Untangling the Third Wire: Broadband Over Power Lines, Open Access, and Net Neutrality

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I. Introduction

Today, high-speed Internet access services are provided primarily over coaxial cable in the form of cable modem services offered by cable television providers, and over copper telephone wires in the form of DSL offered by local telephone companies. Electric utility companies providing broadband over existing power lines represent a potential "third wire" to provide high-speed Internet access to homes and businesses and provide competition to the current market leaders. This note will provide an overview of broadband and broadband over power line services and will discuss a discrete regulatory aspect of telecommunications, network access requirements (including the concepts of open access and net neutrality), as it relates to the provision of broadband over power lines.

II. Broadband Overview

In the Telecommunications Act of 1996,[1] Congress directed the Federal Communications Commission (FCC) to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis[2] and to "promote the

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1. Pub. L. 104-104, 110 Stat. 56 (1996) (codified as amended in scattered sections of 15, 18, and 47 U.S.C.) [hereinafter the 1996 Act].
2. 47 U.S.C.S. § 157 note 3(a) (Lexis Nexis 2006) (incorporating § 706 of the 1996 Act) ("The [FCC] and each State Commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . . by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures to promote competition in the

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continued development of the Internet."[3] The term "broadband" defines a type of advanced telecommunications technology that provides high-speed and high-capacity access to the Internet.[4] Broadband access has been recognized as vital to education, health care, employment, productivity, and homeland security. FCC Chairman Kevin J. Martin has stated that encouraging the deployment of broadband services is his top priority.[5] Furthermore, President George W. Bush has established a national goal of making affordable broadband services available to all Americans by 2007.[6]

When access to the Internet first became available, the majority of American households with Internet connections subscribed to "narrowband" service provided over local telephone facilities (also

local telecommunications market, or other regulating methods that remove barriers to infrastructure investment").

3. 47 U.S.C.S. § 230(b)(1) (Lexis Nexis 2006). The Internet is defined as "the international computer network of both Federal and non-Federal interoperable packet switched data networks." 47 U.S.C.S. § 230(f)(1) (Lexis Nexis 2006). The Internet is also described as "the combination of computer facilities and electromagnetic transmission media, and related equipment and software, comprising the interconnected worldwide network of computer networks that employ Transmission Control Protocol/Internet Protocol or any successor protocol to transmit information." 47 U.S.C.S. § 231(e)(3) (Lexis Nexis 2006).
4. The FCC defines high-speed connections to the Internet as those that deliver services at speeds exceeding 200 kilobits per second (kpbs) in at least one direction, while advanced services lines are connections that deliver services at speeds exceeding 200 kbps in both directions. FCC Wireline Competition Bureau, Industry Analysis and Technology Division, High-Speed Services for Internet Access: Status as of December 31, 2004, at 1 n.1 (rel. July 7, 2005), *available at* http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd0705.pdf (last visited October 29, 2005) [hereinafter FCC July 2005 High-Speed Services Report]. The FCC closely monitors the development of broadband in the United States. Twice a year, facilities-based broadband providers must report the number of high-speed connections in service pursuant to the FCC's local competition and broadband data gathering program. In the Matter of Local Competition and Broadband Reporting, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717, ____ (2000).
5. *See* Kevin J. Martin, *United States of Broadband*, WALL ST. J., July 7, 2005, at A12. Chairman Martin stated, "Broadband access is essential to an expanding Internet-based information economy." *Id.*
6. *See* President George W. Bush, *High Tech Improving Economy, Health Care, Education*, Remarks at the United States Department of Commerce, Washington, D.C. (June 24, 2004), *available at* http://www.whitehouse.gov/news/releases/2004/06/print/20040624-7.html (last visited October 29, 2005). In the same speech, President Bush stated, "We need to get broadband to more Americans . . . . [O]ne great opportunity is to spread broadband throughout America via our power lines." *Id.*

known as dial-up Internet access).[7] However, technological limitations of local telephone wires limit the speed at which Internet data may be transmitted through narrowband connections. Therefore, high-speed "broadband" access soon developed. Subscribers to broadband access services can access the Internet at speeds that are significantly faster than telephone dial-up service.[8] As a result of faster access, subscribers can access information with much less transmission delay, can utilize complex "real-time" applications[9] (such as interactive gaming and Voice over Internet Protocol (VoIP)[10]) and view video programming similar to current broadcast and cable television services.

A. Types of Broadband

High-speed Internet access services are provided primarily over coaxial cable in the form of cable modem services[11] offered by cable television operators, and over copper telephone wires in the form of digital subscriber line (DSL)[12] offered by local exchange carriers

7. *See The Internet: A Short History of Getting Connected*, *available at* http://www.fcc.gov/omd/history/internet/ (last visited October 29, 2005).
8. The speeds at which information may be accessed via broadband can be faster than dial-up service by a magnitude of 50 times or more. *See Broadband – High Speed Internet Access*, *available at* http://www.fcc.gov/cgb/broadband.html (last visited October 29, 2005). Today most broadband providers are offering service well in excess of the minimum 200 kbps speed. Availability of Advanced Telecommunications Capability in the United States, GN Docket No. 04-54, Fourth Report to Congress, 2004 FCC LEXIS 5157, 6, 11-12 (2004) [hereinafter FCC Fourth Section 706 Report].
9. "Real time" applications are those communications where there is no perceived delay in their transmission, as the communication is being received perceptively at the same time it is transmitted. *See* NEWTON'S TELECOM DICTIONARY 572 (17th ed. 2001).
10. VoIP is a technology that allows users to make telephone calls using a broadband Internet connection instead of an analog telephone line. Although the FCC has not adopted a formal definition of VoIP, the FCC uses the term to refer to any IP-enabled services offering real-time, multidirectional voice functionality, including, but not limited to, services that mimic traditional telephony. *See* In the Matter of IP-Enabled Services, WC Docket No. 04-36, Notice of Proposed Rulemaking, 19 FCC Rcd 4863, 4866, ¶ 3 n.7 (2004). Some analysts predict that Internet voice services will entirely replace the need for the public switched telephone network. *See How the Internet Killed the Phone Business*, ECONOMIST, Sept. 17, 2005, at 11.
11. Cable modems allow subscribers to access high-speed data services over cable systems that are generally designed with hybrid fiber-coaxial (HFC) architecture. FCC Fourth Section 706 Report, *supra* note 8, at 13.
12. DSL is a copper-based service that allows the telephone carrier to add certain electronics to the telephone line to enhance the copper loop that

(LECs).[13] In addition, mobile and fixed wireless providers provide broadband over wireless radio spectrum[14] and satellite providers provide broadband over satellite radio spectrum.[15] In addition, broadband can be provided by fiber,[16] as well as electric power lines. However, not every home and business has access to every type of broadband service and there are some areas of the country that do not have access to any broadband service.[17]

B. Broadband Over Power Lines: The Third Wire

Broadband over power lines (BPL)[18] uses existing electrical power lines as a transmission medium to provide high-speed communication

provides the customer voice service so that it serves as a conduit for both voice and high-speed data traffic. *Id.* at 18-19.

13. According to the FCC, by the end of 2004, high-speed DSL lines in service increased to 13.8 million lines; high-speed connections over cable modems increased to 21.4 million lines. FCC July 2005 High-Speed Services Report, *supra* note 4, at 2 and Table 1.
14. Examples of wireless technologies include Wi-Fi, WiMax, and 3G wireless services. Wi-Fi-enabled wireless devices can send and receive data from any location within signal reach of a base station or access point (typically 300 feet). FCC Fourth Section 706 Report, *supra* note 8, at 24-25. A WiMax broadband wireless network is capable of transmitting network signals covering in excess of 30 miles of linear service area. *Id.* at 28-29. 3G services, such as Evolution Data Optimized (EV-DO), are mobile broadband services where mobile subscribers can access the Internet via a wireless modem card connected to a laptop computer or personal digital assistant (PDA). *Id.* at 31-32.
15. According to the FCC, high-speed Internet access over satellite remains a nascent technology, accounting for less than 1% of total high-speed lines. Currently, satellite broadband providers provide Internet access to individuals primarily in small office/home environments and small businesses that are not currently served by wireline broadband providers or cable companies. *Id.* at 35-36, 91.
16. Fiber optic cable transmission facilities (also known as fiber-to-the-home (FTTH)) run from a distribution frame or its equivalent in an incumbent LEC's central office to the loop demarcation point at an end user customer premise. FCC Fourth Section 706 Report, *supra* note 8, at 21. For example, the FTTH deployment by Verizon Communications, Inc. creates a new network, overlaying the existing circuit switched feeder and distribution network throughout the LEC's entire central office serving area. *Id.*
17. The FCC indicates that, at the end of 2004, broadband service providers reported at least one high-speed service subscriber in 95% of the nation's zip codes; and that 80% of zip codes have two or more high-speed service providers. FCC July 2005 High-Speed Services Report, *supra* note 4, at 4 and Tables 12, 13, 15. In addition, the FCC reports that approximately 70% of zip codes are served by three or more high-speed service providers, and over 50% of zip codes are served by four or more high-speed service providers. *Id.*
18. BPL is also known as "power line communications." *See* http://www.plcforum.org/frame_plc.html (last visited October 29, 2005).

capabilities by coupling low power radio frequency (RF) energy onto alternating current power lines.[19] Given that power lines reach virtually every residence and business in every community and geographic area of the country, BPL has the potential for ubiquitous deployment and to provide additional competition for the existing market leaders, cable and DSL broadband access services.[20] Unlike satellite, fiber, or wireless broadband technologies, BPL uses existing infrastructure for transmission, meaning that no new wires need to be installed in order to distribute the broadband connection to each house in a neighborhood, and BPL can be accessed from any electrical outlet in each house without additional inside wiring.[21] This means that BPL service providers face a low cost of market entry and the potential for quick deployment, possibly providing a broadband option for rural or other markets that may otherwise be expensive to serve.[22]

BPL also differs from other broadband technologies in that it can be used to provide enhanced services to the underlying electric utility. For example, enhanced services BPL could make available to the underlying electric utility include outage and restoration detection, network security and monitoring, automated meter reading, and transformer overload detection.[23] Such "smart grid" capabilities have the potential to enhance the efficiency and reliability of electric

19. FCC Fourth Section 706 Report, *supra* note 8, at 34-35; In the Matter of Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband over Power Line Systems; Carrier Current Systems, Including Broadband over Power Line Systems, ET Docket Nos. 04-37, 03-104, Report and Order, 19 FCC Rcd 21265, 21267, ¶ 3 (2004) [hereinafter FCC BPL Order]. A BPL system is also known as a "carrier current system." FCC BPL Order, *supra*, at 21267, ¶ 3. The FCC distinguishes "in-house BPL," where electrical outlets within a building are used to transfer information between home electronic devices, from "access BPL," where high-speed Internet access and other broadband services are delivered to homes and businesses over medium voltage power lines. *Id.* at 21267-68, 21278-79, ¶¶ 5, 29-30.
20. *See* FCC BPL Order, *supra* note 19, at 21266, 21271, ¶¶ 1, 3.
21. *See* National Association of Regulatory Utility Commissioners, Report of the Broadband Over Power Lines Task Force, February 2005, at 4, *available at* http://www.naruc.org/associations/1773/files/bplreport_0205.pdf (last visited October 29, 2005) [hereinafter NARUC BPL Report]. However, BPL technology, in its current form, is not suitable for carrying broadband signals over long distances. A typical BPL signal will only propagate along a power line for 1,000 to 3,000 feet before it becomes too weak or distorted to be useful. *Id.* at 4, 6.
22. *Id.* at 2, 4. However, given the current technical constraints limiting the "long-haul" capabilities of electric power lines (*see supra* note 21), BPL may not be an effective solution for widely dispersed rural populations. *Id.* at 12.
23. *See* NARUC BPL Report, *supra* note 21, at 5, 15.

utilities' power operations.[24]

However, licensed radio service users in both the private and government sectors have expressed the need to ensure that the RF energy from BPL signals on power lines does not cause harmful interference to licensed radio services.[25] Most BPL systems operate in the 2 MHz – 80 MHz range; users of this portion of the spectrum also include public safety and Federal government agencies, aeronautical navigation licensees, amateur radio operators, international broadcasting stations, and citizen's band radio operators.[26] The FCC has concluded that BPL systems can be configured and managed to minimize or eliminate the potential for interference with other spectrum users and has established rules to provide operational, administrative, and certification requirements for BPL systems operators.[27] To date, the majority of deployments of BPL by electric utilities have been limited to experimental or "pilot" deployments. Examples of full-scale commercial deployments of BPL are those by Cinergy in Cincinnati, Ohio, and the municipal utility in Manassas, Virginia.[28] While the FCC does not report individual market share data for all technologies, the current BPL

24. *Id.* at 13-14. BPL could have value to electric utility operators as a means of enhancing operations even without the associated provision of broadband access to subscribers. For example, Consolidated Edison Company in New York and Hawaiian Electric Company are utilities that have implemented BPL projects to improve their operational capabilities. *Id.* at 14.
25. The issue of interference does not arise with other broadband access and distribution technologies because copper twisted-pair wires (used for DSL), fiber, and coaxial cable are all non-radiating mediums as compared to open-air power lines. *Id.* at 9.
26. FCC BPL Order, *supra* note 19, at 21268, ¶ 8; NARUC BPL Report, *supra* note 21, at 9.
27. FCC BPL Order, *supra* note 19, at 21266, 21275-276, ¶¶ 2, 23. It is possible that the issue of interference will become less of a concern when the transition of television broadcasting from analog to digital transmission is complete, freeing up a portion of the spectrum currently used by analog broadcasts for new uses, such as additional public safety uses. *See* Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251, § 3004 (1997) (specifying conditions under which the transition to digital broadcasting will take place).
28. NARUC BPL Report, *supra* note 21, at 12-13. Commercial deployments of BPL have the potential to increase given the $100 million investment in July 2005 by Google, Goldman Sachs, and the Hearst Corporation in BPL provider Current Communications. *See IBM Joins BPL Community*, *available at* http://telephonyonline.com/technology/news/broadband_power_IBM_071205/ (last visited October 29, 2005). Also in July 2005, IBM announced a joint venture with CenterPoint Energy, a Texas power company, to create a center in Houston to test BPL. *Id.*

market share appears to be less than 1% of existing broadband lines.[29]

With regard to regulatory oversight, BPL service providers face issues arising from regulation of the underlying electric utility as well as telecommunications regulation.[30] The remainder of this note focuses on one discrete regulatory issue relating to telecommunications, network access requirements, as it relates to BPL.

III. Network Access Requirements

Network access, as a general term, refers to the ability of a service provider to have access to a competitor's facilities-based network in order to provide a competing service. "Open access" is a regulatory construct that allows competitors to have network access on nondiscriminatory terms and conditions at rates that are "just and reasonable."[31] In the telecommunications context, open access requirements are often referred to as the regulatory obligation to "unbundle" facilities.[32] In the broadband Internet context, unfettered access by subscribers to competing service providers via the Internet is often referred to as "network [or 'net'] neutrality."[33]

29. *See* FCC July 2005 High-Speed Services Report, *supra* note 4, at 2 and Tables 1–4; FCC Fourth Section 706 Report, *supra* note 8, at 34-35.
30. Regulatory issues and concerns relating to BPL can include cost allocation, affiliate transactions, rights-of-way, pole attachments, provider access, licensing or franchise requirements, universal service fund contributions, and other legacy telephone regulation. *See* NARUC BPL Report, *supra* note 21, at 18-19.
31. *See* In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, GEN Docket No. 00-185, Notice of Inquiry, 15 FCC Rcd 19287, 19298-300, ¶¶ 26-31 (2000) (describing different technological and economic models of "open access" relating to provision of cable modem service).
32. Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability; CC Docket Nos. 01-338, 96-98, 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd 16978, 16992-17007, ¶¶ 8-34 (2003), *vacated and remanded in part*, *aff'd in part*, United States Telecomm. Ass'n v. Federal Communications Comm'n, 359 F.3d 554 (D.C. Cir. 2004) (discussing FCC's long and complex unbundling regime since passage of the 1996 Act).
33. *See* Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. OF TELECOMMUNICATIONS AND HIGH TECH. L. 141, 145-147 (2005), *available at* http://ssrn.com/abstract=388863 (last visited October 29, 2005); *see generally*, *Principles for an Open Broadband Future*, A Public Knowledge

A. The Title Bout

An evaluation of regulatory requirements for communications services begins with the Communications Act of 1934.[34] The Communications Act contains sections, or titles, which describe the extent of regulation imposed on communications service providers by regulatory agencies depending on what type of service is being provided.[35] For broadband providers, two categories of service provider defined in the Communications Act are of central importance: "telecommunications service provider"[36] and "information service provider."[37] Being placed in one category as opposed to the other determines the degree of regulatory oversight, and therefore has significant implications to service providers. Telecommunications carriers must comply with a number of regulatory mandates set forth in Title II of the Communications Act, such as offering service on a nondiscriminatory basis at just and reasonable rates,[38] interconnecting their networks with the facilities and equipment of other telecommunications carriers,[39] unbundled access requirements,[40] and universal service obligations.[41] The FCC

White Paper, July 6, 2005, *available at* http://www.publicknowledge.org/content/papers/open-broadband-future/ (last visited October 29, 2005).

34. Pub. L. 73-416, 48 Stat. 1064 (1934), as amended by the 1996 Act [hereinafter the Communications Act].
35. The Communications Act contains the following sections: Title I – General Provisions; Title II – Common Carriers; Title III – Provision Relating to Radio; Title IV – Procedural and Administrative Provisions; Title V – Penal Provisions and Forfeitures; Title VI – Cable Communications; and Title VII – Miscellaneous Provisions. *Id.*
36. The 1996 Act defines "telecommunications service" as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used." 47 U.S.C.S. § 153(46) (Lexis Nexis 2006). "Telecommunications" is defined as "the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." 47 U.S.C.S. § 153(43) (Lexis Nexis 2006).
37. "Information service" is defined as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, 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.S. § 153(20) (Lexis Nexis 2006).
38. 47 U.S.C.S. §§ 201-205 (Lexis Nexis 2006).
39. 47 U.S.C.S. § 251(a)(1) (Lexis Nexis 2006).
40. 47 U.S.C.S. § 251(c)(3) (Lexis Nexis 2006) ("[Each incumbent LEC has]

may forbear from applying these mandatory provisions, if it determines that forbearance is in the public interest.[42]

Conversely, information service providers are not subject to Title II or to rate regulation or state-imposed entry regulation. Rather, information service providers are subject to minimal Federal regulation under the basic public interest principles set forth in Title I of the Communications Act.[43] The FCC may employ jurisdiction under Title I in its discretion, when Title I gives the FCC subject matter jurisdiction over the service to be regulated and the assertion of jurisdiction is reasonably ancillary to the effective performance of the FCC's various responsibilities.[44]

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[t]he duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory . . . ").

41. 47 U.S.C.S. § 254(d) (Lexis Nexis 2006).
42. 47 U.S.C.S. § 160(a) – (b) (Lexis Nexis 2006).
43. *See* 47 U.S.C.S. § 151 (Lexis Nexis 2006) (FCC established to "make available . . . to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of the national defense, for the purpose of promoting safety of life and property through the use of wire and radio communication, and for the purpose of securing a more effective execution of this policy . . .").
44. *See* In the Matter of IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers, WC Docket Nos. 04-36, 05-196, First Report and Order and Notice of Proposed Rulemaking, 2005 FCC LEXIS 3209, ¶ 27 (2005), quoting United States v. Southwestern Cable Co., 392 U.S. 157, 177-178 (1968) [hereinafter FCC VoIP E911 Order], *petitions for review pending sub nom.* Nuvio Corp. v. Federal Communications Comm'n, D.C. Cir. No. 05-1248 (and consolidated cases) (filed July 11, 2005). *See also* California v. Federal Communications Comm'n, 905 F.2d 1217, 1241 n.35 (9th Cir. 1990) (holding that a Title I information service can be regulated under the FCC's "ancillary authority," but only in furtherance of specific statutory objectives). In the FCC VoIP E911 Order, the FCC determined that it could employ its Title I ancillary authority to require VoIP providers to supply enhanced 911 (E911) emergency calling capabilities to their customers as a mandatory feature of the service. FCC VoIP E911 Order, *supra*, ¶ 26. *Cf.* In the Matter of Communications Assistance for Law Enforcement Act [CALEA] and Broadband Access and Services, ET Docket No. 04-295, RM-10865, First Report and Order and Further Notice of Proposed Rulemaking, 2005 FCC LEXIS 5259 (2005) (finding that definitions of "telecommunications carrier" and "information services" under CALEA were broader than those in the Communications Act, allowing the FCC to require broadband and VoIP services to accommodate law enforcement wiretaps) [hereinafter FCC CALEA Order], *petitions for review pending sub nom.* CompTel v. Federal Communications Comm'n, D.C. Cir. No. 05-1408 (and consolidated cases) (filed October 25, 2005).

B. Brand X

The importance of the statutory designation of information or telecommunications service, as it relates to the issues of broadband network access, was recently demonstrated in a June 2005 United States Supreme Court decision, *National Cable & Telecomm. Ass'n v. Brand X Internet Servs*.[45] The matter originated with the FCC's designation of cable modem broadband service as an information service rather than a telecommunications service thereby subjecting the service to Title I of the Communications Act rather than Title II.

1. The FCC's Declaratory Ruling on Cable Modem Services

In March 2002, the FCC released a Declaratory Ruling and Notice of Proposed Rulemaking,[46] in which the FCC attempted to resolve the lingering questions regarding the legal status under the Communications Act of high-speed access to the Internet provided by cable modem services. Noting that the Communications Act does not clearly indicate how such services should be classified or regulated,[47] the FCC relied on its Universal Service Report,[48] in which the FCC held that Internet access service is properly classified as an information service because the provider offers a single, integrated service – Internet access – to the subscriber.[49] The FCC then concluded that the classification of cable modem service turns on the nature of the functions that the end user is offered, and that cable modem service is an offering of Internet access service, which combines the transmission of data with computer processing, information provision, and computer interactivity, thereby enabling end users to run a variety of applications.[50] Cable modem service, according to the FCC, is a single, integrated service that enables the subscriber to utilize Internet access service through a cable provider's

45. National Cable & Telecomm. Ass'n v. Brand X Internet Servs., 125 S. Ct. 2688 (2005) [hereinafter *Brand X*].
46. In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities; GN Docket No. 00-185, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798 (2002) [hereinafter FCC Cable Modem Order].
47. *Id.* at 4819, ¶ 32.
48. Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Report to Congress, 13 FCC Rcd 11501 (1998).
49. *Id.* at 11536, ¶¶ 73, 75.
50. FCC Cable Modem Order, *supra* note 46, at 4822-23, ¶ 38.

facilities and receive a comprehensive service offering.[51]

According to the FCC, cable modem service does not include an offering of telecommunications service to its subscribers.[52] While cable modem service provides, as an information service, capabilities "via telecommunications," the telecommunications component is not separable from the data-processing capabilities of the service and is integral to its other capabilities.[53] The FCC concluded that any ancillary use of telecommunications facilities to transport digital information to and from the cable modem is inseparable from Internet access. The cable operator providing cable modem service over its own facilities is not offering telecommunications service to the end user, but rather is merely using telecommunications to provide end users with cable modem service.[54]

Acknowledging that some cable operators may also offer cable telephony service, the FCC concluded that that was not enough to impose an open access regime for cable Internet service.[55] The FCC then examined how cable operators provide cable modem service and concluded that cable operators did not offer telecommunications to ISPs or other information service providers on a common carrier basis.[56]

2. The Ninth Circuit

Prior to issuance of the FCC Cable Modem Order, a number of federal courts, including the United States Court of Appeals for the Ninth Circuit (Ninth Circuit), addressed the question of how cable service should be classified under the Communications Act within the context of whether a local franchising authority could condition a cable franchise on open access to the cable network facilities.[57] When numerous parties petitioned for judicial review of the FCC Cable Modem Order, the Ninth Circuit was chosen by judicial

51. *Id.*
52. *Id.* at 4823, ¶ 39.
53. *Id.*
54. FCC Cable Modem Order, *supra* note 46, at 4823-24, ¶ 41.
55. *Id.* at 4826, ¶ 46.
56. *Id.* at 4827, ¶ 48.
57. *See* AT&T Corp. v. City of Portland, 216 F.3d 871, 880 (9th Cir. 2000) (holding that "the transmission of Internet service to subscribers over cable broadband facilities is a telecommunications service under the Communications Act") [hereinafter *Portland*]; MediaOne Group, Inc. v. County of Henrico, Virginia, 257 F.3d 356, 365 (4th Cir. 2001) (holding that the Communications Act preempted local regulation of cable broadcast services without ultimately deciding whether cable broadband is properly categorized as a telecommunications service or an information service).

lottery.[58] The lead plaintiff, Brand X, was an Internet service provider that favored categorizing cable modem service as telecommunications (*i.e.*, a Title II service) so that cable providers would have an obligation to open their lines to competing Internet service providers on a common carriage basis.[59] The Ninth Circuit ruled in favor of Brand X based on what it interpreted as the *stare decisis* effect of its own earlier decision in *Portland* (*i.e.*, that cable modem service is best treated as a telecommunications service under the Communications Act).[60] The FCC and the National Cable and Telecommunications Association petitioned the Supreme Court of the United States for certiorari.

3.The Supreme Court

On June 27, 2005, the Supreme Court issued its review of the Ninth Circuit decision.[61] The Supreme Court majority opinion reversed the Ninth Circuit, strongly supporting deference to administrative agencies and stating its assertion that the FCC's determinations were reasonable and justifiable particularly with regard to difficult policy matters involving ambiguous governing statutes.[62] Using the deferential framework of *Chevron USA, Inc. v. Natural Resources Defense Council, Inc.*,[63] the Court found that it was reasonable for the FCC to distinguish information services from telecommunications services by focusing on whether the consumer believes he is purchasing high-speed Internet access, as opposed to a stand-alone capacity to send and receive "ordinary language"

58. Brand X Internet Servs. v. Federal Communications Comm'n, 345 F.3d 1120, 1127 (9th Cir. 2003) [hereinafter *Ninth Circuit Brand X Decision*], *rev'd and remanded by* National Cable & Telecomm. Ass'n v. Brand X Internet Servs., 125 S. Ct. 2688 (2005).
59. *Ninth Circuit Brand X Decision*, 345 F.3d at 1127 nn.10, 11.
60. *See id.* at 1132; *Portland*, 216 F.3d at 880.
61. *Brand X*, 125 S. Ct. 2688 (2005).
62. *Id.* at 2712 ("The questions the Commission resolved in the order under review involve a subject matter that is technical, complex, and dynamic . . . . Nothing in the Communications Act or the Administrative Procedure Act makes unlawful the Commission's use of its expert policy judgment to resolve these difficult questions") (internal quotations omitted)).
63. Chevron USA, Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984). Under *Chevron*, ambiguities in statutes within an agency's jurisdiction to administer are delegations of authority to the agency to fill in the statutory gap in a reasonable fashion. *Id.* at 865-66. If a statute is ambiguous, and the agency's construction is reasonable, a federal court must accept the agency's construction of the statute, even if the agency's reading differs from what the court believes is the best statutory construction. *Id.* at 843-44 & n.11.

messages with no data processing or storage capabilities.[64] The Court stated:

A court's prior judicial construction of a statute trumps an agency construction otherwise entitled to *Chevron* deference only if the prior court decision holds that its construction follows from the unambiguous terms of the statute and thus leaves no room for agency discretion. . . . [T]he Court of Appeals erred in refusing to apply *Chevron*... [because its] prior decision in *Portland* held only that the *best* reading of [the statute] was that cable modem service was a "telecommunications service," not that [this reading] was the *only permissible* reading of the statute.[65]

Despite that fact that (at the time) DSL service remained classified as a telecommunications service, the Court found that the FCC made a reasonable policy choice in classifying cable modem service as an information service and that the FCC reasonably relied upon changing market conditions to support this first step in what the Court saw was a larger strategy by the FCC to deregulate facilities-based information service providers.[66] Regarding Title II's open access requirements, the Supreme Court opined that the FCC would have authority to impose open access requirements on information services under its ancillary jurisdiction under Title I if it so chose.[67] The Supreme Court's endorsement of the FCC Cable Modem Order was seen as permission to the FCC to likewise release DSL services from telephony-style regulation.[68] Indeed, shortly following the *Brand X* decision, the FCC issued a related ruling in its ongoing proceeding concerning wireline broadband.

64. *Brand X*, 125 S. Ct. at 2700-01.
65. *Id.* at 2700-01 (emphasis in original).
66. *Id.* at 2710-11. The Court stated, "The Commission's decision appears to be a first step in an effort to reshape the way the Commission regulates information-service providers; that may be why it has tentatively concluded that DSL service provided by facilities-based telephone companies should also be classified solely as an information service." *Id.* at 2711.
67. *Brand X*, 125 S.Ct. at 2711 ("[a]ny inconsistency between the order under review and the Commission's treatment of DSL service can be adequately addressed when the Commission . . . decides whether, pursuant to its ancillary Title I jurisdiction, to require cable companies to allow independent [Internet service providers (ISPs)] access to their facilities"). While this portion of the Supreme Court's decision is dicta, it does indicate that the Supreme Court anticipated the possibility of FCC action taken under its Title I ancillary jurisdiction, at least with regard to network access requirements.
68. *See Brand-X Ruling Opens Door for FCC To Proceed on Broadband Deregulation*, TELECOMMUNICATIONS REPORTS, July 7, 2005, at 8-9.

C. FCC Order on Wireline Broadband Access Services

In September 2005, the FCC issued an order in its proceeding concerning broadband access to the Internet over LEC wireline facilities.[69] In the order, the FCC revisited its prior determinations regarding open access requirements for DSL providers, and determined that wireline broadband Internet access service is more properly defined as an information service, rather than a telecommunications service, because its providers offer a single, integrated service (*i.e.*, Internet access) to end users.[70] Similar to the analysis in the FCC Cable Modem Order regarding cable modem services, the FCC concluded that wireline broadband Internet access service provides end users with much more than a transmission component, inextricably combining the offering of computer capabilities with telecommunications.[71] In reclassifying the service, the FCC lifted the "heavy burdens of Title II regulation" in the same way as it did for cable modem services in the FCC Cable Modem Order.[72]

Although in the past the FCC required LECs to provide the broadband transmission component of its DSL service separately from the Internet service as stand-alone service on a tariffed, common carrier basis (and defined that component as a telecommunications service under the Communications Act), the FCC now eliminated the requirement to unbundle the transmission component of LECs' Internet access service.[73] In order to ensure a

69. The FCC's order extends to "wireline facilities of the telephone network to provide subscribers with Internet access capabilities," whether provided over all copper loops, hybrid copper-fiber loops, or a fiber-to-the-curb (FTTC) or FTTH network. In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Universal Service Obligations of Broadband Providers; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Conditional Petition of the Verizon Telephone Companies for Forbearance under 47 U.S.C. § 160(c) with Regard to Broadband Services Provided Via Fiber to the Premises; Petition of the Verizon Telephone Companies for Declaratory Ruling or, Alternatively, for Interim Waiver with Regard to Broadband Services Provided via Fiber to the Premises; Consumer Protection in the Broadband Era; CC Docket Nos. 02-33, 01-337; 95-20, 98-10; WC Docket Nos. 04-242, 05-271; Report and Order and Notice of Proposed Rulemaking, 2005 FCC LEXIS 5257, ¶ 9 & n.15 (2005) [hereinafter FCC DSL Order].
70. *Id.* ¶ 14.
71. *Id.* ¶ 15.
72. *See id.* at 256 (Statement of Commissioner Kathleen Q. Abernathy).
73. FCC DSL Order, *supra* note 69, ¶ 41. The FCC originally imposed the

smooth transition, the FCC required that LECs continue to provide existing wireline broadband Internet access transmission offerings, on a grandfathered basis, to unaffiliated ISPs for one year as common carriage.[74]

In order to address concerns of rural providers about the impact of charges that help support telecommunications in high-cost areas, the FCC also granted to LECs the flexibility to offer the transmission component of the wireline broadband Internet access service to affiliated or unaffiliated ISPs either on a common carrier basis or on a non-common carrier basis.[75] Therefore, if they choose to do so, LECs may continue to offer wireline broadband transmission on a Title II basis.

In non-common carriage (*i.e.*, private carriage) arrangements, those ISPs that wish to continue to use LEC network facilities must reach commercial agreements with the LECs.[76] These commercial agreements better serve the interests of ISPs, broadband providers, and consumers by providing greater flexibility to respond to individual market circumstances.[77] Conversely, Title II common carrier offerings are to be offered on a "permissive tariffing basis," under which, in lieu of filing tariffs for the service with the FCC, usually a Title II requirement, carriers may simply post the rates, terms, and conditions of their generally available offerings on their websites.[78] Finally, the FCC opined that the requirements for imposing its Title I ancillary jurisdiction would likely be satisfied for any consumer protection, network reliability, or national security obligations that the FCC may subsequently decide to impose on wireline broadband Internet access service providers.[79]

D.The FCC's Policy Statement on Broadband "Openness"

unbundling requirement as part of its "Computer Inquiries" proceedings, in which the FCC first examined the relationship between communications and computer processing. *See* In re Amendment of Section 64.702 of the Commission's Rules and Regulations, 77 FCC 2d 384 (1980), *recon.*, 84 FCC 2d 50 (1980), *further recon.*, 88 FCC 2d 512 (1981), *aff'd sub nom*, Computer and Communications Industry Ass'n v. Federal Communications Comm'n, 693 F.2d 198 (D.C. Cir. 1982).

74. FCC DSL Order, *supra* note 69, ¶¶ 98-99.
75. *Id.* ¶ 88.
76. *Id.* ¶¶ 87-88.
77. *Id.* ¶ 88.
78. FCC DSL Order, *supra* note 69, ¶ 90. The FCC concluded that mandatory tariffing of these "voluntary" Title II offerings would unnecessarily constrain how wireline carriers may offer broadband Internet access transmission as a telecommunications service. *Id.* ¶ 92.
79. *Id.* ¶¶ 61-62.

The FCC accompanied the issuance of the FCC DSL Order with a policy statement describing four principles "to ensure that broadband networks are widely deployed, open, affordable, and accessible to consumers" (*i.e.*, the FCC's "net neutrality" principles).[80] The FCC's four principles "to encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet" are as follows:

1)consumers are entitled to access the lawful Internet content of their choice;

2)consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement;

3)consumers are entitled to connect their choice of legal devices that do not harm the network; and

4)consumers are entitled to competition among network providers, application and service providers, and content providers.[81]

The FCC Policy Statement applies to all broadband providers, however, as of the effective date of the FCC DSL Order, if a broadband Internet access provider wishes to block its subscribers' access to a site, service, or application, it is not automatically barred from doing so.[82]

80. In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities; CC Docket Nos. 02-33, 01-337, 95-20, 98-10; GN Docket No. 00-185; CS Docket No. 02-52; Policy Statement, 2005 FCC LEXIS 5258, ¶ 4 (2005) [hereinafter FCC Policy Statement]. Although the principles in the FCC Policy Statement do not have the force of rules, the FCC stated that it intends to incorporate the principles into ongoing policymaking activities "subject to reasonable network management." *Id.* ¶ 5 & n.15. In a concurrence to the FCC DSL Order, FCC Commissioner Michael J. Copps stated, "We need to keep a watchful eye to ensure that network providers do not become Internet gatekeepers, with the ability to dictate who can use the Internet and for what purpose. . . . While I would have preferred a rule that we could use to bring enforcement action, [the statement of policy] is a critical step." FCC DSL Order, *supra* note 69, at 265-66 (Statement of Commissioner Michael J. Copps, Concurring).

81. FCC Policy Statement, *supra* note 80, ¶ 4.

82. *But see* Madison River Communications, LLC and Affiliated Companies, File No. EB-05-IH-0110, Order, 20 FCC Rcd 4295 (Enf. Bur. 2005). In Madison River, the FCC's Enforcement Bureau entered into a consent decree to resolve its investigation with respect to Madison River

United Power Line Council Petition for Declaratory Ruling

On December 23, 2005, the United Power Line Council (UPLC) filed a petition

with the FCC requesting that the FCC issue a definitive ruling that BPL is not a telecommunications service.[83] In its petition, UPLC argued that, like cable modem service and DSL, the FCC should classify BPL as an information service.[84] The UPLC also argued that such a classification would promote broadband access and competition and further remove regulatory uncertainty concerning broadband access services.[85]

IV. How Will Developing Policies on Broadband Network Access Requirements Affect BPL Deployment?

As stated above, BPL is a nascent technology; it currently has only a very small market share, and still faces certain technological constraints that have limited its growth in the past. However, given the near ubiquitous deployment of the electric grid, BPL has the potential to be both a major competitor in the broadband arena and to provide increased efficiencies to electric utilities through "smart grid" management. In such an environment, policies that provide regulatory certainty can have a profound effect on whether BPL is further deployed and advanced.

The Supreme Court's decision in *Brand X* and the FCC's recent FCC DSL Order provide valuable insight into current regulatory policies regarding broadband network access requirements as they might be applied to BPL. These two decisions indicate that electric utilities providing BPL will be unlikely to be subject by the FCC to either an open access regime or mandated net neutrality requirements.[86] Although the FCC DSL Order dealt with wireline

Communications' blocking of ports which affected customers' ability to use certain VoIP applications (*i.e.*, a violation of the FCC's "net neutrality" principles). *Id.* at 4295, ¶ 1.

83. *See* Pleading Cycle Established for Comments on United Power Line Council's Petition for Declaratory Ruling Regarding the Classification of Broadband Over Power Line Internet Access Service as an Information Service, WC Docket No. 06-10, Public Notice, 2006 FCC LEXIS 06-10 (2006).
84. *Id.* at 1.
85. *Id.*
86. Other factors that militate against an application of unbundling or network access obligations on BPL providers include the possibility that mandatory access could conflict with the underlying electric utilities' use of BPL for efficient systems operations, one of the factors which makes BPL attractive to electric utilities in the first instance. *See* NARUC BPL Report, *supra* note

broadband access, and *Brand X* dealt with cable modem access, the FCC indicated that it intended to treat other broadband platforms (such as satellite or power line) consistent with its holdings in the FCC DSL Order.[87] The FCC further noted that a consistent regulatory treatment of competing broadband platforms allows investors to make market based, rather than regulation-driven, investment and deployment decisions.[88] Moreover, the FCC was clear that its FCC Policy Statement on broadband "openness"[89] and that its Notice of Proposed Rulemaking to create a broadband consumer protection framework (issued as part of the FCC DSL Order) [90] applied to all broadband providers. Following *Brand X* and the FCC DSL Order, electric utilities seeking to offer BPL can be more certain of a regulatory level playing field with other broadband providers. Therefore, it is likely that, in response to the UPLC's petition for declaratory ruling, the FCC will determine that, like both DSL and cable modem service, BPL is an information service.

On the other hand, recent changes at the United States Supreme Court[91] question whether the opinion of the three-justice minority in the *Brand X* decision might have more sway if interpretation of the Communications Act came before it in another matter, for example, in a challenge to the extent of the FCC's ancillary authority under

21, at 25.

87. FCC DSL Order, *supra* note 69, ¶ 11 n.30. The FCC stated, "We will address, where appropriate, any regulatory treatment and other issues associated with . . . alternative [broadband] platforms in separate proceedings in a manner not inconsistent with the analysis and conclusions in this Order." *Id.*
88. Press Release, FCC, FCC Eliminates Mandated Sharing Requirements on Incumbents' Wireline Broadband Internet Access Services (August 5, 2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-260433A1.pdf (last visited October 29, 2005).
89. FCC Policy Statement, *supra* note 80, ¶ 4 (stating that the FCC "has jurisdiction necessary to ensure that providers of telecommunications for Internet access or . . . IP-enabled [ ] services are operated in a neutral manner").
90. *See* FCC DSL Order, *supra* note 69, ¶ 146 (indicating that consumer protection framework applying to all broadband providers, regardless of underlying technology, will be built on FCC's ancillary jurisdiction under Title I). *See also*, FCC CALEA Order, *supra* note 44, ¶ 24 (holding that "facilities-based providers of any type of broadband Internet access service, including but not limited to wireline, cable modem, satellite, wireless, fixed wireless, and broadband access via power line are subject to [federal wiretapping act]").
91. Chief Justice John G. Roberts, Jr. took his seat in September 2005; Justice Samuel A. Alito, Jr., successor to retired Justice Sandra Day O'Connor, took his seat in January 2006. *See* http://www.supremecourtus.gov/index.html (last visited March 11, 2006).

Title I.[92] In addition, several members of Congress have begun drafting legislation to re-write portions of the 1996 Act.[93] While not mandating open access for broadband service providers, current drafts do include net neutrality requirements.[94] In sum, while these factors do inject some uncertainty into future regulatory requirements that may be applied to broadband service providers, the current deregulatory environment created by *Brand X* and the FCC DSL Order should encourage further BPL deployment.

V. Conclusion

Although cable modem and DSL currently lead the market for the provision of broadband services, other technologies, including BPL, promise to provide additional competition for consumers, spurring innovation and increasing customer choice. BPL is uniquely positioned to be the "third wire" providing broadband to homes and businesses. The FCC's and the Supreme Court's recent broadband-related decisions regarding network access requirements, as well as the recently-opened FCC proceeding to determine the regulatory classification of BPL, have gone far to untangle the regulatory uncertainty that may have limited additional BPL deployment to date.

92. The *Brand X* dissent, authored by Justice Antonin Scalia and joined by Justices Souter and Ginsburg, concluded that the FCC had fundamentally misinterpreted the Communications Act, contorting its definitions to satisfy the FCC's predilection for deregulation. Justice Scalia wrote, "the [FCC] has chosen to achieve [broadband deregulation] through an implausible reading of the statute, and has thus exceeded the authority given to it by Congress." *Brand X*, 125 S. Ct. at 2713 (J. Scalia, dissenting).

93. *See* Press Release, United States House of Representatives Committee on Energy and Commerce, Committee Releases Draft Broadband Legislation (September 15, 2005), *available at* http://energycommerce.house.gov/108/News/09152005_1642.htm (last visited October 29, 2005). The Staff Discussion Draft of this legislation authored by Representatives Joe Barton and John D. Dingell is available at http://www.baller.com/pdfs/Draft_Barton-Dingell.pdf (last visited October 29, 2005) [hereinafter Staff Discussion Draft].

94. *See* Staff Discussion Draft, *supra* note 93, at Section 104 (broadband providers shall not "block, impair, or interfere with . . . access to . . . content, applications, or services . . ."). Other legislative activity of interest to broadband providers, in particular BPL providers, is a recent law signed by the Governor of the State of Texas on September 7, 2005. This law allows, but does not require, *inter alia*, Texas electric utilities to deploy BPL or to provide access to their facilities to BPL operators, and allows electric utilities and BPL operators to determine what ISPs have access to broadband capacity on the system (*i.e.*, open access and net neutrality are not mandated). Public Utility Regulatory Act, TEX. UTIL. CODE ANN., §§ 43.001-.152 (West 2005).