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Network Rules

Susan Crawford

Professor of Law
Benjamin N Cardozo School of Law
55 Fifth Ave.
New York , NY 10003
United States
(212) 790-0493 (Phone)
(212) 790-0205 (Fax)
<scrawford@crawford.net >

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Network Rules

by

SUSAN P. CRAWFORD*

INTRODUCTION

Baby Bell executives and online companies have been holding a lively debate on the Hill and in the press over the past months. A BellSouth chief technology officer told reporters that his company should be able to charge Yahoo! for having its site load more quickly than Google.¹ The AT&T CEO said that "There seems to be a mentality [on the part of online companies] that they can put more and more through our pipes for free. . . . We're the ones who built the network. You cannot make that sort of investment if you can't make a return on the capital. They're more than welcome to use our networks, but if they do, they're going to have to pay. It's not free."

The telcos² claim that they have spent (or plan to spend) billions on building fiber-optic networks that can carry large amounts of data, and that therefore they are entitled to give their own content and the content of their paying partners priority.³ In the words of Ivan Seidenberg, CEO of Verizon, the Bells "have to make sure that [application providers] don't sit on our network and chew up bandwidth. We need to pay for the pipe."⁴

* Associate Professor, Cardozo School of Law. [Thanks to...]

1. Jonathan Krim, *Executive Wants to Charge for Web Speed*, Washington Post, Dec. 1, 2005, at D05.

2. Throughout this Essay, the telcos (a common nickname for the Baby Bells) are the protagonists. Cable and wireless companies have very similar goals, and a history of vertically-integrated networks (and light regulatory treatment) that has left them in a good position to claim the control over their broadband access points that the telcos seek in legislation. Cablecos, in particular, have been the creatures of exclusive government franchises granted them, and so have not had to engage in a great deal of competition. [Weiser/Nuechterlein.] My aim in this Essay is to propose a single regime—unbundling—for all broadband access points, whether owned by telcos, cablecos, or wirelesscos. Thus, for every mention of "telco" in this Essay an implied cableco/wirelessco mention should be understood. In effect, the telcos seek to turn the internet into a mobile phone walled garden with a cable system overlay ("channels" of content). The cablecos and wirelesscos make many of the same arguments now being advanced by the telcos.

3. Hiawatha Bray, *Telecoms want their products to travel on a faster Internet*, Boston Globe, Dec. 13, 2005.

4. Paul Kapustka, *Verizon Says Google, Microsoft Should Pay for Internet Apps*,

Similarly, Verizon deputy general counsel John Thorne has said that Google is “enjoying a free lunch that should, by any rational account, be the lunch of the facilities providers.”⁵ The telco plan has two elements: First, they plan to prioritize their own packets and the packets of their partners, so that these packets will arrive more predictably than other packets. Second, they plan to charge unaffiliated online content providers (like Google, or any other non-telco source of packets) to cross their networks.

In response, Vint Cerf, one of the creators of TCP/IP, has called on behalf of Google for a “lightweight but enforceable neutrality rule.”⁶ A group of online companies has written to Congress claiming that “The incredible potential of broadband will be severely compromised if network operators are permitted to be the gatekeepers of the Internet, deciding what content, applications and services succeed or fail on the Internet.”⁷ Legislative activity in this area has been intense.⁸

For the last ten years, a great deal of scholarly energy has been devoted to exposing and beating back ever-expanding intellectual property claims. James Boyle provided an important framework for this scholarship in his 1996 book, *Software, Shamans, and Spleens*,⁹ and this Essay is written in his honor. Boyle shed light on the information vise-tightening and enclosure, the loss of balance, and the growth in regulated uses that has since fascinated an entire generation of legal scholars. He revealed the rhetorical construction in the background of the expansionist effort by showing how a “romantic author” figure was being used to paper over otherwise irreconcilable theoretical tensions inherent in the notion of

InformationWeek, Jan. 5, 2006. *See also* Dionne Searcey & Amy Schatz, *Phone Companies Set Off a Battle Over Internet Fees*, Wall Street Journal, Jan. 6, 2006 (slightly different version of Seidenberg remarks).

5. Arshad Mohammed, *Verizon Executive Calls for End to Google’s ‘Free Lunch,’* Washington Post, Feb. 7, 2006.

6. Letter Vint Cerf to Hon. Joe Barton, Nov. 8, 2005.

7. Amazon.com Inc., eBay Inc., Google and IAC/InterActive Corp. to House Commerce Committee.

8. As of June 2, 2006, the following bills relating to net neutrality were pending: S.2360 Wyden (D) (for); S.2917 Snowe (R) and Dorgan (D) (for); HR5417 Sensenbrenner (R) and Conyers (D) (antitrust approach); HR5273 Markey (D) (for); HR5252 Barton (R) and Rush (D) (giving FCC power to police complaints); S.2686 Stevens (R) and Inouye (D) (FCC to do a study). [footnote will change].

9. JAMES BOYLE, *SOFTWARE, SHAMANS, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* (1996) [hereinafter BOYLE, SHAMANS, SOFTWARE, AND SPLEENS].

intellectual property.¹⁰ Boyle noted that intellectual property policy was often presented (with the aid of the “romantic author”) as a public goods problem, for which the answer was increased incentives for private actors—when the same policy questions could also be presented as a monopoly problem, for which the answer would be mandating more efficient information flows leading to overall public benefits.¹¹ Boyle suggested that “Intellectual property just does not occupy the same position in the imagination as human rights or environmentalism,”¹² and expressed the concern that we were heading down a path of “intellectual property rights becom[ing] the vehicle for oligopolistic concentrations of corporate power worse than those of a cyberpunk dystopia.”¹³ Many writers followed Boyle in exploring intellectual property theory and activism, transforming what had been an academic backwater into a thriving body of scholarship.

This Essay compares the debate between the telcos and the online companies over broadband access regimes (often called the “network neutrality”¹⁴ debate) to the ongoing tussle between intellectual property maximalists and “free culture”¹⁵ advocates. These two sets of arguments are strikingly parallel.¹⁶ The same battles are being played out again, but this time at the fundamental level of network transport. Again, a romantic figure is being used—this time, the romantic figure of the “network builder.”

In debates over intellectual property law, maximalists claim that creativity comes from lone geniuses (the “romantic author”) who must be

10. See Boyle, 113-118 (“the romantic vision of authorship plays down the importance of external sources by emphasising the unique genius of the author and the originality of the work”, 114).

11. At 38 .

12. At 143.

13. At 184.

14. Tim Wu, Network Neutrality, Broadband Discrimination, 2 J. on Telecomm. & High Tech. L. 141, 141-44 (2003).

15. Lawrence Lessig, FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY (2004).

16. Some of my colleagues have already explored the philosophical intersections between copyright law and communications law. See Tim Wu, Copyright's Communications Policy, 103 Mich. L. Rev. 278 (2004) (copyright law's role in regulating competition between rival disseminators); Molly Shaffer von Houweling, Communications' Copyright Policy, 4 J. Telecomm. & High Tech. L. 97 (2005) (communication law's role in regulating creativity); Jonathan Weinberg, Digital TV, Copy Control, and Public Policy, 20 Cardozo Arts & Ent. L.J. 277 (2002) (communication law involvement in information policy). I discussed the FCC's role in copyright policy in *The Biology of the Broadcast Flag*, 25 Hastings Comm. & Ent. L.J. 603 (2003).

given legal incentives to work. Intellectual property scholars have carefully examined the incentives arguments made by the backers of the romantic author vision, and have pointed out that granting overly strong property rights to copyright holders may not be socially appropriate. Because all works draw on earlier works, access to earlier works encourages creative innovation,¹⁷ and strong monopoly grants are not necessary for authorship to continue,¹⁸ overprotecting the romantic author may actually harm society as a whole.¹⁹

In the current net neutrality debate, network providers claim that they (the romantic builder) must be allowed by law to price discriminate vis-a-vis content sources in order to be encouraged to build the network (or continue supporting it).²⁰ It is as if a hardhatted young builder is standing before us, sleeves rolled up, a coil of fiber over his shoulder, muscles rippling, eager to achieve the American dream of property ownership and all its benefits of leases, lending, and upward mobility. If we agree with the vision of the romantic builder, and make sure that he is perfectly compensated for all revenue streams generated by “his” network, the network provider will act as a gatekeeper for all content that reaches its subscribers, choosing winners and losers based on ability to pay. In a nutshell, access to all communications networks will be in the form of private cable-like systems. The romantic figure of the builder is being used to end the arguments about desirable social policy that should be taking place. Should we abandon the rules that have made possible the explosive growth of the internet? Should we allow companies with significant market power over broadband access to impose discriminatory pricing on sources of content? What effects will this privatization of network access valves have on society as a whole?

My goal in this Essay is to convince a new generation of legal scholars

17. See Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. Econ. Persp. 29 (Winter 1991) (negative consequences for second innovators from over-protection of first innovators).

18. See Yochai Benkler, *Coase's Penguin, or, Linux and The Nature of the Firm*, 112 Yale L.J. 369 (2002) (open source software).

19. Scholars have also noted that the romantic author vision is factually inapposite because intellectual property rights are often assigned to intermediary publishers or distributors. See, e.g., Molly Shaffer von Houweling, *Distributive Values in Copyright*, 83 Tex. L. Rev. 1535 (2005), citing William Patry, *The Failure of the American Copyright System: Protecting the Idle Rich*, 72 Notre Dame L. Rev. 907 (1977). Although the current Copyright Act provides mechanisms by which authors who have assigned their works can terminate these transfers, the rules are complicated. 17 U.S.C. §§ 203, 304 (2006).

20. Many sources.

that communications law (that boring province of insiders citing section numbers and mumbling acronyms) is to the networked age as intellectual property law was to the information age and labor law was to the industrial age. The same energy and principled holistic approach used in re-examining intellectual property law (“why do we have intellectual property at all?”) is now needed in the debate over access to broadband networks.

The “romantic builder” may not have the interests of society as a whole in mind. Just as we grant intellectual property rights in order to encourage creativity that will eventually be available to all (and therefore temper absolute monopolies over creative production through devices such as fair use, limited periods of protection, the first sale doctrine, and compulsory licenses), so should communications law lead to socially desirable results. The private access regime sought by these network providers is likely to have socially undesirable results. First, it will likely have a negative impact on the many other actors online that use many inputs (not just transport) to create great social benefits. Many of these social benefits from online innovation come in forms other than revenue streams. As in the intellectual property debates, protecting property prerogatives too strongly may not be worth the limitations on overall social wellbeing that enforcement of these rights creates. Second, the payments sought by the network providers bear no necessary relationship to the “incentives” that they claim they need. Indeed, the incentive claims made by the network providers may very well be completely inaccurate—in many instances, the network provider has already built the network, will be able to recoup its investment by providing transport to end-users, or will never actually build the promised highspeed fiber local loops. In other words, the regime these network providers seek is likely to harm society and will not necessarily lead to social benefits in the form of increased innovation or better broadband penetration.

This debate is urgent because traditionally separate communications networks devoted to broadcast, wireless, telephony, and cable are rapidly converging. As the distinctions between these networks disappear, what might have seemed like a request for an exception from widely-applicable regulatory treatment (“we want new private highspeed networks not to be treated like traditional telephone networks”) may actually be an assertion of a paradigm shift (“no network access used for communications should be subject to non-discrimination rules”). What may have seemed initially to be

an exception to the general rule of common carriage²¹ may be transformed into the only available reality.

We are learning that the value of the internet to society comes from many different sources, and not just from the transport of bits or the making of money by firms.²² In my view, we have the opportunity to create a great public benefit by requiring that network providers make available nondiscriminatory broadband transport to all comers, including their own competitors. This approach, called “unbundling” by communications lawyers, will best support continued explosive growth of the incredible collection of positive network externalities that is the internet. Just as the greater level of intellectual property protection accorded content companies has arguably had a negative effect on the health and extent of the public domain²³ and is widely viewed to be socially undesirable, the greater level of control sought by access providers to choose online winners and losers will likely have a negative effect on the health and diversity of the internet. By contrast, if an unbundling rule is put in place, the resulting network will likely be more socially valuable than the one that would have been created by giving network providers strong property rights over access in the hope that the resulting revenue would provide incentives to investment in the network.²⁴

Examining how Japan and Germany have dealt with broadband access policy may have valuable lessons for U.S. scholars. In Japan, a strong regulator has mandated that the incumbent open its facilities—including its

21. “Common carriage” is an ancient concept. In a nutshell, common carriage principles “guarantee that no customer seeking service upon reasonable demand, willing and able to pay the established price, however set, would be denied lawful use of the service or would otherwise be discriminated against.” Eli Noam, *Beyond Liberalization II: The Impending Doom of Common Carriage, Telecommunications Policy* (1994) (available at <http://www.columbia.edu/dlc/wp/citi/citinoam11.html>).

22. E.g., Yochai Benkler, *Coase’s Penguin, or, Linux and the Nature of the Firm*, 112 *Yale L. J.* 369 (2002).

23. Key articles about the enclosure of the public domain caused by intellectual property legislation include: Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 *N.Y.U. L. Rev.* 354 (1999); Dan L. Burk, *Muddy Rules for Cyberspace*, 21 *Cardozo L. Rev.* 121 (1999); Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 *Berkeley Tech. L.J.* 1089 (1998); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 *Cal. L. Rev.* 111 (1999).

24. The risks posed by propertization of communications networks have been explored by Yochai Benkler in *Siren Songs and Amish Children: Autonomy, Information, and Law*, 76 *N.Y.U. L. Rev.* 23 (2001) (effects on personal autonomy), and by Larry Lessig and Mark Lemley in *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era* (April 1, 2000). Berkeley Program in Law & Economics, Working Paper Series. Paper 37 (effects on innovation), among other.

fiber optic connections—to its competitors. The result has been vibrant competition, low prices, very high speeds, very high penetration of the consumer market for broadband access, and explosive innovation in applications and services. In Germany, a relatively weak regulator has been unable (or unwilling) to mandate that the incumbent monopoly telecommunications company, Deutsche Telekom (DT), open its facilities to competitors. The result has been a continued monopoly by DT, which is now poised to roll out fully-integrated “interactive entertainment” systems that will embody all of the controls and price-discrimination so eagerly sought by telcos here in the U.S. Although the European Commission has threatened to take legal action against the German government for its laxity in its dealings with DT, the incumbent is confident that its plans will receive legislative approval.

In the U.S., the market for broadband access is settling into a comfortable oligopoly—giant telcos and cablecos gently fighting among themselves. We should not expect that our current trajectory will provide competition for broadband access that will lead to lower prices, higher speeds, greater penetration, choices of unfettered access valves, and greater innovation. We need to make sure that the form of internet access available to the U.S. produces the maximum possible amount of overall social benefit, and we cannot rely on the current marketplace for access to provide this to us. We have had enough experience with a still-youthful internet to know that open, nondiscriminatory network access—a neutral substrate over which many kinds of private endeavors travel—is likely to produce greater social value than cable-system-like proprietary access.

Part I of this Essay discusses the context in which the telco “romantic builder” rhetoric is emerging, and describes how this vision is obscuring the central policy choice that should be at the heart of this discussion: will open or propertized network access lead to the greatest overall social benefit? Part II compares the network neutrality debate to the continuing battles over intellectual property that Boyle presaged in *Shamans, Software, and Spleens*. Part III provides the comparative analysis, assessing the Japanese and German situations. Part IV provides a roadmap for future scholarship in this area.

I. THE BATTLEFIELD

After the AT&T executive claimed to own “the network,” the ensuing uproar caused him to backtrack and “clarify,” saying that he had been

referring only to the company's "private internet" over which it plans to offer its new television service, and not the "public internet."²⁵ The concept of a "private internet" is central to the telco rhetoric. Some background may help.

Until very recently, the telephone companies were required to provide telecommunications services on a common carriage basis.²⁶ This meant that they could not discriminate against anyone wishing either to connect to their network or use their facilities to compete with them. Starting in the 1960s, the telcos were also required to permit competitors to attach devices to these networks, as long as the devices were certified not to cause harm to the network.²⁷ This open network made growth of the internet possible in the U.S., because consumers were able to get flat-rate dial-up access to the internet and attach modems to telephone connections that allowed their computers to act like phones. By contrast, both cable and wireless companies have been permitted (largely) to act as private, vertically-integrated networks without a great deal of FCC regulation.²⁸

Although telephone companies were not initially enthusiastic about acting as internet service providers and connecting their subscribers to the internet, they prospered when subscribers bought extra lines to allow them to go online through other ISPs. Later, the phone companies prospered again when subscribers bought their proprietary DSL services to make higher speed access (one to two Mbps) to the internet possible.²⁹ (Both dial-up and DSL access run across traditional telephone copper wires.) The

25. Reuters, *No Action Needed Now on Net Neutrality: FCC Chief*, Dec. 14, 2005.

26. See Ithiel de Sola Pool, *TECHNOLOGIES OF FREEDOM* 75, 79 (1983) (discussing history of common carriage in the United States); James B. Speta, *Deregulating Telecommunications in Internet Time*, 61 *Wash. & Lee L. Rev.* 1063 (2004); JoAnne Holman & Michael A. McGregor, *The Internet as Commons: The Issue of Access*, 10 *Comm. L. & Pol'y* 267 (2005) (as early as ICC regulations created pursuant to the Interstate Commerce Act of 1897, regulations have classified the telephone industry as a public utility and a common carrier).

27. See Kevin Werbach, *The Federal Computer Commission*, 84 *N. Carolina L.Rev.* 1, 18-19 (2005) (describing Carterfone history and Part 68 rules); Jason Oxman, *The FCC and the Unregulation of the Internet* (Fed. Comm'n's Comm'n Office of Plans and Policy, Working Paper No. 31, 1999), http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf.

28. See, e.g., 47 U.S.C. § 541(c)-(d).

29. Digital subscriber line service (DSL) devotes certain frequencies on traditional copper phone lines to data transmission, and is faster than dialup because (in part) it does not need to go through a circuit switch but instead goes directly to the packet-switched network. There must be a DSL modem at each end of the phone line, which will transmit and receive all data (without conversion) as a digital signal. A subscriber's house must be close to the telephone office and its DSL modem. DSL speeds in the U.S. are about 1.5 Mbps, which is about 50 times the speed of a 28bps dial-upmodem. FCC defines broadband as anything over 200 Kbps, which is alarmingly slow.

explosive growth of the internet took these phone companies by surprise, however, and they became unhappy with requirements to provide flat-rate, open access to this increasingly desirable network. Their dissatisfaction increased when use of online voice services (VoIP) began to undermine their traditional telephone revenues. They decided to compete with the internet.

The Baby Bells argued strenuously that cable companies providing internet access should be subject to the same open access, common carriage, “unbundling” and nondiscrimination provisions under which the telcos were operating. But the cable companies had as of March 2002 obtained from the FCC the promise that the broadband access they provided would not be regulated as a “telecommunications service” by the FCC—and so no open access or “unbundling” obligations would be imposed on them.³⁰ Between 2002 and 2005 the telcos switched gears and fought hard to remove their own unbundling obligations, pointing out that new investment in fiber networks would be stunted if they did not have control over their networks similar to that of the cable companies. As of February 2003, the FCC made clear that unbundling requirements would not be imposed on new fiber to the home (FTTH) installations by the telcos, and in October 2004 the Commission eliminated unbundling obligations for fiber to the curb (FTTC) projects.³¹ Immediately following the summer 2005 *BrandX* decision,³² which deferred to the FCC’s determination that cable networks had no common carriage obligations, the Bells demanded that DSL services be similarly released from any requirement to connect to all ISPs or carry all services. In August 2005, they achieved this goal with the issuance of the FCC’s Wireline DSL

30. See generally *In re 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, Declaratory Ruling and Notice of Proposed Rulemaking*, 17 F.C.C.R. 4798 (Mar. 14, 2002) (holding that cable companies are not subject to common carriage obligations). Broadband access service provided by cable companies is called “cable modem” service. Cable modem service, which competes directly with DSL, uses home cable network pipes (hybrid fiber coaxial networks) that are connected to ethernet network cards inside computers. Cable facilities are connected via highspeed links directly to the internet.

31. FCC, *In the Matter of 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 Dockets Nos. 01-338, 96-98, 98-14, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, Feb. 20, 2003; *In the Matter of Unbundled Access to Network Elements; Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, WC Docket No. 04-313 and CC Docket No. 01-338.

32. *National Cable & Telecommunications Association et al. v. Brand X Internet Services et al.*, 125 S. Ct. 2688, ___ U.S. ___ (S. Ct. Jun. 27, 2005).

order.³³

Now the telcos and the cablecos are aligned, because both groups of companies have reached a common plateau of deregulation: all unbundling and nondiscrimination requirements have been removed from their broadband businesses by the FCC, and they will no longer have to carry competing services (such as Skype or GoogleVideo or even competitive internet access providers) at optimal speeds. The telcos are working very hard to ensure that they have legislative language in place blessing the FCC's decisions in this area. The enormous lobbying energy now being devoted in the U.S. to ensuring the deregulation of broadband access is in turn part of a global attempt on the part of many broadband providers to turn their networks into something much more like what cable companies and mobile phone carriers have—wholly monetized “services,” with vertically-integrated networks built to allow deep packet inspection and the possibility of blocking or degrading undesirable services.

The telcos plan to enable monetization and discrimination by marking their content with priority tags that the routers in their last-mile networks (the part of the internet that reaches consumers) can read, thus gating the flow of all other (untagged) bits. The notion is that traffic that flows over the networks these companies control can be subject to “shaping” and prioritizing. Other, nonaffiliated sources of online bits (individuals as well as companies) will not get priority for their communications unless they pay the relevant telephone company for this value-added service.³⁴ This is

33. *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 No. 02-33, CC Docket No. 01-337, CC Docket Nos. 95-20, 98-10, WC Docket No. 04-242, WC Docket No. 05-271, Report and Order and Notice of Proposed Rulemaking, rel. Sept. 23, 2005 [DSL Order] (classifying wireline broadband internet access service (DSL) as an information service under Communications Act, and thus no longer subject to common-carrier regulations under Title II of the Communications Act).

34. This is a broad introduction to a much more nuanced story. For example, Verizon's plans are different from AT&T's, and the plans of cable services may differ from the Bells. Verizon plans to have one laser within its glass strands provide IPTV, phone, and “internet” service to homes, while a separate laser within the same strand will provide video services from Verizon. Thus, if users watch IPTV or use the phone, their “internet” speeds will be lower, and some have estimated that Verizon's IPTV and phone services will take up 80% or more of the

what the AT&T executive meant when he talked about a “private internet,” and what Verizon means by the tagline “It’s the Network” in its advertising.³⁵ The prioritized communications are being called a “private internet” by the telephone companies, even though from consumers’ perspectives these communications will be indistinguishable from what they thought was simply “the internet.” What Americans mean by the word “internet” is what the telcos would call the “public internet”—the network of user-created blogs, email transmissions, local news, community groups, and online work and publications that has caused millions of Americans to buy broadband DSL and cable access (not to mention second phone lines) over the last few years.

There is very little competition for broadband access in the U.S. More than 95% of residential broadband access in the U.S. is provided by either cable modem or DSL connection, with about 60% of broadband-subscribed households using cable service, and 38% using DSL.³⁶ The median number of broadband providers for each household is two—essentially, most households in the U.S. have a choice of either a cable modem service or a DSL service.³⁷ About a third of the nation’s households subscribe to broadband service.³⁸ Thus, the market for broadband access in the U.S. is essentially a duopoly, with most Americans having a choice of either a cable modem or DSL connection.

available bandwidth. Catherine Yang, *Is Verizon a Network Hog?*, BusinessWeek Online, Feb. 2, 2006. AT&T plans to use a single pipe to “pump” video, data, and “internet access service” to homes. Their video packets will be prioritized, and data and “internet access service” packets will not be. Comcast plans to have “internet access” share a single pipe with (now) analog video and, later, digital video services. But the overall “shaping” and “prioritizing” point is true for all of the large incumbent providers of broadband services in th U.S..

35. E.g., <http://estore-origin.vzwshop.com/migo/>.

36. 2006 FCC report at 8 (37.2% DSL, 61% cable, .2% fiber); GAO report at 16. See also U.S. Department of Commerce, *A Nation Online: Entering the Broadband Age* (Washington, D.C., September 2004). (20 percent of households had broadband service). A May 2006 GAO report found that the FCC’s figures as to the availability of broadband to residences were inaccurate because (1) the FCC’s data collection procedures allowed providers to claim an entire zip code as “covered” even if only a single *business* (and no residences) was actually served in that zip code, and (2) competitors using the same “unbundled” infrastructure in a particular location were counted, even though “several reporting provicers could be relying on the same infrastructure, owned by the incumbent telephone company, to provide access.” Thus, the GAO found, even though only 77 percent of households in Kentucky actually had broadband access available at the end of 2004, the FCC’s data for the same time period would show that 96% of households in Kentucky lived in zip codes with broadband service. GAO report at 21-22. Also, the FCC counts any access faster than 200kbps as “broadband,” even though such a slow speed does not allow for easy graphical web searching or downloading.

37. GAO report at 23.

38. GAO report at 15, using data as of 2005.

The nation's desire for greater broadband penetration has been a source of support for the telcos' efforts to have control over their networks. The U.S. is falling behind in ensuring that its citizens have highspeed access to the internet. Studies by the Organization for Economic Cooperation and Development and the International Telecommunication Union have found that the U.S. is either 12th (OECD) or 16th (ITU) in the world in terms of the percentage of people having broadband access to the internet.³⁹ And broadband speeds in other countries are often four to five times (or even ten times) higher than they are in the U.S.⁴⁰

Optical fiber to the home is not yet widely deployed in the U.S.,⁴¹ and this broadband technology (along with others, such as broadband over power lines and WiMAX⁴²) may hold the potential to increase broadband penetration. The telcos argue that the market for broadband access is sufficiently competitive. They also assert that unless they have control over who has access to their fiber networks they will have no incentives to install, maintain, or improve those networks and thus improve America's standing in the race to hook up citizens to the high-speed internet.⁴³

39. CQ Weekly.

40. "Internet services in South Korea, Japan and Italy can transfer data at 8 to 10 megabits per second and are delivering sophisticated interactive games, online video and television programs to subscribers. In the United States, cable users can download information from the Internet at about 3 to 6 megabits per second; DSL users typically are limited to about 1.5 megabits per second." CQ Weekly. Japan is providing symmetric speeds of 100Mbps to consumers. [source]

41. According to the FTTH Council, as of September 2005, 2.7 million homes were passed by fiber and over 300,000 homes were connected to fiber in 652 communities in 46 states. Compare to number of homes in the US.

42. Data can be sent over power lines that bring electricity into houses ("broadband over power line," or BPL), and plans are proceeding in Texas to provide broadband access in this way. Steve Donohue, *Powerline Outfit's Talking Triple Play, Firm Backed by Google to Light Up in Texas*, Multichannel News, Jan. 2, 2006. Satellite broadband is very expensive, but continues to be discussed as an alternative. Satellite News, *Teles MD Has High Hopes for U.K. Satellite Broadband Offering*, Aug. 15, 2005. WiMax is a wireless networking standard that can transfer data over a distance of about thirty miles, but may not work well in crowded city standards—and may not be able to compete effectively with enormously popular ordinary wifi access. Dave Bailey, *Is WiMax On Course for Success?*, IT Week, Apr. 11, 2005. Community wireless mesh networks (with a single connection to the internet shared by multiple devices) are coming into use. Wireless Review, *The 2006 Wireless Industry Technology Preview*, Nov. 1, 2005 (citing analyst report claiming that the market for wireless mesh infrastructure will be worth \$974 million by 2009). At the moment, however, none of these alternative routes is a realistic competitor to telco broadband access.

43. So the telcos argue that the quid pro quo for improving the American broadband story should be control over their networks and the ability to force competing services to compensate the network manager for "prioritized" carriage. Verso is already providing Skype blocking software to network providers. Ted Shelton, *Verso Appliance Lets Enterprises Block Skype*,

Opponents of network neutrality argue that the telcos need to discriminate among packets and prioritize some over others in order to extract all the monetary value from the internet that they can, so that they will have adequate incentives to offset their investments in broadband access.⁴⁴ Because the current batch of broadband providers has tacitly agreed that charging for value-added services (in other words, charging sources of content for speed) is an appropriate business practice, “naked” (unprioritized) broadband service will not be available in this country. Cable and telephone companies are simply not competing for the right to provide unfettered, un-monetized internet access. Nor are any of these players enthusiastic about allowing individuals and companies to upload materials at the same speeds that they can download.⁴⁵ This asymmetry between uploading and downloading further constrains sources of content (whether consumers or firms) from publishing their own material, and privileges the network providers’ content-source partners whose material will be made available by the network provider itself.

Both the telcos and the cable companies often begin any speech about their ownership of “their network” with a claim as to how much they have spent building it. Comcast claims to have spent \$100 billion, and will say “We took a flyer on it.”⁴⁶ Verizon claims to have invested \$15 billion in building its FiOS service.⁴⁷ AT&T (formerly SBC) claims to have spent \$5 to \$6 billion on its Project Lightspeed fiber-optic network.⁴⁸ All three companies have said publicly that in order to recoup this investment they will need to be able to monetize their networks.⁴⁹

InformationWeek, Sept. 21, 2005.

44. See, e.g., Christopher S. Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate*, 3 J. on Telecomm. & High Tech. L. 23, 65 (2004); Christopher S. Yoo, *Beyond Network Neutrality*, 19 Harv. J. Law & Tech. 1 (2005).

45. Large telephone company and cable company broadband access services uniformly throttle uploading speeds, and all plan to continue doing so. For example, AT&T claims a 20 Mbps download speed for its Lightspeed service, but will provide only 1 MBps for uploading; Verizon claims a 30 MBps download speed for the top bracket of FiOS, but will provide only 5 MBps for uploading; and Comcast claims a 6MBps download speed for its basic service but provides only 384K for uploading (Marguerite Reardon, *Ups and Downs of Consumer Broadband*, Aug. 1, 2005, News.com).

46. Joe Waz, Comcast, at CDT roundtable, Jan. 25, 2006. [I was present and took notes.]

47. Link Hoewing, Verizon, at CDT roundtable, Jan. 25, 2006. [I was present and took notes.]

48. *AT&T Rolls Out Lodi Plan*, TMC.net, Dec. 31, 2005.

49. The leading non-corporate voices in support of this claim are well-respected and extremely able. They include Adam Thierer of the Progress and Freedom Foundation, who has often said that vertical integration of network pipes with higher layers of the protocol stack will

Given the deeply entrenched nature of the extraordinarily large Baby Bells⁵⁰ and cable companies that exist in this country, the very high upfront costs of creating an alternate broadband access route to consumers' homes, and the need to obtain rights-of-way from municipalities in order to reach these homes, there is little hope that real competition to these high-speed broadband providers in the market for unfettered internet access (both up and down) will emerge. In the meantime, the old copper wires that were required to serve as common carriage platforms in the past, with their equal dial-up or DSL access to ISPs and thence to the internet, are being taken out of service.⁵¹ End-users will have no choice but to sign up to whatever limitations the providers of fiber decide make sense.⁵² Competitive ISPs

both lead to more robust competition for the provision of broadband access and ensure that consumers have a wide array of service choices (e.g., Adam Theiner, *Are Dumb Pipes Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model*, 3 J. Telecomm. & High Tech. L. 275 (2005)), Chris Yoo, who has noted that network managers' ability to manage congestion will bring great economic benefits to consumers who are not themselves high-bandwidth users (see, e.g., Christopher Yoo, *Network Neutrality and the Economics of Congestion*, 94 Geo. L. J. (2006) ("allowing unfettered access to content, applications, and devices may actually harm consumers"); James Speta, *Handicapping the Race for the Last Mile?: A Critique of Open Access*, 17 Yale J. on Reg. 39, 76-88 (2000) (suggesting open access rules may be harmful; consumer demand for broadband access platform will force providers to make available open networks); and Phil Weiser, *Paradigm Changes in Telecommunications Regulation*, 71 U. Colo. L. Rev. 819, 832-37 (2000) (suggesting limited regulation). The economic assumptions of some of the opponents of network neutrality have been sharply questioned by Barbara van Schewick in *Towards an Economic Framework for Network Neutrality Regulation* (September 20, 2005), available at <http://ssrn.com/abstract=812991> (arguing that potential for discriminatory activities by network providers is greater than commonly assumed).

50. Of the seven Baby Bells formed after the breakup of Ma Bell in 1984, only four remain. The old AT&T, Southwestern Bell, Ameritech, SNET, Pacific Bell, and BellSouth are now collectively "AT&T." Similarly, GTE, Nynex, Bell Atlantic, and MCI have joined together to form Verizon. Two Baby Bells, the new AT&T and Verizon, control telco access around the country. According to TNS Telecom, the post-BellSouth merger AT&T will control 22% of all consumer dollars spent on telecom services (including video services) and 34% of dollars spent in the business market. After the deal is closed, three of the nation's top telecom providers - AT&T, Verizon and Comcast - will control 49% of the total consumer market and in the business market AT&T and Verizon will represent 55% of spending. [cite.] In effect, the industry is re-monopolizing.

51. See Verizon FiOS TOS, Sec. 8.4: "Conversion from DSL Service to Verizon Fios Internet Service. If your local Verizon telephone company provisions transport service to your location utilizing fiber optic technologies, we may in our discretion terminate your DSL Service and no longer make DSL service available to your location. In cases of such termination, we will offer to you Verizon Fios Internet Service and we will disclose to you applicable rates and additional terms, if any, that may differ from the DSL Services provided under this Agreement."

52. The Verizon home Terms of Service already outlaw hosting servers, Verizon FiOS TOS, sec. 3.6.5., and Verizon blocks ports that are used for incoming requests for web pages and services. The FiOS service includes a clause stating that if a subscriber abandons Verizon's local phone service, Verizon may in its discretion terminate the FiOS service. Verizon FiOS Terms of

who used dial-up or DSL connections provided by the telcos to sell services to their customers are going out of business. And the telcos/cablecos are fighting the creation of government-owned networks that might provide unfettered broadband connections to the internet at lower rates.⁵³

The telcos' interests here align with those of several other incumbents who would welcome private access valves as a lever to attain their own goals. With perfectly tracked communications—the same routers that know to speed a first-run movie along its way will also know who is watching that movie, and from what chair—law enforcement's surveillance challenge is lessened. We have learned in the U.S. that law enforcement has an insatiable appetite for data (even if it cannot construe the data once it receives it). Hollywood would also like to know who is watching what movie, and whether the right license fee has been paid. Hollywood is at risk because user-created content, including video as well as text, is becoming extremely popular online. Users are competing with content providers in a way they have not before. Similarly, the telcos are at risk because free VoIP services are undermining their revenues. And law enforcement feels itself to be at risk because online communications are not necessarily authenticated in any way that is familiar to them. A long list of fears of the internet, supported by constant negative mass media articles, provide justifications for these incumbents' desires and, in turn, for the notion that all access should be carefully watched and paid for. All of these fears would be (from the telco/law enforcement/content perspective) addressed and assuaged by the chokepoints for access and use that would be created if the telco "romantic builder" rhetoric were blessed by Congress and their dominion over "their networks" legalized..

Because broadcast, telephony, cable, and wireless networks increasingly all use Internet Protocol (IP) packet-switching technologies, these formerly separate networks are merging into one. The winner in the contest to provide broadband access to this network to consumers will either be the telcos/cablecos (over fiber to the home) or the wireless

Service, sec. 8.3. And Verizon's Terms of Service do not guarantee internet access (sec. 15.2). It can be expected that other forms of discrimination against user-created content or content that has not paid for access to Verizon's subscribers will be put in place when the legal status of Verizon's service is clearer.

53. Wall Street Journal, *Phone Giants are Lobbying Hard to Block Towns' Wireless Plans as Cities Try to Build Networks, SBC and Other Companies Say It's Unfair Competition*, June 23, 2005. Washington Post, *Fast Internet Service for the People, Telecoms Fight Plans for Public Networks*, Dec. 2, 2004 at A01.

companies (using wireless bandwidth to reach the home, and fiber connectivity on the backbones).⁵⁴ In either case, all of these actors want to be in charge of vertically-integrated, private access regimes—and many of them have significant market power.

There is nothing wrong with making money from private property. If a telco or cableco was merely charging for access to the movies it owned, the network neutrality controversy would never have arisen. The problem is that there is little or no competition in the market for broadband access, and the telcos/cablecos are planning to leverage their power over transport into power over content.

The network neutrality battle is not just about who gets to collect rents for streaming video services. First, if a telco makes an exclusive deal with any high-speed application source, agreeing to prioritize its packets, then the rest will be second-best and may fail.⁵⁵ Second, new businesses and individuals with ideas for new online interactions may not be able to pay for any of these value-added services. Thus, the risks to as-yet-unborn technologies and interactions may be great. They may never be discovered and may never attract investment because they will not be accessible at the high speeds their use requires. Third, the telcos seek to internalize the positive externalities of the internet, but cannot adequately express social demand for access and activities online.⁵⁶

The rhetoric of the “romantic builder” has enormous power in the U.S. We feel uncomfortable second-guessing Verizon’s business plans for “its” broadband access loops. But the romantic vision so successfully conveyed

54. The cable, telco, and wireless industries have formed a united front against the imposition of non-discrimination rules on broadband access. *See* TESTIMONY OF STEVE LARGENT PRESIDENT AND CHIEF EXECUTIVE OFFICER, CTIA – THE WIRELESS ASSOCIATION® BEFORE THE U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION, S. 2686, Communications, Consumer’s Choice, and Broadband Deployment Act of 2006, May 18, 2006 (available at http://commerce.senate.gov/public/_files/largent051806.pdf) (“The wireless industry is very concerned that the proposed Net Neutrality regulations being contemplated will drive away the investment the industry needs to continue building the infrastructure, design the devices and operate the evolving networks needed to sustain consumer demand for more advanced mobile services. The industry is also concerned that many of the unintended consequences that would flow from some of the Net Neutrality regulations being considered would have a particularly negative impact on wireless consumers.”) add cable cite.

55. At a public meeting in Washington, D.C. on Feb. 8, 2006, the general counsel of BellSouth, Barrett Ross, stated that BellSouth would want to retain the latitude to make just this kind of exclusive deal with a source of content. [I was present and took notes.]

56. See Part II, *infra*.

by the network operators papers over the central communications policy question: is it better for society for access to the converged communications network to be privatized and discriminatory? Many more questions follow from this central question: If access to the network is provided on a discriminatory basis, what consequences will this have for the U.S. economy and American civil life? What should the role of government be? An examination of analogous intellectual property battles may provide some clues.

II. COMPARING BATTLES

In his 1996 book, *Shamans, Software, and Spleens*, Boyle revealed that belief in the “romantic author” was driving society towards a series of missteps—awarding too many property rights to the wrong people, in a manner that dramatically undervalued the interests of both the sources of and audiences for information. The same series of missteps arguably now is being urged by the telcos/cablecos/wirelesscos in the net neutrality debate.

A. Intellectual Property Missteps

Boyle pointed out that information issues could be viewed as either potential monopoly problems, for which the solution would be to make sure more information was available, or as public goods problems, for which the solution would be to enable the producers of information to commodify information so that they had ample incentives to produce it.⁵⁷ He focused on the tensions inherent in these views of information, noting that there is no principled way to determine when you are on the potential monopoly side of the equation (requiring the disclosure of more information to make markets work better) or the “need for incentives” side (requiring the commodification of more information to make markets work better). In his view, economic analysis of information policy questions was inherently suspect because of this central indeterminacy.⁵⁸ And this indeterminacy was being covered up by a reliance on the romantic vision of the “author.” Boyle noted that the idea of the romantic author was a relatively recent innovation, stemming from the 18th century:

As authors ceased to think of themselves as either

57. *Shamans, Software, and Spleens*, at 31, 36, 40.

58. *Shamans, Software, and Spleens*, at 41.

craftsmen, gentlemen, or amaneunses for the Divine spirit, a recognizably different more romantic vision of authorship began to emerge. . . . The romantic author was defined not by the mastery of a prior set of rules, but instead by the transformation of genre, the revision of form. Originality became the watchword of artistry and the warrant for property rights.⁵⁹

The originality, spirit, and imagination of this romantic author became the justification for reposing property rights in him, and provided a method by which the central indeterminacy of information policy could be papered over: only original expression would be protected (thus rewarding the originality of the author) but everything not original to the author would remain public (thus avoiding the monopoly problem). Additionally, once information policy questions were viewed through the lense of needing to reward a creative and little-recognized author, the “need for incentives” side of the equation, and the concern for commodification that would assist property owners, dominated. On Boyle’s account, this concern for the “author” permeates information policy, in areas far afield from traditional “authorship” (like ownership of spleens, or regulation of insider trading).⁶⁰

For Boyle, our implicit (and often unconscious) reliance on the figure of the romantic author leads inevitably to a number of missteps. His 1996 book examined a series of situations—biotechnology, copying of materials for classroom use, and software—in demonstrating that concern for the romantic author appeared to be resulting in a dimunition of the public domain on an international scale. Too many property rights were being created, in his view, and they were impinging on traditionally public resources.

At the same time, indigenous sources for many claims of intellectual property were being ignored. Traditional knowledge was being used as fodder for sweeping patent claims by biotech companies, and dances and artifacts and other cultural forms were leaving developing nations unprotected by intellectual property rights. Trade negotiators, meanwhile, were taking the position that the greater the intellectual property protection provided by a developing nation, the more likely that that nation would attract investment by established firms.⁶¹ Boyle noted that insistence on

59. Shamans, Software, and Spleens, at 54.

60. Shamans, Software, and Spleens, at 58.

61. Shamans, Software, and Spleens, at 124.

maximalist interpretations of intellectual property would undermine the abilities of second innovators, or later authors, to build on what had come before—and that all works draw on prior works. Additionally, as many scholars have pointed out, because intellectual property rights are often assigned to publishers or distributors that can have a chokehold on the flow of information, the romantic author vision may be completely inaccurate.⁶² In Boyle’s words, “An author-centered regime can actually *slow down* scientific progress, *diminish* the opportunities for creativity, and *curtail* the availability of new products.”⁶³ In effect, the tradeoff for all the unfairnesses of maximal intellectual property protection appears to be *inefficiency* rather than efficiency—all in the name of protecting the romantic author.⁶⁴

B. *Communications policy missteps*

Just as Boyle found that intellectual property advocates use the figure of the “romantic author” to move their expansionist arguments forward, the telephone companies are beginning to use the figure of the “romantic builder” (who needs incentives to continue to build this resource) in an attempt to shape communications law. As with intellectual property policy, reliance on this romantic figure leads to the creation of too many property rights awarded to the wrong people, and will tend to both systematically ignore the contributions and needs of the internet’s indigenous people—users—and the social value created by their use of the internet. The claim that particular incentives are needed to encourage this romantic figure is as mysterious in the telecom setting as it is in the intellectual property law context.

1. *Rewarding the wrong people*

The telcos/cablecos/wirelesscos plan to provide a “private internet” in the form of local access loops that prioritize bits. This “private internet” will also include “public” internet access in the form of best efforts transmissions of non-prioritized content to subscribers. But from a subscribers’ perspective, the private internet and the public internet will be arguably indistinguishable. They will likely see and interact with a

62. Cites.

63. Shamans, Software, and Spleens, at 119. Emphasis in original.

64. Shamans, Software, and Spleens, at 140-41.

communications network in their homes that they will call “the internet”.⁶⁵

From the telco perspective, this communications network is no more than a transport mechanism—a set of privately-owned wires and cables that stretches across the world.⁶⁶ Their simple calculation is that they are entitled to a cut of all transactions that use their broadband access connection to this transport mechanism. They plan to charge subscribers flat fees for broadband access and content sources fees for reaching these subscribers across this local broadband access loop at the highest available speed. In other words, they plan to discriminate against applications that do not pay for speedy passage across their access connections.

The telcos’ argument is facially appealing: if you build something, and it is your private property, you should be able to make money from it. But the reality is that the telcos did not create the entire value of “the internet,” and it is “the internet” that their subscribers want to access. To allow these access providers to take a cut of all profits generated by those sources of content that reach their subscribers would arguably be rewarding the wrong people.

Although the telcos do not share this view, the engineers who designed it know that the internet is nothing but an agreement to interconnect and to use a common protocol and naming system.⁶⁷ “The internet” is the ever-expanding set of standards and relationships that are possible using the graphical, networked screen. No permission is needed to use these standards or to participate in building relationships using these standards. Any device can “connect” to the internet if it can use the TCP/IP protocol and has access to some form of transport. But the internet works

65. This is a prediction based on the assumption that consumers will have a single communications pipe into their home that they will use to access interactive communications that have for the last ten years been part of what is commonly called “the internet.”

66. McCurry re wires and cables. Note that although private companies have invested in the wires and the cables necessary to reach the thicker wires and cables that make up the backbone of the internet, much if not all of this investment has been heavily subsidized by regulatory agreements and end-user fees. And the right to use public “rights of way,” or physical key connection points under the control of local authorities, is not owned by the carriers. Indeed, carriers own only 2% of the land they use to provide internet access to houses. Thus, even the argument that the telcos “own” the transport substrate is contestable and will require thorough investigation that is beyond the scope of this Essay.

67. Who “owns” the agreement to interconnect and to use a common protocol? Who “owns” the domain name system (or “DNS”)? No one and everyone. All of these things are within a kind of “network public domain” – a commons that is available to all to use. No telephone company or cable company could claim to own these affordances.

with any form of transport.⁶⁸ The transport needed to implement these interconnection, protocol, and naming agreements is nothing more than that—transport, or carriage, via any form of medium, from one node to another. On this view, what the telcos own is “transport,” but not “the internet.”

The value created by the standards and relationships of the internet bears little relationship on any measure to the characteristics of the transport valve through which access to these standards and relationships is obtained. Because the internet is an open set of agreements that anyone can join, it permits and encourages collaboration and interactivity that is beneficial to society.⁶⁹ It is much more than wires and cables; instead, it is a complex environment in which the actions of a billion autonomous human beings are constantly creating persistent, nonlinear forms of order and creativity. These organisms/developments/forms are what users want to reach.⁷⁰

The telcos and cablecos have not created successful online businesses or any notable innovations associated with online life. Indeed, the telcos in particular have resisted the incursions of the internet since the outset. AT&T resisted the advent of the 56K modem, and had to be forced to adopt it by the Department of Defense. The Bells complained about dial-up traffic and resisted DSL installation. Now they have moved on to derail municipal broadband access efforts. They have never been happy that they cannot bill separately for online “services” to which the public has access. The telcos and cablecos would like to be in the “content” business, and they see that business as pumping their partners’ television programs through a fast lane of their pipes to consumers, and charging nonaffiliates to similarly reach those consumers. They are indifferent to the reality that much of what is happening online is being created by end-users

68. [pigeon transport; high latency, good function].

69. Pew studies. Growth of blogs.

70. Benkler, *Consumers to Users*; Lessig *Future of Ideas*; *Information Rules*. Users are increasingly producing their own “content,” and this trend will undoubtedly continue. Thus, individuals are “sources” for online value that may be affected by the prioritization and upload-throttling practices of broadband access providers. Because we have been moving at a crawl online in comparison with Asian countries, and because we have experienced only the services presently commonly available on the internet, we have no idea what other user-generated experiences might be possible with an unfettered high-speed connection. Our current telcos are not likely to be sources of this innovation, because they do not believe that expanding demand for the internet will lead to higher profits. Thus, they are unlikely to follow internet strategies that lower costs or generate new applications. They are instead convinced that letting the internet evolve naturally would lead to application providers, such as Google, capturing all the benefits.

themselves: homemade video, text, and interactions of all kinds.

There is nothing wrong with charging a price for a service, and in a perfect marketplace every price reflects the overall value that service contributes to creating. But the marketplace for broadband access in the U.S. is far from perfect. Instead, what the network providers have is a distribution chokehold stemming from their control over physical access to the network. If all the network providers wanted was to be paid back for building this set of access points, and they gave us a predictable compensation mechanism to make this repayment possible (and did not force us to buy the new propertized thing by disabling the old common carriage access points), the network neutrality fight would not have happened. The key difference here is that the transport providers would like to charge fees that will be set with reference to their valuation of the communication that is transported to their subscribers. In light of their market power, this is a naked holdup. They are using their controlled distribution channel to capture returns that come from value they have not created.

In a nutshell, the telephone and cable companies' claim is not merely that they own their networks, but also that that ownership dictates that they participate in whatever profits flow from use of their broadband access points.⁷¹ But to reward these actors by allowing them to optimize these

71. In the 1890 article that launched privacy law in the U.S., Samuel D. Warren and Louis D. Brandeis said: "The possibility of future profits is not a right of property which the law ordinarily recognizes." (in *The Right To Privacy*, 4 Harv. L. Rev. 193 (1890)). These authors were trying to persuade their readers of the existence of a general right in individuals to be let alone. They didn't think this right to be let alone was a property right, because (in part) they didn't believe that the concept of property was broad enough to cover privacy. For example, if true but private facts were published about a man, and that publication made his life difficult (or ruined him), Warren and Brandeis felt that property law wouldn't necessarily protect him -- because "the possibility of future profits is not a right of property which the law ordinarily recognizes." We now live in an era in which possessors of things they believe to be their "property" fervently believe that law protects their possibility of future profits gained from any exploitation of that property. One example: the continuing kerfuffle over Google Book Search, in which publishers are horrified that someone else may someday make money from the books the publishers sold in the past. The publishers believe that they should get a cut of all possible future revenue streams that others create based on these books, and that courts and judges should act immediately to enjoin any activities that might not fit with this model—whether or not existing fair use caselaw would support their claims. The ongoing fight over tiered internet access analyzed in this Essay is very similar—the broadband providers are horrified that someone else may someday make money from applications crossing their broadband access points. The network builders fervently believe that they should get a cut of the revenue streams that others will create if those others seek to reach their subscribers, and that the legislature should act immediately to bless their vision of the future. We don't (usually) protect existing business models with statutes or caselaw. See Susan P. Crawford, *The Biology of the Broadcast Flag*

access valves for billing purposes would reward the wrong people.

2. *Creating too many property rights*

The broadband access debate can be seen as a contest between concern over monopoly control of access (the network neutrality argument) and concern over insufficient commoditization of access (the telco argument). The rhetoric of the romantic builder leads immediately to support for the public goods/commoditization point of view. But in the broadband world, even more clearly than in the world of intellectual property, the reality of market dominance should be understood and revealed. Current broadband providers in the U.S. come in only two flavors: telcos and cablecos. The vast majority of Americans have at most two choices of broadband provider wherever they are, and competition between these providers is not intense. Prices have stayed high and speeds have stayed low. In both industries, consolidation is very common.⁷² In effect, the industry is re-monopolizing.

What the telcos want is to have their property rights in their access networks recognized legislatively. But in the current context, in which the access providers have significant existing market power and are sometimes in a position of actual monopoly where they operate,⁷³ to create such additional property rights would merely intensify the monopoly problem to which the 1996 Telecommunications Act was addressed.⁷⁴

In the case of intellectual property, use of the rhetorical romantic author figure underscores the notion that there is a distinction between idea and expression, and that only the expression (the romantic material of authorship) is controlled by an “owner.” (This distinction quickly falls apart when any close case is considered, but it does have a principled relationship to the role of the romantic author.) Unlike the romantic author figure, the romantic builder does not assist in any line-drawing between

(discussing content industry efforts to use FCC rules to shield their existing business model from competition).

72. See note __ supra.

73. GAO report: The GAO recently found that broadband access providers have significant market power in most parts of the country, have dominant power in others, and are monopolies in the rest.

74. 1996 Act required incumbent phone companies to make elements of their networks available to competitive local phone companies. These “element” calculations were easily gamed by the incumbents, who successfully avoided competition in most cases. The 1996 Act requirements are widely agreed to have failed in their purpose.

owned and unowned, between monopoly and avoiding-monopoly. He owns (or controls) everything that is associated with his broadband access points. Thus, to create additional property rights to reward this romantic actor in the manner requested by the telcos (through sharing in the value of all communications that cross his broadband access points) is likely to be primarily destructive. He should be rewarded for providing transport, to be sure. But to do more than that will only serve to make clear that communications law serves monopolists and disserves the forces of competition.

3. Systematically ignoring contributions of indigenous peoples

Taking the (counterfactual) baseline view that what end-users want is passively to watch movies online, the telcos move to the assumption that greater monetization of online old-media-company movies and television will lead to greater investment in this “content” and thus greater incentives to produce it, with improvements in general welfare as the result. Alternatively, the network providers seek to make arrangements with aggregators of user-generated material that will allow them to take a piece of the revenue generated when they transmit it to end-users. These alternative approaches systematically seek to both ignore and capitalize on the user-generated material that is prevalent online. Just as the biotech companies described by Boyle did, the access providers would like to take advantage of what traditional knowledge and decentralized action is creating online, and find some way to make it into a revenue stream. At the same time, they claim that only their packaging of this material, their selection and culling of it, and their presentation of mainstream movies and television, will have value to broadband access subscribers as “content.” Indeed, cable company representatives say confidently that the internet only “took off” when they made video “content” available across their access networks.⁷⁵

It may go too far to assert that the standards and relationships that make up the internet constitute the equivalent of a developing nation that is likely to be abused by the dominant network access providers. But the internet is certainly changing and growing—certainly “developing” in that literal sense—and the public campaign of the network access providers alternately ignores indigenous sources of information (“nothing happened online until we started broadcasting television there”) or seeks to monetize otherwise free sources of information for its own purposes. In an odd echo

75. Steve Effross, cable lobbyist, at Personal Democracy Forum debate, May 9, 2006 (mp3).

of trade negotiators speaking of adoption of intellectual property regimes by developing nations,⁷⁶ the telcos and cablecos assert that the internet will never reach its potential unless broadband access to it is commoditized in the way they suggest.⁷⁷ Their reluctance to provide symmetric broadband access, which would allow users to upload their own creative content with the same ease that they download old-time Hollywood movies, is evidence of their colonizing approach to online interaction.

In fact, although use of the internet is difficult to assess, studies have shown that most of what is interesting to end-users is what other end-users are doing.⁷⁸ End-users spend their time reading blogs, posting pictures, sending email, reading about health issues, chatting, and generally interacting with others. End-users are not (only) passive recipients of “content.” Yochai Benkler has written eloquently about how the networked information economy is enhancing the autonomy of individuals at the same time that it is allowing them to do more in loosely-organized groups than might be possible through traditional markets or firms.⁷⁹ David Bollier has argued that “there has never been a commons as big, robust and socially creative as the Internet,”⁸⁰ and Lawrence Lessig has written frequently about the importance of unowned and uncontrolled yet valuable commons resources online.⁸¹ To connect with others, to find groups and affiliations, we are publishing 70,000 new blogs daily, and updating 700,000 existing blogs.⁸² Over the last ten years, a wholly decentralized and global investment of time, money, and gifts has created the indigenous content of the internet, without the involvement of the network providers.

76. Barshefsky speeches.

77. Telco testimony.

78. Pew broadband usage study; others.

79. YOCHAI BENKLER, *THE WEALTH OF NETWORKS* (2005); Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, 52 *Federal Communications Law Journal* 561-579 (2000).

80. David Bollier, *Reclaiming the Commons*, *Boston Review* (Summer 2002). DAVID BOLLIER, *PUBLIC ASSETS, PRIVATE PROFITS: RECLAIMING THE AMERICAN COMMONS IN AN AGE OF MARKET ENCLOSURE* (2001).

81. Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* 19-21 (2001). See, e.g., *Internet Commons Congress 2004*, held in Silver Spring, Maryland in March 2004 (described as “An international open assembly of the public, gathered to address a broad range of issues that threaten the Internet Commons and basic rights to own fully-functional computers, to use information rendered to the Commons for the public benefit, and to develop vibrant new means for working with information.”). See generally Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge Univ. Press, 1990).

82. Technorati data.

To ignore indigenous online content while seeking to commoditize it is likely to be destructive. First, if contributing to this indigenous ecosystem becomes more difficult because of the nature of the prioritized access valves that the network providers are seeking to control, the ecosystem itself will cease to be as robust or diverse. The network providers will have destroyed the village while seeking to make its attractions into a revenue-generating theme park. Second, if only those indigenous materials that the network provider finds valuable or that have the ability to pay the network provider for enhanced passage reach subscribers at the speeds necessary for comfortable viewing, the feedback mechanisms that have (indirectly) directed the growth of this ecosystem will be crippled.⁸³ Only the network provider gatekeepers will be deciding what is “worth” seeing, and the indigenous content providers will never learn whether they have an interactive audience that merits additional investment in their productions. The value of particular packets is most accurately known only to the originator and recipient of those packets, not to the intermediary that carries them; endpoints can adjust to those values in nuanced ways that an intermediary chokepoint cannot.

4. *Attempting to appropriate social value*

To reward the network providers by permitting them to charge sources of content for fast passage across their network access points would likely cut off developments that would benefit society as a whole. Positive externalities, or “spillovers,”⁸⁴ representing differences between private returns and social returns,⁸⁵ are created every day by use of the internet. Many of these externalities are not susceptible to economic valuation. Concrete examples of these spillovers include the ability of a second innovator to use an Application Program Interface (or API) provided by an initial innovator to build an entirely new application using the first innovator’s data, or the ability of scientific researchers to share data for purposes of research, or the ability of ability of a school in North America

83. The word “cyberspace,” although currently out of fashion, elegantly captures this idea of indirect direction based on decentralized feedback. Norbert Wiener coined the word to connote a Greek steersman who acts as a kind of thermostat—responding to external feedback that trigger changes in the system. Fundamentally, no one is in charge of the standards and relationships that make up the internet. No one “steers.” But everyone steers through collective, autonomous feedback, in a constant loop of reaction and change.

84. Mark A. Lemley & Brett M. Frischmann, *Spillovers* (April 2006 manuscript on file with author); Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 Minn. L. Rev. 917, 967 (2005) (“Neither the law nor economic efficiency require complete internalization; external benefits are a ubiquitous boon for society.”).

85. Spillovers at 8.

to do a joint project with a school in Hong Kong. Similar positive externalities exist for intellectual creations offline and online, of course; the ability of one author to use a germ of an idea that she has read in an earlier author's book, or of a songwriter to allude to an earlier song, or of a professor to use an excerpt of an article for teaching purposes are all examples of positive externalities whose benefit is not internalized by the initial author.⁸⁶ The architecture of the internet⁸⁷ only increases the availability of these spillovers, many of which will not be "paid for" by anyone, but for which social demand is high and resulting social benefit will be great.⁸⁸

As with intellectual property, the question for internet policy is how thoroughly one private owner should be permitted to extract value from her creation. In the net neutrality battle, the "creation" is the building of a broadband access connection. The telcos' argument is that spillovers (uncaptured value in the hands of users) have negative effects on their incentives to invest in their networks.⁸⁹ This fits with the traditional view of internalizing externalities, which suggests that if property owners are made liable for (so that they bear the social cost of) their actions and are also entitled to appropriate the benefits of their property, their interests will align with those of society and cause them to make efficient decisions.⁹⁰ On this view, spillovers are bad, because they will get in the way of the provision of signals of consumer demand (because no one will be paying for the spillover) and will not increase the property owner's incentive to invest in her property.⁹¹

It may be, however, that spillovers (uncaptured returns) in this context are good, not bad. Spillovers in intellectual endeavors (writing, composing, researching) are good because they drive further innovation.

86. See Brett M. Frischmann, *Evaluating the Demsetzian Trend in Copyright Law*, REV. L. & ECON. (forthcoming 2006).

87. See Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. Rev. 925 (2001).

88. Frischmann, Infrastructure (private willingness to pay for or invest in infrastructural inputs, like information, does not necessarily reflect social demand for outputs). Benkler, *Freedom in the Commons: Towards a Political Economy of Information*, 52 Duke L. J. 1245 (2003) (importance of nonmarket production of information).

89. Many examples.

90. Spillovers at 12. See also Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 Harv. J.L. & Tech. 85, 101 (2003) (discussing "internalization of complementary externalities").

91. Spillovers at 12-13.

Indeed, industries with significant spillovers seem to be characterized by more and faster innovation. The example used by Lemley and Frischmann (and others) is the tussle between Route 128 innovation and Silicon Valley innovation. Silicon Valley may have done better because it did not attempt to lock down and “own” innovation or employees; employees in the Valley, unlike the Route 128 area, were free to move from company to company, carrying with them what they had learned.⁹² Even Alexander Graham Bell himself did not try to capture the increased “value” of telephony services experienced by his first subscribers when the second wave of subscribers joined his network. Instead, he merely charged per additional phone.

The reason there is such a difference between private returns and social returns online is that the current internet’s architecture makes it so easy to generate these social returns. Because no one needs permission or to pay a special fee to release a new application online, new applications come into being every single day.⁹³ To eliminate this entire potential externality surplus, by finding a way to perfectly price-discriminate and have everything paid for, would neatly eliminate spillovers and would, the telcos assert, give them the incentives they need to continue building out network connections. But if monetization became the default setting for internet access, great social costs stemming from overall innovation losses, loss of access to new developing forms of interactions without the wherewithal to pay for speedy carriage, and loss of access to non-monetary sources of social value would likely be generated that would undoubtedly exceed the private benefits that the telcos seek to capture.⁹⁴

92. Spillovers at 14, citing Annalee Saxenian, *Regional advantage. Culture and competition in Silicon Valley and Route 128* (Harvard University Press 1994); Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. Rev. 575 (1999).

93. Cerf Senate testimony.

94. This section is an attempt to answer a recent question posed by Lawrence Lessig to Brett Frischmann. Because choosing open access or network neutrality will impose costs on the polity or the market, Lessig suggested that we needed a “clearer sense of the parameters for deciding when open access is a solution.” Lawrence Lessig, *Re-Marking the Progress in Frischmann*, 89 Minn. L. Rev. 1031, 1039 (2005). My response is that specific costs and benefits in this context are unknown and unknowable. The overall social benefit—the spillovers—of open broadband access connections will be greater than the private gains from commoditizing these access points, particularly given the significant market power held by the network providers. See Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 Vand. L. Rev. 2063 (2000) (noting “tremendous non-economic losses--in terms of concentration and commercialization of information production and homogenization of the information produced that a perfectly enclosed information environment imposes on our democracy and our personal autonomy”).

It is true that wires used for internet access in concert with the standards and relationships that make up the internet create unprecedented levels of positive externalities. This is a frustrating state of affairs for the telcos. While their revenue from phone service is diminishing, and subscribers are dropping their landline phones and replacing them with VoIP phones (or wireless phones from another carrier), the internet's positive externalities are continuing to explode. The telcos would like to internalize these externalities by capturing the crumbs from this golden loaf of social values, but their ability to lock down innovation and centralize control is likely if implemented to destroy the loaf itself.⁹⁵ The deepest pockets are not necessarily the deepest sources of creativity and invention.

If broadband access is provided on a nondiscriminatory, unbundled basis, users will have many choices of internet service providers because competition for both transport and applications will be intense. Japan's experience with broadband access makes this clear--particularly when compared to the Deutsche Telekom story.⁹⁶ Just as we now know that authors will create without a strong copyright monopoly in place, we also know from Japan that broadband access providers will compete even if they are not given the ability to charge whatever they want for passage through their gates.

5. *Drawing the threads together*

Two sets of arguments emerge from this comparison of intellectual property missteps to communications missteps. First, as in the intellectual property debate, telco demands for "incentives" are likely overblown. They ignore many of the sources of value that make up the internet, and over-privilege the telco investment in fiber at the expense of potentially far greater social gains. Second, the precise reasoning behind the telco demand for incentives is unclear.

As in the intellectual property debate, those arguing the need for incentives have both *ex ante* and *ex post* justifications in mind.⁹⁷ Broadband access points take both time and money to create, and (so the argument goes) network providers need *ex ante* incentives in order to build

95. Lemley, *Free Riding*.

96. Section III, *infra*.

97. For an analysis of the intellectual property incentives debate, see Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. Chi. L. Rev. 129 (2004).

them.⁹⁸ Absent such incentives, the argument is that U.S. broadband penetration will remain low. This is an *ex ante* justification because the goal of such an incentive would be to influence behavior (the building of an access point) that happens before the right to exclude non-paying content sources from “fast lanes” of access points comes into play. *Ex post* justifications for legislative protection of access points are also often stated. For example, some network providers have argued that protection is necessary to encourage the network owner to make additional investments in maintaining the network,⁹⁹ or to avoid “congestion” on the network.¹⁰⁰ These are *ex post* justifications because they are operating on the incentives that legislative protection will give the network providers to manage network access points that have already been built.

In general, the providers of broadband access in this country do not make a great deal of information available about how their networks function, including what kinds of “shaping” activities are already taking place, how expensive it is to build and maintain their local loops, and how cost-effective unfettered access could be. Nor are the numbers that have been supplied by the broadband providers with respect to their already-incurred and yet-to-be-incurred costs of installing fiber broadband access points reliable. This reality undermines both *ex ante* and *ex post* justifications given for broadband access. We cannot test these justifications in any way.

The *ex ante* explanation creates exclusive control rights in network access points so as to encourage the builders to create these local loops in the first place.¹⁰¹ The telco’s customers for these purposes will include content sources (paying for quick passage across the broadband access points) as well as end user subscribers (presumably paying a flat fee for access). This propertization incentive will allow the network provider to charge much more than its marginal costs to content sources. As a result, “consumption” of the network access points by these customers will be artificially lowered. Some people who would have been willing to pay more than the marginal cost (but not much more) for quick passage, and secondary innovators who wanted to reach such end-users without paying protection money to the access provider points, will be unable to obtain

98. For example, Deutsche Telekom has threatened not to build fiber access to homes unless it is able to exclude competitors from them. Section III, *infra*.

99. Verizon arguments.

100. Yoo re congestion..

101. For a parallel explanation in the IP setting, see Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 *U. Chi. L. Rev.* 129 (2004)..

such transport. End-users who want to upload (thus becoming “content sources” themselves) will be frustrated—thus stifling some amount of further innovation.

From what little information we have, the ex ante incentives sought by the telcos do not appear to have any particular relationship to their actual building costs.¹⁰² Additionally, although investment in broadband is the ex ante incentive goal, revenues reaped from proprietizing broadband access will more likely turn into entitlements that are monetized on Wall Street rather than put to use building additional broadband connections.¹⁰³ For both of these sets of reasons, even ex ante justifications proffered by the telcos should be carefully examined.

If the reason for protecting network providers’ control over these access points is to ensure that the network is well-managed, there is no principled reason to limit this control in any way—just as in the intellectual property setting.¹⁰⁴ This ex post justification supports any amount of value-extraction by the network provider—particularly in the absence of genuine market competition for broadband access points. By the same logic, if the reason for protecting the network providers’ control over their access points is to avoid congestion or overuse of the network, all actions of the network provider (even those aimed at stifling competitive services or redlining particular communities) are appropriate.

As Mark Lemley has noted with respect to intellectual property “incentives,” these ex post justifications are “jarringly counterintuitive in a

102. David Burstein has pointed out that network provider arguments about their costs of installation have often proved to be wildly inaccurate. In his words, “Installing DSL in a CO [Central Office], for example, is a one-day job of plopping a \$10K box in and connecting it to fiber nearly always in place. Three years ago telcos were making fantastic claims of hundreds of thousands of dollars each, and the need for millions in “incentives” before they would cover every CO in the state. Make that tens of millions when you actually measure the “deregulation” rate hikes.” Dave Burstein, DSL Prime reporter, June 8, 2006 email to the author.

103. According to David Burstein, when Bill Smith of BellSouth was asked, “Your DSL equipment costs are coming down. How much will you drop prices?” Smith responded that BellSouth would share the profits with its shareholders instead. June 8 email Burstein to Crawford. The telephone companies claimed in connection with undoing unbundling requirements and linesharing that they would build more broadband connections in the U.S. if they won. Their own projections of broadband penetration for the U.S. in 2000-2001 were for 80-90%—and they reached only 75% penetration. Cites.

104. Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 *U. Chi. L. Rev.* 129 (2004).

market economy.”¹⁰⁵ These network managers may not be the best improvers of their networks. They may not have access to the best research or the most creative ways of making these broadband access points work efficiently. At the least, we have no empirical evidence that the current group of network managers is best suited for the job of improving these networks. Distribution of broadband access may, in fact, be better accomplished by others.

Discrimination as a way to improve the network manager’s return on his investment in broadband deployment is entirely speculative. There is no assurance that granting monopoly discrimination rights based on these ex post justifications will actually increase broadband penetration or lead to better-maintained networks. Indeed, granting such rights may lead only to higher prices and lower supplies of broadband access.

The incentive arguments made by these network providers prove on close examination to be weak and occasionally internally inconsistent. Where a network provider has already built broadband access points (as in the case of Verizon), why does he need incentives to create them? What assurance do we have that propertization of these access points will in fact lead to greater investment in broadband?¹⁰⁶ Why should we think that such propertization will lead to greater revenues for the broadband providers? Why would broadband providers who operate essentially without market competition necessarily manage their access points (the goal of the ex post justifications) in ways that will produce desirable outcomes for society? Finally, why would charging subscribers differentially for bandwidth usage (but not discriminating against applications or sources of content) be an unsustainable model for the network providers?¹⁰⁷ The real primary incentive for discrimination (from the network provider point of view) appears to be to protect existing revenue streams.

105. Id.

106. Verizon CEO Ivan Seidenberg has consistently said that he will install fiber without regard to what the regulatory structure for this installation is. SBC’s CTO, ____, has told reporters the same thing.

107. See Brett M. Frischmann, *An Economic Theory of Infrastructure and Sustainable Infrastructure Commons*, 89 Minn. L. Rev. 917, 925-26 (2005) (stating “[t]his does not mean, however, that access is free. We pay tolls to access highways, we buy stamps to send letters, we pay telephone companies to route our calls across their lines, and so on. Users must pay for access to some (though not all) of these resources. Nor does it mean that access to the resource is unregulated. Transportation of hazardous substances by highway or mail, for example, is heavily regulated. The key point is that the resource is openly accessible to all within a community regardless of the identity of the end-user or end-use.”) This is the essence of common carriage.

In sum, “monetization” of broadband access is not, standing by itself, wrong. What is wrong is that the network providers have market power over access that has become strategically necessary to the American economy and to an entire way of life.¹⁰⁸ The telcos are not suggesting that anyone have the power in the future to audit or enforce their progress towards the goals supposedly served by these incentives. Implicitly, therefore, these incentives assume the existence of a perfectly competitive market that will enforce these goals for all of us. Because such a market does not exist, the incentive arguments made by the network providers should be examined closely.

III. THE COMPARATIVE STORY

Approaches taken in Japan and in Germany to broadband access regulation may be instructive for U.S. policy decisions in the coming years. Japan has chosen to be a strong regulator of telecommunications services, and broadband penetration and speeds are high in that country. Competition for applications and services provided over Japan’s unbundled pipes is fierce. Germany, by contrast, has allowed its incumbent telecommunications company, Deutsche Telekom, to remain enormously powerful, and has not enforced unbundling requirements that would have introduced competition for broadband access. As a result, broadband penetration in Germany remains lower than in many other European countries, although Germany is the largest of the group in terms of population and economic heft. Deutsche Telekom is now poised to create a fully-integrated “entertainment platform” for its broadband subscribers, and is seeking legislative protection of its network so that its offerings to consumers will not be subject to competition from the internet.

A. *Japan and Broadband*

Japan is first in the world for broadband penetration and optical fibre availability to individual homes.¹⁰⁹ Although the telcos in the U.S. claim that it is too expensive to roll out fiber, and that they will need regulatory relief and other incentives in order to do so, Nippon Telegraph and Telephone Corp. (NTT), the Japanese telco, has gone ahead and installed fiber. At the same time, NTT is required by its regulator to provide its

108. Bush administration broadband plans.

109. GLOBAL BROADBAND BATTLES: WHY THE U.S. AND EUROPE LAG WHILE ASIA LEADS (Martin Fransman, ed.), Chaps. 1-2.

competitors with access to its fiber networks (to “unbundle its local loop”).¹¹⁰ As a result of the competition engendered by this unbundling as well as competition from major electricity companies in Japan, broadband users in Tokyo are online at speeds that are more than ten times faster than users in New York.¹¹¹

Takanori Ida recently evaluated the forces that have led to this situation in Japan, and has written about the consequences this strong regulation has had for NTT’s health.¹¹² In a nutshell, NTT began an aggressive fiber campaign in the early 1990s in order to avoid being broken up by the Japanese government.¹¹³ NTT’s strategy was to show Japan that only a comprehensive telecommunications company would be strong enough to succeed with rolling out fiber, and that therefore that company should not be broken up.¹¹⁴ NTT announced in the late 1990s that it would provide a nationwide fiber network by the end of 2015, and has so far made substantial progress on this promise.¹¹⁵

At the same time, the Japanese regulator required NTT to open its networks entirely to its competitors. In Ida’s words, “Thanks to the policy of thoroughly open access to NTT’s regional communications networks and optical fiber, it became possible for newcomers to offer ADSL and FTTH services without having their own infrastructure.”¹¹⁶ All of NTT’s services were unbundled at very low costs to NTT’s competitors – fiber as well as copper (DSL and traditional phone line) affordances. Japan has the most open networks of any country in the world.¹¹⁷

Life for broadband consumers in Japan is good, but life for NTT is difficult. NTT probably would not have survived the low charges that its

110. GBB at 60. The local loop refers to the “physical twisted metallic pair connecting the network termination point at the subscriber’s premises to the main distribution frame or equivalent facility in the fixed public telephone network” (European Parliament and Council, 2000, p. 4)

111. GBB at 59.

112. GBB, Chapter 2.

113. GBB at 67-68.

114. In 1998-99, NTT was regrouped for management and reporting purposes into three companies: NTT East, NTT West (both regional phone companies), and NTT DoCoMo. (Japan’s leading cellular service provider), with a NTT as a holding company controlling all three. *See* http://www.ntt.co.jp/about_e/corporatedata.html.

115. GBB at 68.

116. GBB at 69.

117. GBB at 69.

regulator required had it not been for the financial success of its other subsidiaries, including the strength of its wireless services. NTT has had to lower its prices, fire employees, outsource services, cut salaries, and close offices in order to survive.¹¹⁸ Fierce competition from both DSL providers and electric companies (who were able to provide fiber networks that were completely independent of NTT's networks) has forced NTT to lower its prices even further.¹¹⁹ NTT's situation continues to be difficult, and it may need to dismantle its traditional telephone network and focus only on optical IP fiber services in the coming years.¹²⁰ NTT's profits plunged 30% in 2005 as a result of decreased revenue from traditional telephone subscribers and low prices for all of its other services.¹²¹ NTT cannot leverage its broadband offerings by vertically integrating services, and hopes that its costs for providing fiber access will soon equal its revenues from this service.¹²² At the same time, it will continue to be responsible for opening up these networks to its competitors and providing universal connectivity in Japan.

The results of these events have, however, been astonishing. Japan now has at least 24 million people using broadband, with about two-thirds of those end-users using DSL and the rest fiber connections.¹²³ Japan is ranked eighth in the world in terms of its broadband penetration, and according to the U.S. Department of Commerce the widespread availability of broadband in Japan has led to broad use of voice and video services there.¹²⁴ NTT expects that there will be 30 million subscribers to fiber services by the end of 2010.¹²⁵ Japanese prices for fiber broadband access are the lowest in the world, and speeds are very high.¹²⁶

118. GBB at 72.

119. GBB at 71.

120. GBB at 73.

121. Yuri Kageyama, *NTT fiscal 2005 profit down 30 percent*, AP BusinessWeek Online, May 12, 2006 (available at http://www.businessweek.com/ap/financialnews/D8HI69UO3.htm?campaign_id=apn_tech_up&han=tc).

122. Stephen McClelland, *21CN: Japan's 21st Century Network*, Telecommunications Magazine, Mar. 27, 2006 (available at http://www.telecommagazine.com/search/article.asp?HH_ID=AR_1901).

123. IDC November 2005 report, summarized at http://www.japancorp.net/Article.Asp?Art_ID=11208. Also Computer Industry Almanac press release at <http://www.c-i-a.com/pr1105.htm>.

124. *Japan: Telecommunications Market Brief 2006*, U.S. Commercial Service, U.S. Dept. of Commerce (available at http://www.buyusainfo.net/docs/x_8524808.pdf), April 2006.

125. *Japan: Telecommunications Market Brief 2006*, U.S. Commercial Service, U.S. Dept. of Commerce (available at http://www.buyusainfo.net/docs/x_8524808.pdf), April 2006.

126. *The First Mile: Capsule Summaries of Trend Data for Broadband*, March 2006

B. Germany and Broadband

Germany's incumbent, DT, controls at least 90% of the market for broadband access in Germany.¹²⁷ DT's revenues are being undermined by the growth of VoIP services and are threatened by the model of new fast-growing municipal networks. Both Amsterdam and Paris are making great strides in laying their own fiber and avoiding the incumbent telecom operator.¹²⁸ DT's responsive tactics are very similar to what incumbent telcos here in the U.S. are working towards: acquiring legislative protection for complete control over their broadband infrastructure.

In September 2005, DT announced that it would be investing \$3.9 billion on installing fiber-to-the-curb (FTTC) – deploying a high-speed optical fiber network between the operator's central offices and the curb of consumers' homes in 50 German cities.¹²⁹ DT's plan was to create a million more "triple-play" (integrated services) customers by the end of 2006.¹³⁰ DT has announced that it intends to remain Europe's "number one" telecom operator, and is poised to buy other network operators (including the U.K. incumbent, British Telecom) to hang onto this status.¹³¹ It is also planning to offer a new IPTV service in partnership with Microsoft (as a result of a deal Microsoft has announced is its second

(available at http://www.broadbandproperties.com/2006issues/mar06issues/firstmile_march.pdf).

127. Broadband Battles, at 167 (88% as of end of 2004). *Deutsche Telekom Reaches 9.2 million DSL Users, On-track for IPTV Launch*, Converge! Network Digest, May 11, 2006 (available at <http://www.convergedigest.com/DSL/lastmilearticle.asp?ID=18212>). OECD 2005 broadband penetration statistics (10.7 million broadband subscribers in Germany).

128. Damien Chew, *European Telecoms: CityNet Amsterdam: Fibre-to-the-home is becoming a reality*, ING Wholesale Banking publication, Feb. 24, 2006 (available at <http://www.ftthcouncil.org/documents/736808.pdf>); *Paris Plans FTTH Network*, LightReading.com, Jan. 9, 2006 (available at http://www.lightreading.com/document.asp?doc_id=86547).

129. *DT Flings Billions at Fiber Access*, LightReading.com, Sept. 1, 2005 (available at http://www.lightreading.com/document.asp?doc_id=79944). The remaining distance to homes will be covered by VDSL links, providing speeds of up to 50Mbps. John Blau, *Deutsche Telekom to Begin IPTV Test in May*, Network World News, Apr. 28, 2006 (available at <http://www.networkworld.com/news/2006/042806-deutsche-telekom-to-begin-iptv.html>).

130. *DT, TI Set to Spend Big on Broadband*, LightReading.com, Nov. 9, 2005 (available at http://www.lightreading.com/document.asp?doc_id=83983).

131. *DT Plans Acquisitions*, LightReading.com, May 4, 2006 (available at http://www.lightreading.com/document.asp?doc_id=94066); *Would DT Buy BT?*, LightReading.com, May 26, 2006 (available at http://www.lightreading.com/document.asp?doc_id=95818).

biggest ever) over this new broadband network.¹³²

Potential competitors to Deutsche Telekom have long complained that the incumbent has been very slow to grant access to the local loop and has imposed “excessive co-location conditions” and “excessive licensing fees” for this access.¹³³ Although unbundling has been required by the German regulator since 1998, DT has been successful in keeping its competitors “relative[ly] insignificant.”¹³⁴ It has also required that anyone buying a DSL connection for broadband internet access (which could include use of VoIP services) also buy a landline phone line from DT.¹³⁵

Broadband penetration in Germany is surprisingly low – Germany is ranked 10th in Europe and 18th of OECD countries as of December 2005.¹³⁶ Although more than 60% of Germans are online,¹³⁷ only thirteen out of every 100 inhabitants subscribe to broadband services (compared to

132. *Microsoft Wins IPTV Deal at DT*, LightReading.com, Mar. 21, 2006 (available at http://www.lightreading.com/document.asp?doc_id=91180). MSN is also providing IPTV platforms to BT, Telecom Italia, Swisscom, the new combined AT&T entity, and Alcatel. Deutsche Telekom's T-Online division will offer a triple-play data, voice and video service in Germany, France, and Spain called T-Home, that will be based on Microsoft IPTV software and set-top boxes provided by Cisco. *DT Launching Home Triple-Play Broadband*, UPI, Apr. 28, 2006 (available at <http://www.upi.com/Hi-Tech/view.php?StoryID=20060428-052533-1063r>).

133. Office of the United States Trade Representative, *Background on the 2001 Section 1377 Review*, Apr. 2, 2001 (available at http://www.ustr.gov/Document_Library/Press_Releases/2001/April/Background_on_the_2001_Section_1377_Review.html) (noting practices of DT that hinder entry by competitors and are in derogation of World Trade Organization commitments by Germany). “Under Section 1377 of the Omnibus Trade and Competitiveness Act of 1988 the USTR annually reviews, by March 31 of each year, the operation and effectiveness of U.S. telecommunications trade agreements, and takes action where noncompliance is found. In most cases related to implementation of WTO commitments under the 1998 Basic Telecommunications Agreement, the annual Section 1377 review process has led governments and regulators to take immediate steps to address the complaints of U.S. carriers.”

134. *Broadband Battles*, at 167. U.S. telecommunications trade associations in the past filed complaints with USTR (e.g., in February 1999, 2000, and 2001) under Section 1377 of the Omnibus Trade and Competitiveness Act of 1988, charging that Germany was not fully complying with the WTO's Basic Telecommunications Agreement. *See* 2001 Country Report on Economic Policy and Trade Practices, Bureau of Economics and Business Affairs, U.S. Dept. of State, Feb. 2002 (available at <http://www.state.gov/documents/organization/8224.pdf>).

135. *German Innovation Stalled at Home*, Deutsche Welle, Dec. 13, 2004 (available at <http://www.dw-world.de/dw/article/0,2144,1427206,00.html>).

136. ECTA press release, May 2006, available at <http://www.ectportal.com/en/upload/File/Broadband%20Scorecards/Q405/Final3%20Press%20Release%20Sc%20Q4051.pdf>. OECD Broadband Statistics, Apr. 2006 (available at www.oecd.org/sti/ict/broadband) 9as of Dec. 2005).

137. Internet World Stats, Germany, available at <http://www.internetworldstats.com/eu/de.htm>.

16.8 in the U.S. and 25.4 in Iceland).¹³⁸ Nearly 95% of those subscribers use DSL connections – cable broadband has no real presence in Germany, although cable penetration itself is very high.¹³⁹ And DT's ISP (T-Online) has an "extraordinarily strong market position" in DSL, with very few competitors.¹⁴⁰ Germany has already fallen behind in the market for innovation in online music and voice services, and is unlikely to be a source of innovation in video applications.¹⁴¹

In February 2006, the partially state-owned DT urged the German government to pass a law that would protect DT's new fiber network from access requirements.¹⁴² Under this approach, Germany's Federal Network Agency would only be allowed to intervene if, in the absence of regulation, competition in a "new market" was likely to be inhibited "in the long term."¹⁴³ DT threatened not to build this network unless it received the protection it sought, and the German government agreed to help.¹⁴⁴

The European Union's New Regulatory Framework requires that broadband providers with significant market power be subject to a range of

138. OECD Broadband statistics, n.96 (total of 10.7 million broadband subscribers).

139. Broadband Battles, 195. Broadband Battles suggests that the reason for this is the complicated state-level system of regulation of cable content. 204.

140. Broadband Battles, 197. DT has 9.2 million broadband customers in Germany, out of a total of 10.7 million broadband subscribers in that country. OECD 2005 broadband penetration statistics, available at http://www.oecd.org/document/39/0,2340,en_2649_201185_36459431_1_1_1_1,00.html.

141. *German Innovation Stalled at Home*, Deutsche Welle, Dec. 13, 2004 (available at <http://www.dw-world.de/dw/article/0,2144,1427206,00.html>) ("Experts fear a repeat of the MP3 fiasco, the technology for which was also developed in Germany, although German firms did not develop lucrative business applications for it. Similar resistance to digital music means that most Germans who buy and download music online use foreign services, like iTunes, with German online music platforms struggling to catch up.") See also alarm:clock Euro blog, entry for Feb. 1, 2006: "Europe's largest economy has been the region's largest disappointment for venture capital investors, according to the buzz at VC and tech conferences over here." An examination of the pace of online innovation in Germany is beyond the scope of this Essay, but early signs have not been encouraging thus far.

142. The German government still owns 15.2% of DT, and a German government-owned bank owns another 17.3% of the company – the largest shareholders in DT. John Blau, *Blackstone Buys \$3.3 Billion Stake in Deutsche Telekom*, IDG News Service, Apr. 24, 2006. The German government therefore is likely very sensitive to fluctuations in the company's fortunes.

143. *Deutsche Telekom competitors up in arms at regulatory hiatus option for VDSL network*, Heise Online News, May 18, 2006 (available at <http://www.heise.de/english/newsticker/news/73290>).

144. *EU Threatens Sanctions Over Protection Request by Telekom*, Deutsche Welle, Mar. 13, 2006 (available at <http://www.dw-world.de/dw/article/0,2144,1933722,00.html>). ("I am not talking about monopolist profits," [DT CEO] Ricke said. "We simply want to be able to determine our own destiny in a ew market. We need clear legal commitments regarding the long-term regulatory situation if we are to roll out this (VDSL) project.")

obligations, including transparency, non-discrimination, accounting separation, access, and price controls.¹⁴⁵ In particular, where an operator is found to have significant market power, the regulator must “provide[] services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners.”¹⁴⁶ In May 2006, when the German government approved the draft bill to be sent to Parliament that would have exempted Deutsche Telekom from being forced to unbundle its \$3.9 billion broadband network, the European Commission responded by threatening legal action against Germany.¹⁴⁷ According to the International Herald Tribune, Viviane Reding, the EC commissioner for information society and media, said “We cannot afford to create new monopolies out of short-term political opportunism.”¹⁴⁸ A DT spokesman responded that “We cannot possibly invest €3bn [\$3.9 billion] in setting up a network without receiving adequate protection for our investment in return.”¹⁴⁹ DT and its friends in the German government take the view that in “new and emerging markets in which market power may be found to exist because of ‘first-mover’ advantages, should not in principle be subject to ex-ante regulation.”¹⁵⁰

Beginning in mid-June 2006, DT plans to offer consumers a package that will be accessed by a proprietary media receiver manufactured by Linksys (part of Cisco).¹⁵¹ Consumers will be offered about 100 channels, including existing satellite and cable feeds, and video-on-demand movies.¹⁵² This MSN platform will also offer web surfing, VoIP, and “other interactive entertainment services.”¹⁵³ DT’s vision, like that of other

145. Directive 2002/19/EC of the European Parliament and of the Council, 7 March 2002, on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) (available at http://europa.eu.int/information_society/topics/telecoms/regulatory/new_rf/documents/l_1082002_0424en00070020.pdf), preamble para. 14.

146. Access Directive, Arts. 8 and 10.

147. *EU renews legal threat over German broadband*, International Herald Tribune, May 17, 2006 (available at <http://www.ihrt.com/articles/2006/05/17/business/techbrief.php>).

148. *Id.*

149. *EU Commissioner: No regulatory compliance exception for DT’s optical fiber networks*, Heise Online News, Feb. 20, 2006 (available at <http://www.heise.de/english/newsticker/news/69849>).

150. *Id.*, citing draft bill.

151. John Blau, *Deutsche Telekom to begin IPTV Test in May*, Network World News, Apr. 28, 2006 (available at <http://www.networkworld.com/news/2006/042806-deutsche-telekom-to-begin-iptv.html>). *DT Rival Launches IPTV*, LightReading.com, May 12, 2006 (available at http://www.lightreading.com/document.asp?doc_id=94671).

152. *Id.*

153. *Id.*

telcos around the world, is that this integrated IP-based platform combining information, communication, and entertainment (ICE) will prove irresistible to consumers.¹⁵⁴ It will allow for differentiation of services, because DT will be able to use the packet inspection capabilities of Cisco's routers to ensure that the capacity of this broadband connection will be dedicated to DT's partners' content. DT is well on the way to being able to fully leverage its network operator status into becoming a gatekeeper over all broadband interactions in the areas it serves.

IV. COMPARING COMPARISONS

The arguments in favor of "integrated IP" networks made by the telcos in the U.S. and the arguments made by intellectual property maximalists have much in common. They are also different in key respects.

Consider the similarities. U.S. telcos are moving to erase traditional concerns over the monopolization of access that have shaped communications law since the days of the railroads, just as intellectual property maximalists have tried to erase traditional concerns over the monopolization of intellectual work that have shaped intellectual property law since the Statute of Anne. Both groups are deeply threatened by the digitization of all content—whether the content is a telephone call or a first-run movie. Both groups have longstanding business models that have relied on customary physical friction in the analogue world—for the telcos, the difficulty of making a telephone call without a telephone system, and for the IP maximalists, the difficulty of copying a work inexpensively. Both the telcos and the IP maximalists (using DRM) would like to be able to perfectly price-discriminate with respect to access to their digital "products."¹⁵⁵ Perfect price discrimination requires perfect control, and so both groups have sought legal and technical assistance in establishing and maintaining such control.

154. See David Russell, *The Road to Convergence: Network Transformation and IP*, Converge! Network Digest, May 17, 2006 (available at <http://www.convergedigest.com/bp-ttp/bp1.asp?ID=355&ctgy=Loop>) (explaining origin of ICE) ("Going forward, successful operators will be ICE operators, providing information, communication, and entertainment services to subscribers. To deliver ICE services uniformly and cost effectively, providers must transform their networks and their business models, encompassing entirely new lines of business.").

155. See Dan L. Burk, *Anticircumvention Misuse*, 50 *UCLA L. Rev.* 1095, 1106-07 (2003); Julie E. Cohen, *Pervasively Distributed Copyright Enforcement*, 95 *Geo. L.J.*; Pamela Samuelson, *DRM [and, or, vs.] the Law*, *Comm. ACM*, Apr. 2003.

Consider the differences in both timing and available alliances. This fight with the telcos over net neutrality is like the fight that took place just before the Digital Millennium Copyright Act of 1998 (“DMCA”)¹⁵⁶ was enacted, when the copyright industry was seeking legal protection to ensure their exclusive rights were not eroded by digital technologies. The telcos are now seeking legal protection for a new role as cable operators – content providers, gatekeepers, and salesmen for walled gardens. Unlike the pre-DMCA days, when few people were paying attention to the problem of locking up distribution of digital content, and those people were inadequately funded to contest the copyright owners’ claims, there are strong collective forces already on the side of an open, neutral internet. These forces include the many entities and individuals who have elected to join the grassroots savetheinternet.com effort, but also substantial online companies and innovators whose business models depend on the provision of a neutral online substrate.

Unlike in the intellectual property law context, in which the DMCA incorporated a strong liability protection for online businesses (in the safe harbors provided to online service providers who took adequate steps to remove copyrighted material that was being infringed), the new anti-network neutrality telecom bills contain no tradeoffs that will assist these online businesses. And unlike in the intellectual property wars, which seemed to be fought only between private parties, we have a strong pre-net neutrality governmental commitment to open communications networks that has served the United States well in the past. Finally, unlike in the copyright context, in which the old laws were being fiercely protected by incumbents (who had been granted extraordinarily strong if usually unenforceable exclusive rights), in the communications law setting the telcos are trying to use accommodations granted to the cable companies in *BrandX* to throw traditional common carriage regulatory structures covering public networks out the window. Their arguments are for a change in the status quo, rather than for legal arrangements that will ensure continuation of the status quo (arguably the claim behind the DMCA anti-circumvention provisions).

A key element that separates the intellectual property from the telecom battles in the U.S. is that during the early days of the copyright disputes we did not have international models available for comparison to

156. See Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified in scattered sections of 17 U.S.C.).

our own situation, and we were not racing with other countries to create the most economically valuable copyright policy. As this Essay has demonstrated, the telecommunications issues now under discussion in the U.S. have clear parallels in other countries.

We know from Japan that competition for broadband access-and concomitant low prices and high speeds-will erupt when incumbents are forced to unbundle their broadband facilities. We know that this unbundling will make life economically difficult for network providers, as it has for NTT. If we decide to adopt a wholesale separation regime for telecommunications providers, we can arrange for ways to make them whole.¹⁵⁷

We know from Germany that incumbents want to reserve any excess capacity in their broadband connections for their own prioritized content,

157. There is a strong argument in favor of exercising eminent domain, and paying compensation, rather than regulating around a taking in this context. It is in fact difficult to say empirically whether the gains of a regulatory taking would exceed the private harms suffered by the network owners. It would be very difficult to write down in words what discriminations were unlawful by a particular network provider, given the providers' propensity to label everything they do "network management." (Network providers will always be able to claim that particular discriminations were simply matters of "network management.") Litigation over whether any rate-setting regulation was a taking would take years and would be enormously expensive, given the almost limitless resources of the telcos to fight for their franchises. It might be wiser to simply declare that the federal government was acting to enforce structural separation of the telcos and cablecos when it comes to internet access. This step could then be accomplished through an actual compensated taking, forcing the network providers to cease providing prioritized content or do more than provide unbundled transport services that were open to aninterconnection. The expense would be great, but the arguments would be over. There are analogies available in other fields. For example, in 1992 a FERC Order (No. 636, known generally as the Open Access Order) made pipeline unbundling a requirement, mandating that pipelines separate transportation from the services they offer. Order 636 meant that the transport pipelines could no longer engage in gas sales or sell any product as a bundled service. Thus, no advantages in terms of (among other things) the timing of gas transportation could be afforded by a pipeline to its affiliates. This set of actions has had generally beneficial effects on gas customers. It was expensive to achieve: FERC recognized that pipeline companies would incur costs as a result of complying with Order 636, and allowed them to charge customers for them. The initial plan was to allow pipeline companies to charge exit fees and surcharges to recover 100 percent of their "prudently incurred" transition costs between the bundled and unbundled regimes; later, FERC issued Order 636-A on August 3, 1992, which required pipeline companies to recover 10 percent of these transition costs through the rates they charged for gas transportation. These costs included "realignment costs" for changing gas supply contracts, "stranded costs" for assets used to provide bundled products, costs incurred to purchase new equipment, and other costs. Energy Information Administration, FERC Order 636: The Restructuring Rule (1992), available at http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/ferc636.html. It is true that having the FCC work on such a "prudently incurred" cost-assessment regime will take a great deal of time and may be very expensive. But the cost will serve a higher public value..

and are not particularly concerned about what this will do to “the internet.” We also know that this approach will keep consumers moving slowly online and being treated as passive absorbers of cable-like content rather than producing their own material. Finally, we can be confident based on what we hear from Germany as well as from our own incumbents that the network operators’ plan is to gradually diminish the importance of “the internet” to the public. The operators have always been unhappy with the popularity of the internet and the ease with which their communications services have been commodified, and they are desperate to displace it. Although DT has more control over the market for broadband access in Germany than our incumbents do in the U.S., this is a difference of degree rather than kind. The reality is that Americans have no more than one or two choices of providers.

The German view, one centered on the ideal of the romantic builder, will tend to disproportionately favor the contributions of the network provider—their streaming, big-media productions (rather than the file transfers and local storage embraced by end users), and their preference for downloading over uploading. This will mean that the astonishing resources of the internet, and its overwhelming efficiency in using many eyes and hands to create value, will eventually, inevitably, diminish rather than grow. The distributional, environmental, and innovation-related effects of this trend will be profound.

These comparative examples show that the incentives arguments of U.S. incumbents are overblown. Competition, rather than legislative protection, provides incentives to lower costs and provide better networks; the “romantic builder” is actually a holdup artist with substantial market power; and the network providers seek to replace “the internet” with a privatized network that they can control.¹⁵⁸ More importantly, however, we see that Japan has taken the view that complete control of strategically key network access points is inappropriate. The access points are still “owned,” privately, by NTT. But NTT has a duty to open them to all comers, so as to further Japan’s overall plan to bring broadband access to the interactive internet to its citizens.

158. See Jonathan Zittrain, *The Generative Internet*, 119 *Harv. L. Rev.* 1974, 2040 (2006) (noting possible future of the internet; “Two Internets would consign the existing grid to an applianceized fate, in which little new happens as existing technology players incrementally modify existing applications without the competitive pressure of grid-enabled innovation arbitrage.”).

The knowledge we gained from the intellectual property debates should help us in the telecommunications fracas. We know that the network operators plan to create too many property rights that will reward the wrong people, and that the societal spillovers made possible by the internet will be undermined and undervalued by these incumbents. We also know from the Japanese examples that incentives to build networks may come from competition rather than legislation, just as authors will continue to write even without a copyright monopoly at the forefront of their minds.

We have an opportunity in the U.S. to take positive action on this question. We could create enormous public benefits by imposing duties on broadband access providers to serve all other access providers alike. It is not wrong to own an access point to the internet. What is wrong is to act as a holdup artist—to require that a portion of all value stemming from use of the network, however created, be paid to you. Taking this step, requiring this duty to serve other access providers, would make it possible to have a network that will be far more valuable than the one that would have been created by giving these particular access point owners the incentives they now seek on Capitol Hill. Just as intellectual property law is designed to serve the public interest through key limitations on an “owner’s” ability to extract value from his/her work, so should these broadband access networks be subject to unbundling and common carriage obligations to further competition, innovation, and other central social goals.

CONCLUSION

We have time to consider the question of network control. Control over distribution chokepoints—prioritization of particular packets—is not inevitable. As we have seen, the Japanese experience shows us that it is possible to imagine an alternative future for the internet: blazing high speeds brought about by competition, no prioritization/discrimination, and the emergence of new applications taking advantage of the open internet substrate.

The goals of our communications law are not clear. Even though the bills that are being considered will fundamentally affect our economy and society, we have not decided what is important to us. In a sense, we are faced with a narrow question: what polices should apply to the “last mile” broadband access point? Should it be nondiscriminatory or vertically-integrated with a carrier’s other offerings?

We have three options in answering this question: we can relax into the property talk and “romantic builder” notion being conveyed by the carriers, and believe that the granting of legislative incentives to invest in the carriers’ networks will lead to overall benefits for mankind; we can attempt to draft a network neutrality rule that calls upon carriers to treat “similar” services similarly, and then founder on the rocky shoals of trying to determine which flow of amplifying bits is “similar” to another (imagine the deep packet inspection that will be required to make that assessment possible); or we can recognize that the value of access to the internet carries with it a duty to be open to all comers—particularly given the very few choices of network providers in this country. On this third view, we can decide together that the internet’s value to people will be better served by choosing to require a common carriage duty, with appropriate compensation to the carriers. This will not be an easy discussion, and scholarly assistance is needed.

When scholars confront copyright questions, they address—directly—what benefits copyright law is supposed to bring to all people. The copyright maximalists scarcely recognized the importance of encouraging second-in-time innovators and peer creations, but scholars took on these issues with vigor. The current communications law discussion does not adequately take into account the interactive, user-generated nature of the internet, and the benefits that open access to this resource has generated and will continue to generate for humanity. In the broadband context, other countries—in particular, Japan—seem to have found ways to keep broadband access points open, competitive, fast, and inexpensive. We should learn from the copyright debates and from the comparative broadband deployment stories available to us, and do the same. We are at risk of being in thrall to an idea of romantic network ownership that should be questioned as dogma.