

NETWORK RULES

SUSAN P. CRAWFORD*

I

INTRODUCTION

Baby Bell executives and online companies have been holding a lively debate on the Hill and in the press as to whether the Bells should be permitted to deviate from common carriage¹ models in providing “last mile” internet access.² 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’s.³ The CEO of AT&T said, “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.”⁴

Copyright © 2007 by Susan P. Crawford. Anyone may make verbatim copies of this article for noncommercial purposes so long as the following notice is retained on all publicly distributed copies:

© 2007 Susan P. Crawford. Symposium, *Cultural Environmentalism @ 10*, 70 LAW & CONTEMP. PROBS. (James Boyle & Lawrence Lessig, eds., Spring 2007). Licensed under the Creative Commons Attribution-NonCommercial-NoDerivs License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/> or send a letter to Creative Commons, 543 Howard Street, 5th Floor, San Francisco, California, 94105, USA.

This article can also be found <http://law.duke.edu/journals/lcp/>.

* Associate Professor, Cardozo School of Law.

1. “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*, (Columbia Univ. Working Papers Server Project, 1994), available at <http://www.columbia.edu/dlc/wp/citi/citinoam11.html>.

2. The last mile is the local link between a local telephone company switching facility and the premises of a resident or customer; it is the final leg of delivering communications connectivity.

3. Jonathan Krim, *Executive Wants to Charge for Web Speed*, WASH. POST, Dec. 1, 2005, at D5.

4. *Broadband Battles*, THE AGE, Dec. 16, 2005, <http://www.theage.com.au/news/technology/broadband-battles/2005/12/15/1134500943128.html?page=3>.

The telcos (and cablecos and wirelesscos)⁵ 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.⁶ In the words of the Verizon CEO, 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.”⁷ Similarly, another Verizon executive has said that Google is “enjoying a free lunch that should, by any rational account, be the lunch of the facilities providers.”⁸

The telcos have a two-part strategy: First, they plan to prioritize their own packets and the packets of their partners so these affiliated packets would arrive more predictably than other packets. Second, they propose to charge unaffiliated online-content providers (like Google or any other non-telco source of packets) to cross their networks. In response to this, Vint Cerf, one of the creators of TCP/IP, has called on behalf of Google for a “lightweight but enforceable neutrality rule.”⁹ A group of online companies has written to Congress claiming that “[t]he 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.”¹⁰ Legislative activity in this area has been intense.¹¹

In the academic realm, dissection of intellectual property policy has been a popular pursuit for some time, and has attracted mainstream support. 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

5. Throughout this article, the telcos (a common nickname for the Baby Bells, generated when AT&T—known familiarly as Ma Bell—settled an antitrust action against it by breaking into multiple telecommunications companies) are the protagonists. Cable and wireless companies have very similar goals, and their history of vertically integrated networks (and light regulatory treatment) has left them in a good position to claim the control over their broadband access points that the telcos seek through legislation. Cablecos, in particular, have been the creatures of exclusive government franchises and so have not had to engage in a great deal of competition. I propose a single regime—structural separation for all broadband access points, whether owned by telcos, cablecos, or wirelesscos. 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.

6. Hiawatha Bray, *Telecoms Want Their Products to Travel on a Faster Internet*, BOSTON GLOBE, Dec. 13, 2005, at A1.

7. Paul Kapustka, *Verizon Says Google, Microsoft Should Pay for Internet Apps*, INFORMATIONWEEK, Jan. 5, 2006, <http://informationweek.com/story/showArticle.jhtml?articleID=175801854>; see also Dionne Searcey & Amy Schatz, *Phone Companies Set Off a Battle over Internet Fees*, WALL ST. J., Jan. 6, 2006, at A1 (providing a slightly different version of Seidenberg remarks).

8. Arshad Mohammed, *Verizon Executive Calls for End to Google’s ‘Free Lunch,’* WASH. POST, Feb. 7, 2006, at D1.

9. Letter from Vinton Cerf to Hon. Joe Barton, Chairman, House Committee on Energy and Commerce, and Hon. John D. Dingell, Ranking Member, House Committee on Energy and Commerce (Nov. 8, 2005), available at <http://www.cdt.org/speech/net-neutrality/20051108google.pdf>.

10. Krim, *supra* note 3.

11. *E.g.*, S. 2360, 109th Cong. (2006); S. 2917, 109th Cong. (2006); H.R. 5417, 109th Cong. (2006) (antitrust approach); H.R. 5273, 109th Cong. (2006); H.R. 5252, 109th Cong. (2006) (giving FCC power to police complaints); S. 2686 Stevens (R) and Inouye (D) (FCC to do a study).

an important framework for this scholarship in *Software, Shamans, and Spleens*,¹² and this article 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 intellectual property.¹³ 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.¹⁴ Boyle suggested that “[i]ntellectual property just does not occupy the same position in the imagination as human rights or environmentalism,”¹⁵ 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.”¹⁶ Many writers have followed Boyle in exploring intellectual property theory and activism, transforming what had been an academic backwater into a thriving body of scholarship that has attracted wide notice.¹⁷

This article compares the debate between the telcos and the online companies over broadband access regimes (often called the “network neutrality”¹⁸ debate) to the ongoing tussle between intellectual property maximalists and “free culture”¹⁹ advocates. These two sets of arguments are strikingly parallel.²⁰ 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.”

12. JAMES BOYLE, *SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* (1996).

13. *See id.* at 114 (“[T]he romantic vision of authorship plays down the importance of external sources by emphasizing the unique genius of the author and the originality of the work.”).

14. *Id.* at 38.

15. *Id.* at 143.

16. *Id.* at 184.

17. For discussion of Boyle’s analysis and contribution to this debate, see *infra* Part III.

18. *See* Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 141–44 (2003) (discussing “network neutrality”).

19. *E.g.*, LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* (2004).

20. Some of my colleagues have already explored the philosophical intersections between copyright law and communications law. *See* Molly Shaffer Van Houweling, *Communications’ Copyright Policy*, 4 J. ON TELECOMM. & HIGH TECH. L. 97 (2005) (discussing communication law’s role in regulating creativity); Tim Wu, *Copyright’s Communications Policy*, 103 MICH. L. REV. 278 (2004) (discussing copyright law’s role in regulating competition between rival disseminators); Jonathan Weinberg, *Digital TV, Copy Control, and Public Policy*, 20 CARDOZO ARTS & ENT. L.J. 277 (2002) (discussing communication law’s 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).

In debates over intellectual property law, maximalists claim that creativity comes from lone geniuses (the “romantic author”) who must be given legal incentives to work.²¹ 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 might not be socially appropriate. Because all works draw on earlier works, because access to earlier works encourages creative innovation,²² and because strong monopoly grants are not necessary for authorship to continue,²³ overprotecting the romantic author may actually harm society as a whole.²⁴

In the current network neutrality debate, network providers claim that they (the romantic builders) must be allowed by law to price-discriminate vis-à-vis content sources in order to be encouraged to build the network (or to continue supporting it).²⁵ It is as if a hard-hatted 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 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 questions about desirable social policy that should not be dropped: Should the rules that have made possible the explosive growth of the internet be abandoned? Should companies with significant market power over

21. This corresponds to the “romantic author” figure in Boyle’s SHAMANS, SOFTWARE, AND SPLEENS. See *infra* Part III.

22. See Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 34–36 (1991) (negative consequences for second innovators from overprotection of first innovators).

23. See Yochai Benkler, *Coase’s Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369 (2002) (discussing this claim in the context of open source software).

24. Scholars have also noted that the creative genius (or, as Boyle terms it, the “romantic author”) vision is factually inapposite because intellectual property rights are often assigned to intermediary publishers or distributors. See, e.g., Molly Shaffer Van Houweling, *Distributive Values in Copyright*, 83 TEX. L. REV. 1535, 1540 (2005). 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 (2000).

25. See, e.g., Sonia Arrison, *Nixing Net Neutrality*, TECHNEWS WORLD, Aug. 25, 2006, <http://www.technewsworld.com/story/52618.html> (“[A]s consumption of rich online multimedia grows, the next-generation internet will require billions of dollars in investments to expand bandwidth capacity. With network providers taking significant risks in response to this demand, it would be a mistake for Congress to intervene and regulate in anticipation of problems.”); KYLE DIXON ET AL., THE PROGRESS & FREEDOM FOUNDATION, A SKEPTIC’S PRIMER ON NET NEUTRALITY LEGISLATION 7 (2006), <http://www.ncta.com/DocumentBinary.aspx?id=445> (“Net neutrality mandates represent the forced commoditization of broadband infrastructure. Broadband providers would be prohibited from experimenting with different network architectures that might conflict with the one-size-fits-all ‘end-to[-]end’[-]dumb pipe model. Under a net neutrality regime, the providers would have difficulty developing innovative business models that would permit them to recoup the significant fixed costs of building out broadband networks.”).

broadband access be allowed to impose discriminatory pricing on sources of content? How will this privatization of network access valves affect society as a whole?

This article's aim is to convince a new generation of legal scholars 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.

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. But the romantic builder may not have the interests of society as a whole in mind: indeed, 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 well-being that enforcement of these rights creates. Second, the payments sought by the network providers bear no necessary relationship to the "incentives" 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 high-speed 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 carriage may be transformed into the only available reality.

We are learning that the value of the internet to society comes from many different sources—not just from the transport of bits or the making of money by

firms.²⁶ We have the opportunity to create a great public benefit by requiring network providers to make available nondiscriminatory broadband transport to all comers. This approach, called “quarantine” by communications lawyers,²⁷ 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 domain²⁸ 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 a quarantine 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.²⁹

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 fiber-optic connections—to its competitors.³⁰ 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.³¹ 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 United States. Although the European Commission has threatened to take legal action against the German government for its laxity

26. *E.g.*, Benkler, *supra* note 23.

27. See 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, 121 (2003) (“The classic and pure structural remedy [for competition failure] is a “quarantine” that forbids the platform monopolist from participating in the applications sector.”). In the FCC’s *Computer I* decision, AT&T was precluded from providing applications; this was a “quarantine” remedy. *Id.* at 129.

28. 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); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111 (1999); Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 BERKELEY TECH. L.J. 1089 (1998).

29. The risks posed by proprietization of communications networks have been explored by, among others, Yochai Benkler in *Siren Songs and Amish Children: Autonomy, Information, and Law*, 76 N.Y.U. L. REV. 23 (2001) (exploring effects on personal autonomy), and by Mark Lemley and Lawrence Lessig in *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001) (exploring effects on innovation).

30. See *infra* Part IV.A.

31. See *infra* Part IV.B.

in its dealings with DT, the incumbent is confident that its plans will receive legislative approval.

In the United States, the market for broadband access is settling into a comfortable oligopoly—giant telcos and cablecos gently fighting among themselves.³² We should not expect that our current trajectory will provide competition for broadband access leading 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 United States produces the maximum possible amount of overall social benefit, and we cannot rely on the current marketplace for access to provide this. 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 II of this article discusses the context in which the telco rhetoric of the provider as romantic builder is emerging and describes how this vision is obscuring the central policy choice that should be at the heart of the network neutrality debate: Will open or propertized network access lead to the greatest overall social benefit? Part III compares the network neutrality debate to the continuing battles over intellectual property that Boyle presaged in *Shamans, Software, and Spleens*. Part IV provides the comparative analysis, assessing the Japanese and German situations. Part V provides a roadmap for future scholarship in this area.

II

THE BATTLEFIELD

A. Deregulation and Broadband Providers

After the CEO of AT&T argued that, having built the network, the telcos own it, 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.”³³ 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.³⁴ This meant that they

32. S. DEREK TURNER, BROADBAND REALITY CHECK II: THE TRUTH BEHIND AMERICA’S DIGITAL DECLINE 19 (2006), available at <http://www.freepress.net/docs/bbrc2-final.pdf> (describing regional duopolies controlled by cable and telephone providers).

33. *No Action Needed Now on Net Neutrality: FCC Chief*, REUTERS NEWS, Dec. 14, 2005, available at <http://in.tech.yahoo.com/051214/137/61jmv.html>.

34. 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, 1083 (2004); JoAnne Holman & Michael A. McGregor, *The Internet as Commons: The Issue of Access*, 10 COMM. L. & POL’Y 267, 279–80 (2005) (relating that as

could not discriminate against anyone wishing either to connect to their network or to 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.³⁵ This open network made growth of the internet possible in the United States because consumers could get flat-rate, dial-up internet access 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.³⁶

Although telephone companies were not initially enthusiastic about acting as internet service providers (ISPs) and connecting their subscribers to the internet, they prospered when subscribers bought extra lines to allow them to go online through other ISPs. The phone companies prospered again when subscribers bought their proprietary DSL services,³⁷ enabling internet access at even higher speeds (one to two Mbps).³⁸ The 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 telcos argued strenuously that cable companies providing internet access should be subject to the same open access, common carriage, and nondiscrimination provisions under which the telcos were operating. But as of March 2002, the cable companies had obtained from the FCC the promise that the broadband access they provided would not be regulated as a “telecommunications service” by the FCC—so no open access obligations

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).

35. See Kevin Werbach, *The Federal Computer Commission*, 84 N.C. 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 Office of Plans & Policy, Working Paper No. 31, 1999), http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf.

36. See, e.g., 47 U.S.C. §§ 541(c)–(d) (2000).

37. Both dial-up and digital subscriber line (DSL) access run across traditional telephone copper wires. See CISCO SYSTEMS, *INTERNETWORKING TECHNOLOGY HANDBOOK*, at 21-1, http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/dsl.pdf (last visited Jan. 23, 2007).

38. DSL devotes certain frequencies on traditional copper phone lines to data transmission and is faster than dial-up 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. U.S. GOV’T ACCOUNTABILITY OFFICE, PUBL’N NO. GAO-06-426, *TELECOMMUNICATIONS: BROADBAND DEPLOYMENT IS EXTENSIVE THROUGHOUT THE UNITED STATES, BUT IT IS DIFFICULT TO ASSESS THE EXTENT OF DEPLOYMENT GAPS IN RURAL AREAS* 22 (2006), available at <http://www.gao.gov/new.items/d06426.pdf> [hereinafter GAO 2006 REPORT]. DSL speeds in the United States are about 1.5 to 3 Mbps (about 50 to 100 times the speed of a 28 bps dial-up modem), while ADSL speeds may reach 8 Mbps. *Id.* at 8. The FCC defines broadband as anything over 200 Kbps, which is alarmingly slow. FCC, *What Is Broadband?*, <http://www.fcc.gov/cgb/broadband.html> (last visited Feb. 21, 2007).

would be imposed on them.³⁹ 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.⁴⁰ Immediately following the summer 2005 decision in *National Cable & Telecommunications Ass'n v. Brand X Internet Services*,⁴¹ 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 order.⁴²

Now the telcos and the cablecos are aligned, for both groups have reached a common plateau of deregulation: all unbundling and nondiscrimination requirements have been removed from their broadband businesses by the FCC, and these providers will no longer have to carry competing services (such as Skype, GoogleVideo, or even competitive ISPs) at optimal speeds. The telcos and cablecos are working very hard to get legislative language in place blessing these FCC decisions.

B. From Deregulation to Monetization and Prioritizing

The enormous lobbying energy now being devoted to ensuring the deregulation of broadband access in the United States is in turn part of a global attempt by many broadband providers to turn their networks into something much more like what cable companies and mobile phone carriers already 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 can read, thus gating the flow of all other (untagged) bits. The notion

39. See generally Inquiry Concerning Appropriate Regulation of High-Speed Access to the Internet over Cable and Other Facilities, 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 high-speed links directly to the internet.

40. Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 68 Fed. Reg. 52,276, 52,279 (Sept. 2, 2003) (to be codified at 47 C.F.R. pt. 51); Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 69 Fed. Reg. 77,950, 77,952 (Dec. 29, 2004).

41. 545 U.S. 967 (2005).

42. *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 70 Fed. Reg. 60,222, 60,223–25 (Oct. 17, 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).

is that these companies can shape and prioritize traffic that flows over the networks they control.

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.⁴³ This is what the CEO of AT&T meant when he talked about a “private internet,” and what Verizon means by the tagline “It’s the Network” in its advertising.⁴⁴ 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, e-mail transmissions, local news, community groups, and online publications—that has motivated millions of Americans to buy broadband DSL and cable access (not to mention second phone lines) over the last few years.

Telcos and other opponents of network neutrality contend that prioritizing some packets over others is necessary in order to extract all possible monetary value from the internet and so have adequate incentives to invest in broadband access.⁴⁵ Because the current batch of broadband providers has tacitly agreed that charging sources of content for speed is an appropriate business practice, “naked” (unprioritized) broadband service will not be available in this country.

43. 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. Catherine Yang, *Is Verizon a Network Hog?*, BUSINESSWEEK ONLINE, Feb. 2, 2006, http://www.businessweek.com/technology/content/feb2006/tc20060202_061809.htm. 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 eighty percent or more of the available bandwidth. *Id.* 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. See CHARLES B. GOLDFARB, CONG. RESEARCH SERV., ACCESS TO BROADBAND NETWORKS, June 29, 2006, at 11, available at http://www.ipmall.info/hosted_resources/crs/RL33496_060629.pdf; Dave Passmore, *Net Neutrality Technical Challenges*, BUS. COMM. REV., Apr. 1, 2006, available at <http://www.burtongroup.com/promo/columns/column.asp?articleid=252&employeeid=56> (“One might argue that no cable operators (or Verizon with FIOS) are really ‘net neutral,’ since they’ve carved out dedicated bandwidth for their video services. (An exception is AT&T/SBC, whose Project Lightspeed IPTV is limited by DSL, which has insufficient capacity to set aside dedicated video bandwidth.)”); Posting by Cynthia Brumfield to IPDemocracy, Ed Whitacre: No Packet Prioritization for Us (May 31, 2006, 08:57 AM), http://www.ipdemocracy.com/archives/001612ed_whitacre_no_packet_prioritization_for_us.php (noting self-contradictory statements by AT&T Chairman Ed Whitacre). Comcast plans to have “internet access” share a single pipe with (now) analog video and, later, digital video services. See Ellen Lee, *Comcast Expands System Upgrade*, SAN FRANCISCO CHRON., Dec. 28, 2006, available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/12/28/BUGMHN7V201.DTL>. But the overall “shaping” and “prioritizing” point is true for all of the large incumbent providers of broadband services in the United States.

44. *E.g.*, America’s Most Reliable Wireless Network, <http://www.verizonwireless.com/b2c/bestNetwork/itsthenetwork.jsp> (last visited Mar. 22, 2007).

45. See, *e.g.*, Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005); 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).

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 at which they can download.⁴⁶ This asymmetry between uploading and downloading further constrains business and individual sources of content from publishing their own material and privileges the network providers' content source partners whose material will be made available by the network provider itself.

C. Competition and Incentives

Broadband access providers in the United States face very little competition. More than ninety-five percent of residential broadband access in the United States is provided by either cable modem or DSL connection, with about sixty percent of broadband subscribed households using cable service, and thirty-six percent using DSL.⁴⁷ The median number of broadband providers for each household is two—essentially, most U.S. households have a choice of either a cable modem service or a DSL service.⁴⁸ About a third of the nation's households subscribe to broadband service.⁴⁹ Thus, the U.S. market for broadband access is essentially a duopoly, with most Americans having a choice of either a cable modem or DSL connection.

46. 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 6 Mbps download speed for its basic service but provides only 384K for uploading. Marguerite Reardon, *Ups and Downs of Consumer Broadband*, CNET NEWS.COM, Aug. 1, 2005, http://news.com.com/Ups+and+downs+of+consumer+broadband/2100-1034_3-5810534.html.

47. See INDUS. ANALYSIS & TECH. DIV., FED. COMM'NS COMM., HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF JUNE 30, 2006, at 3 (2007), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128A1.pdf ("Of the 50.4 million lines that were faster than 200 kbps in both directions, 45.9 million lines were designed to serve primarily residential end users. Of these, cable modem represented 59.9% while 35.8% were ADSL, 0.2% were SDSL or traditional wireline, 1.0% were fiber to the end user premises, and 3.2% used other technologies."); *see also* U.S. DEP'T OF COMMERCE, A NATION ONLINE: ENTERING THE BROADBAND AGE 1 (2004) (reporting that twenty percent of households had broadband service). *But see* GAO 2006 REPORT, *supra* note 38, at 12 (finding that about half of broadband subscribers used cable and half used DSL). In May 2006, GAO 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 providers could be relying on the same infrastructure, owned by the incumbent telephone company, to provide access." *Id.* at 16–17. Thus, the GAO found, even though only seventy-seven 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 ninety-nine of households in Kentucky lived in zip codes with broadband service. *Id.* Also, the FCC counts any access faster than 200 kbps as "broadband," even though such a slow speed does not allow for easy graphical web searching or downloading. *See* What is Broadband?, *supra* note 38.

48. GAO 2006 REPORT, *supra* note 38, at 18.

49. *Id.* at 10 (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. Yet the United States is falling behind in ensuring that its citizens have high-speed access to the internet. Studies by the Organization for Economic Cooperation and Development (OECD) and the International Telecommunication Union (ITU) have found that the United States is either twelfth or twenty-first in the world in the percentage of people having broadband access to the internet.⁵⁰ And broadband speeds in other countries are often four to five—or even ten or one hundred—times higher than they are in the United States.⁵¹

Optical fiber to the home is not yet widely deployed in the United States,⁵² and this broadband technology (along with others, such as broadband over power lines and WiMAX⁵³) may hold the potential to increase broadband penetration.

The network providers 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 the standing of the United States in the race to hook up citizens to the high-speed internet.⁵⁴

50. Elizabeth Wasserman, *The New Telecom Wars: Looking to Update a Landmark Law*, CO WKLY., Nov. 14, 2005, at 3049, 3052; Richard Hoffman, *When It Comes to Broadband, U.S. Plays Follow the Leader*, INFORMATIONWEEK, Feb. 15, 2007, <http://www.informationweek.com/story/showArticle.jhtml?articleID=197006038>.

51. "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." Wasserman, *supra* note 50. Japan is providing symmetric speeds in excess of 100 Mbps to consumers. Hoffman, *supra* note 50 ("Most current U.S. customers are lucky to get one-tenth or even one one-hundredth of that speed, particularly for uploads—and they pay more for the lower speed.").

52. Only one percent to two percent of U.S. broadband users report having fiber access. HIGH-SPEED SERVICES FOR INTERNET ACCESS, *supra* note 47, at 2.

53. 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 do this. Steve Donohue, *Powerline Outfit's Talking Triple Play; Firm Backed by Google, Malone to Light Up in Texas*, MULTICHANNEL NEWS, Jan. 2, 2006, at 10. Satellite broadband is very expensive, but continues to be discussed as an alternative. *Teles MD Has High Hopes for U.K. Satellite Broadband Offering*, SATELLITE NEWS, 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 cities nor be able to compete effectively with enormously popular ordinary wifi access. Dave Bailey, *Is WiMax on Course for Success?*, IT WEEK, Apr. 14, 2005, <http://www.itweek.co.uk/itweek/analysis/2087395/report-wimax-course-success>. Community wireless mesh networks (with a single connection to the internet shared by multiple devices) are coming into use. Jason Meyers, *The 2006 Wireless Industry Technology Preview*, WIRELESS REV., Nov. 1, 2005, <http://www.keepmedia.com/pubs/WirelessReview/2005/11/01/1069954> (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.

54. So the network providers argue that the quid pro quo for improving the U.S. 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 blocking software to network providers. Ted Shelton, *Verso Appliance Lets Enterprises Block Skype*, INFORMATIONWEEK, Sept. 21, 2005, <http://www.informationweek.com/story/showArticle.jhtml?articleID=171000619>.

Telephone and cable company officials often begin speeches about their companies' ownership of the network with a claim as to how much they have spent building it. Comcast claims to have spent \$100 billion.⁵⁵ Verizon claims to have invested \$15 billion in building its FiOS service.⁵⁶ AT&T⁵⁷ claims to have spent \$5 to \$6 billion on its Project Lightspeed fiber-optic network.⁵⁸ All three companies have said publicly that in order to recoup this investment they will need to be able to monetize their networks.⁵⁹

There is little hope that real competition for unfettered internet access (both up and down) will emerge, given the deeply entrenched nature of the extraordinarily large telcos⁶⁰ and cablecos, the very high up-front costs of creating an alternate broadband access route, and the need to obtain municipal rights-of-way to reach consumers' homes. In the meantime, the old copper wires that were required to serve as common carriage platforms in the past, with their nondiscriminatory dial-up or DSL access to ISPs and thence to the internet, are

55. Joseph W. Waz, Jr., Vice President, Comcast, Keynote Remarks at the Broadband Policy Summit (May 10, 2006), available at <http://www.ncta.com/DocumentBinary.aspx?id=357>.

56. Justin Fox, *The Broadband War of 2006*, FORTUNE, Apr. 3, 2006, available at http://money.cnn.com/2006/03/21/technology/pluggedin_fortune/index.htm.

57. Formerly SBC.

58. Keith Reidat, *AT&T Rolls Out Lodi Plan: Lightspeed, Though, May Be Subject to Fee*, THE RECORD, Dec. 31, 2005, available at <http://www.tmcnet.com/usubmit/2005/dec/1250476.htm>.

59. The leading non-corporate voices in support of this claim are well respected and extremely able. Adam Thierer of the Progress and Freedom Foundation, for example, has often said that vertical integration of network pipes with higher layers of the protocol stack will 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 Thierer, *Are "Dumb Pipes" Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model*, 3 J. ON TELECOMM. & HIGH TECH. L. 275 (2005). Others have 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. 1847, 1853–54 (2006) (“[P]rohibiting last-mile providers from deviating from network neutrality may actually harm consumers. Simply put, the current regime of flat-rate pricing and unrestricted access discourages innovation in network management.”); James B. Speta, *Handicapping the Race for the Last Mile?: A Critique of Open Access Rules for Broadband Platforms*, 17 YALE J. ON REG. 39, 76–88 (2000) (suggesting that open-access rules may be harmful and that consumer demand for broadband access platforms will force providers to make available open networks); Phil Weiser, *Paradigm Changes in Telecommunications Regulation*, 71 U. COLO. L. REV. 819, 832–37 (2000) (suggesting limited regulation). Barbara van Schewick has sharply questioned the economic assumptions of some network neutrality opponents in *Towards an Economic Framework for Network Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. 329 (arguing that potential for discriminatory activities by network providers is greater than commonly assumed).

60. 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 with AT&T will result in control of twenty-two percent of all consumer dollars spent on telecom services (including video services) and thirty-four percent of dollars spent in the business market. Press Release, TNS Telecoms, Combined AT&T/Bellsouth Will Control 22% Consumer Telecom Spending, 34% Business Spending (Mar. 13, 2006), <http://www.tnstelecoms.com/press-3-13-06.html>. 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.” *Id.* In effect, the industry is re-monopolizing.

being taken out of service.⁶¹ End users will have no choice but to sign up to whatever limitations the providers of fiber decide make sense.⁶² Competitive ISPs 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 and cablecos are fighting the creation of government-owned networks that might provide unfettered broadband connections to the internet at lower rates.⁶³

The telcos' interests here align with those of several other incumbents who would welcome private-access privileges to attain their own goals. 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—ease law enforcement's surveillance tasks. Hollywood would also like to know who is watching what movie and whether the right license fee has been paid.

Nondiscriminatory communications make law enforcement feel itself to be at risk because online communications are not necessarily authenticated in any way that is familiar to them. It puts Hollywood 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. The telcos are at risk because free VoIP services are undermining their revenues. A long list of fears of the internet, supported by constant negative mass-media articles, provides justifications for these incumbents' desires and, in turn, for the notion that all access should be carefully monitored and paid for. All these fears would be assuaged by chokepoints that would be created by Congress's blessing the rhetoric of the romantic builder and legalizing the telcos' dominion over "their" networks.

Because broadcast, telephony, cable, and wireless networks all increasingly 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 and cablecos (using fiber to the home) or the wireless companies (using wireless

61. See Verizon Internet Access Service Terms of Service, § 8.4, http://www.verizon.net/policies/popups/tos_popup.asp ("Conversion from DSL Service to Verizon Fios Internet Service. At such time as Verizon is able to provision the Service 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, and such rates and terms may differ from the DSL Services provided under this Agreement.").

62. Verizon already outlaws hosting servers, *id.* § 3.6.5, and also 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. *Id.* § 8.3. Furthermore, Verizon's Terms of Service do not guarantee internet access. *Id.* § 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.

63. Jesse Drucker & Li Yuan, *Hostile Reception: Phone Giants are Lobbying Hard to Block Towns' Wireless Plans*, WALL ST. J., June 23, 2005, at A1; Jonathan Krim, *Fast Internet Service for the People; Telecoms Fight Plans for Public Networks*, WASH. POST, Dec. 2, 2004, at A01.

bandwidth to reach the home and fiber connectivity on the backbones).⁶⁴ In either case, all 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 were 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 or cablecos are planning to leverage their power over transport into power over content.

Nor is the network neutrality battle just about who gets to collect rents for streaming video services. It is also about the environment that will result. First, if a telco makes an exclusive deal with any high-speed application source, agreeing to prioritize its packets, then any other source will be second-best and may fail. 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 they cannot adequately express social demand for access and activities online.⁶⁵

The rhetoric of the “romantic builder” has enormous power in the United States. Mere network users feel uncomfortable second-guessing Verizon’s business plans for “its” broadband access loops. But the romantic vision of the network builder so successfully conveyed 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 one: How will discriminatory access affect the U.S. economy and civil life? What should the role of government be? A comparison of analogous intellectual property battles may provide some clues.

64. The cable, telco, and wireless industries have formed a united front against the imposition of non-discrimination rules on broadband access. See Steve Largent, President and CEO, CTIA-The Wireless Association, Testimony before the U.S. Senate Comm. on Commerce, Sci. and Transp. 5 (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.”); *All Things Considered: Internet Debate: Preserving User Parity* (NPR radio broadcast Apr. 25, 2006), available at <http://www.npr.org/templates/story/story.php?storyId=5362403>: (“Companies that have spent money and have not been rewarded by Wall Street . . . [like cable] allow[] companies like Google to thrive. . . . Let’s say someone wanted to get a broadband delivery of a wedding. Companies should be able to charge for this.” (statement by Dan Brenner of the National Cable Television Association)).

65. See Part III, *infra*.

III

COMPARING BATTLES

In *Shamans, Software, and Spleens*, Boyle revealed that belief in a creative genius—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. Arguably, the same series of missteps is now being urged by network providers (the telcos, cablecos, and wirelesscos in the guise of the network’s genius creators) in the network neutrality debate.

A. Intellectual Property Missteps

Information issues, Boyle wrote, could be viewed either as 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 it so they had ample incentives to produce it.⁶⁶ He focused on the tensions inherent in these views of information, noting that there is no principled way to determine when one is 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.⁶⁷ 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 late eighteenth century:

As authors ceased to think of themselves as either craftsmen, gentlemen, or amanuenses 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.⁶⁸

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 lens 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,

66. BOYLE, *supra* note 12, at 31, 36, 40.

67. *Id.* at 41.

68. *Id.* at 54.

even in areas far afield from traditional “authorship” (like ownership of spleens, or regulation of insider trading).⁶⁹

For Boyle, our implicit and often unconscious reliance on the figure of the romantic author leads inevitably to a number of missteps. In *Shamans, Software, and Spleens*, he examined a series of situations—biotechnology, copying of materials for classroom use, and software—demonstrating that concern for the romantic author appeared to be resulting in a diminution 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 such cultural expression as dances and artifacts in developing nations were left unprotected by intellectual property rights. Trade negotiators, meanwhile, were contending that the greater the intellectual property protection provided by a developing nation, the more attractive that nation would appear for investment by established firms.⁷⁰ Boyle noted that all works draw on prior works; insisting on maximalist interpretations of intellectual property would undermine the abilities of second innovators, or later authors, to build on what had come before. Additionally, 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.⁷¹ 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.”⁷² In effect, the tradeoff for all the unfairness of maximal intellectual property protection appears to be inefficiency rather than efficiency—all in the name of protecting the romantic author.⁷³

B. Communications Policy Missteps

Just as Boyle found that intellectual property advocates use the “romantic author” figure to promote expansionist arguments, network providers are beginning to use 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

69. *Id.* at 58.

70. *Id.* at 124.

71. See, e.g., Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CAL. L. REV. 1331, 1339 (2004) (“[R]ushing to protect the romantic author often serves to promote the interests of corporate owners of intellectual property rather than the individual artists, authors, and creators themselves.”).

72. BOYLE, *supra* note 12, at 119.

73. *Id.* at 140–41.

internet. The claim that particular incentives are needed to encourage this romantic figure is just as mysterious in the telecom setting as in the intellectual property context.

1. Rewarding the Wrong People

The network providers 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 internets and the public internet will arguably be indistinguishable. Subscribers will likely continue to see and interact with a communications network in their homes that they will call “the internet.”⁷⁴

From the perspective of the network provider, this communications network is no more than a transport mechanism—a set of privately owned wires and cables that stretches across the world.⁷⁵ The providers’ 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 providers’ 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 (or the cablecos or wirelesscos) did not create the entire value of “the internet,” and it is “the internet” that their subscribers want to access. Allowing 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 providers do not share this view, the engineers who designed the internet know that it is nothing but an agreement to interconnect and to use

74. 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.”

75. See, e.g., Mike McCurry, *Hostile Commentary and Net Neutrality*, HUFFINGTON POST, May 1, 2006, http://www.huffingtonpost.com/mike-mccurry/hostile-commentary-and-ne_b_20179.html (“The internet is not a free public good. It is a bunch of wires and switches and connections and pipes and it is creaky.”); see generally Susan P. Crawford, *Internet Think*, 6 J. ON TELECOMM. & HIGH TECH. L. (forthcoming 2007), available at <http://ssrn.com/abstract=962596> (describing mindsets of telco incumbents, engineers, and internet futurists). 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 two percent 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 article.

a common protocol and naming system.⁷⁶ “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 with any form of transport. 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 and their analogues own is “transport,” but not “the internet.”

By any measure, the value created by the standards and relationships of the internet bears little relationship 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 benefits society.⁷⁷ 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, or forms are what users want to reach.⁷⁸

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 telcos 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

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

77. See, e.g., Lee Rainie, Director, Pew Internet & American Life Project, Speech to ThinkTank06 at Seton Hall University: How the Internet is Changing Consumer Behavior and Expectations (June 7, 2006) (transcript available at <http://www.pewinternet.org/ppt/2006%20-%206.7.06%20ThinkTank%20Seton%20Hall.pdf>).

78. Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, 52 FED. COMM. L.J. 561, 579 (2000). See generally LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2001). 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.

be in the “content” business, which they see 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 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 a service provides. But the U.S. marketplace for broadband access 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 providers wanted was to be paid back for building this set of access points and if they had proposed a predictable mechanism to make this repayment possible (without forcing consumers 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 correspond to the value of the communication 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 providers’ claim is not merely that they own their networks, but also that their ownership dictates their participation in whatever profits flow from use of their broadband access points.⁷⁹ But to reward these actors by allowing them to optimize these access valves for billing purposes would reward the wrong people.

79. In an 1890 article that launched privacy law in the United States, Samuel D. Warren and Louis D. Brandeis said, “The possibility of future profits is not a right of property which the law ordinarily recognizes . . .” *The Right to Privacy*, 4 HARV. L. REV. 193, 204 (1890). These authors were trying to persuade their readers of the existence of a general right in individuals to be let alone. They did not think this right to be let alone was a property right, because (in part) they did not 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 would not necessarily protect him—because “the possibility of future profits is not a right of property which the law ordinarily recognizes.” *Id.* 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 is 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. *See* Google, Google Book Search: Legal Analysis, <http://books.google.com/googlebooks/newsviews/legal.html> (last visited Feb. 21, 2007). 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 case law would support their claims. The ongoing fight over tiered internet access analyzed in this article 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 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 do not (usually) protect existing business models with statutes or caselaw. *See* Crawford, *supra* note 20 (discussing content-industry efforts to use FCC rules to shield their existing business model from competition).

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 network provider argument). The rhetoric of the romantic builder leads to support for the 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 U.S. broadband providers come in only two flavors: telcos and cablecos. The vast majority of U.S. consumers have at most two choices of broadband provider, wherever they are, and competition between these providers is not intense.⁸⁰ Prices have stayed high and speeds have stayed low. In both industries, consolidation is very common.⁸¹ In effect, the industry is re-monopolizing.

What the telcos want is to have property rights in their access networks. 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,⁸² to create such additional property rights would merely intensify the monopoly problem to which the 1996 Telecommunications Act was addressed.⁸³

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 at least bears a principled relationship to the role of the romantic author.) Unlike the romantic author figure, however, the romantic builder does not assist in any line-drawing between owned and unowned, between monopoly and its avoidance. He owns (or controls) everything 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. The builder should be rewarded for providing transport, to be sure. But to do more than this will make

80. *See supra* Part II.

81. *See supra* note 60.

82. Broadband access providers have significant market power in most parts of the country, have dominant power in others, and are monopolies in the rest. *See supra* note 48 and accompanying text (noting a median of two providers per household); *see also* TURNER, *supra* note 32, at 19 (noting that the U.S. broadband market is dominated by regional duopolies and little competition).

83. The 1996 Act required incumbent phone companies to make elements of their networks available to competitive local phone companies. *See* 47 U.S.C. § 251(c)(3) (2000). 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. *See, e.g.*, Gene Kimmelman et. al, *The Failure of Competition Under the 1996 Telecommunications Act*, 58 FED. COMM. L.J. 511 (2006); CONSUMER FED’N OF AM. & CONSUMERS UNION, LESSONS FROM 1996 TELECOMMUNICATIONS ACT: DEREGULATION BEFORE MEANINGFUL COMPETITION (2000), <http://www.consumersunion.org/pdf/lesson.pdf>.

clear only that communications law serves monopolists and diserves 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 network access providers 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 to greater incentives to produce it, resulting in improvements in general welfare. Alternatively, the network providers seek to make arrangements with aggregators of user-generated material allowing 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 took advantage of traditional knowledge and decentralized action to create a revenue stream, so the access providers would like to take advantage of what is being created online and to find some way to make it profitable. 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.”

It may go too far to assert that the standards and relationships that make up the internet are equivalent to a developing nation 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 network access providers’ public campaign alternately ignores indigenous sources of information (“nothing happened online until we started broadcasting television there”) and seeks to monetize otherwise free sources of information for its own purposes. In an odd echo of trade negotiators speaking of adoption of intellectual property regimes by developing nations,⁸⁴ 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.⁸⁵ Their reluctance to provide

84. *See, e.g.*, Ambassador Charlene Barshefsky, Speech at the Asia Society: Toward the Pacific Community, American Trade Policy in Asia (Jan. 21, 1999) (transcript available at <http://www.asiasociety.org/speeches/barshefsky2.html>) (“The work we have underway to address the trade problems rests on specific U.S. commercial interests. But it also contributes to the broader goal: the integration of China into an international culture of open economies and the rule of law. Embedded in our agreements on market access and intellectual property are broader international norms to which China has committed: transparent laws and regulations; access to administrative or judicial decision making; curbs on arbitrary exercise of bureaucratic power.”).

85. *See, e.g.*, Testimony of Tom Tauke, Verizon EVP, Senate Commerce Committee Hearing: Communications, Consumer Choice, and Broadband Act of 2006 5 (May 25, 2006) (transcript available at http://commerce.senate.gov/public/_files/tauke052506.pdf) (“If enacted, net neutrality regulation will potentially prohibit us from offering customers the unique and secure platform required for these next-generation services. It will potentially prohibit us from offering a competing video service to consumers. Put another way, radical net neutrality proposals would chill the investment climate for

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 end users are most interested in what other end users are doing.⁸⁶ End users spend their time reading blogs, posting pictures, sending e-mail, reading about health issues, chatting, and generally interacting with others. End users are not (only) passive recipients of “content.” 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.⁸⁷ “[T]here has never been a commons as big, robust and socially creative as the Internet”;⁸⁸ that valuable commons resources online remain unowned and uncontrolled is critical.⁸⁹ To connect with others, to find groups and affiliations, users are publishing 70,000 new blogs daily, and updating 700,000 existing blogs.⁹⁰ 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.

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 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 the only indigenous materials that reach subscribers at the speeds necessary for comfortable viewing are those the network provider finds valuable or those that can pay for such enhanced passage, the feedback mechanisms that have directed

broadband networks, deter and delay broadband rollout, and lock in today’s internet architecture and levels of performance.”).

86. See, e.g., PEW INTERNET & AM. LIFE PROJECT, HOME BROADBAND ADOPTION 2006 (2006), available at http://www.pewinternet.org/pdfs/PIP_Broadband_trends2006.pdf (noting high percentage of home broadband users—forty-two percent or about thirty-one million people—who have posted content to the internet; sharing a variety of creations online is among the most popular kinds of user-generated content. Overall, thirty-six million internet users have shared their own artwork, photos, stories, or videos on the internet).

87. YOCHAI BENKLER, THE WEALTH OF NETWORKS (2005); Benkler, *supra* note 78.

88. David Bollier, *Reclaiming the Commons*, BOSTON REV., Summer 2002, at 8. See generally DAVID BOLLIER, PUBLIC ASSETS, PRIVATE PROFITS: RECLAIMING THE AMERICAN COMMONS IN AN AGE OF MARKET ENCLOSURE (2001).

89. LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 19–21 (2001). For example, the Internet Commons Congress 2004, held in Silver Spring, Maryland in March 2004, was described as “[a]n 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.”*Id.* See generally ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990).

90. According to Technorati data, there are about 75,000 new blogs a day. Bloggers update their weblogs regularly; there are about 1.2 million posts daily, or about 50,000 blog updates an hour. About Technorati, <http://technorati.com/about> (last visited Jan. 23, 2007).

(if indirectly) the growth of this ecosystem will be crippled.⁹¹ 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,”⁹² representing differences between private returns and social returns,⁹³ are created every day by internet use. Many of these externalities are not susceptible to economic valuation. Concrete examples of these spillovers include a second innovator’s ability to use another innovator’s Application Program Interface (API) to build an entirely new application using the other innovator’s data, scientific researchers’ ability to share data for research, or the ability of a school in North America to do a joint project with a school in Hong Kong. Similar positive externalities exist for intellectual creations offline as well, of course.⁹⁴ The internet’s architecture⁹⁵ 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.⁹⁶

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 network neutrality battle, the “creation” is the building of a broadband access connection. The network providers argue that spillovers

91. The word “cyberspace,” although currently out of fashion, elegantly captures this idea of indirect shaping 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 triggers 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.

92. 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.”). See generally Mark A. Lemley & Brett M. Frischmann, *Spillovers*, 107 COLUM. L. REV. 257 (2007).

93. Lemley & Frischmann, *supra* note 92, at 262.

94. Examples of positive externalities whose benefit is not internalized by the initial author are one author’s ability to use the germ of an idea she has read in an earlier author’s book or a songwriter’s to allude to an earlier song or a professor’s to use an excerpt of an article for teaching purposes. See Brett M. Frischmann, *Evaluating the Demsetzian Trend in Copyright Law*, 3 REV. L. & ECON. (forthcoming 2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=855244.

95. See generally 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).

96. Frischmann, *supra* note 92 (explaining that private willingness to pay for or invest in infrastructural inputs, like information, does not necessarily reflect social demand for outputs); see generally Yochai Benkler, *Freedom in the Commons: Towards a Political Economy of Information*, 52 DUKE L. J. 1245 (2003) (importance of non-market production of information).

(uncaptured value in the hands of users) have negative effects on their incentives to invest in their networks.⁹⁷ This fits with the traditional view of internalizing externalities, which suggests that if property owners are made liable for (and so bear the social cost of) their actions and are entitled to appropriate the benefits of their property, their interests will align with those of society and lead them to efficient decisions.⁹⁸ On this view, spillovers are bad because they obstruct signals of consumer demand (because no one will be paying for the spillover) and will not increase the property owner's incentive to invest.⁹⁹

It may be, however, that spillovers in this context are good, not bad. Spillovers in intellectual endeavors (such as writing, composing, and researching) drive further innovation. Indeed, industries with significant spillovers seem to be characterized by more and faster innovation. One frequently cited example 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.¹⁰⁰ 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 for 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.¹⁰¹ To eliminate this entire potential externality surplus by finding a way to perfectly discriminate through prices would neatly eliminate spillovers and would, the providers assert, give them the incentives they need to continue

97. See, e.g., Tauke testimony, *supra* note 85; see also Scott Cleland, NPR commentary, *Neutrality: Congress Debates Internet Fast Lane*, June 21, 2006, <http://www.npr.org/templates/story/story.php?storyId=5500103> ("Price regulation would destroy any economic incentive to innovate and invest in the private networks that make up the Internet. Over time, we would end up with a slower Internet and higher broadband prices and taxes for consumers, less broadband choice and slower broadband deployment to all Americans.").

98. Lemley & Frischmann, *supra* note 92, at 264–68; 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").

99. Lemley & Frischmann, *supra* note 92, at 267–68.

100. *Id.* at 270 (citing ANNALEE SAXENIAN, *REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128*, 161–68 (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, 577–78 (1999)).

101. Vint Cerf, on behalf of Google, has testified that "[w]e care passionately about the future of the Net, not just for ourselves, but because of all the other potential Googles out there." *Network Neutrality: Hearing Before the U.S. Sen. Comm. on Commerce, Science, and Transportation*, 109th Cong. 3 (Feb. 7, 2006) (statement of Vinton G. Cerf, Vice President and Chief Internet Evangelist, Google Inc.), available at <http://commerce.senate.gov/pdf/cerf-020706.pdf>.

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 newly 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 network providers seek to capture.¹⁰²

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 frustrating for the telcos. While their revenue from phone service is diminishing and subscribers are replacing their landline phones with VoIP or wireless phones, the internet's positive externalities continue to explode. The telcos would like to internalize these externalities by capturing the crumbs from this golden loaf of social value, but their ability to lock down innovation and centralize control, if implemented, is likely to destroy the loaf itself.¹⁰³ 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—ISPs—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.¹⁰⁴ 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 cannot 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, network provider demands for “incentives” are likely overblown. They ignore many of the sources of value that make up the internet and privilege the telco or cableco investment in fiber at the expense of potentially far greater

102. 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 a “clearer sense of the parameters for deciding when open access is a solution” is needed. Lawrence Lessig, *Re-Marking the Progress in Frischmann*, 89 MINN. L. REV. 1031, 1039 (2005). I respond 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, 2064 (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”).

103. See Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031 (2005).

104. See *infra* Part IV.

social gains. Second, the precise reasoning behind the network providers' 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.¹⁰⁵ 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 them.¹⁰⁶ Absent such incentives, U.S. broadband penetration will remain low. The incentives argument is an *ex ante* justification because the goal would be to influence behavior (the building of an access point) happening before the right to exclude non-paying content sources from "fast lanes" of access points comes into play. *Ex post* justifications, by contrast, operate on the incentives legislative protection will give network providers to manage network access points that have already been built. For example, some network providers have argued that legislative protection is necessary to encourage the network owner to invest in maintaining the network¹⁰⁷ or in preventing congestion on the network.¹⁰⁸

Both the *ex ante* and the *ex post* justifications are undermined by lack of information, making them completely untestable. In general, the providers of broadband access in this country provide little information about how their networks function, including what kinds of "shaping" activities are already taking place, the cost of building and maintaining their local loops, and the cost-effectiveness of unfettered access. Nor are the numbers that have been supplied by the broadband providers respecting the past and future costs of installing fiber broadband access points reliable.

The *ex ante* explanation creates exclusive control rights in network access points so as to encourage the builders to create local loops in the first place.¹⁰⁹ The providers' customers for these purposes will include content sources (who will pay for quick passage across the broadband access points) as well as end users, (who will presumably pay a flat fee for access). This propertization incentive will allow the network provider to charge content sources much more than its marginal costs. As a result, "consumption" of the network access points by these customers will be artificially lowered. Some content sources 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 network providers' access points, will be unable to obtain such transport. End users who want to upload (thus becoming "content sources" themselves) will be frustrated—thus stifling some amount of further innovation.

105. See Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129 (2004) (analyzing the intellectual property incentives debate).

106. For example, DT has threatened not to build fiber access to homes unless it is able to exclude competitors from them. See *infra* Part IV.B.

107. See sources cited *supra* note 97.

108. Yoo, *supra* note 59.

109. See Lemley, *supra* note 105 (providing a parallel explanation in the IP setting).

Moreover, the *ex ante* incentives sought by the telcos may not have any particular relationship to their actual building costs.¹¹⁰ Additionally, revenues reaped from propertizing broadband access will more likely be monetized on Wall Street rather than put to use building additional broadband connections. For both of these sets of reasons, even *ex ante* justifications proffered by the telcos should be carefully examined.

The *ex post* justifications have no limiting principles whatsoever. 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.¹¹¹ 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.

Like those respecting intellectual property “incentives,” these *ex post* justifications are “jarringly counterintuitive in a market economy.”¹¹² 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, no empirical evidence suggests 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.

The *ex post* justifications are also highly speculative. The telcos can provide no assurance that price discrimination will improve the network manager's return on his investment in broadband deployment. 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. When a provider has already built broadband access points (as in the case of Verizon), why does it need incentives to create them? What assurance do users have that propertization of these access points will in fact lead to greater investment in broadband? Why should such propertization not just lead to greater revenues for the broadband providers? Why would broadband providers who operate

110. For evidence of the general untrustworthiness of the Bells, see Scott Woolley, *Shortchanged*, FORBES, May 12, 2003, at 82, available at http://www.forbes.com/forbes/2003/0512/082_print.html (“The Baby Bells may have bilked consumers out of billions by inflating the cost of their networks.”).

111. Lemley, *supra* note 105.

112. *Id.*

essentially without market competition necessarily manage their access points (the goal of the ex post justifications) in ways that would 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 business model for the network providers?¹¹³ Gravel pits are highly remunerative. The real primary incentive for discrimination (from the network provider point of view) appears to be to protect existing revenue streams and create new ones.

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.¹¹⁴ The network providers 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 network providers’ incentive arguments should be examined closely.

IV

COMPARING COUNTRIES

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. DT is now poised to create a fully integrated “entertainment platform” for its broadband subscribers and is seeking legislative protection of its network so its offerings to consumers will not be subject to competition from the internet.

113. See Frischmann, *supra* note 92, at 925–26 (“This 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.

114. See Declan McCullagh, *Bush: Broadband for the People by 2007*, CNET NEWS.COM, Apr. 26, 2004, http://news.zdnet.com/2100-3513_22-5200196.html.

A. Japan and Broadband

Japan is the first country in the world where broadband and optical fiber have been made available to individual homes.¹¹⁵ Although U.S. telcos claim that rolling out fiber is too expensive and that they need regulatory relief and other incentives to do so, Nippon Telegraph and Telephone Corp. (NTT), the Japanese telco, has done it. At the same time, NTT is required by its regulator to provide its competitors with access to those fiber networks (to “unbundle its local loop”).¹¹⁶ 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 those for users in New York.¹¹⁷

How has this come about? In a nutshell, NTT began an aggressive fiber campaign in the early 1990s in order to avoid being broken up by the Japanese government.¹¹⁸ NTT’s strategy was to show Japan that only a comprehensive telecommunications company would be strong enough to succeed with fiber, and that it should therefore remain intact.¹¹⁹ 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.¹²⁰

At the same time, the Japanese regulator required NTT to open its networks entirely to its competitors. Of the resulting efficiencies, Kyoto University economics professor Takanori Ida writes, “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.”¹²¹ All of NTT’s services were unbundled at very low costs to its competitors—fiber as well as copper (DSL and traditional phone line) affordances. Japan has the most open networks of any country in the world.¹²²

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 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,

115. GLOBAL BROADBAND BATTLES: WHY THE U.S. AND EUROPE LAG WHILE ASIA LEADS chs. 1–2 (Martin Fransman ed., 2006) [hereinafter GLOBAL BROADBAND BATTLES].

116. *Id.* at 60. Communications lawyers refer to providing such access as “unbundling the local loop.” The local loop refers to the “physical twisted metallic pair circuit in the fixed public telephone network connecting the network termination point at the subscriber’s premises to the main distribution frame or equivalent facility.” Council Directive 2000/185, preamble ¶ 3, 2000 O.J. (EC).

117. GLOBAL BROADBAND BATTLES, *supra* note 115, at 59.

118. *Id.* at 67–68.

119. 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 NTT, Corporate Data, http://www.ntt.co.jp/about_e/corporatedata.html (last visited Mar. 22, 2007).

120. GLOBAL BROADBAND BATTLES, *supra* note 115, at 68.

121. *Id.* at 69.

122. *Id.*

fire employees, outsource services, cut salaries, and close offices in order to survive.¹²³ Fierce competition from both DSL providers and electric companies (who were able to provide fiber networks completely independent of NTT's networks) has forced NTT to lower its prices even further.¹²⁴ NTT's situation continues to be difficult, and it may need to dismantle its traditional telephone network and focus only on optical internet fiber services in the coming years.¹²⁵ NTT's profits plunged thirty percent in 2005 as a result of decreased revenue from traditional telephone subscribers and of low prices for all its other services.¹²⁶ NTT cannot leverage its broadband offerings by vertically integrating services, and it hopes that its costs for providing fiber access will soon come down to equal its revenues from this service.¹²⁷ 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, however, have been astonishing. Japan now has at least twenty-four million people using broadband, with about two-thirds of those end users using DSL and the rest fiber connections.¹²⁸ Japan is ranked eighth in the world in broadband penetration, and the widespread availability of broadband in Japan has led to broad use of voice and video services there.¹²⁹ NTT expects that fiber services will have thirty million subscribers by the end of 2010.¹³⁰ Japanese prices for fiber broadband access are the lowest in the world, and speeds are very high.¹³¹

B. Germany and Broadband

Germany's incumbent, DT, controls at least ninety percent of the market for broadband access in Germany.¹³² DT's revenues from this near monopoly, however, are being undermined by the growth of VoIP services and are

123. *Id.* at 72.

124. *Id.* at 71.

125. *Id.* at 73.

126. Yuri Kageyama, *NTT Fiscal 2005 Profit Down 30 Percent*, AP BUSINESSWEEK ONLINE, May 12, 2006, http://www.businessweek.com/ap/financialnews/D8HI69UO3.htm?campaign_id=apn_tech_up&chan=tc.

127. Stephen McClelland, *21CN: Japan's 21st Century Network*, TELECOMM. MAG., Mar. 27, 2006, http://www.telecommagazine.com/search/article.asp?HH_ID=AR_1901.

128. Summary of IDC NOVEMBER 2005 REPORT, http://www.japancorp.net/Article.asp?Art_ID=11208; see also Press Release, Computer Industry Almanac, USA Leads Broadband Subscriber Top 15 Ranking (Nov. 14, 2005), <http://www.c-i-a.com/pr1105.htm>.

129. U.S. COMMERCIAL SERV., U.S. DEP'T OF COMMERCE, JAPAN: TELECOMMUNICATIONS MARKET BRIEF 2006 (2006), http://www.buyusainfo.net/docs/x_8524808.pdf.

130. *Id.*

131. THE FIRST MILE: CAPSULE SUMMARIES OF TREND DATA FOR BROADBAND (2006), http://www.broadbandproperties.com/2006issues/mar06issues/firstmile_march.pdf.

132. GLOBAL BROADBAND BATTLES, *supra* note 115, at 167 (eighty-eight percent as of end of 2004); see also *Deutsche Telekom Reaches 9.2 million DSL Users, On-track for IPTV Launch*, CONVERGE! NETWORK DIGEST, May 11, 2006, <http://www.convergedigest.com/DSL/lastmilearticle.asp?ID=18212>; see also OECD Broadband Statistics, December 2005, http://www.oecd.org/document/39/0,2340,en_2649_34223_36459431_1_1_1_1,00.html (last visited Mar. 22, 2007) (10.7 million broadband subscribers in Germany).

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.¹³³ DT's responsive tactics are very similar to those of incumbent U.S. telcos: both seek legislative protection for complete control over their broadband infrastructure.

In September 2005, DT announced 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 consumers' homes in fifty German cities.¹³⁴ DT planned to add a million more "triple-play" (integrated services) customers by the end of 2006.¹³⁵ DT has announced its intent to remain Europe's "number one" telecom operator, and, to retain this status, it is poised to buy other network operators, including the U.K. incumbent, British Telecom.¹³⁶ It also plans to offer a new IPTV service over this new broadband network in partnership with Microsoft (as a result of a deal Microsoft has announced is its second biggest ever).¹³⁷

Potential competitors to DT have long complained that the incumbent has been very slow to grant access to the local loop and has imposed "excessive collocation conditions" and "excessive licensing fees" for this access.¹³⁸ Although unbundling has been required by the German regulator since 1998, DT has

133. DAMIEN CHEW, ING WHOLESALE BANKING, EUROPEAN TELECOMS: CITYNET AMSTERDAM: FIBRE-TO-THE-HOME IS BECOMING A REALITY (2006), <http://www.ftthcouncil.org/documents/736808.pdf>; *Paris Plans FTTH Network*, LIGHTREADING.COM, Jan. 9, 2006, http://www.lightreading.com/document.asp?doc_id=86547.

134. *DT Flings Billions at Fiber Access*, LIGHTREADING.COM, Sept. 1, 2005, 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 fifty Mbps. John Blau, *Deutsche Telekom to Begin IPTV Test in May*, NETWORK WORLD NEWS, Apr. 28, 2006, <http://www.networkworld.com/news/2006/042806-deutsche-telekom-to-begin-iptv.html>.

135. *DT, TI Set to Spend Big on Broadband*, LIGHTREADING.COM, Nov. 9, 2005, http://www.lightreading.com/document.asp?doc_id=83983.

136. *DT Plans Acquisitions*, LIGHTREADING.COM, May 4, 2006, http://www.lightreading.com/document.asp?doc_id=94066; *Would DT Buy BT?*, LIGHTREADING.COM, May 26, 2006, http://www.lightreading.com/document.asp?doc_id=95818.

137. *Microsoft Wins IPTV Deal at DT*, LIGHTREADING.COM, Mar. 21, 2006, 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. *Id.* 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, <http://www.upi.com/Hi-Tech/view.php?StoryID=20060428-052533-1063r>.

138. OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, BACKGROUND ON THE 2001 SECTION 1377 REVIEW (2001), http://www.ustr.gov/Document_Library/Press_Releases/2001/April/Background_on_the_2001_Section_1377_Review.html. The review notes that DT practices 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."

succeeded in keeping its competitors “relative[ly] insignificant.”¹³⁹ 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.¹⁴⁰

Broadband penetration in Germany is surprisingly low: Germany is ranked tenth in Europe and eighteenth out of OECD countries as of December 2005.¹⁴¹ Although more than sixty percent of Germans are online,¹⁴² only thirteen out of every 100 inhabitants subscribe to broadband services, compared to 16.8 in the United States and 25.4 in Iceland.¹⁴³ Nearly ninety-five percent of those subscribers use DSL connections; cable broadband has no real presence in Germany, although cable penetration itself is very high.¹⁴⁴ And DT’s ISP (T-Online) has an “extraordinarily strong market position” in DSL, with very few competitors.¹⁴⁵ 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.¹⁴⁶

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.¹⁴⁷ Under this approach, Germany’s Federal Network

139. GLOBAL BROADBAND BATTLES, *supra* note 115, at 167. U.S. telecommunications trade associations in the past filed complaints with USTR (for example, 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 BUREAU OF ECON. & BUS. AFFAIRS, U.S. DEP’T OF STATE, 2001 COUNTRY REPORT ON ECONOMIC POLICY AND TRADE PRACTICES (2002), <http://www.state.gov/documents/organization/8224.pdf>.

140. *German Innovation Stalled at Home*, DEUTSCHE WELLE, Dec. 13, 2004, <http://www.dw-world.de/dw/article/0,2144,1427206,00.html>.

141. Press Release, ECTA, Broadband Study Highlights Two-Speed Europe (May 2006), <http://www.ectportal.com/en/upload/File/Broadband%20Scorecards/Q405/Final3%20Press%20Release%20Sc%20Q4051.pdf>; OECD Broadband Statistics, *supra* note 132.

142. Internet World Stats, Germany, <http://www.internetworldstats.com/eu/de.htm> (last visited Mar. 22, 2007).

143. OECD Broadband Statistics, *supra* note 132 (total of 10.7 million broadband subscribers).

144. GLOBAL BROADBAND BATTLES, *supra* note 115, at 195. GLOBAL BROADBAND BATTLES suggests that the reason for this is the complicated state-level system of regulation of cable content. *Id.* at 204.

145. *Id.* at 197. DT has 9.2 million broadband customers in Germany, out of a total of 10.7 million broadband subscribers in that country. OECD Broadband Statistics, *supra* note 132.

146. *German Innovation Stalled at Home*, *supra* note 140 (“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 The Alarm Clock, http://www.thealarmclock.com/euro/archives/2006/02/best_exits_foreuro_vcs_were_i.html (Feb. 1, 2006, 06:50) (“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 article, but early signs have not been encouraging thus far.

147. 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 SERV., Apr. 24, 2006, available at <http://www.itworld.com/Tech/2428/060424blackstone/>. The German government therefore is likely very sensitive to fluctuations in the company’s fortunes.

Agency would be allowed to intervene only if, in the absence of regulation, competition in a “new market” was likely to be inhibited “in the long term.”¹⁴⁸ DT threatened not to build this network unless it received the protection it sought, and the German government agreed to help.¹⁴⁹

The European Union’s New Regulatory Framework requires that broadband providers with significant market power be subject to a range of obligations, including transparency, non-discrimination, accounting separation, access, and price controls.¹⁵⁰ 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.”¹⁵¹ In May 2006, when the German government approved the draft bill for the European Parliament that would have exempted DT from being forced to unbundle its \$3.9-billion broadband network, the European Commission responded by threatening legal action against Germany.¹⁵² An EC commissioner for information society and media said, “We cannot afford to create new monopolies out of short-term political opportunism.”¹⁵³ A DT spokesman responded that it “cannot possibly invest [\$3.9 billion] in setting up a network without receiving adequate protection for our investment in return.”¹⁵⁴ DT and its friends in the German government take the view that “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.”¹⁵⁵

Beginning in mid-June 2006, DT plans to offer consumers a package that they will access through a proprietary media receiver manufactured by Linksys, a division of Cisco.¹⁵⁶ Consumers will be offered about 100 channels, including existing satellite and cable feeds, and video-on-demand movies.¹⁵⁷ This MSN platform will also offer web surfing, VoIP, and “other interactive entertainment

148. *Deutsche Telekom Competitors Up in Arms at Regulatory Hiatus Option for VDSL Network*, HEISE ONLINE NEWS, May 18, 2006, <http://www.heise.de/english/newsticker/news/73290>.

149. *EU Threatens Sanctions Over Protection Request by Telekom*, DEUTSCHE WELLE, Mar. 13, 2006, <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 new market. We need clear legal commitments regarding the long-term regulatory situation if we are to roll out this (VDSL) project.”).

150. Council Directive 2002/19, preamble, 2002 O.J. (EC).

151. *Id.* arts. 8, 10.

152. *EU Renews Legal Threat over German Broadband*, INT’L HERALD TRIB., May 17, 2006, <http://www.iht.com/articles/2006/05/17/business/techbrief.php>.

153. *Id.*

154. *EU Commissioner: No Regulatory Compliance Exception for DT’s Optical Fiber Networks*, HEISE ONLINE NEWS, Feb. 20, 2006, <http://www.heise.de/english/newsticker/news/69849>.

155. *Id.*

156. John Blau, *Deutsche Telekom to Begin IPTV Test in May*, NETWORK WORLD NEWS, Apr. 28, 2006, <http://www.networkworld.com/news/2006/042806-deutsche-telekom-to-begin-iptv.html>; *DT Rival Launches IPTV*, LIGHTREADING.COM, May 12, 2006, http://www.lightreading.com/document.asp?doc_id=94671.

157. *DT Rival Launches IPTV*, *supra* note 156.

services.”¹⁵⁸ DT’s vision, like that of other telcos around the world, is that this integrated IP-based platform combining information, communication, and entertainment (ICE) will prove irresistible to consumers.¹⁵⁹ 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.

V

COMPARING COMPARISONS

The arguments in favor of “integrated IP” networks made by the U.S. network providers and the arguments made by intellectual property maximalists have much in common. They also differ in key respects.

Consider the similarities. U.S. network providers 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 creative 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 analog 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 network providers and the IP maximalists (using DRM) would like to have perfect price discrimination respecting access to their digital “products.”¹⁶⁰ Perfect price discrimination requires perfect control, and so both groups have sought legal and technical assistance to establish and maintain such control.

Consider the differences in both timing and available alliances. This fight over network neutrality is like the fight that took place just before the Digital Millennium Copyright Act of 1998 (DMCA)¹⁶¹ was enacted, when the copyright industry was seeking legal protection to prevent digital technologies from

158. *Id.*

159. See David Russell, *The Road to Convergence: Network Transformation and IP*, CONVERGE! NETWORK DIG., May 17, 2006, <http://www.convergedigest.com/bp-ttp/bp1.asp?ID=355&ctgy=Loop>. The author explains the origin of ICE thusly: “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.”

160. 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. 1, 5 (noting the encryption found on DVD players that enables geographic price discrimination); Pamela Samuelson, *DRM [and, or, vs.] the Law*, COMM. ACM, Apr. 2003, at 41.

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

eroding their exclusive rights. 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 now 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,¹⁶² as well as 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,¹⁶³ the new anti-network neutrality telecom bills contain no tradeoffs to assist the online businesses. And unlike the intellectual property wars, which seemed to have been between only private parties, open communications networks have served us well in the past and have correspondingly been a strong governmental priority. Finally, unlike 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), the network providers are trying to use accommodations granted to the cable companies in *Brand X* 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 battles from the telecom battles in the United States is that during the early days of the copyright disputes, international models were unavailable for comparison, and the United States was not racing with other countries to create the most economically valuable copyright policy. Now, however, the telecommunications issues under discussion in the United States have informative international parallels.

In Japan, competition for broadband access—and concomitant low prices and high speeds—will erupt when incumbents are forced to unbundle their broadband facilities. This unbundling will make life economically difficult for network providers, as it has for NTT. If we adopt a wholesale separation regime for telecommunications providers, we can arrange for ways to make them whole.¹⁶⁴ Because “unbundling” has proven not to work in the United States

162. Save the Internet: Fighting for Internet Freedom, <http://www.savetheinternet.com/> (last visited Mar. 22, 2007).

163. Safe harbors were provided to online service providers who took adequate steps to remove material that was infringing copyrights.

164. 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 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

(prompting litigation and lobbying but few consumer benefits), “quarantine” will be needed.¹⁶⁵

Germany’s incumbents want to reserve any excess capacity in their broadband connections for their own prioritized content and are not particularly concerned about what this will do to “the internet.” This approach will keep consumers moving online slowly, behaving like passive absorbers of cable-like content rather than producing their own material.

Finally, what we hear from Germany as well as from our own incumbents signals the network operators’ plan 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 U.S. incumbents do, this is a difference of degree rather than

provider, given the providers’ propensity to label everything they do as legitimate “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 perform an actual compensated taking, forcing the network providers to cease providing prioritized content or do more than provide unbundled transport services that are open to interconnection. 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) mandated pipeline unbundling, requiring pipelines to sell transportation separately from other services. ENERGY INFO. ADMIN., FERC ORDER 636: THE RESTRUCTURING RULE (1992), http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/ferc636.html. Order 636 meant that the transport pipelines could no longer engage in gas sales or sell any product as a bundled service. *See id.* 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 generally benefited 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% 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 ten 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. *Id.* Concededly, 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.

165. The 1996 Act directed incumbent local telephony carriers to unbundle parts of their networks for lease to providers of competitive local exchange services at cost-based prices. Mandated unbundling under the Act is widely viewed to have been a failure. Since the Act came into force ten years ago, the FCC has been mired in litigation over what precisely their unbundling rules are—which elements have to be unbundled, and at what prices. *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999) (vacating and remanding key unbundling rules from Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 61 Fed. Reg. 45,476 (Aug. 29, 1996) (codified at 47 C.F.R. pts. 1, 20, 51, 90)); *United States Telecomm. Ass’n v. FCC*, 290 F.3d 415 (D.C. Cir. 2002) (remanding the FCC’s new network elements rule, announced at Revision of the Commission’s Rules Specifying the Portions of the Nation’s Local Telephone Networks That Incumbent Local Telephone Companies Must Make Available to Competitors, 65 Fed. Reg. 2367 (Jan. 14, 2000) (codified at 47 C.F.R. pt. 51), and its new rules for sharing the local loop, announced in Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 65 Fed. Reg. 1331 (Jan. 10, 2000) (codified at 47 C.F.R. pt. 51)); *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 68 Fed. Reg. 52276 (Sept. 2, 2003) (codified at 47 C.F.R. pt. 51) (“Final Order”) (setting out more rules).

kind. In reality, consumers here 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. The internet's astonishing resources and its overwhelming efficiency in using many eyes and hands to create value, will therefore 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 improve 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.¹⁶⁶ More important, however, is that complete control of strategically key network access points, as in Japan, 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.

The intellectual property debates suggest that in the context of the telecommunications fracas the network operators would create too many property rights that would reward the wrong people and that these incumbents would undermine and undervalue the societal spillovers made possible by the internet. The Japanese examples also show 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.

VI

CONCLUSION

In the United States, we have an opportunity to take positive action on this question. Imposing duties on broadband access providers to serve all other access providers alike (by requiring them to separate their transport services from their “content” services) could create enormous public benefits. 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 the owner. Requiring the duty to serve other access providers would make possible a network that would be far more valuable than one that would be created by giving these particular access-point

166. See Jonathan Zittrain, *The Generative Internet*, 119 HARV. L. REV. 1974, 2040 (2006). The author envisions this possible future: “Two Internets would consign the existing grid to an appliancized fate, in which little new happens as existing technology players incrementally modify existing applications without the competitive pressure of grid-enabled innovation arbitrage.”

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 or her work, so should these broadband access networks be subject to common carriage obligations to further competition, innovation, and other central social goals.

We have time to consider the question of network control. Control over distribution chokepoints—prioritization of particular packets—is not inevitable. It is possible to imagine (in Japan, it exists) an alternative future for the internet: blazing high speeds brought about by competition, no prioritization or discrimination, and the emergence of new applications taking advantage of the open internet substrate.

Now, however, the goals of U.S. communications law are not clear. Even though the bills now being considered by Congress 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 policies should apply to the “last mile” broadband access point? Should it be nondiscriminatory or vertically integrated with a carrier’s other offerings?

Answering this question poses three options: (1) We can relax into the property talk and “romantic builder” notion being conveyed by the carriers and believe that legislative incentives to invest in the carriers’ networks will lead to overall benefits for mankind. (2) We can attempt to draft a network neutrality rule that calls upon carriers to treat “similar” services similarly, 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 (3) 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. As to this third option, we can decide together whether the internet’s value to people will be better served by requiring 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 nor 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. As James Boyle might have said if he were writing about telecommunications

instead of intellectual property law, we are at risk of being in thrall to an idea of romantic network ownership that should be questioned as dogma.