

Broadband over Power Line: Key Legal Issues for Utilities

Beyond the technical and operational issues that must be considered in the deployment of a BPL platform, myriad legal and regulatory issues must be taken into account in a properly structured BPL program. This first of three planned essays provides an overview of some of the key legal issues facing entities that provide services and content riding on a BPL platform.

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I. Introduction and Overview

In the current period where numerous broadband technologies are vying to fill various market niches, there has been much speculation that broadband information and telecommunication services may be increasingly available over power lines used as broadband access platforms – commonly referred to as “Broadband over Power Line,” or BPL. BPL is a group of technologies that allow digital information using Internet Protocol, an open network protocol, to be trans-

mitted over utility power lines. It has the capability to support both upstream and downstream speeds exceeding 200 kbps in the last mile to an electrical outlet in a residence or business. All that is needed is the outlet – there is no need for a telephone, cable, or satellite service.

The “IP-enabled” services that BPL supports include Voice Over Internet Protocol (VOIP), instant messaging, streaming media, online gaming, virtual private networks, and peer-to-peer file sharing. To be connected to the Internet through BPL, the customer (business or

consumer) simply plugs a modem into a wall outlet and subscribes for Internet service.

After a long period during which expectations exceeded implementations for BPL, the technological and logistical issues are finally being resolved. This may enable service to be available in remote areas and may reduce the cost of service through increased competition in broadband services.

Beyond the technical and operational issues that must be considered in the deployment of a BPL platform, myriad legal and regulatory issues must be taken into account in a properly structured BPL program. This series of three articles, which will be published over several issues of *The Electricity Journal*, is intended to provide a context for the evaluation of these issues and to begin to provide a checklist of areas that should be considered.

While broadband is finally starting to fulfill its promise of delivering a variety of services, many issues remain unresolved.¹ In the case of BPL, issues arise from the fact that the services are offered utilizing the facilities of regulated utilities. Unresolved legal and regulatory issues include those related to state and federal telecommunications regulation, state and federal regulation of affiliate transactions (including limits imposed by the Public Utility Holding Company Act (PUHCA)), local franchising, tax matters, liability, and ISP contractual and statutory matters.

These articles will address some of these opportunities and challenges for BPL. This first article provides an introduction to broadband, and the acronyms, terms and relationships of various technologies associated with the implementation of BPL and the services that potentially will ride on a BPL platform. It also provides a business context for the discussion. The article also provides an overview of some of the

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The second article, to be published in the near future, will provide an overview of the key regulatory issues applicable to BPL beyond the radiofrequency interference issues (RFI) that have been the focus of recent proceedings at the Federal Communications Commission. In those proceedings, the FCC has adopted new technical rules applicable to BPL designed to foster its deployment while addressing RFI concerns of licensed spectrum users.² In the final article, tax and related billing

and payment administration issues will be discussed, and considerations for structuring and contracting with customers and suppliers will be suggested.

II. Introduction to the Broadband Market and the Emergence of BPL

A. The current broadband market

“Broadband” refers to high-speed transmission of data over an “always-on” connection. The FCC defines “broadband” to mean “all evolving high-speed digital technologies that provide consumers integrated access to voice, high-speed data, video-on-demand, and interactive delivery services.”³ At present, the majority of broadband service is provided through either cable modem service provided over cable systems or DSL service provided over telephone lines. Approximately two-thirds of all residential and small business broadband subscribers have broadband access through a cable connection.⁴ Most of the other third have DSL access.⁵ Importantly, many broadband users do not have a choice between cable or DSL due to technology and infrastructure limitations. The current market penetration of cable and DSL is due to the fact that they are operated by entities that owned the required infrastructure in place (i.e., wired telephone and cable systems) prior to the advent of broadband,

though in the case of DSL there are also several companies that provide DSL service through leased access to telephone company lines to subscriber premises known as "local loops."

This presence of installed infrastructure makes connection easier for subscribers. For example, to use a cable modem, a user connects her computer to the same cable line that delivers cable television service. DSL access is achieved by connecting to existing copper telephone lines.

Because many U.S. households and businesses do not have access to either cable or DSL service, there is increasing interest in developing alternative technologies that can deliver broadband services to consumers and businesses, including wireless and BPL technologies. Wireless has the advantage of limited infrastructure requirements (i.e., no wires), but is limited by spectrum availability and other technical constraints. BPL has the advantage of a significant ubiquitous existing infrastructure (as is the case for telephone, and to a lesser extent, cable), but faces technological constraints related to, among other things, the need to control RFI and the associated impact on system capacity and speed, measured in kilobits per second (kbps) or megabits per second (Mbps).

B. Limitations on growth of the broadband market

The gradual growth of broadband is due in large measure to

the relatively high service cost and the "catch 22" of content development. Broadband subscriptions can cost up to five times as much as a dial-up connection. Many potential subscribers likely feel that the extra cost is not warranted for general e-mail and Internet browsing. In addition, because of the relatively low subscribership, companies have not been aggressive about developing content aimed at taking

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advantage of broadband transmission speeds. This lack of content has kept consumer demand low. Additional hurdles include legal and regulatory uncertainty, lack of cost-effective equipment, and financing issues, among others.⁶

In addition, there are technical and historical limitations that have limited the growth of existing services. Cable systems were originally designed to service residential customers, with the result that most businesses were not connected to cable networks. Where businesses are not connected to the local cable system, cable providers cannot provide

service to businesses without spending additional amounts for systems build-outs. There are also hurdles to widespread DSL deployment. DSL requires a continuous "clean" copper loop to the subscriber's premises and is distance-limited, which has been a hurdle to DSL deployment in less populated locations.⁷

Broadband providers also face operational challenges affecting their ability to deploy broadband in a timely and ubiquitous manner. Two major challenges concern access to multi-tenant buildings and public rights-of-way. Some of the problems might not interfere with BPL, however, because the service is provided over power lines already in place, providing electric service to residences and businesses. However, as will be discussed in a later article in this series, it is unclear at this time what additional requirements local governments may seek to impose on BPL systems that use facilities occupying public rights-of-way.

C. The role of wireless services in broadband

Wireless services can be deployed more rapidly and often more cheaply than wired service, but are subject to certain technical and regulatory limitations. Historically, fixed wireless networks have been used to provide backhaul transport and private line services, though more recently fixed wireless technologies are being used to provide high speed private networks and Internet

access services. Several different technologies are used to provide broadband wireless networks, and vary in the frequencies used and their licensed and unlicensed status.

Several unlicensed technologies, including devices that are compliant with the 802.11b and 802.11 standards and other similar technologies, popularly referred to as "WiFi," provide broadband access that are enjoying wide popularity. The unlicensed devices that use such technologies are covered by Part 15 of the FCC's rules (as the FCC has suggested for BPL), which establish technical requirements for devices, but not for the services provided through them. The rules are primarily designed to assure that devices not interfere with licensed services. Once devices are certified as complying with Part 15's technical rules (which are designed to prevent interference), they may be sold directly to consumers without any further FCC involvement. In short, these unlicensed devices and services can be offered without the costs of acquiring an FCC license.

Although such unlicensed devices can play a role in providing service to homes and businesses (the so called "last mile" broadband solutions), to date, most have been used to provide home networking and other on-location solutions.

There are, however, now providers of wireless local area network equipment in both licensed and unlicensed bands

that have data speeds of up to 2–3 Mbps. In addition, a relatively new technology in the early stages of development, known as WiMax (for "Worldwide Interoperability for Microwave Access"), is capable of transmitting signals greater than 30 miles at shared data rates of up to 75 Mbps. According to the FCC, WiMax has the potential to alter and further accelerate the development of broadband services.⁸

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D. The FCC position on BPL

In Late 2004, the FCC released new requirements and guidelines for BPL, suggesting that it be covered by the Part 15 regime referenced above.⁹ The FCC noted that deployment of BPL will broaden access to broadband for residences and businesses and will enhance competition. As a result of the above considerations and other issues, rural areas are underserved in broadband services. The relative lack of service in rural areas offers opportunities for systems based on new technologies, including BPL.

E. Additional regulatory hurdles for broadband services including BPL

Notwithstanding the recent FCC action regarding BPL, the FCC and the states are struggling to identify the appropriate regulatory regime for broadband services. The FCC will continue to grapple with the question of whether broadband services over telephone lines should be treated as a regulated "telephony" or as an unregulated "information service." This decision has implications for federal and state regulation of the services and for tax and other issues. It also has implications for universal service requirements and law enforcement requirements. The recent FCC release regarding BPL offers greater certainty to potential BPL service providers, but does not resolve all issues. These and other regulatory questions will be dealt with in more detail in the next article in this series.

F. The relationship of VOIP to BPL

Voice Over Internet Protocol services use Internet protocol to provide voice transmission. VOIP is provided in generally two ways. The first is by a VOIP system (including software and hardware) located at the customer's premises. The second is by VOIP service provided through gateway computers acting as a link of VOIP systems and the public switched telephone network (PSTN). Gateway computers convert circuit-

switched voice signals into IP packets, and vice versa. They also provide functions related to system control, address translation, and perform other functions. Once converted to packets, voice can be transmitted along with other digitized data on the Internet and other networks.

VOIP services can be offered over BPL. This would be a logical combination of services from a consumer perspective, and could provide certain billing, customer relationship, and other efficiencies with respect to electrical, telephone, and information services. The provision of VOIP services over BPL, however, will require a thorough analysis of the combination of regulatory, tax, liability, and contractual issues arising from several separate areas of law such as electric utility, telephony, information services, and consumer arenas.

III. Legal Considerations in BPL Commercial Relationships

A. The evolving role of electrical utilities as ISPs

An Internet service provider (ISP) provides Internet access to consumers and businesses. ISPs also provide related services such as Web hosting, Web page design, and hardware and software consulting. The larger ISPs enter into contractual arrangements to assure access to leased telephone lines enabling them to provide service, but BPL

provides an opportunity for ISPs to use electrical utility lines instead.

The ascendance of BPL will not result in all utilities becoming ISPs. Some utilities will lease their facilities to ISPs and share in revenues with the ISPs like landlords sharing sales revenues of tenants. Other utilities will become ISPs themselves and offer information services, accept consumer subscriptions, offer

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chat rooms, email services, content, and so on. The differences in the activities in which a utility engages, including activities associated with offering ISP services, will trigger different laws.

Importantly, as the roles of utility and ISP become mixed, any type of jointly provided service may trigger laws which are unfamiliar either to the entity that was historically only a utility or to an ISP. For example, if (a) the utility does not provide the ISP service but bills for it on the ISP's behalf, or (b) the utility shares customer account or other information, or (c) either party sends emails advertising its own or the

other's services, laws such as the federal Fair Credit Reporting Act,¹⁰ the CAN-SPAM Act,¹¹ and the FTC Telemarketing Sales Rule¹² (which expressly includes "utility bills" as within its definition of "billing information"¹³) should be examined to assure compliance.

B. Legal limitations imposed by contract are different than those arising under regulations

While utilities historically operated in a regulated context, the addition of BPL services, which are not subject to the same regulatory regime, will add a layer of complexity to the structuring of a BPL service. There is a great difference between a contract backed or enforced by a regulated utility tariff structure (such as with traditional utility activity), and one supported only by contract law (as in the BPL context).¹⁴ In the case where only contract law applies, one has to know what contract law applies and, as we explain below, there is a current legal void with respect to information contract law¹⁵ (except in Virginia¹⁶ and Maryland¹⁷ which have adopted the Uniform Computer Information Transactions Act). In addition, contracts, particularly consumer contracts, are under constant challenge, including by class action attorneys. Entities offering them need to track standard commercial and consumer law rules as well as laws regarding intellectual property and information. Properly structured

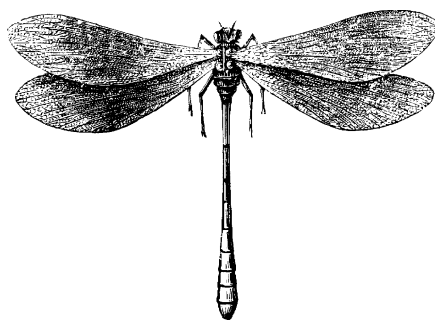
contracts may also be used to avoid surprise caused by regulatory and technological change, i.e., not all technologies are the same and disclosures may be appropriate in various circumstances (such as disclosures regarding the need for firewalls where a technology is “always on”).

The current regulatory regime for BPL should be evaluated in a broader context of overall business regulations. Just because the FCC is not licensing BPL services does not mean that they are entirely unregulated. They are “regulated” in the same sense that any business is regulated by business-specific regulators (e.g., the FTC for many ISPs) and myriad new laws regarding contracting or doing business electronically.¹⁸ They are also regulated by the states on various aspects of their business (such as rights of way issues and access to multi-tenant facilities for equipment).

C. The subject matter of a contract can affect which laws apply

The content of a contract may determine the applicable law. For example, utility customers are protected by law from having their power shut off without notice.¹⁹ But ISPs typically contract for the ability to terminate ISP service instantly upon suspected breach. ISPs seek this contractual right because if time for cure is allowed, massive charges can be incurred that are not avoidable by the ISP. Data or

information services create minute-by-minute costs, for example, stock quotes and access to software applications provided for a premium. Royalties are due from the ISP back to third-party creators or licensors and these costs do not stop when a customer stops paying or otherwise breaches the ISP contract. Harm multiplies in relationships of this type unless



the arrangement can be ended or suspended quickly in the event of problems. Where BPL services are provided, however, several different rules may apply and will need to be considered (e.g., rules for utility and rules for the ISP).

The determination of which laws apply to contracts for the provision of BPL services will present analytical challenges. For example, consider what contract law in the U.S. governs electrical utility contracts when BPL services are also provided. Utilities can make and enforce contracts for traditional utility services via tariffs. But if the same utility offers *information services*, the analysis will be different: pure contract law, with no tariff structure,

should apply. But there still remains the question of which specific contract laws will apply. Most lawyers would view a contract for the sale of electricity services as governed by the common law of contracts.²⁰ But a minority of states treat it as if the electricity is a “good” just like a toaster,²¹ or at least they so treat it once it passes through a consumer’s meter²² (this has been called a “mystical” analysis by one commentator).²³ In those states, UCC Article 2 contract law applies to the “goods” part of the contract, including implied warranties.²⁴

The determination of whether digital information is a good further complicates the issue. Digital information is not a good under existing legal definitions, but this question is the subject of current legal debate and confusion in some settings.²⁵

Both kinds of contracts, the one for electricity and the one for information services, should be governed by the common law of contracts. But the question is not free from doubt and information services will also be impacted by intellectual property, e-commerce rules, and other laws, including the First Amendment.

D. Bill payment and credit considerations for utilities offering BPL services

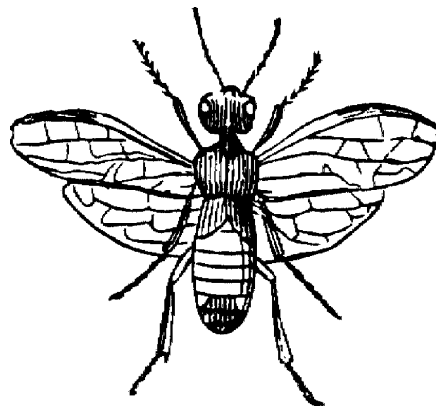
Utility customers generally pay their bills: if they don’t, they lose power. The same compulsion will not be present with respect to payments for information

services. For example, if a mother doesn't want her son to spend so much time on the Internet anyway, and wants to dispute a bill, she will do so without being very concerned about a loss of service during the dispute.²⁶ This difference in a customer's willingness to claim (rightly or wrongly) billing errors, may require reconsideration of contracts between utilities and their credit card processors (if the utility accepts credit cards). To the extent the utility accepted the fraud risk under those contracts, it was a relatively small risk because most people will not dispute that they ordered and received electricity (assuming they want to keep receiving it). That is not true for all information services.

E. Legal issues where utilities and ISPs jointly provide services

Utilities that provide ISPs with access to infrastructure in a "joint services" context will also have to consider new legal issues. The analysis of these issues will require attention to the nature of what is being offered, directly or indirectly. Information such as software, data compilations, and movies are protected by copyright.²⁷ If the utility's "tenant" ISP with whom the utility shares revenue infringes copyrights, the utility can be liable under concepts of indirect infringement in certain circumstances. To illustrate, in a seminal copyright case an owner of land on which a flea market operated shared revenues from

sales of pirated software and was vicariously liable for the infringing sales.²⁸ Peer-to-peer networks can create similar risks, but even if those are avoided, other risks can arise. For example, state regulators are beginning to push for disclosures from providers to users about the dangers of peer-to-peer functionality.²⁹ In short, it is unlikely that a utility providing access



to its infrastructure to an ISP will be able to take the "I'm just a landlord" stance where the ISP "tenants" will be offering services protected by intellectual property – those and other laws need to be considered.

F. Liability for infringement, defamation, and other unlawful activities by users

Defamation law has long imposed liability on the person who *makes* a defamatory comment, on the person who *republishes* it, and on the person who *distributes* it, under various rules. Many questions arise in this context for ISPs. For example, if a user defames someone in the ISP's chat

room, is that a republication by the ISP, may an ISP edit the comments, or does that make the situation worse? What if the user uploads onto a bulletin board copyrighted songs or movies – since the ISP's computers make a copy to allow that, is that infringement by the ISP (in addition to the infringement by the up-loader)? In each case, federal laws include provisions intended to protect the ISP if it provides certain notices and adopts certain policies.³⁰ Some of those laws also protect businesses that merely transmit communications or cache them on their systems.³¹ Providers of BPL services need to consider these laws and implement the required policies and systems in order to qualify for available defenses.

G. Privacy and security issues

Utilities already collect and store personal information about their customers, but how much of it is collected "online?" Several of the new privacy and security laws impact data collected online but not offline,³² and several deal with the security of computer information, not paper files.³³ Any utility acting as an ISP (or as a utility) will want to take a fresh look at these new laws to discern and address their obligations. Also, ISPs will want to become familiar with the federal Electronic Communications Privacy Act,³⁴ which includes the Wiretap Act³⁵ (communications intercepted during transmission) and the Stored Communications Act³⁶ (stored messages).■

Endnotes:

1. Currently, the regulatory framework applicable to broadband access varies depending on the underlying access technology employed. For example, the regulatory treatment of cable modem service differs from digital subscriber line (DSL) service deployed by telephone companies. See *Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003), cert. granted, 125 S. Ct. 655 (2004). It is unclear, at the present time, for example, whether broadband access services provided on BPL platforms will be treated as unregulated "information services" or as regulated, common carrier, "telecommunications services."

2. See Report and Order, 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, 19 FCC Rcd 21265 (2004), reconsideration pending ("BPL Report and Order"). RFI issues arise from BPL operation because electric power lines are not shielded. As a result, portions of any RF energy they may carry can be radiated, causing interference to licensed users operating on the same frequency bands as those on which BPL signals are transmitted. *Id.*, ¶ 7.

3. See <http://www.fcc.gov/broadband>. See also Availability of Advanced Telecommunications Capability in the United States, Fourth Report to Congress, 19 FCC Rcd 20540 (2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-208A1.pdf ("Fourth Broadband Report").

4. Mike Musgrove, *Broadband Broadens Its Pitch, Firms Bundle Services, 'Tier' Prices in Effort To Lure New Customers*, WASHINGTON POST, Feb. 2, 2003, at H01.

5. *Id.*

6. See generally, *Broadband: Bringing Home the Bits* (National Academies Press, 2002).

7. In order to receive DSL service the customer must be located within

approximately 18,000 feet or about 3 miles of the telephone company central office. See generally *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*, Report, 14 FCC Rcd 2398, at 3 (1999).

8. See generally *Fourth Broadband Report*, at 18–19.

9. See generally *BPL Report and Order*.

10. 15 U.S.C. § 1681 *et seq.*

11. 15 U.S.C. § 7701 *et seq.* (2003).

12. 16 C.F.R. § 310 (2005).

13. *Id.* at § 310.2(c) ("Billing information means any data that enables any person to access a customer's or donor's account, such as a credit card, checking, savings, share or similar account, utility bill, mortgage loan account, or debit card") (emphasis added).

14. See, e.g., *Federal Trade Commission v. Verity International, Ltd.* 6 ILR (P&F) 3113 (2000).

15. See, e.g., HOLLY K. TOWLE AND RAYMOND T. NIMMER, *THE LAW OF ELECTRONIC COMMERCIAL TRANSACTIONS*, Ch. 8.01[4] (A.S. Pratt & Sons, 2003, 2004).

16. Va. Code Ann. § 59.1–501.1 *et seq.* (2000).

17. MD. Code Ann, Commercial Law, §22–101 *et seq.* (2000).

18. See generally, Towle and Nimmer, *supra* note 15.

19. See, e.g., *Craft v. Memphis Light, Gas and Water Division*, 436 U.S. 198 (1978).

20. See, e.g., *Buckeye Union Fire Ins. Co. v. Detroit Edison Co.*, 196 N.W.2d 316, 38 Mich. App. 325 (1972).

21. See, e.g., *Cincinnati Gas & Elec. Co. v. Goebel*, 502 N.E.2d 713, 28 Ohio Misc. 2d 4 (Mun. Ct. 1986); *Helvey v. Wabash County REMC*, 278 N.E.2d 608, 151 Ind. App. 176 (1st Dist. 1972).

22. *Singer Co., Link Simulation Systems Div. v. Baltimore Gas and Elec.*

Co., 558 A.2d 419, 79 Md. App. 46 (1989).

23. Raymond T. Nimmer, *Through the Looking Glass: What Courts and UCITA Say About the Scope of Contract Law in the Information Age*, DUQUESNE LAW REV., Winter, 2000.

24. See *supra* notes 12 and 13.

25. See, e.g., *Specht v. Netscape Communications Corp.*, 306 F3d 17, Note 13 (2d Cir. 2002) (criticizing lower court for assuming that digital information is a "good"); Lorin Brennan, *Why Article 2 Cannot Apply To Software Transactions*, 38 DUQUENSE LAW REV. 459 (2000) (analyzing differences between goods and information and reviewing contrary cases); and *Rhone-Poulenc Agro, S.A. v. DeKalb Genetics Corporation*, 284 F.3d 1323, 1333, 62 USPQ2d 1188 (2002).

26. See, e.g., *Federal Trade Commission v. Verity International, Ltd.* 6 ILR (P&F) 3113 (2000).

27. 17 U.S.C. § 102–103.

28. *Fonovisa Inc. v. Cherry Auction*, 76 F.3d 259, (9th Cir. 1996).

29. See, e.g., letter from National Association of Attorney Generals to Adam Eisgrau, Executive Director P2P United (Aug. 5, 2004) (copy available <http://pub.bna.com/eclr/p2pagletter.pdf>).

30. See, e.g. Towle and Nimmer, *supra* note 15, Ch. 10.09[3] (Communications Decency Act) and Ch. 8.04 (DMCA § 512).

31. *Id.* at Ch. 8.04[1].

32. See, e.g., CA Civ. Code §§ 1798.82 and 1798.29 (requiring notice of breach of information security where data is computerized).

33. See, e.g., Fair and Accurate Credit Transactions Act of 2003 adding 15 USC § 1681(c)(g) (credit card receipts printed electronically may not show more than last 5 digits or expiration date; rule does not apply to paper receipts).

34. 18 U.S.C. § 2510 *et seq.*

35. 18 U.S.C. §§2510–2522.

36. 18 U.S.C. §§ 2701–2711.