

COMPLETING THE CONNECTION: ACHIEVING UNIVERSAL SERVICE THROUGH MUNICIPAL WI-FI

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ABSTRACT

The federal universal service scheme is designed to ensure that everyone has affordable access to advanced telecommunications and information services. Despite the development of cost-effective technologies that drastically reduce the cost of telephone services vis-à-vis the Internet and Wi-Fi networks, federal regulations generally prevent municipalities or private companies from providing wireless Internet access with universal service funds. Federal regulations have replaced technology costs, lack of business incentives, and consumer affordability as the primary barrier to universal service. Competitive neutrality, the pro-competitive and technology-neutral approach to universal service funding, must be fully embraced in order to empower local communities with the choice of technologies that best suits their residents in providing universal and affordable access to advanced telecommunications and information services.

INTRODUCTION

¶1 In the days leading up to January 31, 2005, Louise Bolton exclaimed “I’m so excited I can’t hardly contain it.”² After a nearly thirty-year battle with state officials and the telephone company,³ the small

¹ Harvard Law School, J.D. candidate, 2006. Mr. Oh would like to thank Prof. Charles Nesson, Weld Professor of Law, Harvard Law School, and Prof. Jon Hanson, Professor of Law, Harvard Law School, for their guidance, insight, and support in the development of this iBrief.

² Ralph Blumenthal, *In the Age of the Wireless Phone, a Louisiana Town Awaits the Real Thing*, N.Y. TIMES, Dec. 12, 2004, § 1, at 37.

³ *See id.* Compare with Shaw, Louisiana, which was scheduled to receive telephone services a few months after Mink. “‘It’s wonderful,’ said Judy Ballard, 58, who lives in Shaw. ‘But it took me losing my husband’ to get the service. For years, she and others in the area had lobbied the PSC [Public Service Commission] for some kind of phone service. In May 1998, Ballard’s husband, Mike, had a heart attack. ‘A neighbor raced to the top of a levee to try to get a cellular phone signal from anywhere. The 911 operator he reached was in Mississippi, and it took 90 minutes for an emergency crew to arrive.’”

rural town of Mink, Louisiana, was finally wired for phone service.⁴ BellSouth Corporation spent \$700,000 extending the telephone lines an extra thirty miles, costing approximately \$47,000 per phone.⁵ The project cost is to be covered by a special access fund to provide telecommunications services to the poor and to rural communities.⁶ Phone customers throughout the state pay a small monthly charge, estimated at less than one dollar.⁷ Service was officially inaugurated by a call from the governor.⁸ Previously, “[i]f we wanted to talk to anyone, we walked there, or drove if it was too far,” explained Ms. Bolton.⁹

¶2 During the three decades that Mink waited for basic telephone service, technological advancements, such as the proliferation and commercialization of Internet, have brought the dream of universal communications services to the brink of reality. Recent advances in cost-effective technologies raise the question: why are such technologies not more widely deployed? The existence of federal and state universal service programs makes this situation doubly puzzling.

¶3 The phrase “universal service” was coined in 1907 by Theodore Vail, president of AT&T, to capture his vision of affordable telephone service within everyone’s reach: “One System, One Policy, Universal Service.”¹⁰ At that time, “only about [ten] percent of the households in the country had telephone service.”¹¹ The main obstacles to universal service were technology costs, business incentives, and affordability.¹²

⁴ ASSOCIATED PRESS, *Mink, La., Will Take Your Call Now*, N.Y. TIMES, Feb. 1, 2005, § A, at 15.

⁵ ASSOCIATED PRESS, *Tiny La. Community Gets Telephone Service*, Jan. 31, 2005, available at 1/31/05 APONLINEUS 01:09:56.

⁶ *Id.* This fund is available “when the cost of connecting isolated rural pockets to residential phone service exceeds \$1,500 per phone.” *Id.*

⁷ *Id.*

⁸ ASSOCIATED PRESS, *Mink, La., Will Take Your Call Now*, N.Y. TIMES, Feb. 1, 2005, § A, at 15. Mink also received its first telemarketing call during its first day of having telephone service. *Id.*

⁹ *Id.*

¹⁰ THE DIGITAL DIVIDE: FACING A CRISIS OR CREATING A MYTH? 148 (Benjamin M. Compaine, ed., 2001). See also MARK GOLDSTEIN & RICHARD Z. GOODING, UNIVERSAL SERVICE TO UNIVERSAL ACCESS (1995), available at://www.researchedge.com/uss/dev.html; MARK COOPER, UNIVERSAL SERVICE: A HISTORICAL PERSPECTIVE AND POLICIES FOR THE TWENTY-FIRST CENTURY (1996), available at <http://www.benton.org/publibrary/uniserv-prospective/commitment.html>.

¹¹ COOPER, see *supra* note 10.

¹² The lack of cost-effective technologies often made it cost-prohibitive to deliver phone services to isolated, rural communities. Phone companies often lacked compelling business incentives to branch out to smaller, rural markets

¶4 Today, universal service is commonly associated with governmental programs, policies, and initiatives responsible for ensuring that the poor and those in geographically isolated communities have affordable access to advanced telecommunications and information services.¹³ These programs mainly subsidize the cost of providing affordable telecommunications services:¹⁴ access fees (fees that all telecommunications users pay to help offset the costs for poor and rural users) and price averaging (the practice of averaging the costs for all users in a geographic region and thereby lowering the costs for rural customers at the expense of urban customers).¹⁵ Hence, universal service programs are able to overcome the problem of technology costs and business indifference to bring telecommunications services to areas that are not the primary targets of telecommunications providers.

¶5 This iBrief focuses on the federal universal service program and how its regulatory policies forestall the widespread deployment of cost-effective technology. Part I presents municipal wireless Internet networks as an affordable and technologically feasible alternative for delivering telecommunications services to the average consumer. Part II provides an overview of the key components of the federal universal service program enacted in the Telecommunications Act of 1996 (“1996 Act”). Part III argues that current telecommunications regulations, which limit the availability of universal service funds, impose significant legal hurdles for municipal broadband initiatives. Current regulations are too inflexible to exploit recent technological advancements and appear

even when providing phone services was technologically feasible; businesses instead concentrated on larger, more lucrative metropolitan markets. Additionally, the average person often could not afford phone services even when such services were available in a given market: phones were primarily business tools and luxury items for the wealthy. See Press Release, ITTA NRTA NTCA OPASTCO (May 2003), available at <http://www.opastco.org/docs/061603USFhandout.pdf>. For additional background information, see CHARLES H. FERGUSON, THE BROADBAND PROBLEM: ANATOMY OF A MARKET FAILURE AND A POLICY DILEMMA (2004).

¹³ See generally Universal Service Administrative Company, Overview, <http://www.universalservice.org/overview/> (last visited July 10, 2005).

¹⁴ THOMAS J. DUESTERBERG & KENNETH GORDON, COMPETITION AND DEREGULATION IN TELECOMMUNICATIONS: THE CASE FOR A NEW PARADIGM 48 (1997); Robert Cannon, *An Internet Service Provider's Guide to the Universal Service \$2.25 Billion Fund For Schools and Libraries*, <http://www.cybertelecom.org/usf/usfguide.htm> (last visited Dec. 6, 2005).

¹⁵ GOLDSTEIN & GOODING, *supra* note 10 (discussing rate averaging and internal cross-subsidization); Cannon, *supra* note 14. See generally ROBERT W. CRANDALL & LEONARD WAVERMAN, WHO PAYS FOR UNIVERSAL SERVICE?: WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT 7–12, (2000), available at <http://brookings.nap.edu/books/0815716117/html/1.html>.

antithetical to the statutory mandates for universal service. Part IV discusses how the universal service program can be adapted to hasten universal access to advanced telecommunications services through high-speed Internet connections. This approach not only paves a path to universal service, but also universal access to advanced telecommunications and information services, thereby bridging both the telecommunications and digital divides.

I. TELECOMMUNICATIONS THROUGH WI-FI NETWORKS

¶6 Langtoft, a remote, rural community in England consisting of approximately 400 residents,¹⁶ recently leapt into the digital age by deploying a wireless mesh network, which provides a high-speed, broadband Internet connection to all its residents through wireless rooftop transmitters that link to a satellite.¹⁷

¶7 This broadband connection enables Langtoft residents to use Voice-over-Internet-protocol or Voice-over-IP (“VoIP”).¹⁸ VoIP is a telephony service that uses the Internet—rather than traditional, plain-old-telephone service (“POTS”)—to make telephone calls.¹⁹ A “grant . . . provided by Yorkshire Forward from its Rural Community Broadband Fund . . . finance[d] the installation of broadband networks in rural communities not otherwise served” by their local telephone exchanges.²⁰

¶8 A wireless “Wi-Fi” network, employing similar technology, provides broadband connection to a North Pole research station.²¹ In the United States, Long Beach, California deployed a Wi-Fi network to

¹⁶ LocustWorld, Mesh Spreads Broadband Internet through English Village, <http://www.locustworld.com/modules.php?op=modload&name=News&file=article&sid=54> (last visited July 10, 2005).

¹⁷ *Id.*

¹⁸ See VoIP, Langtoft.net, <http://www.langtoft.net/broadband/voip.htm> (last visited Nov. 10, 2005).

¹⁹ *Id.*

²⁰ High Speed Langtoft, Langtoft.net, at <http://www.langtoft.net/broadband/grantbid.htm> (last visited Nov. 10, 2005).

²¹ Lucy Sherriff, *Frozen Polar Waste Gets Wi-Fi Hotspot*, THE REGISTER (United Kingdom), Apr. 14, 2005, available at http://www.theregister.co.uk/2005/04/14/wifi_north_pole/. “Wi-Fi” refers to a specific wireless transmission protocol widely used to deliver Internet access and does not refer to “wireless” communications in general. More specifically, “Wi-Fi” is “[s]hort for wireless fidelity. A term developed by the Wi-Fi Alliance to describe wireless local area network (WLAN) products that are based on the Institute of Electrical and Electronics Engineers’ (IEEE) 802.11 standards.” Wi-Fi Alliance, Glossary of Terms, <http://www.wi-fi.org/OpenSection/glossary.asp?TID=2> (last visited July 10, 2005).

provide free broadband connection in its downtown area.²² The annual cost to provide such a system is estimated at only \$2,500.²³ Cost-effective technology now exists to bring advanced telecommunication and information services to any location in the world.

¶9 Philadelphia's recent efforts to deploy a city-wide Wi-Fi mesh network exemplify the challenges that must be negotiated to utilize these technologies. In the fall of 2004, Philadelphia announced that it would deploy a Wi-Fi network offering free service to over 1.5 million people across 135 square miles.²⁴ At an estimated cost of ten to fifteen million dollars, this service would particularly benefit 70% of the city's students who qualify for economic assistance,²⁵ as well as under-served portions of the city that have been frustrated by the unavailability of broadband connection from local telecommunications providers.²⁶ Responding to heavy lobbying by the telephone industry, the state legislature passed a measure which greatly limited a municipality's ability to deploy such networks.²⁷ Proponents claimed that municipal broadband would be competing unfairly against the telecommunications companies and would undercut incentives for private infrastructure investments.²⁸ Philadelphia's experience exemplifies the non-technological factors that now pose the most significant barriers to the widespread deployment of municipal Wi-Fi networks.²⁹

²² John Markoff, *More Cities Set Up Wireless Networks*, N.Y. TIMES, Jan. 6, 2003, § C at 7.

²³ *Id.*

²⁴ Bob Tedeschi, *What Would Benjamin Franklin Say? Philadelphia Plans Citywide Free Wi-F Internet Access for Computer Users*, N.Y. TIMES, Sept. 27, 2004, § C at 8.

²⁵ *Id.* Compare *id.* (Philadelphia's approximate \$7-10 per resident costs) with *supra* notes 5-7 (the \$47,000 per phone for Mink, as well as the \$1,500 per phone threshold to qualify for funding in Louisiana).

²⁶ Marguerite Reardon, *Local Officials Sound Off on Municipal Wireless*, CNET NEWS.COM, May 3, 2005, http://news.zdnet.com/2100-1035_22-5694248.html. (“There are huge neighborhoods that you'd think would have access to broadband that don't,” said John Street, mayor of Philadelphia “And they aren't just the poorest neighborhoods, although they are at the top of the list. The Verizons of the world say it's coming, but we don't have time to wait. The future of our city depends on getting this access to everyone now.”)

²⁷ Matt Lake, *Is Municipal Wi-Fi Doomed in the United States?*, CNET.COM, Jan. 18, 2005, http://reviews.cnet.com/4520-6028_7-5621367-1.html.

²⁸ Declan McCullagh, *Philly, Verizon Reach Accord on City Wi-Fi Plan*, ZDNET.COM, Dec. 1, 2004, at http://news.zdnet.com/2100-1035_22-5473112.html (discussing Pennsylvania House Bill 30, Section 3014(H)).

²⁹ See, e.g., Stefanie Olsen, *Google Faces Obstacles in S.F. Wi-Fi Bid*, CNET NEWS.COM, Oct. 3, 2005 (discussing criticisms from SBC Communications,

¶10 The Wi-Fi mesh networks demonstrate that delivering affordable, if not free, telecommunications to household consumers is technologically possible; technological feasibility and costs are no longer the chief barriers to universal telecommunications service. As with Philadelphia's Wi-Fi experience, the main impediments for the deployment of new, cost-effective technologies are now legal restrictions, the telecommunications industry lobby, and a battle the over local control of telecommunications choices.³⁰

II. THE UNIVERSAL SERVICE PLAN: TELECOMMUNICATIONS ACT OF 1996

¶11 The federal universal service program plays an important role in overcoming the technological and cost barriers in delivering telecommunications services to poor and rural communities. Advanced telecommunications and information services have become integral to continued prosperity, success, and freedom in everyday life.³¹ The "1996 Act's explicit endorsement of the goals of competition and deregulation represents a significant break from the prior statutory framework."³² Whereas historically the communications field had been dominated by a

Verizon Communications, and cable companies, e.g. Comcast, as well as potential lawsuits and new legislation, in response to Google's proposal in regard to San Francisco's municipal Wi-Fi project), http://news.com.com/Google+faces+obstacles+in+S.F.+Wi-Fi+bid/2100-7351_3-5887919.html.

³⁰ The perverse business incentives for the telecommunications industry to maintain and exploit existing regulatory barriers and the political dynamics between local, state, and federal government pose significant barriers to the widespread deployment of municipal Wi-Fi networks. These topics, however, are outside the scope of this iBrief.

³¹ During the sixtieth anniversary of the Communications Act of 1934, President Bill Clinton noted that "we are still defining the role that telecommunications technology will play in our society. With a universe of electronic information at our fingertips, we can better educate our people, promote democracy, save lives, and create jobs across America. As we work to *enhance the partnership between the public and private sectors*, we continue to draw inspiration from the original Communications Act, which has long served to benefit all of our citizens and to propel our nation into the future."

GOLDSTEIN & GOODING, *supra* note 10 (quoting Federal Communications Law Journal, Vol. 47, No. 2, December, 1994) (internal quotation marks omitted) (emphasis added), available at <http://www.researchedge.com/uss/dev.html>. The 1996 Act "also marked the first true statutory enactment of universal service and broadly expanded its scope to include more telecommunications services and all telecommunications carriers. . . . *The Act specifically anticipates that schools and libraries will use the fund to acquire Internet access.*" Cannon, *supra* note 14 (emphasis added).

³² 47 U.S.C. § 254(b)(2) (2000) (emphasis added).

few, heavily regulated providers, Congress sought to establish “a pro-competitive, deregulatory national policy framework,” making “advanced telecommunications and information technologies and services” available to all Americans, “by opening all telecommunications markets to competition.”³³

A. Overview of Universal Service Provisions

¶12 The 1996 Act marked the “most comprehensive reform of the telecommunications legal landscape since [the Communications Act of] 1934.”³⁴ Section 254 on Universal Service specified that “[a]ccess to advanced telecommunications and information services should be provided in all regions of the Nation” as a core principle for the “preservation and advancement of universal service.”³⁵ The universal service program is designed to ensure that “[q]uality services [are] available at just, reasonable, and affordable rates.”³⁶ The program is overseen by the Federal Communications Commission (“FCC”), and receives recommendations from a Federal-State Joint Board.³⁷ To help administer the program, the FCC created the Universal Service Administrative Company (“USAC”).³⁸

¶13 The universal service program is privately financed by telecommunications providers who must contribute into the Universal Service Fund (“USF”).³⁹ “[T]elecommunications companies are required

³³ Cf. FED. COMM’NS COMM’N, REPORT ON FEDERAL-STATE JOINT BOARD ON UNIVERSAL SERV., CC Docket No. 96-45 (Apr. 10, 1998), ¶ 204 (noting that the “traditional core goal of universal service is ensuring affordable *basic* residential telephone service”) (emphasis added) available at http://ftp.fcc.gov/Bureaus/Common_Carrier/Reports/fcc98067.pdf, [hereinafter “Universal Service Report”]; *id.* at ¶ 102 (“our interpretation of the 1996 Act may mean that information services such as Internet access are not eligible for subsidies outside of the limited scope of schools and libraries . . .”).

³⁴ Cannon, *supra* note 14.

³⁵ Telecommunications Act of 1996 § 254, 47 U.S.C. § 254(b)(2) (2000).

³⁶ *Id.* § 254(b)(1).

³⁷ *Id.* § 254(a)(1)-(2).

³⁸ See Press Release, ITTA NRTA NTCA OPASTCO, *supra* note 12, at 1 (“The Universal Service Administrative Company (USAC) has been designated by the FCC to administer the universal service support mechanisms that make up the federal Universal Service Fund (USF). The components of the USF are the High-Cost-program, the Low Income Program, the Schools and Libraries Program and the Rural Health Care Program. USAC’s responsibilities include billing contributors, collecting contributions and disbursing universal service support funds.”).

³⁹ *Id.* (The “[f]ederal universal service program is not supported through annual federal appropriations. In fact, *universal service support is privately funded* through carrier-to-carrier transactions.”) (emphasis in original).

to contribute a percentage of the revenues they derive from long-distance and other interstate and international services to the USF. In turn, the USF reimburses eligible telecommunications carriers that provide the services that the law seeks to make widely available.”⁴⁰

¶14 In executing the universal service provisions, the FCC’s rules are based on the following goals:

1. All universal service objectives established by the Act must be implemented, including those for low-income individuals, consumers in rural, insular and high cost areas, as well as for schools, libraries, and rural health care providers.
2. Rates for basic service must be maintained at affordable levels.
3. Affordable basic phone service must continue to be available to all users with the help of a universal service fund which will subsidize phone service for those who qualify.
4. The benefits of competition in the telecommunications arena must be brought to as many consumers as possible.⁴¹

¶15 Services that are supported under the universal service program and eligible for USF funding include access to:

- a telephone network with the ability to place and receive calls
- touch tone capability; single-party service
- emergency systems including, where available, 911 and Enhanced 911
- operator services
- interexchange services
- directory assistance
- limited long distance calling (for qualifying low-income users).⁴²

⁴⁰ Congressional Budget Office, Financing Universal Telephone Service: Introduction (2005), <http://www.cbo.gov/ftpdocs/61xx/doc6191/03-28-Telephone.pdf>.

⁴¹ National Telecommunications and Information Administration (“NTIA”), The New Universal Service: A User’s Guide, <http://www.ntia.doc.gov/opadhome/uniserve/univweb.htm> (last visited July 10, 2005).

⁴² *Id.*

B. Funding for Schools, Libraries, and Rural Health Providers

¶16 The Act included special provisions for qualified facilities, such as schools, libraries, and rural medical providers, to obtain advanced telecommunications and information services as part of the universal service framework.⁴³ “The Act specifically anticipates that schools and libraries will use the fund to acquire Internet access.”⁴⁴ To avoid potential roadblocks to the information superhighway, the law specified a policy of competitive neutrality:⁴⁵ local communities were given the flexibility to choose the technology that best suited their particular needs.⁴⁶ Competitive neutrality promotes market competition among telecommunications service providers like telephone companies, cable television providers, and cellular networks. By not tying funding to a specific technology, competitive neutrality avoids the problem of network effects (creating an artificial monopoly by favoring an option or giving it a head start). In addition, local communities retain control over technology decisions, allowing for local experimentation to find the best-suited solution without artificially constraining choice.

¶17 This policy utilizes market pressures to accelerate advanced-services deployment by spurring competition for universal service dollars among different service providers. Competitive neutrality takes advantage of technological flexibility, which allows specialized communication services, such as the telephone, to be reconfigured to also provide Internet access. Such flexibility allows specialized “smart networks” to deliver multiple services, including voice, Internet access, video-on-demand, and streaming music.⁴⁷

⁴³ 47 U.S.C. § 254(b)(6), (h)(1) (2000).

⁴⁴ Cannon, *supra* note 14.

⁴⁵ 47 U.S.C. § 254(h)(2) (2000).

⁴⁶ For further discussion regarding competitive neutrality, see *infra* notes 115-116 and accompanying text.

⁴⁷ See generally, FERGUSON, *supra* note 12, at 189–92 (discussing the “Implications of an Open-Architecture U.S. Broadband Policy”). See Jim Hu, *Cable and Tech Feeling Closer*, ZDNET.COM, April 3, 2005, http://news.zdnet.com/2100-1035_22-5652570.html?tag=zdfd.newsfeed (discussing the future convergence of telephony, broadband, and video services). This competitive-neutrality approach espouses the end-to-end neutrality undergirding Internet architecture—a simpler network has more flexibility in carrying different type of data from one end of the communication network to the other; J.H. Saltzer, et al., *End to End Arguments in System Design*, ACM Trans. on Computer Systems, 1984, <http://web.mit.edu/Saltzer/www/publications/endtoend/endtoend.pdf>; reprinted in INNOVATIONS IN INTERNETWORKING (Craig Partridge, ed. 1988).

III. LEGAL BARRIERS

¶18 Laws and regulations present significant hurdles for the widespread deployment of new telecommunications technologies. As mentioned earlier, the Pennsylvania measure severely constrains the ability of local municipalities to pursue local broadband initiatives.⁴⁸ As more cities consider such projects,⁴⁹ more states are also considering similar restrictive measures. For example, legislators in Texas have proposed a measure that would limit municipal discretion to deploy Wi-Fi networks,⁵⁰ while Utah narrowly defeated a measure that would have effectively shutdown an inter-city broadband project.⁵¹ With respect to the universal service program, FCC regulations impose considerable legal obstacles that impede the deployment of advanced technologies that can simultaneously provide basic and advanced services. Although the universal service program strives to provide “[a]ccess to advanced telecommunications and information services . . . in all regions of the Nation,”⁵² these regulations are too inflexible and insensitive to effectively exploit rapidly developing, cost-effective technologies.

A. Distinctions without Technological Differences

¶19 Regulatory stagnation stems from the FCC’s distinction between regulated telecommunications services and unregulated information services.⁵³ Although the 1996 Act retained most of the existing Title II provisions of the Communications Act of 1934, the 1996 Act added new provisions regarding advanced telecommunications and information services,⁵⁴ previously unused and undefined terms.⁵⁵ Instead of technologically forward-looking interpretations, the FCC “concluded that the 1996 Act’s definitions of telecommunications service and information service essentially correspond to the preexisting [sic] categories of basic

⁴⁸ See *supra* note 16-21 and accompanying text.

⁴⁹ See, e.g., Olsen, *supra* note 29.

⁵⁰ See Eric Berger, *Wireless Networks Don't Click With Some: Telecom Bill Would Ban Free Internet Access Like That In Model East End Program*, HOUSTON CHRON., Mar. 3, 2005, available at <http://www.chron.com/cs/CDA/ssistory.mpl/front/3065992>.

⁵¹ Lisa Roskelley, *Utah Senate Votes to Not Amend Bill That Targets Statewide Internet Project*, MIAMI HERALD, Feb. 20, 2005. See also Jim Hu, *Carriers Throw Their Weight Around Towns*, ZDNET.COM, Dec. 1, 2004 (discussing how Utah’s UTOPIA initiative have been effectively undermined by the proposed initiative, whether or not it passes).

⁵² 47 U.S.C. § 254(b)(2) (2000).

⁵³ See *Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Svcs.*, 125 S.Ct. 2688, 2696 (2005).

⁵⁴ Universal Service Report, *supra* note 33, ¶ 30.

⁵⁵ *Id.* ¶ 21.

and enhanced services, in that they were intended to refer to separate categories of services.”⁵⁶ The FCC came to this conclusion despite the “advent of IP [“Internet protocol”] networks [that] placed great strain on the categorical definitions [previously] set out by the Commission”⁵⁷

¶20 As a result, the FCC associated telecommunications primarily with traditional, basic POTS, especially the “‘core’ or ‘designated’ telecommunications services that will be supported by universal service support mechanisms.”⁵⁸ Internet services, in comparison, are considered to be information services, not telecommunications services.⁵⁹ Although the FCC recognizes that IP telephony (or VoIP) services maybe

⁵⁶ Universal Service Report, *supra* note 33, ¶ 13. *See also* Brand X, 125 S.Ct. at 2708 (stating “we may assume that the parallel terms ‘telecommunications service’ and ‘information service’ substantially incorporated . . . [the] meaning [of basic and enhanced service], as the Commission has held.”).

⁵⁷ Universal Service Report, *supra* note 33, at Appendix B: Separate Statement of Commissioner Michael K. Powell, Concurring, 125.

⁵⁸ Barbara Esbin, Internet Over Cable: Defining the Future in Terms of the Past, August 1998, OPP Working Paper Series, *available at* http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp30.pdf (“single party service, voice grade access to the PSTN, dial tone multi-frequency (‘DTMF’) signaling or its functional equivalent, access to emergency services, access to operator services; access to interexchange service, access to directory assistance, and toll limitation services for qualifying low-income consumers.”). *See also* Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Services, 545 U.S. (2005), 125 S.Ct. 2688, 2697 (2005) (stating that the “definitions of the terms ‘telecommunications service’ and ‘information service’ established by the 1996 Act are similar to the *Computer II* basic- and enhanced-service classifications”).

⁵⁹ The FCC determined that “definition of Telecommunications . . . excludes Internet access services Internet access service does not constitute a telecommunications service, and . . . telecommunications services and information services are ‘separate, non-overlapping categories, so that information services do not constitute ‘telecommunications’ within the meaning of the 1996 Act.” Universal Service Report, *supra* note 33, ¶ 33. *Cf.* Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Svcs., 125 S.Ct. 2688, 2697 (2005) (stating that the “the [FCC] concluded that broadband Internet service provided by cable companies is an ‘information service’ but not a ‘telecommunications service’”) (emphasis in original).

particularly “difficult-to-classify,”⁶⁰ in general, the Internet is classified as an information service, and thus free from regulatory oversight.⁶¹

¶21 These interpretations have serious consequences for the Internet’s role in delivering universal service. The FCC did not fully embrace the “infinite flexibility of IP switched-packet networks . . . to transmit voice, in addition to data, using a protocol that allows for a significant degree of computer processing and other advanced capabilities.”⁶² Flexibility allows the Internet to be a common platform for voice, data, and even video services, and allows for POTS to provide additional services like Internet access, “blur[ring] these [categorical] distinctions [between telecommunications and information services], making them difficult, if not impossible, to maintain.”⁶³ Nonetheless, the FCC maintains “that the categories of ‘telecommunications service’ and ‘information service’ . . . are mutually exclusive.”⁶⁴

¶22 Unfortunately, the FCC’s regulatory schema better addresses the previous century’s technological challenges. The FCC’s outdated technological understanding of communications services assumes that “the growth of Internet-based information services greatly stimulates our country’s use of telecommunications, and thereby the revenue base from which we now fund universal service.”⁶⁵ This view presumes that information services like the Internet *uses* telecommunications services, rather than *delivers* telecommunications services.⁶⁶ As a consequence,

⁶⁰ Universal Service Report, *supra* note 33, at Appendix B: Separate Statement of Commissioner Michael K. Powell, Concurring, 126. “These considerations favor resolving these matters (which I believe encompass the classification of Internet and IP telephony) on a case-by-case basis, rather than through rulemaking.” *Id.* at 127.

⁶¹ *See id.* ¶ 32 (“The Act imposes no regulatory obligations on information service providers as such”). The FCC has been evaluating the recent developments concerning VoIP, but has yet to rule whether such services should now be properly considered as telecommunications.

⁶² *Cf. id.* at Appendix B: Separate Statement of Commissioner Michael K. Powell, Concurring, 125.

⁶³ *Id. But see Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Svcs.*, 125 S.Ct. 2688, 2709 (2005) (noting that “a telephone company that packages voice mail with telephone service offers a transparent transmission path,” and is therefore a telecommunications service even when packaged with an information service such as voice mail or caller identification).

⁶⁴ Universal Service Report, *supra* note 33, ¶ 13.

⁶⁵ *Id.* ¶ 3.

⁶⁶ “The Commission conceded that, like all information-service providers, cable companies use ‘telecommunications’ to provide consumers with Internet service; cable companies provide such service via the high-speed wire that transmits signals to and from an end user’s computer. . . . The wire is used, in

the FCC does not adequately accommodate a future in which the Internet becomes the primary method of delivering telecommunications, whether in the form of voice, video, or data. The FCC envisions the Internet as just an application available through traditional telephone services,⁶⁷ instead of telephony service becoming just one of the myriad applications accessible through the Internet.⁶⁸

¶23 As a result, projects designed to provide low-cost or free basic services to household consumers through the Internet, e.g. municipal Wi-Fi networks, do not qualify for most USF funding since such projects are categorized as information services rather than telecommunications.⁶⁹ Even though a municipal Wi-Fi network, coupled with VoIP,⁷⁰ is capable of providing telecommunications services, “Internet access providers look like other enhanced- or information-service providers” from a regulatory perspective.⁷¹

¶24 Such regulatory classifications make it extremely difficult for municipal Internet projects to qualify for universal service funding since municipal Wi-Fi would be classified as an information service, not a

other words, to access the World Wide Web, newsgroups, and so forth, rather than ‘transparently’ to transmit and receive ordinary-language messages without computer processing or storage of the message [like a telecommunications service].” Nat’l Cable & Telecomms. Ass’n. v. Brand X Internet Svcs., 125 S.Ct. 2688, 2703-04 (2005).

⁶⁷ See Universal Service Report, *supra* note 33, ¶ 75 (“[The FCC] believes that Internet access providers do not offer subscribers separate services -- electronic mail, Web browsing, and others -- that should be deemed to have separate legal status. It is useful to examine specific Internet applications, however, in order to understand the nature of the functionality that an Internet access provider offers.”).

⁶⁸ *Cf.* Brand X Internet Svcs., 125 S.Ct. at 2715 (Scalia, J., dissenting) (“It is therefore inevitable that customers will regard the competing cable-modem service as giving them *both* computing functionality *and* the physical pipe by which that functionality comes to their computer -- both the pizza and the delivery service that nondelivery pizzerias require to be purchased from the cab company.”) (emphasis in original).

⁶⁹ See Universal Service Report, *supra* note 33, ¶ 52 (“Internet access services are appropriately classed as information services without regard to our treatment of protocol processing.”).

⁷⁰ VoIP through Wi-Fi is also known as Voice-over-Wireless or “VoFi.” See ZDnet, VoFi: Taking VOIP Wireless, at

<http://whitepapers.zdnet.com/abstract.aspx?docid=139350&promo=2000010>

(last visited Nov. 1, 2005); C.J. Mathias, *Making VoFi Work*,

WIRELESS.ITWORLD.COM, June 20, 2005,

http://wireless.itworld.com/4266/050620makevofi/page_1.html.

⁷¹ Universal Service Report, *supra* note 33, ¶ 81.

telecommunications service.⁷² Information services are not required to contribute to the USF and are not subjected to universal service obligations.⁷³ Such information services are also generally ineligible for universal service funding.⁷⁴

¶25 Technology advancements have blurred the FCC's categorical definitions and are no longer justified from a technological perspective. Though telephony services can be delivered through VoIP and VoFi, such projects would likely be considered to be delivering information services, rather than telecommunications.⁷⁵ While both traditional and Internet-based services are capable of providing telephony services indistinguishable to the customers, the FCC's telecommunications-information services dichotomy entails that only traditional telephone service qualifies as telecommunications.⁷⁶

⁷² Due to the FCC's mutually exclusive definitions for telecommunications and information services, "Internet access services are appropriately classed as information, rather than telecommunications, services. . . . [since] Internet access providers do not offer a pure transmission path; they combine computer processing, information provision, and other computer-mediated offerings with data transport." *See id.*, ¶ 73.

⁷³ *See Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Svcs.*, 125 S.Ct. 2688, 2696-97 (2005).

⁷⁴ "As [the FCC's] interpretation . . . may mean that information services such as Internet access are not eligible for subsidies outside of the limited scope of . . . section 254(h). We believe Congress made a policy decision to limit support for information services to schools and libraries. 'Telecommunications services' provide the basic transmission functionality that enables customers in rural and high-cost areas to connect to the rest of America. These services also enable users to reach Internet access providers, so reductions in the cost of basic telephone service in rural areas will effectively reduce the cost of Internet access in those areas." Universal Service Report, *supra* note 33, ¶ 102.

⁷⁵ *FCC Adopts Order on Vonage's VOIP Petition*, TECH L.J. (Nov. 9, 2004), <http://www.techlawjournal.com/topstories/2004/20041109.asp>. For example, AT&T offers calling plans and bundled services that may consist of traditional telephone service, CallVantage (a VoIP-based telephone service), and dial-up or DSL Internet access. AT&T proclaims that with its CallVantage service, "[y]ou'll use your phone the exact same way, but you'll get more from AT&T VoIP than you ever thought possible" and [will] "still provides the remarkable voice quality and overall simplicity that you expect."⁷⁵ Each of these services is capable of providing telephony services indistinguishable to the customers, straining rigid classification. AT&T, About AT&T CallVantage Service, <http://www.usa.att.com/callvantage/about/index.jsp> (last visited Nov. 1, 2005).

⁷⁶ Compare with *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Svcs.*, 125 S.Ct. 2688, 2710 (2005), where the court held that cable Internet companies provide information services since there is "*not a transparent ability (from the end user's perspective) to transmit information*," as opposed to dial-up or digital

B. Un-Enhanced Services

¶26 The FCC's regulatory schema remains an impediment for providing universal advanced services, notwithstanding technological issues. Although the universal service section of the 1996 Act mandates that "[a]ccess to advanced telecommunications *and* information services should be provided in all regions of the Nation,"⁷⁷ the FCC's interpretation only requires universal access to "basic" telephone services.⁷⁸ In formulating this distinction, the FCC relied on its previous classifications of basic and enhanced services.⁷⁹ Telecommunications mostly corresponds to basic services, primarily POTS; information services correspond mostly to enhanced services, like the Internet.⁸⁰

¶27 This basic/enhanced distinction reveals a fundamental tension between the policy of providing *basic* services with the universal service statutory mandate of providing *advanced* telecommunications and information services. The FCC's emphasis on basic services unduly focuses on telecommunications services, rather than emphasizing *both*

subscriber lines ("DSL") internet companies, which do provide telecommunications services. (emphasis added).

⁷⁷ 47 U.S.C. § 254(b)(2) (2000). (emphasis added).

⁷⁸ Cf. James B. Speta, *Deregulating Telecommunications in Internet Time*, 61 WASH. & LEE L. REV. 1063 1149 (2004) ("The Act itself states that '[a]ll providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.' In practice, however, distortions have been introduced, because 'providers of telecommunications services' has been limited to traditional wireline and wireless telephony services.").

⁷⁹ See Esbin, *supra* note 58.

⁸⁰ Reply Brief for Petitioner at 6, *FCC v. Brand X Internet Svcs.*, No. 04-281, Nat'l Cable & Telecomms. Ass'n., 125 S.Ct. 2688 (2005) ("Although the statutory term 'information service' and the former regulatory term 'enhanced service' largely cover the same functions, they are not coextensive. Enhanced services are by definition offered over common carrier transmission facilities, whereas information services may be provided via any form of telecommunications"), <http://www.usdoj.gov/osg/briefs/2004/2pet/7pet/2004-0281.pet.rep.pdf>; Cybertelecom, *Enhanced Service Providers*, available at <http://www.cybertelecom.org/ci/esp.htm> (last visited July 10, 2005). See also Universal Service Report, *supra* note 33, ¶ 27 ("The Commission stressed that the category of enhanced services covered a wide range of different services, each with communications and data processing components. Some might seem to be predominantly communications services; others might seem to be predominantly data processing services. The Commission declined, however, to carve out any subset of enhanced services as regulated communications services. It found that no regulatory scheme could 'rationally distinguish and classify enhanced services as either communications or data processing' . . .").

telecommunications and information services.⁸¹ This emphasis on basic services at the expense of information services disregards section 254(b)(3), which “establishes that the Commission’s rules and policies must ensure that ‘consumers . . . have access to telecommunications *and* information services.’”⁸² Although the FCC specifically includes Internet services as part of the Rural Health Care—the universal service support mechanism for rural health care providers—and the E-Rate—the schools and libraries universal service support mechanism—programs,⁸³ these universal service mechanisms are only available to qualified facilities, not ordinary household consumers.

¶28 Even though a VoIP-enabled, municipal Wi-Fi network is capable of providing basic telephony services, such “a service could fall into “either the ‘basic’ or the ‘enhanced’ category, but not both.”⁸⁴ Despite being able to provide nearly the “exact same” service as a regular telephone,⁸⁵ a municipal VoFi network would not qualify for universal service funding.

C. *Un-Advanced Services*

¶29 The FCC’s emphasis on basic services also detracts from the statutory mandate of providing *advanced* telecommunications and information services. The FCC notes that “section 254(b)(3) [of the 1996 Act] establishes that the Commission’s rules and policies must ensure

⁸¹ Universal service programs, such as Lifeline, concentrate on providing affordable telecommunications services rather than information services. *See* Universal Service Administrative Company, Low Income: Lifeline, <http://www.universalservice.org/li/components/lifeline.asp> (last modified March 3, 2005); Universal Service Administrative Company, Low Income: Consumer Eligibility, http://www.universalservice.org/li/overview/consumer_elig.asp (last modified March 3, 2005).

⁸² Universal Service Report, *supra* note 33 ¶ 204 (emphasis added). *Compare* 47 U.S.C. § 254(b)(3) (2000) with the FCC’s conclusion that the “traditional core goal of universal service is ensuring affordable *basic residential telephone service* . . . it is clear that section 254(b)’s goal of *affordable basic service* indicates that Congress intended that [such] services should be affordable” (Universal Service Report, *supra* note 33 ¶ 204 (emphasis added)).

⁸³ Universal Service Administrative Company, About the Schools and Libraries Division, <http://www.sl.universalservice.org/overview/about.asp> (last modified April 3, 2002); Universal Service Administrative Company, About RHCD, <http://www.rhc.universalservice.org/overview/rhcd.asp> (last modified March 19, 2004).

⁸⁴ Universal Service Report, *supra* note 33, ¶ 13. “[A] service with both communications and computer-processing components was deemed to be providing an enhanced service, not a basic one.” *Id.* ¶ 34.

⁸⁵ *See* text accompanying *supra* note 75 (describing AT&T’s VoIP telephone service)..

that ‘consumers . . . have access to telecommunications and information services.’”⁸⁶ The FCC also emphasizes that “the traditional core goal of universal service is ensuring affordable *basic* residential telephone service”⁸⁷ The FCC, however, ignores that the remainder of 254(b)(3), which “includ[es] . . . *advanced* telecommunications and information services” as services to which the FCC must ensure consumer access.⁸⁸ Although the FCC may argue that prioritizing universal access to basic telecommunications *and* information services before advanced services is justified, its actual rules and policies appear to prioritize only *basic* telecommunications services, ignoring any form of information services as well as all types of advanced services.

¶30 Although the FCC preaches that market competition, unfettered from government regulations, best promotes the widespread deployment of technologies, particularly the Internet,⁸⁹ its actions fall short of its rhetoric. Information services and enhanced telecommunications services are not subject to the same regulatory obligations as basic telecommunications services, and are not required to contribute to the universal service fund.⁹⁰ As a consequence, information services and enhanced telecommunications services do not qualify for consumer-targeted universal service programs. The FCC rejects competitive neutrality for the consumer marketplace, denying funding needed for

⁸⁶ Universal Service Report, *supra* note 33, ¶ 204.

⁸⁷ *Id.* (emphasis added).

⁸⁸ 47 U.S.C. § 254(b)(3) (2000) (emphasis added).

⁸⁹ *See, e.g.*, Universal Service Report, *supra* note 33, at Appendix B: Separate Statement of Commissioner Michael K. Powell, Concurring, 125 (“If innovative new IP services were all thrown into the bucket of telecommunications carriers, we would drop a mountain of regulations, and their attendant costs, on these services and perhaps stifle innovation and competition in direct contravention of the Act.”); *See* FCC, 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: Third Report, Hearing Before the Federal Communications Commission [hereinafter “Deployment of Advanced Telecommunications: Third Report”], CC Docket 98-146, ¶ 133 (“[C]ompetition, not regulation, holds the key to stimulating further deployment.’ . . . a minimal regulatory framework will promote competition and thus encourage investment in advanced telecommunications capability.”).

⁹⁰ Universal Service Report, *supra* note 33, ¶ 32 (“The Act imposes no regulatory obligations on information service providers as such.”). *See also* Nat’l Cable & Telecomms. Ass’n, 125 S.Ct. 2688, 2696 (2005).

“emerging technologies . . . to stimulate competition and create new alternatives and choices for consumers.”⁹¹

¶31 Through its wait-and-see approach, the FCC is shirking its legal mandate. “Congress envisioned that the FCC would *actively pursue* information each year on broadband deployment . . . [and] *initiate* a broadband action plan to obtain concrete, nationwide data, to elicit wider stakeholder input and analysis, and to promote the deployment of broadband to all Americans.”⁹² The FCC’s reliance on private markets to provide universal service may also be misplaced. Consumers who traditionally have had the most difficulty accessing basic services are likely to encounter the same issues with advanced services.⁹³

¶32 In addition, advanced services may not be universally accessible despite “the expansion of advanced services to many regions of the nation, and [the] growing number of subscribers.”⁹⁴ As the FCC’s own data indicates, even in those regions where advanced services have been deployed, such services may only be available for business customers, leaving ordinary citizens without affordable high-speed services.⁹⁵ In fact, problems of limited access to both basic services and to the Internet—the digital divide—is most acute in non-rural areas.⁹⁶

⁹¹ Cf. Deployment of Advanced Telecommunications: Third Report, *supra* note 89, ¶ 7.

⁹² *Id.* at Appendix D: Dissenting Statement of Commissioner Michael Capps. (emphasis added).

⁹³ See *id.* (noting that “[among] businessperson I’ve had the chance to meet [when asked] if he or she was convinced the market could get the job of deployment done[,] [t]he vast majority of these business leaders tell me that for that last 10, 15, 20 percent or more of Americans, probably not”).

⁹⁴ *Id.* ¶ 89.

⁹⁵ *Id.* ¶ 25 (“[I]n some zip codes, high-speed services may be available to some large, primarily business users, but not be available, affordable or marketed to residential users. In addition, service could be marketed to limited neighborhoods, or very localized infrastructure barriers such as inside wiring issues could prevent some customers in a zip code from accessing services available to other customers in the same zip code.”).

⁹⁶ “[I]nformation have-nots are disproportionately found in this country’s rural areas and its central cities. While most recognize that *poor* people as a group have difficulties in connecting to the NII [National Information Infrastructure], less well-known is the fact that the lowest telephone penetration exists in central cities . . . Overall, the poorest households . . . in central cities have the lowest *telephone* penetration . . .” THE DIGITAL DIVIDE, *supra* note 10 at 8–9, 12. (emphasis in original).

¶33 Although the FCC has been called upon to make universal service funds more available for information services,⁹⁷ the FCC has “decline[d] to expand the definition of . . . services [supported by universal service] to include advanced or high-speed services”⁹⁸ As a result, communities seeking to deploy communications services that would be able to simultaneously deliver both basic *and* enhanced services, as well as advanced telecommunications *and* information services, must do so without USF assistance.

D. *Special Services, Not Advanced Services*

¶34 Although both the E-rate and the Rural Health Care programs subsidize telecommunications *and* Internet access,⁹⁹ the FCC refuses to recognize Internet access as a statutorily required advanced service.¹⁰⁰ Instead, the FCC designated that Internet services were additional *special services* for such support mechanisms for schools, libraries, and health care providers¹⁰¹ that the FCC has discretion to provide under a different statutory provision.¹⁰²

¶35 The main consequence of this statutory interpretation is that universal service programs are not required to provide Internet access. Internet access is merely a discretionary “special” or “additional” service, which only schools, libraries, and health care providers are eligible to receive, rather than a service required to be provided to the

⁹⁷ See, e.g., Anne Marie Squeo, *Universal Battle In Tiny Towns*, WALL STREET JOURNAL, Feb. 22, 2005, available at <http://www.vonage-forum.com/printout1690.html> (“Internet-phone services like Vonage say that broadband lines should be subsidized.”).

⁹⁸ Federal-State Joint Board on Universal Service, ORDER AND ORDER ON RECONSIDERATION, July 14, 2003, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-170A1.pdf, at 4, ¶ 8.

⁹⁹ Universal Service Administrative Company, Rural Health Care: Eligible Services (listing examples of eligible services), <http://www.rhc.universalservice.org/eligibility/services.asp> (last visited July 10, 2005); Universal Service Administrative Company, About the Schools and Libraries Division (listing examples of eligible product functions and types, including cable modems and FRAD), http://www.sl.universalservice.org/vendor/epd_pilot/products.asp (last Nov. 7, 2005).

The relevant statutory provision is designed “to enhance . . . access to *advanced telecommunications and information services* for all public and nonprofit elementary and secondary school classrooms, health care providers, and libraries.” 47 U.S.C. § 254(h)(2)(A) (2000). (emphasis added).

¹⁰⁰ See 47 U.S.C. § 254(h)(2) (2000)—Advanced Services (“The [FCC] shall establish competitively neutral rules” to enhance access to advanced services).

¹⁰¹ See Universal Service Report, *supra* note 33, ¶¶ 151–154.

¹⁰² 47 U.S.C. § 254(c)(3) (2000)—Special Services.

general public. As a result, municipalities that wish to provide Internet services to its resident—such as a city-wide Wi-Fi or VoFi network—are not eligible for universal service funding.

IV. A NEUTRAL APPROACH TO UNIVERSAL SERVICE

¶36 The current regulatory schema erects considerable legal barriers to universal service. These policies unduly favor pre-existing technologies and telecommunications providers, retarding the widespread deployment of new and innovative methods of accessing telecommunications and information services. The FCC's regulations are a confusing and confounding exercise in statutory interpretation,¹⁰³ seemingly more interested in maintaining the status quo of established regulatory definitions rather than pursuing “policies for the preservation and advancement of universal service.”¹⁰⁴

¶37 One of the fundamental flaws in the FCC's approach is that it does not apply the competitive neutrality principle to all its universal-service initiatives, thereby failing to exploit low-cost technologies to increase access to telecommunications services. Competitive neutrality exploits the fundamental change to communication services that the Internet ushered in—the ability to deliver a telephone call or a television program is no longer tied to a specific set of wires.¹⁰⁵ The virtue of “dumb networks” is that they do not discriminate based on data type.¹⁰⁶ These networks can transmit various types of information, whether it is a voice message, a television signal, or a webpage. This technological evolution punctuates a shift in the telecommunications paradigm: the primary service that the telecommunications industry now provides is “access.” Voice is no longer “the service” being delivered, but only one of many available applications. The technological future of telecommunications lies in the ability to simultaneously deliver voice, video, and data regardless of the underlying technological infrastructure.¹⁰⁷ Access to telecommunications services becomes more

¹⁰³ Cf. *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Svcs.*, 125 S.Ct. 2688, 2713 (2005). (J. Scalia, dissenting) (criticizing the FCC's statutory interpretation that cable companies that sell broadband Internet service do not provide telecommunications service as defined in the 1996 Act). “The Federal Communications Commission (FCC or Commission) has once again attempted to concoct ‘a whole new regime of regulation (or of free-market competition)’ under the guise of statutory construction.” *Id.*

¹⁰⁴ 47 U.S.C. § 254(b) (2000)—Universal service principles.

¹⁰⁵ See *supra* note 68.

¹⁰⁶ Compare dumb networks with reconfigured “smart” networks at *supra* note 47 and accompanying text.

¹⁰⁷ See generally Ben Charny & Marguerite Reardon, *Phone Companies Hear Call of the TV*, June 6, 2005 ZDnet.com available at

important than whether the data transmission platform is built upon copper wires, cables, fiber optics, cellular networks, Wi-Fi mesh networks, or even electrical power lines.¹⁰⁸

¶38 Unfortunately, the FCC has only embraced competitive neutrality as a guiding principle in a limited manner. Statutorily, competitive neutrality is mandated for the universal services provisions targeting qualified facilities like schools, libraries, and rural medical providers. “In that case, Congress expressly directed the Commission to create ‘competitively neutral rules’ to facilitate ‘access to advanced telecommunications and information services.’”¹⁰⁹ The FCC, however, has declined to apply this approach for the remainder of the universal service scheme. This same type of narrow statutory construction was also seen when the FCC interpreted that Internet services are a “special service,” rather than an advanced service to which competitively neutral rules were to provide access.¹¹⁰ Such interpretative gymnastics contorts the plain language of the universal service mandate.¹¹¹

¶39 Thus, the same policy of competitive neutrality, which was specifically adopted for schools, libraries, and health care providers, particularly in rural and poor communities, is not applicable in speeding the deployment of those very same services and technologies to the individual residents of those communities. As a result, the current

http://news.zdnet.com/2100-1035_22-5734429.html (describing the “triple-play bundle of broadband, TV programming plus local and long distance phone services”). See also Marguerite Reardon, *Cablevision: We're not Afraid of Verizon's Fiber*, May 5, 2005, ZDnet.com, available at http://news.zdnet.com/2100-6005_22-5696942.html; Marguerite Reardon, *Cable Goes for the Quadruple Play*, CNET NEWS.COM, Nov. 7, 2005, http://news.com.com/Cable+goes+for+the+quadruple+play/2100-1034_3-5933340.html (discussing the “fight between cable operators and phone companies is heating up as attention turns from the triple-play offering to the quadruple play, a service bundle that includes high-speed data, telephony, TV, and now wireless.”).

¹⁰⁸ “The triple-play networks available today can be built on DSL, FTTx, and HFC access architectures. They can use varying amounts of fiber, copper, wireless in the network.” IEC, Conference Schedule, available at <http://www.iec.org/events/2005/supercomm/conference/tf2.html> (last visited July 10, 2005). “Current networks need to be able to scale as speeds become faster and the triple-play bundle yields to quadruple or quintuple play.” *Id.*

¹⁰⁹ Universal Service Report, *supra* note 33, ¶ 13.

¹¹⁰ See earlier discussion regarding “special” services at *supra* note 101.

¹¹¹ See *supra* note 103. See also Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Svcs., 125 S.Ct. 2688, 2718 (2005) (J. Scalia, dissenting) (“*Such Mobius-strip reasoning mocks the principle that the statute constrains the agency in any meaningful way.*”) (emphasis added) (footnote omitted).

regulatory scheme unnecessarily constrains local communities from choosing the technology that best meets their particular needs.

¶40 The lessons learned in schools and libraries should be applied to basic services for all consumers. The FCC should recognize that the competitively neutral approach is the best way to ensure access to advanced services throughout the country and adopt this approach across all universal service programs. “The 1996 Act makes a decisive break from the existing practice of implicit universal service subsidy structures. Rather than preserve the inefficient mechanisms designed for an industry characterized by local monopolies, *the 1996 Act directs the Commission to make universal service funding explicit and competitively-neutral.*”¹¹² The scope of competitive neutrality should extend beyond schools, libraries, and rural medical providers;¹¹³ the FCC should make a decisive and fresh break from its own existing regulatory practices to deploy advanced services to all people throughout the nation by spurring market competition.¹¹⁴

¶41 Opening USF eligibility to non-telecommunications carriers¹¹⁵ would allow municipal Wi-Fi networks to compete effectively in the basic-service market, increasing individual choice, lowering costs through competitive pressures, and incentivizing the most cost-effective service delivery. Competition between traditional and non-traditional communications providers already promotes cost-effective delivery of Internet services for schools and hospitals.¹¹⁶ Similarly, competition

¹¹² Universal Service Report, *supra* note 33, ¶ 13 (emphasis added).

¹¹³ For schools and hospitals, the FCC already recognizes that “the principle of competitive neutrality . . . allow[s] both telecommunications carriers and other firms to compete to receive support for providing Internet access and internal connections” and “to compete *effectively* in the market” Universal Service Report, *supra* note 33, ¶ 13 (emphasis added).

¹¹⁴ *Cf.* Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Svcs., 125 S.Ct. 2688, 2711 (2005) (noting that “[the FCC] concluded that changed market conditions warrant different treatment of facilities-based cable companies providing Internet access. . . . We find nothing arbitrary about the Commission’s providing a *fresh analysis* of the problem as applied to the cable industry”) (emphasis added).

¹¹⁵ *Cf.* Universal Service Report, *supra* note 33, ¶ 13 (“Therefore, the Commission concluded that firms that are not telecommunications carriers are eligible to compete to receive support under 254(h)(2) for providing Internet access”).

¹¹⁶ *Cf.* Universal Service Report, *supra* note 33, ¶ 13 (arguing that competitive neutrality requires support for all entities; cable is cost-effective choice for schools and libraries). “To allow support for Internet access and internal connections only when provided by a telecommunications carrier would reduce the sources from which schools and libraries could obtain these services at a

among service providers, including Internet service providers, would prompt cost-effective basic services.¹¹⁷

¶42 As a staunch proponent of competitive markets, it is notable that Former FCC Commissioner Michael Powell

simply disagree[s] with those who argue we are massively subsidizing the Internet by letting it operate in a free market while other companies labor under the yolk of government regulation. That seems to be an ironic characterization in light of the Act's stated goal of fostering a pro-competitive, deregulatory environment. The way to level this disparity, if at all necessary, is not to extend government imposed costs and regulations to the Internet¹¹⁸

¶43 Opening the USF to non-traditional communications providers increases competition while not placing traditional telecommunications providers, who pay into the USF, at a competitive disadvantage.¹¹⁹ Adopting a position of competitive neutrality for all universal service programs will empower local communities to provide the most cost-effective and technologically appropriate solutions to their

discount which, in turn, would *reduce competitive pressures* on providers to lower their costs *This would appear contrary to the statutory goal of providing . . . services in the most cost-effective manner possible, which would minimize the total cost and thus the total amount of universal service contributions that would need to be collected.*" *Id.* (emphasis added).

¹¹⁷ Critics may contend that allocating universal service funds to Internet providers to deliver basic services through IP telephony—whether municipal broadband projects or private Internet service providers ("ISPs")—would place traditional telecommunications providers at a competitive disadvantage since Internet providers are not obligated to contribute to the USF, and thereby violating the competitive neutrality principle. The FCC, however, has found such a contention unpersuasive in context of schools and libraries, noting that "[t]here is no requirement . . . that contributors to universal service mechanisms must also be permitted to receive support." Universal Service Report, *supra* note 33, ¶ 184. "[L]imiting direct support to telecommunications carriers would . . . frustrate the Commission's effort to achieve its goal of competitive neutrality, because it would treat firms other than telecommunications carriers less favorably than telecommunications carriers." *Id.* The FCC concluded that "contributions made by telecommunications carriers . . . will not place those carriers at a competitive disadvantage . . ." *Id.*

¹¹⁸ Universal Service Report, *supra* note 33, at Appendix B: Separate Statement of Commissioner Michael K. Powell, Concurring, 127.

¹¹⁹ "[C]ompetitive advantages are not limited to whether or not companies must contribute to universal service support Moreover, competition is not a game of equally matched players. Competitors have different mixes of competitive advantages and burdens. It is too simple to focus on a single competitive inequity and then declare the game unfair, without examining the totality of advantages and disadvantages among competitors." *Id.*

particular situations. For a community such as Philadelphia,¹²⁰ where poverty is the main barrier to either basic or advanced services, an Internet-based solution may help solve the issues impeding universal service in a cost-effective manner, while simultaneously providing the technological capacity to bridge the digital divide. Where "[t]raditional phone services can be *three times as expensive* as VoIP,"¹²¹ competition will drive the adoption of more, cheaper, and more efficient technological options.

¶44 In observing deployment patterns for advanced services, the FCC observed that "some communities have taken specific steps intended to stimulate economic development in their areas such as building high-speed networks, or aggregating demand."¹²² Such projects, however, were not supported by universal service funds. Competitive neutrality would open universal funds to communities for similar projects, particularly communities that could not otherwise afford to provide a technological infrastructure capable of providing universal access to the basic services or the advanced services required for future business development and prosperity in an increasingly information-driven economy.

¶45 As much as competitive neutrality has helped most all public libraries to offer Internet connections,¹²³ competitive neutrality will help spur similar public-private partnerships that are critical in providing all consumers with advanced telecommunications and information services.¹²⁴ Competitive neutrality does not favor one form or

¹²⁰ See Reardon, *supra* note 26 ("About 25 percent of our residents make less than \$30,000 and another 20 percent make less than \$50,000," said Brad Mayer, IT manager for Chaska. "Now, these aren't poor people, but it's really hard for them to justify spending \$40 or \$50 a month on Internet connectivity.").

¹²¹ Charny & Reardon, *supra* note 107 (emphasis added).

¹²² Deployment of Advanced Telecommunications: Third Report, *supra* note 89. "For example, Butler County, Ohio, recently announced the development of a fiber optic network connecting businesses, schools, and government offices that is designed to promote economic development in the region." *Id.* See also ASSOCIATED PRESS, *Wi-Fi Cloud Covers Rural Oregon*, Oct. 16, 2005.

¹²³ Comments of the American Library Association before the Federal Communications Commission Public Forum on Improving Administration of the E-rate Program, May 8th, 2003, available at <https://www.ala.org/ala/washoff/WOissues/techinttele/erate/eratetestimony.htm> (describing the success of the E-Rate program in promoting Internet connection in libraries, particularly in poor and rural communities).

¹²⁴ Cf. Press Release, JupiterResearch (July 6, 2005) (JupiterResearch Estimates Municipal Wireless Projects Cost \$150,000 Per Square Mile, Setting A High Bar For Breakeven Best Met By Private-Public Cooperation), available at <http://www.jupitermedia.com/corporate/releases/05.07.06-newjupresearch.html>.

infrastructure over another, but rather promotes competition between various methods of delivering advanced services to best serve the local community, whether through traditional phone wires, cable, electrical power lines,¹²⁵ or even without wires, such as through Wi-Fi. Communities would be able to provide an infrastructure for future economic success, as well as ensure that their residents have access and expose to the telecommunications and information services required to participate in the workplaces of tomorrow.

CONCLUSION

¶46 In the early days of telecommunications, the cost of technology posed the most significant barrier to achieving universal service. Today, universal service has yet to materialize despite the increasing affordability of technology. The regulatory system, designed to advance universal service, has instead replaced the cost of technology as the primary impediment. Although “Congress sought to establish ‘a pro-competitive, deregulatory national policy framework,’ making ‘advanced telecommunications and information technologies and services’ available to all Americans,”¹²⁶ the current legal schema fails to “open[] all telecommunications markets to competition,”¹²⁷ which would promote and accelerate the competitive delivery of services.

¶47 Continuing advancements may further reduce the technological barriers to universal service.¹²⁸ Nonetheless, the business and economic disincentives for providing services to the poor and isolated communities will likely remain. As “new communications services such as Internet access and IP telephony grow, traffic will shift away from conventional telecommunications services;”¹²⁹ “it is critical . . . to make sure that our [regulatory] interpretation[s] . . . will continue to sustain universal service in the future.”¹³⁰

¹²⁵ See, e.g., Maryanne Murray Buechner, *Power Play: Electric Grids May Become the Next Providers of Broadband Internet Access*, TIME MAGAZINE, May. 3, 2004 (discussing how municipalities can use electrical power lines to deliver broadband Internet access to their residents), available at <http://www.time.com/time/insidebiz/article/0,9171,1101040503-629395,00.html>.

¹²⁶ Universal Service Report, *supra* note 33, ¶ 29.

¹²⁷ *Id.*

¹²⁸ *Cf. id.* ¶ 103 (“[W]e cannot know whether market and technological forces will result in Internet access being widely available in rural and high cost areas.”).

¹²⁹ *Cf. id.* ¶ 98.

¹³⁰ *Id.*

¶48 “When President Franklin D. Roosevelt signed [the Communications Act of 1934] so many years ago, few realized the dramatic changes in communications that the future would hold.”¹³¹ Universal service programs will continue to play a vital role in ensuring and enabling a connected nation. Universal service funding for Internet-based projects, including municipal Wi-Fi, VoIP, and VoFi networks, is the next step toward making universal service a reality.

¹³¹ GOLDSTEIN & GOODING, *supra* note 10.