

66. “The mere fact that providers of information services use incumbent LEC networks to receive calls from their customers does not mean that such providers should be subject to an interstate regulatory system designed for circuit-switched interexchange voice telephony.” *Id.* ¶ 288.

[T]he development of the Internet and other information services raise many critical questions that go beyond the interstate access charge system that is the subject of this proceeding. Ultimately, these questions concern no less than the future of the public switched telephone network in a world of digitalization and growing importance of data technologies. Our existing rules have been designed for traditional circuit-switched voice networks, and thus may hinder the development of emerging packet-switched data networks. To avoid this result, we must identify what FCC policies would best facilitate the development of the high-bandwidth data networks of the future, while preserving efficient incentives for investment and innovation in the underlying voice network. In particular, better empirical data are needed before we can make informed judgments in this area.⁶⁷

Although they are not required to contribute to universal service funding, ISPs can receive indirect financial support when offering information services⁶⁸ to the named beneficiaries of universal service funding in the Telecommunications Act — schools, libraries, and health care facilities.⁶⁹ While ISPs do not qualify for direct universal service subsidies as telecommunications carriers, they offer the “advanced services” that the drafters of the Telecommunications Act sought to make available to schools, libraries, and health care facilities on a discounted basis.⁷⁰ In essence, ISPs can have their cake and eat it too.⁷¹

67. *Id.* ¶ 311.

68. The Telecommunications Act defines an information service as a service that permits the generation, storage, retrieval, and use of information via telecommunications. *See* 47 U.S.C. § 153(20) (Supp. III 1997).

69. The Telecommunications Act requires elementary and secondary schools, health care providers, and libraries to have access to advanced telecommunications services, although the statute does not define these services. *See id.* § 254(b)(6). The statute also authorizes the FCC to designate additional services subject to the universal service subsidy mechanism. *See id.* § 254(c)(3).

70. The Telecommunications Act requires “telecommunications carriers . . . [to] provide [FCC-designated] services to elementary schools, secondary schools, and libraries for educational purposes at rates less than the amounts charged for similar services to other parties.” *Id.* § 254(h)(1)(b). When providing such discounted “e-rate” services, telecommunications carriers qualify for universal service subsidization. ISPs also qualify for these subsidies because the Telecommunications Act requires the FCC to “enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and non-profit elementary and secondary school classrooms, health care providers, and libraries.” *Id.* § 254(h)(2)(A).

71. *See* Sean M. Foley, Comment, *The Brewing Controversy over Internet Service*

The FCC initiated a Notice of Inquiry seeking comment on the implications of information services such as Internet access on the telephone network.⁷² The FCC asked what it should do to encourage both the development of packet-switching hardware able to route data traffic around incumbent LEC switches and investment in new high-bandwidth access technologies such as wireless and asymmetric digital subscriber line ("ADSL"). Without directly addressing the issue of ISP exemptions and the impact on universal service, the FCC has turned its attention to the broader issue of how to promote the deployment of advanced services by telecommunications carriers.⁷³

In an April 1998 Report to Congress,⁷⁴ the FCC strongly signaled that it was disinclined to maintain a blanket exemption of all types of Internet telephony from universal service funding obligations.⁷⁵

Providers and the Universal Service Fund: A Third Generation Interpretation of Section 254, 6 COMMLAW CONSPECTUS 245 (1998) (stating the case for eliminating the distinction between telecommunications carriers and information service providers and embracing a broader definition of "telecommunications service" so that ISPs pay universal service funding contributions and qualify to receive subsidies).

72. *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, 3 F.C.C.R. 15280 (1998) (Notice of Inquiry).

73. *See Deployment of Wireline Services Offering Advanced Telecommunications Capability*, 13 F.C.C.R. 24012 (1998) (Memorandum Opinion and Order, and Notice of Proposed Rulemaking); *Deployment of Wireless Services Offering Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Development Pursuant to Section 706 of the Telecommunications Act of 1996*, 14 F.C.C.R. 4761 (1999) (First Report and Order and Further Notice of Proposed Rulemaking); *see also Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, 14 F.C.C.R. 2398 (1999) (Report).

74. Federal-State Joint Board on Universal Service, 13 F.C.C.R. 11,501 (1998) (Report to Congress) [hereinafter 1998 Universal Service Report to Congress].

75. The FCC responded to an amendment to the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, Pub. L. No. 105-119, § 623, 111 Stat. 2440, 2521-22 (1998). This statute required the FCC to submit a report to Congress by April 10, 1998, providing a detailed review of the Commission's interpretation and implementation of language contained in the Telecommunications Act. Specifically, Congress required the FCC to report on the following: (1) the definitions of "information service," "local exchange carrier," "telecommunications," "telecommunications service," "telecommunications carrier," and "telephone exchange service" added to the Communications Act of 1934 by the Telecommunications Act, and the impact of the FCC's interpretation of those definitions on the current and future provision of universal service; (2) the application of those definitions to mixed or hybrid services, the effect of this application on universal service, and the consistency of the FCC's application of those definitions, including with respect to Internet access under section 254(h) of the Communications Act of 1934 (47 U.S.C. § 254(h) (Supp. III 1997)); (3) who is required to contribute to universal service funding under section 254(d) of the

The record currently before us suggests that certain of these ["phone-to-phone" IP telephony] services lack the characteristics that would render them "information services" within the meaning of the statute, and instead bear the characteristics of "telecommunications services" [as defined in the Telecommunications Act of 1996]. . . . To the extent we conclude that the services should be characterized as "telecommunications services," the providers of those services would fall within the 1996 Act's mandatory requirement to contribute to universal service mechanisms.⁷⁶

While the FCC refrained from taking a definitive stance "in the absence of a more complete record focused on individual service offerings,"⁷⁷ the analysis in the Report to Congress provides significant insight on the direction of future FCC rulemaking and on the Commission's assessment of the effect of the Internet on the congressionally mandated universal service mission. The FCC considers information services as a means to "buttress, not hinder, universal service,"⁷⁸ particularly when they stimulate demand for basic services that make universal service subsidy contributions. On the other hand, information services hinder the universal service mission if providers also offer telecommunications services in a manner that exploits anomalies and loopholes in the regulations, exempting them from universal service obligations and reducing the funds available for subsidies.⁷⁹

C. Definition of Telecommunications and Information Services

The FCC has reiterated its view that the Telecommunications Act established a regulatory dichotomy between telecommunications and information services in much the same way that the Commission did in its

Communications Act of 1934 and related existing federal universal service support mechanisms, and any exemption of providers or exclusion of any service that includes telecommunications from universal service funding or support mechanisms; (4) who is eligible under sections 254(e), 254(h)(1), and 254(h)(2) of the Communications Act of 1934 to receive specific federal support for the provision of universal service, and the consistency with which the FCC has interpreted these provisions; and (5) the FCC's decisions concerning the percentage of universal service support provided by federal mechanisms and the revenue base from which such support is derived.

76. 1998 Universal Service Report to Congress, *supra* note 74, ¶ 3.

77. *Id.*

78. *Id.*

79. *See id.* ¶ 4.

*Computer Inquiries*⁸⁰ regulatory proceedings and that the Modification of Final Judgment ("MFJ")⁸¹ did in setting the terms and conditions for the divestiture of AT&T's Bell Operating Companies.⁸² Using historical references to the regulatory dichotomy between basic and enhanced services and the MFJ's dichotomy between telecommunications and information services, the FCC articulated a "bright line" distinction between regulated basic telecommunications and unregulated information processing enhancements.⁸³ Operators providing the former have a duty

80. The FCC first attempted to create a "bright line" separation between enhanced service functions, which are unregulated and subject to robust competition, and basic transport capacity, which is regulated and not robustly competitive, in Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), 77 F.C.C.2d 384 (1980), *modified on reconsideration*, 84 F.C.C.2d 50 (1980), *further modified*, 88 F.C.C.2d 512 (1981), *aff'd sub nom.* Computer & Communications Indus. Ass'n v. FCC, 693 F.2d 198 (D.C. Cir. 1982). However, the FCC subsequently decided that structural separation imposed unnecessary costs and burdens, and opted for non-structural safeguards like account auditing and the complaint process. See Amendment of Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), 104 F.C.C.2d 958 (1986) (Report and Order), *modified on reconsideration*, 2 F.C.C.R. 3035 (1987) (Phase I), *further reconsideration*, 3 F.C.C.R. 1135 (1988); 2 F.C.C.R. 3072 (1987) (Report and Order) (Phase II), *reconsideration denied*, 3 F.C.C.R. 1150 (1988), *partially rev'd and remanded sub nom.* California v. FCC, 905 F.2d 1217 (9th Cir. 1990), *on remand*, 6 F.C.C.R. 7571 (1991), *partially rev'd and remanded sub nom.* California v. FCC, 39 F.3d 919 (9th Cir. 1994); see also Robert M. Frieden, *The Computer Inquiries: Mapping the Communications/Information Processing Terrain*, 33 FED. COMM. L.J. 55 (1981); Robert M. Frieden, *The Third Computer Inquiry: A Deregulatory Dilemma*, 38 FED. COMM. L.J. 383 (1987).

81. See *United States v. AT&T*, 552 F.Supp. 131, 226-34 (D.D.C. 1982), *aff'd*, 460 U.S. 1001 (1983). This consent decree, stylized as a modification of the 1956 "Final Judgment," settled an antitrust suit brought by the federal government in 1974 alleging an unlawful combination within the Bell System resulting in the monopolization of both long-distance telephone service and the manufacture of telecommunications equipment.

82. See 1998 Universal Service Report to Congress, *supra* note 74, ¶ 13.

Reading the statute closely, with attention to the legislative history, we conclude that Congress intended these new terms to build upon frameworks established prior to the passage of the 1996 Act. Specifically, we find that Congress intended the categories of 'telecommunications service' and 'information service' to be mutually exclusive, like the definitions of 'basic service' and 'enhanced service' developed in our *Computer II* proceeding, and the definitions of 'telecommunications' and 'information service' developed in the Modification of Final Judgment that divested the Bell Operating Companies from AT&T.

Id.

83. Even before its 1998 Report to Congress, the FCC chose to establish mutual exclusivity between telecommunications and information services. See Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as amended, 11 F.C.C.R. 21905, 21955-56, ¶ 102 (1996) (First Report and Order and Further Notice of Proposed Rulemaking), 12 F.C.C.R. 2297 (1997) (Order on Reconsideration), *further reconsideration pending*, 12 F.C.C.R. 15756 (1997) (Second

to contribute to universal service funding, but providers of the latter do not.

Unfortunately for the FCC, such a clean semantic dichotomy does not work in a time of rapid technological evolution and convergence. In response to an instruction from Congress to consider the impact of mixed or hybrid services on universal service definitions, the FCC recognized that the Internet integrates telecommunications and information services, but it found that ISPs “generally do not provide telecommunications.”⁸⁴ However, the provision of transmission capacity to ISPs does constitute a “telecommunications service.”⁸⁵ Presumably, any basic service routed via such capacity is not necessarily converted into “information services” simply because an “information service provider,” as defined by the Telecommunications Act,⁸⁶ offers other information services, perhaps transmitted over the same capacity.

In its 1998 Report to Congress, the FCC also acknowledged the view of Senators Burns and Stevens that regulatory mutual exclusivity cannot apply when a single enterprise provides both telecommunications and information services, or when a service combines aspects of both classifications.⁸⁷ The FCC stuck to its reliance on the semantic

Report and Order), *aff'd sub nom.* Bell Atlantic Tel. Cos. v. FCC, 131 F.3d 1044 (D.C. Cir. 1997). The Commission concluded that protocol processing services were information services, rejecting the possibility of treating such services as telecommunications and thus potentially making them subject to Title II regulation. *See id.* at 21956–57, ¶¶ 104–105; *see also* Universal Service Order, *supra* note 34, at 9179–80.

84. 1998 Universal Service Report to Congress, *supra* note 74, ¶ 15.

85. “Moreover, we clarify that the provision of transmission capacity to Internet access providers and Internet backbone providers is appropriately viewed as ‘telecommunications service’ or ‘telecommunications’ rather than ‘information service,’ and that the provision of such transmission should also generate contribution to universal service support mechanisms.” *Id.*

86. The Communications Act of 1934 now defines information service as:
[T]he offering of a capability for generating, acquiring, sorting, transforming, processing, retrieving, utilizing, or making available information via telecommunication, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

47 U.S.C. § 153(20) (Supp. III 1997).

87. “Senators Stevens and Burns indicate, an information service provider transmitting information to its users over common carrier facilities such as the public switched telephone network is a ‘telecommunications carrier.’” 1998 Universal Service Report to Congress, *supra* note 74, ¶ 34. The Commission understands the concept of mixed or hybrid services to refer to “services in which a provider offers a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making available information via telecommunications, and as an inseparable part of that service transmits information supplied or requested by the user.” *Id.* ¶ 56.

dichotomies established by the *Computer Inquiries* and the MFJ, and argued the pragmatic view that since ISPs use basic transport capacity as a building block, it “would be difficult to devise a sustainable rationale under which all, or essentially all, information services did not fall into the telecommunications service category.”⁸⁸ Accordingly, the FCC reiterated the need for an absolute regulatory dichotomy based on a functional analysis:

Under this interpretation, an entity offering a simple, transparent transmission path, without the capability of providing enhanced functionality, offers “telecommunications.” By contrast, when an entity offers transmission incorporating the “capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information,” it does not offer telecommunications. Rather, it offers an “information service” even though it uses telecommunications to do so. We believe that this reading of the statute is most consistent with the 1996 Act’s text, its legislative history, and its procompetitive, deregulatory goals.⁸⁹

D. Internet Telephony as Telecommunications Service

As a result of its decision to stick to mutually exclusive categories, the FCC recognized the duty to categorize Internet-mediated telephony as either a telecommunications service or an information service. Despite its disinclination to regulate the Internet, the FCC acknowledged that certain “phone-to-phone IP telephony” services bear the characteristics of “telecommunications services.”⁹⁰ “Phone-to-phone IP telephony” enables

88. *Id.* ¶ 57.

89. *Id.* ¶ 39. More simply, the FCC stated:

A telecommunications service is a telecommunications service regardless of whether it is provided using wireline, wireless, cable, satellite, or some other infrastructure. Its classification depends rather on the nature of the service being offered to customers. Stated another way, if the user can receive nothing more than pure transmission, the service is a telecommunications service. If the user can receive enhanced functionality, such as manipulation of information and interaction with stored data, the service is an information service.”

Id. ¶ 59.

90. *Id.* ¶ 83.

users to access Internet-mediated telecommunications services via ordinary telephone handsets and pay phones instead of specially configured personal computers. With the ease of ordinary telephone access,⁹¹ the market for Internet telephony has exploded, creating the potential for significant migration of traffic from customary switching and routing, subject to access charges and universal service funding contribution requirements, to Internet-mediated switching and routing hitherto exempt from these charges and contribution requirements.

Because Internet telephony has several component parts, possibly offered by different companies, the FCC had to specify which aspects of Internet telephony constitute telecommunications services possibly subject to regulation and the duty to make universal service funding contributions. The FCC stated that the definition of "telecommunications" in the Telecommunications Act limits even the potential for regulation to transmitters of voice and data traffic, thereby excluding providers of hardware and software. Accordingly, "[c]ompanies that only provide software and hardware installed at customer premises do not fall within this category, because they do not transmit information."⁹²

Similarly the FCC has expressed an unwillingness to classify ISP-facilitated, computer-to-computer Internet telephony as "telecommunications." While packets of voice communication are transmitted via ISP-owned or -leased facilities, the FCC chose to emphasize that such voice packets are indistinguishable from the stream of other data and information packets that have no similarity to a telecommunications service. The FCC noted that an ISP may not even know that a customer has established Internet telephony service if the customer uses software secured from someone other than the ISP. The FCC concluded that ISPs do not provide telecommunications service merely by serving as a conduit for access to the Internet, because common carriers typically elect to secure that status and Title II of the

91. *See id.* ¶ 84.

[Internet telephony] offer[s] users the ability to call from their computer to ordinary telephones connected to the public switched network, or from one telephone to another. . . . [A] user first picks up an ordinary telephone handset connected to the public switched network, then dials the phone number of a local gateway. Upon receiving a second dialtone, the user dials the phone number of the party he or she wishes to call. The call is routed from the gateway over an IP network, then terminated through another gateway to the ordinary telephone at the receiving end.

Id. (footnotes omitted).

92. *Id.* ¶ 86.

Communications Act contemplates a conscious exercise of providing or offering telecommunications services.⁹³

On the other hand, phone-to-phone Internet telephony presented the FCC with “a different case.”⁹⁴ For ventures meeting a four-part test,⁹⁵ the FCC stated its tentative conclusion that the service provided constitutes telecommunications, primarily because:

From a functional standpoint, users of these services obtain only voice transmission, rather than information services such as access to stored files. The provider does not offer a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information. Thus, the record currently before us suggests that this type of IP telephony lacks the characteristics that would render them “information services” within the meaning of the statute, and instead bear the characteristics of “telecommunications services.”⁹⁶

Despite its preliminary assessment, the FCC refrained from making “any definitive pronouncements in the absence of a more complete record focused on individual service offerings.”⁹⁷ The FCC deferred a more definitive resolution of these issues “pending the development of a more fully-developed record because we recognize the need, when dealing with emerging services and technologies in environments as dynamic as today’s Internet and telecommunications markets, to have as complete

93. “Without regard to whether ‘telecommunications’ is taking place in the transmission of computer-to-computer IP telephony, the Internet service provider does not appear to be ‘provid[ing]’ telecommunications to its subscribers.” *Id.* ¶ 87 (footnotes omitted).

94. *Id.* ¶ 88.

95. An Internet telephony provider possibly subject to universal service funding contribution requirements must meet the following conditions:

(1) [I]t holds itself out as providing voice telephony or facsimile transmission service; (2) it does not require the customer to use CPE different from that CPE necessary to place an ordinary touch-tone call (or facsimile transmission) over the public switched telephone network; (3) it allows the customer to call telephone numbers assigned in accordance with the North American Numbering Plan, and associated international agreements; and (4) it transmits customer information without net change in form or content.

Id.

96. *Id.* ¶ 89 (footnotes omitted).

97. *Id.* ¶ 90.

information and input as possible.”⁹⁸ The FCC did note that if it were to classify phone-to-phone, Internet-mediated telephony as “telecommunications,” that finding would trigger a mandatory universal service funding contribution from such operators as required by Section 254(d) of the Communications Act. But even in the face of this financial contribution, the FCC implied that it might not have to subject such operators to the full array of common carrier requirements contained in the Communications Act, because Section 10 of the Act, established by the Telecommunications Act,⁹⁹ permits the FCC to forbear from imposing any rule or requirement of the Communications Act on telecommunications carriers.¹⁰⁰ For example, the FCC stated that it might not have to subject providers of Internet telephony to the international accounting rate toll revenue division system, presumably because the FCC recognizes the consumer benefits that accrue from access to services that can undercut and arbitrage the current, above-cost regime.¹⁰¹

IV. SHOULD ISPS SUPPORT UNIVERSAL SERVICE FUNDING?

Section 254(d) of the Communications Act, as amended, mandates universal service contributions from “every telecommunications carrier that provides interstate telecommunications services.”¹⁰² In application, the universal service funding obligation has extended even to providers of paging services, because they provide telecommunications services despite

98. *Id.*

99. *See* 47 U.S.C. § 160 (Supp. III 1997).

100. *See* 1998 Universal Service Report to Congress, *supra* note 74, ¶ 92.

101. *See id.* ¶ 93.

We continue to believe that alternative calling mechanisms are an important pro-competitive force in the international services market. We need to consider carefully the international regulatory requirements to which phone-to-phone providers would be subject. For example, it may not be appropriate to apply the international accounting rate regime to IP telephony.

Id.; *see also* Robert M. Frieden, *Falling Through the Cracks: International Accounting Rate Reform at the ITU and WTO*, 22 TELECOMMUNICATIONS POL’Y, 963–75 (1998).

102. The Commission concluded the following:

[T]o be a mandatory contributor to universal service under section 254(d): (1) a telecommunications carrier must offer “interstate” “telecommunications”; (2) those interstate telecommunications must be offered “for a fee”; and (3) those interstate telecommunications must be offered “directly to the public, or to such classes of users as to be effectively available to the public.

Universal Service Order, *supra* note 34, at 9173 (citing 47 U.S.C. §§ 153(22), 153(43), 153(46)).

the limited use of the local loop and the limited opportunity to receive financial support themselves. Some private telecommunications carriers also must make universal service funding payments even though they operate as non-common carriers.¹⁰³ In its 1998 Report to Congress, the FCC stated its intention to “construe broadly the class of carriers that must contribute.”¹⁰⁴

On the other hand, the FCC declined to require universal service funding contributions from ISPs offering Internet-mediated services, including ones that fall within the “mixed or hybrid” category identified by Senators Stevens and Burns. The FCC chose to adhere to the functional analysis established in *Computer Inquiries* and the MFJ and to its insistence on mutual exclusivity between telecommunications and information services. This means that carriers leasing telecommunications transport capacity to ISPs must include the revenues derived from those lines in their universal service contribution base,¹⁰⁵ but that the lessees (i.e., the ISPs) have no such obligation.¹⁰⁶

The provision of Internet access service involves data transport elements: an Internet access provider must enable the movement of information between customers’ own computers and the distant computers with which those customers seek to interact. But the provision of Internet access service crucially involves information-processing elements as well; it offers end users information-service capabilities inextricably intertwined with data transport. As such, we conclude that it is appropriately classed as an “information service.”¹⁰⁷

The FCC used as an illustrative example the travel planning and airline reservation services available from Microsoft Corporation via the Internet. Microsoft’s Expedia site allows customers to check air fares and

103. For example, the Commission held that operators of interstate private networks that lease excess capacity on a non-common-carrier basis should contribute to universal service. See Universal Service Order, *supra* note 34, at 9178.

104. 1998 Universal Service Report to Congress, *supra* note 74, ¶ 16 (citations omitted).

105. See *id.* ¶ 67.

106. The Commission acknowledged the difficulty of determining whether a universal service contribution should come from an ISP that also happens to operate as a telecommunications carrier and provides its own transport capacity. Currently, carriers using transmission capacity for “internal needs” have no universal service funding obligation as to such capacity, but the Commission stated its intent to examine the matter in a future proceeding. See *id.* ¶ 70.

107. *Id.* ¶ 80 (citations omitted).

to purchase airline tickets via the World Wide Web. Because users access the Expedia Web Page via telecommunication networks configured for Internet services, the FCC acknowledged, "Microsoft can be said to offer a service that 'includes telecommunications.'"¹⁰⁸ However, Expedia customers neither seek nor receive a telecommunications service. They merely secure a link to Expedia via local and interexchange telecommunications carriers. "Phrased another way, Microsoft arguably offers a service that 'includes telecommunications,' but it does not 'provide' telecommunications to customers."¹⁰⁹

The FCC expressed reluctance to expand the scope of regulation and universal service funding liability in a Report to Congress instead of a rulemaking that would have provided a forum for the collection of more data and views. Additionally, the FCC had to consider the overall effect of the Internet and Internet telephony on the universal service mission. On the one hand, it is clear that phone-to-phone Internet telephony can reduce overall universal service funding contributions by providing a loophole for functionally equivalent traffic.¹¹⁰

If such providers are exempt from universal service contribution requirements, users and carriers will have an incentive to modify networks to shift traffic to Internet protocol and thereby avoid paying into the universal service fund or, in the near term, the universal service contributions embedded in interstate access charges. If that occurs, it could increase the burden on the more limited set of companies still required to contribute.¹¹¹

On the other hand, a proliferating network of networks stimulates demand for a variety of telecommunications facilities and services. The FCC acknowledged both outcomes and concluded that for the time being the Internet — and all services available via the Internet — poses no threat to universal service:

For purposes of this Report, we believe that the central issue is whether our decision that Internet access is not a "telecommunications service" is likely to threaten

108. *Id.* ¶ 145.

109. *Id.*

110. See Jamie N. Nafziger, *Time To Pay Up: Internet Service Providers' Universal Service Obligations Under the Telecommunications Act of 1996*, 16 J. MARSHALL J. COMPUTER & INFO. L. 37 (1997).

111. 1998 Universal Service Report to Congress, *supra* note 74, ¶ 98.

universal service. In other words, will Internet usage place such a strain on network resources that incumbent LECs will be unable to provide adequate service? As we noted in the *Access Reform Order*, both ILECs and the Network Reliability and Interoperability Council agreed that Internet usage did not pose any threat to overall network reliability.¹¹²

A. FCC's Predisposition Not to Extend Legacy Regulation

Notwithstanding the adverse financial impact on its universal service mission, the FCC remains adamantly opposed to extending traditional telecommunications regulation to ISPs.¹¹³ To its credit, the Commission has expressed its intent to refrain from extending its regulatory wingspan to include Internet-mediated services. The Commission believes market forces will create incentives for a robustly competitive and ubiquitous high-speed information service infrastructure. Likewise, it wants to apply the preexisting regulatory dichotomy between regulated, common carrier telecommunications and unregulated, non-common-carrier enhanced services articulated in the *Computer Inquiries*. The FCC also supports the Clinton Administration's view that the Internet should be a tax-free, largely unregulated medium.¹¹⁴

In a larger sense the FCC has unofficially expressed its reluctance to extend the common carrier classification and the regulatory burden it generates to Internet-mediated services, including ones that compete with common carrier services. The Commission appears disinclined to impose legacy regulations on new technologies even if these technologies divert traffic and revenue from services that have borne the universal service subsidy obligation:

New technologies, while perhaps similar in appearance or in functionality, should not be stuffed into what may be ill-

112. *Id.* ¶ 100.

113. See JASON OXMAN, FEDERAL COMMUNICATIONS COMMISSION, THE FCC AND THE UNREGULATION OF THE INTERNET, (1999), available at <http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.txt>.

114. See PRESIDENT WILLIAM J. CLINTON AND VICE PRESIDENT ALBERT GORE, JR., A FRAMEWORK FOR GLOBAL ELECTRONIC COMMERCE (July 1, 1997), available at <<http://www.iitf.nist.gov/elecomm.htm>>; UNITED STATES DEPARTMENT OF COMMERCE, THE EMERGING DIGITAL ECONOMY (April 15, 1998), available at <<http://www.ecommerce.gov/emerging.htm>>; UNITED STATES DEPARTMENT OF COMMERCE, THE EMERGING DIGITAL ECONOMY II (June 22, 1999), available at <<http://www.ecommerce.gov/ede/>>.

fitting regulatory categories in the name of regulation. Rather, the Commission should continue the approach of studying new technologies and only stepping in where the purpose for which the Commission was created, protecting the public interest, demands it.¹¹⁵

Staffers at the FCC's in-house think tank favor deregulating incumbents rather than regulating market entrants. The FCC should pay attention to the potential for anticompetitive conduct and an adverse impact on universal service funding. However, the Commission should decide to apply regulatory safeguards on an ad hoc, as-needed basis and in instances where the benefits of regulatory intervention outweigh the costs imposed.

B. Can Universal Service Develop Without Regulation?

Unofficially at least, the FCC has expressed its confidence that marketplace resource allocation will adequately provide the capital, services, and technologies necessary to achieve universal access to information superhighways. This confidence appears to stem in part from the widespread availability of multiple ISPs throughout the nation, the trend toward distance-insensitivity in telecommunications and information services, and the long-standing tendency for ventures to offer nationally averaged, "postalized" rates. However, a fundamental question remains unanswered: Have the millions of dollars already invested in universal service contributed to the above three factors? Conversely, would a change in the level of available funds cause telecommunications carriers to change their pricing policies in a manner detrimental to ubiquitous access?¹¹⁶ These questions cannot be answered without addressing a number of more specific inquiries:

- Are there scenarios in which the number of ISPs in rural and high-cost areas might decline if their cost of doing business (e.g., network access costs) increased significantly?
- Are first- and last-mile access services distance-insensitive and will they remain so with new technologies like ADSL that have service limits based on proximity to switching facilities?

115. OXMAN, *supra* note 113, at 24–25.

116. See Arturo Gandara, *Equity in an Era of Markets: The Case of Universal Service*, 33 WAKE FOREST L. REV. 107 (1998).

- Under what circumstances will carriers de-average rates, thereby eliminating one-price, postalized services?
- Will state regulatory agencies authorize additional telecommunications service providers, including cellular radio operators, to maximize the benefits of universal service subsidies?

C. Effect of Internet Balkanization on Universal Service

As the Internet matures and becomes commercialized, current promotional access pricing and interconnection arrangements will change.¹¹⁷ During the Internet's initial incubation period, ISPs emphasized connectivity at the expense of a calibrated and efficient access and interconnection mechanism. During this time, network congestion did not present much of a problem, and operators typically agreed to a zero-cost "peering" arrangement with other operators. Having no apparent incentive to incur the cost of metering traffic flows, ISPs interconnected facilities on a sender-keep-all basis. Such an arrangement helped make the Internet "a network of networks" and expedited the accrual of positive networking externalities, expanding the value of the Internet as more users and content suppliers come online.

Internet interconnection arrangements have become more hierarchical, with zero-cost peering now primarily limited to high-volume, Tier-1 backbone carriers. Lesser ISPs now must pay larger carriers for access to their backbone networks. This outcome constitutes a perfectly reasonable response to the proliferation of ISPs, including many small ventures that would become free riders on the facilities of larger carriers absent a transfer payment. Furthermore, a payment mechanism helps reduce congestion, or at least imposes the costs of the added traffic burden on the carriers and customers responsible for creating that burden.

However, a more hierarchical Internet might balkanize networks and impose higher costs on rural ISPs and those incurring the higher access charges. This balkanizing effect might arise if more network operators refuse to "peer" and interconnect with other operators, even if the smaller operators offer to pay for access. Even in the absence of such balkanization, the diversification of Internet operator types probably means that most rural ISPs will fall into the lowest and smallest category,

117. See, e.g., Robert M. Frieden, *Without Public Peer: The Potential Regulatory and Universal Service Consequences of Internet Balkanization*, 3 VA. J.L. & TECH. 8 (1998), available at <http://vjolt.student.virginia.edu/graphics/vol3/home_art8.html>; Kenneth N. Cukier, *The Global Internet: A Primer*, TELEGEOGRAPHY 1999, at 112 (Gregory C. Staple ed., 1998); Robert M. Frieden, *Last Days of the Free Ride? The Consequences of Settlement-Based Interconnection for the Internet*, 1 INFO 225 (1999).

thereby reducing their peering opportunities and obligating them to incur interconnection and access charges with just about every other ISP they access. Depending on the financial impact of higher telecommunications link costs, rural ISPs might have to raise rates to levels comparatively higher than rates available in urban locales. Universal service support programs in telecommunications work to prevent such an outcome, but under the current regime only schools, libraries, and health care facilities enjoy subsidized access to Internet service.

D. Distance and Volume Still Affect Price and Terms

Technological innovations in telecommunications and information processing doubtless will lead to declining service costs to most consumers. However, distance and traffic volumes still matter in the cost calculus: A long call routing from a rural caller or Web surfer to a distant call recipient or content source costs more than a shorter or more easily routed call. In the telephony environment, carriers typically average dense and sparse route traffic costs, but a small, rural ISP may not have the traffic volume to engage in similar cost averaging.

There is nothing new about the fact that rural or inner-city residents frequently face higher product and service costs. Arguably, access to the Internet and other advanced services should qualify for the same preferred status as telephony. However, the universal service funding mechanism cannot generate sufficient funds for such an expanded mission. Already, the establishment of discounted "e-rate" access to telephony and the Internet has imposed substantial stress on the universal service contribution process, with consumers objecting to a new tax when IXC's add a new line item to their bills to pass through the explicit financial subsidy burdens. Billions of additional universal service funding dollars would be required if Congress expressly expanded the universal service mission to include Internet access beyond e-rate beneficiaries.

E. Rate Rebalancing Will Occur Despite Adverse Effects on Universal Service Goals

At the same time as rural ISPs incur higher telecommunications costs, all telephone service subscribers in rural and high-cost areas face significantly higher rates. When ILECs face competition in urban areas, they rationally perceive the need to reduce rates and expand service options. Reduced urban service revenues will trigger the need to generate higher revenues elsewhere to yield the same total revenue. One could consider such "rate rebalancing" as unfair in the sense that rural and high-

cost residents, even as they enjoy the benefits of universal service funding, end up “subsidizing” rates available to high-volume urban users. But another way to look at this outcome is to appreciate the fact that without a conscientious effort to meet competitors’ prices, ILECs would lose urban and high-volume customers. Should this occur, ILECs would have to rely even more on the revenues generated when they operate as carriers of last resort to their “captive” customers who have no service alternative. Using universal service concerns as the basis for denying a rate rebalancing request might have the unfortunate effect of making matters worse for rural users in the long run.

V. REGULATORS ARE RELUCTANT TO SUPPORT ALTERNATIVE CARRIERS AND TECHNOLOGIES TO ACHIEVE UNIVERSAL SERVICE OBJECTIVES

The Telecommunications Act created a mechanism for state regulatory agencies to authorize more than one carrier to pursue universal service goals in a locality or region.¹¹⁸ States have been reluctant to certify additional carriers, including ones using wireless technologies that could provide immediate cost-effective service, despite the FCC’s conclusion that “the plain language of section 214(e)(1) does not permit the [Commission] or the states to adopt additional criteria as prerequisites for designating carriers eligible” for universal service subsidization.¹¹⁹

Perhaps this reluctance stems from the perception that authorizing multiple carriers to operate in a single region would somehow adversely affect the ability of the incumbent carrier to continue providing services because of the potential for universal service fund diversion. If providing subsidized services has diverted time, money, and effort from more

118. Any telecommunications common carrier can become certified as an Eligible Telecommunications Carrier (“ETC”) and thereby qualify under Section 254 of the Communications Act of 1934 to receive universal service subsidies. The appropriate state regulatory commission must determine, pursuant to Section 214(e) of the Communications Act, that: (1) the candidate carrier provides the base set of services determined by the FCC, pursuant to Section 254(c), as worthy of federal universal service subsidization, e.g., POTS; (2) the carrier advertises the availability of such services and the applicable charges; (3) the carrier provides the supported services, whether owned or resold, throughout a designated service area; and (4) for service in rural areas, the commission determines that certifying this carrier, in addition to the incumbent carrier, would serve the public interest. *See* 47 U.S.C. § 214(e) (1994).

119. *See* Federal-State Joint Board on Universal Service, 12 F.C.C.R. 8776 (1997); *see also* Federal-State Joint Board on Universal Service: Promoting Deployment and Subscribership in Unserved and Underserved Areas, Including Tribal and Insular Areas, 14 F.C.C.R. 21,177 (1999) (expressing enthusiasm for wireless options).

profitable endeavors, ILECs should welcome the opportunity to share or abandon such a burden. In any event, no state or federal regulatory authority should second-guess the business judgment of a new carrier ready, willing, and able to provide essential, universal services.

Much of the cost incurred in providing wireless services occurs with the installation of the towers, antennas, switches, and transmitters that constitute the infrastructure. The incremental cost of an additional minute of traffic anywhere within the overall "footprint" of a mobile radio system approaches zero, absent congestion. While a rural call may involve more switching and backhauling to a central facility, probably located in an urban locale, the mobile radio operator may be inclined to offer postalized rates throughout a service area — for example, declining to impose higher "roaming" charges simply because the caller is located outside a city. It appears that many regulators have failed to notice the significant reduction in mobile radio charges and the ability of wireless services, in some circumstances, to offer functionally equivalent service at roughly the same cost as conventional wireline options.¹²⁰ In any event, the criteria for determining whether to grant Eligible Telecommunications Carrier status to a wireless carrier does not depend on the affordability or substitutability of wireless services compared with incumbent wireline carrier services.¹²¹

VI. CONVERGENCE REQUIRES A NEW APPROACH TO UNIVERSAL SERVICE

In a converging and Internet-centric environment, pre-existing regulatory classifications simply do not work. Technological convergence blurs the semantic distinctions among print media, broadcasting, and closed-circuit media like cable television and telephony. Market convergence means that previously discrete industry segments merge, or at least become more easily penetrated by newcomers. For example, in an Internet-dominated environment, an ISP could easily become a "one-stop shop" for consumers' telecommunications, entertainment, and information requirements, offering an array of services including streaming audio (radio), video (television), and local and long-distance

120. See Mark J. Ayotte, *Eligibility of Wireless Carriers to Receive Universal Service Support*, 17 COMM. LAW. 11 (1999).

121. "Incumbent LECs can be expected to oppose ETC designation for . . . [wireless service] providers based on claims of 'affordability' and 'substitutability.' Yet, such tests are wholly unrelated to the governing ETC criteria under Section 214(e) and are merely designed to protect their monopoly position and avoid competition." *Id.* at 15.

telephone services along with a variety of news, entertainment, and electronic commerce applications.

Any attempt to extend regulatory regimes to Internet-mediated applications runs the risk of creating a dichotomy in regulatory rights and responsibilities between providers of functionally equivalent services. Many of the services available via the Internet represent a faster, better, cheaper, and smarter evolution of pre-existing services. The Internet provides a convenient, user-friendly medium for acquiring news and entertainment and for engaging in all sorts of commercial transactions. An intention not to regulate, or to regulate lightly, such activities contrasts with pre-existing and more intrusive regulatory models. Governments should not automatically extend the application of pre-existing regulatory regimes to Internet-mediated equivalent services. Nor should governments deregulate incumbent services simply because governments have opted to apply a different — and probably less burdensome — regulatory regime to newly available Internet services.

The development of Internet-mediated services presents a regulatory challenge to governments, particularly to those governments disinclined to treat the new services as equivalent to services transmitted and delivered via traditional media. The juxtaposition of different regulatory regimes typically creates an asymmetry that has the potential to tilt the competitive playing field in favor of the less-regulated service. To the extent that regulation imposes financial and operational burdens, the service provider subject to greater regulation typically finds itself at a competitive disadvantage to a less heavily regulated operator. Governments need a compelling justification to establish different regulatory regimes in view of the potential for such an asymmetry to affect the relative attractiveness of different services in the marketplace.

Regulatory dichotomies work best when technological categories remain discrete and absolute. But they surely do not work when technological convergence results in porous service categories and diversification by operators. When cable television companies and ISPs offer a telephone service functionally similar to that provided by the traditional telephone companies, regulators may not be able to maintain preexisting dichotomies. Until now, government regulators have assumed that incumbent telephone service providers have a dominant market share, should operate as common carriers, and have the best technologies and resources to achieve universal service goals. Government regulators typically assume that market entrants like ISPs, other enhanced service providers, and resellers of basic transmission capacity do not have the potential to acquire a dominant market share, or to offer ancillary, non-

common carrier services. In the future, such assumptions may prove incorrect.

When ISPs offer consumers telephone service equivalents, which link PSTN access with Internet-mediated telephony, preexisting regulatory exemptions tilt the competitive playing field to their advantage. Should significant telephony traffic volumes migrate to routings exempt from universal service contribution requirements, the sum of funds available to achieve the universal service mission will decline. The possibility of declining universal service funds arises just as many governments have articulated a broader and more ambitious universal service mission under which all citizens will have access to both basic telephone service and advanced Internet services.

VII. AN IMMODEST PROPOSAL

The universal service mission may suffer greatly if the FCC continues to apply the dichotomy between basic and enhanced services, coupled with the different regulatory treatment of common carriers and private carriers. If, as anticipated, the Internet becomes the predominant medium for telecommunications and information services, an increasing volume of traffic that previously fell into the basic, common-carrier service category will be diverted to the private-carrier service category. This transformation may appeal to advocates of deregulation, but two secondary effects will have a substantial, adverse impact on the generation of funds for supporting the universal service mission. First, when ISPs offer the functional equivalent of long-distance telephone service, their classification as non-common carrier enhanced-service providers will exempt them from paying access charges and contributing to universal service funding. The second effect is that incumbent carriers, fettered with a more onerous universal service funding burden as a result of asymmetrical regulation, will create subsidiaries that will be classified as enhanced-service providers exempt from universal service subsidy obligations.

When Congress enacted the Telecommunications Act and expanded the scope of the universal service mission, it ordered the FCC to fund the mission with explicit support mechanisms from all telecommunications carriers.¹²² Surely Congress recognized that significantly more funds

122. 47 U.S.C. § 254(d) (1999) requires "[e]very telecommunications carrier that provides interstate telecommunications services . . . [to] contribute, on an equitable and nondiscriminatory basis, to the specific, predictable, and sufficient mechanisms established by the Commission to preserve and advance universal service."

would have to flow from companies providing telecommunications services to achieve an expanded universal service mission and to replace an unsustainable implicit subsidy mechanism from long-distance services to local exchange services. For the subsidy burden to be equitable, all enterprises providing the functional equivalent of interstate telecommunications should make a contribution. This includes ISPs when they hold themselves out as providing such telecommunications services as Internet-mediated long-distance telephone services. Likewise, all providers of local exchange services, which can support the universal service mission, should have access to universal service subsidies. This includes wireless operators, such as cellular radio and personal communications service providers when they apply for Eligible Telecommunications Carrier status and hold themselves out as providing the menu of essential local services specified by the FCC.

Few consumers would welcome a new charge on their long-distance telephone bills entitled “universal service charge,” “PICC,” or something similar. Consumer advocates claim that IXCs have passed the entire universal service subsidy burden to consumers without a commensurate reduction in long-distance charges because the local access charges paid by IXCs contain a substantially reduced implicit universal service subsidy. At the same time that long-distance telephone bills from conventional carriers contain new charges, new Internet telephony services provide substantial savings, partly as a result of access charge and universal service funding exemptions. Part of the solution for stabilizing and rationalizing universal service subsidization lies in spreading the financial burden across all providers of long-distance telephone services, regardless of their existing classification.