

# OPEN COMMUNICATIONS PLATFORMS: THE PHYSICAL INFRASTRUCTURE AS THE BEDROCK OF INNOVATION AND DEMOCRATIC DISCOURSE IN THE INTERNET AGE

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*"Ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition."* Thomas Jefferson, 1813

## I. A KING'S RANSOM TO FREE CODE AND CONTENT FROM THE TYRANNY OF FACILITIES

This article offers a normative perspective on regulating communications platforms. The primary economic goal for communications platforms should be to enhance progress – promoting the economic well being of consumers by expanding output and distributing it in an equitable manner.<sup>1</sup> The primary political goal should be to enrich civic discourse – improving the ability of citizens to participate effectively in writing the rules under which they live.<sup>2</sup> By doing so, a more informed populace will actually be shaping the political institutions in which they live, and this will reflect a closer fit between communications platforms and other realms of society.<sup>3</sup>

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1. See F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 4 (3d ed. 1990).

2. LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* 225-30 (1999) [hereinafter LESSIG, *CODE*].

3. See Mark N. Cooper, *Inequality in the Digital Society: Why the Digital Divide Deserves All the Attention it Gets*, 20 *CARDOZO ARTS & ENT. L.J.* 73 (2002) [hereinafter Cooper, *Inequality*] (outlining a comprehensive paradigm identifying four realms of social order); Mark Cooper, *Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed, Proprietary Networks*, 71 *U. COLO. L. REV.* 1011 (2000) [hereinafter Cooper, *Open Access*] (stating an application to the broadband Internet).

This article is normative in nature because as with any public policy debate about regulation, the debate about actions shapes the world according to specific values. Thus, whenever the exercise of choice is informed by values, either based on business or political viewpoints, the policies that reflect those values are necessarily normative.<sup>4</sup> Those of us involved in the debate over whether and how to regulate communications platforms should be up front about the values we seek to attain before we engage in debate.

The article defines communications broadly because technological convergence is eliminating the archaic distinction between “communications” and “telecommunications.” As evidence, much of the contemporary debate over regulation focuses not on the one-to-one exchange of information that typifies telecommunications, but on the production and exchange of information that involves the mass media (via one-to-many, many-to-one, and many-to-many relationships).<sup>5</sup>

The title of this article uses the term “communications platform” as a matter of principle and strategy. As used in the current debate over communications regulation, the term “information” takes on a strong connotation of a commodity produced by one party and sold or distributed to a passive consumer.<sup>6</sup> But, the current debate is really about the much more profound effects that flow from the convergence of consumption and production—the transformation of consumers into users.<sup>7</sup> The current regulatory debate also encompasses the process of

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4. Lessig refers to the framers of the Constitution and offers the following observation: [T]heir lessons should be our lessons. What they learned was that liberty does not necessarily follow from having a space of no government. Freedom from governmental tyranny may be a necessary condition for liberty, but it is not sufficient. More important, government is necessary to help establish the conditions necessary for liberty to exist. This is because there are collective values that, acting as individuals, we will not realize. These collective values are sometimes values of liberty, which governments can act to establish and support. The freedom to contract, to own property, to travel, to vote – all of these rights require massive governmental support.

LESSIG, *CODE*, *supra* note 2, at 209.

The decision then is not about choosing between efficiency and something else, but about which values should be efficiently pursued . . . [T]o preserve the values we want, we must act against what cyberspace otherwise will become. The invisible hand, in other words, will produce a different world. And we should choose whether this world is one we want.

*Id.*

5. See Phil Weiser, *Networks Unplugged: Toward a Model of Compatibility Regulation Between Communications Platforms* (paper presented at *Telecommunications Policy Research Conference*, Oct. 27, 2001) (adopting this position as well), at <http://www.arxiv.org/html/cs/0109070> (last visited Jan. 24, 2003).

6. See C. EDWIN BAKER, *MEDIA, MARKETS AND DEMOCRACY* 297-307 (2002).

7. See Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, 52 *FED. COMM. L.J.* 561 (2000)

political participation and engagement in civic discourse. This discourse has little to do with the commercial value or the stated business intent of information products.<sup>8</sup>

Pragmatically, “information” has been transformed into a regulatory word, and one that is being tortured for political purposes. Historically, communications functions, which were regulated, were defined to be clearly distinguished from information or video services, which were not. Currently, the definitions of information and cable services are being distorted to include communications functions, thereby deregulating communications through the back door.<sup>9</sup>

Communication platforms hold a special role in the “new” economy. By understanding the unique role that information has historically played in the American polity, this article argues that communications platforms should be kept open. Specifically, this article argues that the physical layer of facilities (the infrastructure of communications) must remain accessible to consumers and citizens, for it is the most fundamental layer in which to ensure equitable access to the rest of the communications platform. An open communications platform promotes a dynamic space for economic innovation and a robust forum for democratic discourse.<sup>10</sup> The role of regulation should be to ensure that strategically placed actors (perhaps by historical favor) cannot deter expression or innovation at any

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[hereinafter Benkler, *Consumers to Users*]; see also MANUEL CASTELLS, *THE INTERNET GALAXY* (2001).

8. See C. EDWIN BAKER, *Giving Up on Democracy: The Legal Regulation of Media Ownership*, Comments of Consumers Union, Consumer Fed'n of Am., Civil Rights Forum, Ctr. for Digital Democracy, Leadership Conference on Civil Rights and Media Access Project, to the *Cross Ownership of Broadcast Stations and Newspapers and Newspaper/Radio Cross-Ownership Waiver Policy, Attachment C to Order*, 16 F.C.C.R. 22,163 (2001) (on file with author); see also Yochai Benkler, *Siren Songs and Amish Children: Autonomy, Information, and Law*, 76 N.Y.U. L. REV. 23 (2001); Yochai Benkler, *Through the Looking Glass: Alice and the Constitutional Foundations of the Public Domain* (paper presented at the *Conference on the Public Domain*, Duke University Law School, Nov. 9-11, 2001), at <http://www.law.duke.edu/pd/papers/benkler.pdf> (last visited Jan. 24, 2003); Yochai Benkler, *Property Commons, and the First Amendment: Towards a Core Common Infrastructure* (paper presented at Brennan Center for Justice, New York University Law School, Mar. 2000), at <http://www.law.nyu.edu/benkler/WhitePaper.pdf> (last visited Jan. 24, 2003) [hereinafter Benkler, *Toward a Core Common Infrastructure*]; 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).

9. *Regarding Digital Television: Before the Senate Commerce Comm.*, (Statement of Dr. Mark Cooper, Director of Research Consumer Federation of America, on Behalf of Consumer Federation of America and Consumers Union), (Mar. 1, 2001), available at <http://www.senate.gov/~commerce/hearings/0301coo.pdf> (last visited Jan. 24, 2003); Jim Chen, *The Authority to Regulate Broadband Internet Access Over Cable*, 16 BERKELEY TECH. L.J. 677 (2001) (suggesting the entirely reasonable, but politically infeasible, approach of defining broadband access as an information service and then regulating it).

10. As discussed below, in the information age it is important to recognize that the commercial marketplace is not the only space for economic innovation.

layer of the platform. This is best achieved by mandating that the core infrastructure of the communications platform remain open and accessible to all.

We are in a critical moment to reaffirm a commitment to open communications platforms because technological and institutional developments in information production are beginning to fulfill the promise of a substantial improvement in both the economy and the polity. The PC-driven Internet has been proven to be an extremely consumer-friendly, citizen-friendly environment for innovation and expression. This has resulted from a largely “open” physical layer—open in the sense of communications devices and transmission networks. The logical or code layer should be open as well, if the end-to-end principle of the Internet is to be fully realized. The end-to-end principle allows interconnection and interoperability in a manner that is particularly well-suited to the economic and political goals identified above. The transparency of the network, and its reliance on distributed intelligence, foster innovation and empower speakers at the ends of the network.

The chaos of economic experimentation and the cacophony of democratic discourse that emanates from an open communications platform model is music to my ears, but the ongoing closure of the third generation Internet has already begun to quiet the chorus. With high speed Internet facility owners refusing to deal with unaffiliated Internet Service Providers (ISPs), banning services that might compete with their core monopoly products and restricting which applications are available to consumers, the communications platform is closing rapidly.<sup>11</sup>

This article argues for an open physical layer in the communications platform. The physical layer of the communications platform is too critical a choke point to risk a closed layer. The physical layer is controlled by too few owners of dominant technology, which makes it too easy to manipulate the platform as a whole. These owners employ singular, narrow motives and leverage market power in order to protect existing monopoly rents to achieve domination over neighboring products. Thus, these players are in a unique position to affect the entire communications platform. If this is allowed to continue, the inevitable economic result will be a lessening of competition and a denial of consumer choice leading to slowing of innovative. The result in the polity will be to confer excessive influence to platform owners and, more importantly, undermine an opportunity to enrich civic discourse through more active involvement of the citizenry.

Although the concept of an open communications platform is under attack at all layers, this article focuses on the physical layer because the

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11. Cooper, *Open Access*, *supra* note 3, at 1042-59.

current strategies and tactics of dominant players controlling physical facilities raises strong concerns which demands immediate responses to stymie the entrenchment of a closed bottleneck at the heart of the platform. Owners of closed facilities have kidnapped the high-speed Internet access market. The closure of the physical layer of the communications platform is a fundamental avenue to undermine a basic tenet of the Internet. Policymakers must move quickly to rescue the Internet by preserving an open physical layer within the communications platform.

Doing so will reaffirm the principle of non-discriminatory access to communications networks, and the principle of end-to-end access, both of which have succeeded in the past. Facility owners are mounting a vigorous campaign of resistance, which has made policy makers and law enforcement authorities hesitant to act. If we cannot force current players to open the physical layer, then perhaps the next best solution may be to pay the ransom necessary to have the facilities provisioned. As long as we get the hostage – an open physical architecture – back, the price will be worth it.

This article provides support for both an open physical platform for the Internet, and refutes the arguments in favor of a closed one. Section II begins by making the case for open platforms in the economy. It explains why an open platform is best suited for disseminating modern information, both economically and politically. In Section III, this paper presents and refutes the arguments in favor of closed platforms, employing general economic arguments that criticize the economics of monopoly market power and vertical integration. Section V examines the anticompetitive and discriminatory practice in the case of the closed physical facilities of the broadband Internet infrastructure. As an example, Section VI reviews the history of the anticompetitive, discriminatory business model of cable owners in protecting their core business (video services). Since cable TV has been a closed platform, and the facility owners are seeking to extend their closed model to the high speed Internet, this traditional platform serves nicely as an economic and practical model for what can happen if the physical architecture is allowed to remain closed. Finally, Section VI briefly reviews some practical suggestions for implementing an open communications platform given a current climate of proprietary networks.

## II. THE CASE FOR OPEN COMMUNICATIONS PLATFORMS

A. *The Economics of Information*

## 1. The Communications Platform as an Economic Model

Yochai Benkler provides a framework with critical insights into the analysis of information production, particularly for understanding the principles of openness that have defined the communications platforms in the Internet age.<sup>12</sup> In this framework, a communications platform is an environment in which information is produced. Benkler uses a layered model to delineate various informational functions within the platform (physical, logical or code, applications, content).<sup>13</sup>

The physical layer consists primarily of two tangible assets, communications devices and transmission media. The logical layer contains the codes, standards or rules with which appliances interconnect, interoperate and communicate. The applications layer contains programs that execute tasks for the user. The content layer involves information products. When combined, these layers represent a coherent platform for describing the complementarities between and among the various informational functions.<sup>14</sup> This article focuses on the physical layer of this communications platform framework to analyze public policy regarding information production both historically as it

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12. See Yochai Benkler, *Intellectual Property and the Organization of Information Production*, 22 INT'L REV. L. & ECON. 81 (2002), available at <http://www.law.nyu.edu/benkler/IP&Organization.pdf>, (last visited Jan. 24, 2003) [hereinafter Benkler, *Intellectual Property*]; Yochai Benkler, *Coase's Penguin, or Linux and the Nature of the Firm* (paper presented at the *Conference on the Public Domain*, Duke University Law School, Nov. 9-11, 2001), at [http://www.law.duke.edu/pd/papers/Coase's\\_Penguin.pdf](http://www.law.duke.edu/pd/papers/Coase's_Penguin.pdf) (last visited Jan. 24, 2003) [hereinafter Benkler, *Coase's Penguin*]; Yochai Benkler, *The Battle Over the Institutional Ecosystem in the Digital Environment*, COMM. ACM, Feb. 2001, at 84, available at <http://www.law.nyu.edu/benkler/CACM.pdf> (last visited Jan. 24, 2003) [hereinafter Benkler, *Institutional Ecosystem*].

13. See Benkler, *Consumers to Users*, *supra* note 7; see also LAWRENCE LESSIG, THE FUTURE OF IDEAS 273 n.13 (2001) [hereinafter LESSIG, *THE FUTURE OF IDEAS*] (noting that TIM BERNERS-LEE, WEAVING THE WEB: THE ORIGINAL DESIGN AND ULTIMATE DESTINY OF THE WORLD WIDE WEB BY ITS INVENTOR 129-30 (1999), identified four layers: transmission, computer, software and content).

14. See Weiser, *supra* note 5, at 1; see also Richard N. Langlois, *Technology Standards, Innovation, and Essential Facilities: Toward a Schumpeterian Post-Chicago Approach*, in DYNAMIC COMPETITION & PUB. POLICY: TECHNOLOGY, INNOVATIONS, AND ANTITRUST ISSUES 193, 207 (Jerry Ellig ed., 2001), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=204069](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=204069) (last visited Jan. 24, 2003) (calling platforms "system products" – "Most cumulative technologies are in the nature of *system products*, that is, products that permit or require the simultaneous functioning of a number of complementary components.").

developed during the industrial age, and as it is now, at the start of the Internet age.

In general, information production exhibits the characteristics of a public good, with positive externalities and high first copy costs.<sup>15</sup> These properties are the launch pad for an economic analysis of information. The public good character of information derives from the fact that it is significantly non-excludable and nonrivalrous.<sup>16</sup> In a truly open environment, once information is produced, it is difficult to prevent it from being shared by users; and the consumption of information (reading or viewing) by one person does not detract from the ability of others to derive value from consuming it.<sup>17</sup>

Information frequently has positive direct and indirect externalities (and occasional negative externalities) associated with its production. Information creates benefits to bystanders that cannot be easily captured in the transactions between the private parties to the exchange of information. This characteristic of information plays an important role when considering the nature of the information environment created by the Internet, as discussed below.

In some respects, information is also subject to network effects.<sup>18</sup> The production and distribution of information becomes more valuable as more people gain access to it. Information is also a major input to its own output, which creates a feedback effect. Where network effects and feedbacks are direct and strong, they create positive feedback loops. Putting information into the world enables subsequent production at lower cost by its original producers or others (because of its public good nature).

To the extent that information and communication are extremely important inputs into the production process for other goods and services, they have a special economic role.<sup>19</sup> They are even often viewed as infrastructure.

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15. See Benkler, *Intellectual Property*, *supra* note 12, at 5; see also BAKER, *supra* note 6, at 8-14.

16. CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 22-23 (1999).

17. BAKER, *supra* note 6, at 8; BRUCE OWEN, *THE INTERNET CHALLENGE TO TELEVISION* 63 (1999) (noting that these characteristics are changeable as technology changes). In the digital information age, the ability to encrypt or otherwise prevent access to information may make it excludable.

18. SHAPIRO & VARIAN, *supra* note 16, at 13-17 (explaining that network effects are sometimes referred to as demand-side, positive externalities).

19. ALFRED KAHN, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* 11 (1988) (noting that "these industries constitute a large part of the 'infrastructure' uniquely prerequisite to economic development" and "as Adam Smith recognized, the division of labor is limited by the extent of the market, and the latter depends in turn on the price and availability of transportation").

## 2. Information Production in the Industrial Age

Over the past century-and-a-half, information production has exhibited economies of scale typical of the industrial age.<sup>20</sup> Capital-intensive technologies and high first copy costs created substantial economies that dictated very large-scale production. This was not always the case, nor need it be in the future, but it has been a fact of life for information production in the industrial age.

These information products also exhibit significant non-substitutability and strong preferences.<sup>21</sup> Different types of information products and institutions have evolved to fill different needs and provide different functions. Print, voice, and video each have very different attributes. They require different types and levels of attention. They tend to convey different types and qualities of information. The result is that there is little ability for individuals to find substitutes for certain media products or institutions.<sup>22</sup>

Analysts recognize that these characteristics of information render it highly unlikely that its markets will be made up of numerous companies competing vigorously (atomistically competitive markets).<sup>23</sup> Rather,

20. High first copy costs are an enduring quality of information that is reinforced in the industrial age by the presence of high capital costs. In the pre-industrial and (perhaps) post-industrial periods first copy costs entail high human capital costs.

21. See BAKER, *supra* note 6; Joel Waldfogel, *Who Benefits Whom in Local Television Markets?*, at <http://rider.wharton.upenn.edu/~waldfogel/tv.pdf> [hereinafter *Local Television*]; Waldfogel, *Comments on Consolidation and Localism*, Roundtable On FCC Ownership Policies (Oct. 29, 2001) at [http://www.fcc.gov/ownership/roundtable\\_docs/waldfogel-stmt.pdf](http://www.fcc.gov/ownership/roundtable_docs/waldfogel-stmt.pdf).

22. Waldfogel, *Local Television*, *supra* note 21; Joel Waldfogel, *Preference Externalities: An Empirical Study of Who Benefits Whom in Differentiated Product Markets* (Oct. 1999), at <http://papers.nber.org/papers/w7391.pdf>; Peter Siegelman & Joel Waldfogel, *Race and Radio: Preference Externalities, Minority Ownership and the Provision of Programming to Minorities* (Oct. 24, 2001), at [http://www.fcc.gov/ownership/roundtable\\_docs/waldfogel-c.pdf](http://www.fcc.gov/ownership/roundtable_docs/waldfogel-c.pdf); Lisa George & Joel Waldfogel, *Who Benefits Whom in Daily Newspaper Markets?* (Oct. 2000), at [http://www.fcc.gov/ownership/roundtable\\_docs/waldfogel-a.pdf](http://www.fcc.gov/ownership/roundtable_docs/waldfogel-a.pdf).

23. See SHAPIRO & VARIAN, *supra* note 16, at 22-23. The characteristics of information goods are as follows:

Information is costly to produce but cheap to reproduce.

Once the first copy of an information good has been produced, most costs are sunk and cannot be recovered.

Multiple copies can be produced at roughly constant per-unit costs.

There are no natural capacity limits for additional copies.

These cost characteristics of information goods have significant implications for competitive pricing strategy. The first and most important point is that markets for information will not, and *cannot*, look like text-book perfect competitive markets in which there are many suppliers offering similar products, each lacking the ability to influence prices.

*Id.*

information markets tend to be tight, differentiated oligopolies or monopolistically competitive.<sup>24</sup>

Public policy in the industrial age was centrally concerned with preventing the abuse of market power and promoting competition at all layers of the communications platform through a wide range of mechanisms. At various times, and in different layers, this policy included structural regulation of ownership of physical facilities (e.g. cable operators could not own television stations, telephone companies could not own cable TV companies), requirements for interconnection and carriage of data, the setting of standards in the logic layer, provision of specific applications (e.g., relay service, touchtone) public interest obligations in programming (content layer), and regulation of rates.

One of the more consistent goals in promoting competition has been to mandate non-discriminatory carriage.<sup>25</sup> The most recent iteration of this policy led to the development of the Internet. Using the Internet as a model, we find that the deeper the principle of openness is embedded in the communications system, the more stimulus there is for information production and innovation.<sup>26</sup>

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24. See *id.* at 54, 87-89.

25. Sections 251, 252 and 271 of the Telecommunications Act of 1996, which have been the focus of an immense amount of attention, imposed extremely strict interconnection and carriage requirements.

26. 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, 935 (2001) [hereinafter Lemley & Lessig, *The End of End-to-End*] (written as a direct response to James P. Speta, Written Ex Parte, *Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T Corp.* FCC DOC. NO. 99-251 (1999)).

[T]he government's activism imposed a principle analogous to [end-to-end] design on the telephone network. Indeed, though it masquerades under a different name (open access), this design principle is part and parcel of recent efforts by Congress and the FCC to deregulate telephony. . . . By requiring the natural monopoly component at the basic network level to be open to competitors at higher-levels, intelligent regulation can minimize the economic disruption caused by that natural monopoly and permit as much competition as industry will allow.

*Id.*

See also James B. Speta, *The Vertical Dimension of Cable Open Access*, 71 U. COLO. L. REV. 975 (2000); Phil Weiser, *Paradigm Changes in Telecommunications Regulation*, 71 U. COLO. L. REV. 819 (2000) (responding to an earlier piece by Lemley & Lessig, Written Ex Parte, *Application for Consent to Transfer Control of Licenses of MediaOne Group Inc. to AT&T Corp.*, FCC DOC. NO. 99-251 (1999), available at <http://cyber.law.harvard.edu/works/lessig/filing/lem-les.doc.html> [hereinafter, Lemley & Lessig]); See also Weiser, *supra* note 5 (as another direct response to Lemley & Lessig, *End of End-to-End*).

*3. Information Production In The Internet Age*

## a. Declining Costs

A dramatic shift in the economics of the information environment has taken place altering the relative cost and importance of the factors of information production. The growth of the Internet, and its underlying technologies, changed the fundamental economics of information production. "As rapid advances in computation lower the physical capital cost of information production, and as the cost of communications decline, human capital become the salient economic good involved in information production."<sup>27</sup>

Historically, dramatic changes in communications and transportation technology affected society deeply.<sup>28</sup> The ongoing technological revolution does so as well, but in a more profound way.<sup>29</sup> The computer and communications industries have high fixed and front-end costs, which result in economies of scale. This is similar to many technologies that have developed over the past century.<sup>30</sup> Computers and communications also exhibit virtuous circles and network effects. Advances in computing technology support more advances in computing technology. This process is observed at the level of hardware<sup>31</sup> and in the organizational process.<sup>32</sup>

At the physical layer, cheap, powerful computers, routers, switches and high capacity fiber optic cable are the rapidly proliferating physical

27. See Benkler, *Coase's Penguin*, *supra* note 12, at 2.

28. Following Lessig's paradigm of modalities of regulation as interpreted as realms of social order in Cooper, *Inequality*, *supra* note 3, we can track the technological transformation affecting the economy (see BRIE-IGCC E-ECONOMY PROJECT, TRACKING A TRANSFORMATION: E-COMMERCE AND THE TERMS OF COMPETITION IN INDUSTRIES (2001)), the polity (see GOVERNANCE.COM: DEMOCRACY IN THE INFORMATION AGE (Elaine Ciulla Kamarck & Joseph S. Nye Jr. eds., 2002)) and civic institutions (see JEREMY RIFKIN, THE AGE OF ACCESS: THE NEW CULTURE OF HYPERCAPITALISM, WHERE ALL OF LIFE IS A PAID-FOR EXPERIENCE chs. 11-12 (2000); ANDREW L. SHAPIRO, THE CONTROL REVOLUTION: HOW THE INTERNET IS PUTTING INDIVIDUALS IN CHARGE AND CHANGING THE WORLD WE KNOW chs. 20-21 (1999)).

29. See Ida Harper Simpson, *Historical Patterns of Workplace Organization: From Mechanical to Electronic Control and Beyond*, CURRENT SOC. 47 (Apr. 1999); BARRY BLUESTONE & BENNETT HARRISON, GROWING PROSPERITY: THE BATTLE FOR GROWTH WITH EQUITY IN THE TWENTY-FIRST CENTURY (2001) (seeking historical parallels to previous technological revolutions, ultimately acknowledge uniqueness of current transformation); George Evans et al., *Growth Cycles*, 88 AM. ECON. REV. 495 (1998).

30. W. KIP VISCUSI ET AL., ECONOMICS OF REGULATION AND ANTITRUST ch. 15 (3d ed. 2000).

31. Brian R. Gaines, *The Learning Curves Underlying Convergence*, 57 TECH. FORECASTING & SOC. CHANGE 7, 20-21 (1998).

32. See W. Brian Arthur, *Positive Feedbacks in the Economy*, 262 SCI. AM. 95, 98 (Feb. 1990).

infrastructure of the digital economy that allow communications at rising speeds with falling costs.<sup>33</sup> In the code and applications layer, a software revolution is the nervous system that enables the messages to be routed, translated, and coordinated.<sup>34</sup>

Standardized and pre-installed bundles of software appear to have allowed the rapidly expanding capabilities of computer hardware to become accessible and useful to consumers with little expertise in computing. At the content layer, every sound, symbol, and image can now be digitized.<sup>35</sup> The more complex the sound or image, the more data has to be encoded and decoded to accomplish the digital representation.<sup>36</sup> But, when computing speeds, storage capacity and transmission rates become big enough, fast enough, and cheap enough, it becomes feasible to move huge quantities of voice, data, and video over vast distances.

The orders of magnitude of change that underlie the growth in the computer and communications industries are enormous.<sup>37</sup> Since the first desktop computers began to enter the residential market about twenty years ago, desktop computers have undergone a remarkable transformation.

Texas Instruments introduced the first computer chip to the world in 1958. Since then the semiconductor has been doubling in capacity and speed . . . almost every 18 months. . . Today the microchip contained in a single laptop computer has more computing power than all the computers used in all the universities across the country in 1950. The cost of processing information and data that once might have been hundreds of thousands, if not millions, of dollars is rapidly falling to zero. The IBM-370-168 mainframe (circa 1975) sold for \$3.4 million; today a personal computer with an Intel Pentium chip retails for about \$1,500 and is nearly 1,000 times faster.<sup>38</sup>

The changes that result from this immense increase in computing and communications capacity arise not only because of the intensity of

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33. SARA BAASE, *A GIFT OF FIRE: SOCIAL, LEGAL AND ETHICAL ISSUES IN COMPUTING* (1997); GEORGE GILDER, *TELECOSM: HOW INFINITE BANDWIDTH WILL REVOLUTIONIZE OUR WORLD* (2000).

34. See Gaines, *supra* note 31.

35. OWEN, *supra* note 17, at 29.

36. *Id.* at 151.

37. Gaines, *supra* note 31, at 20. See, e.g., JAMES GLEICK, *FASTER: THE ACCELERATION OF JUST ABOUT EVERYTHING* (1999); Jeffrey L. Sampler, *Redefining Industry Structure for the Information Age*, *ENGINEERING MGMT. REV.*, Summer 1999, at 68.

38. Stephen Moore & Julian L. Simon, *The Greatest Century That Ever Was: 25 Miraculous U.S. Trends of the Past 100 Years*, at 24 (Cato Inst. Policy Analysis No. 364, 1999), available at <http://www.cato.org/pubs/pas/pa364.pdf> (last visited Jan. 24, 2003).

use of the factors of production, or even its speed, but because there has been a fundamental change in the relationships between the factors of information production.<sup>39</sup> Because computing intelligence can be distributed widely, and the activities of the end-points communicated so quickly, interactivity is transformed. Users become producers as their feedback rapidly influences the evolution of information products.

The institutional forms that will expand are those that economize on the most valuable factor of production (now human capital) by reducing cost or maximizing output. Alternatively, the scarcest or most critical input to production becomes the focal point of attention in economic activity.<sup>40</sup> This makes it possible for a wholly new form of information production – based on peer-to-peer relationships – to exist on a sustainable basis.<sup>41</sup> By drawing on a broad and diverse supply of human capital, a loose, collaborative approach can provide a potent mechanism for production.

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39. See CASTELLS, *supra* note 7, at 28. Note that the telephone is an industrial age communications platform with significant network effects, but does not exhibit the feedback loops or virtuous circles of information age communications platforms.

It is a proven lesson from the history of technology that users are key producers of the technology, by adapting it to their uses and values, and ultimately transforming the technology itself, as Claude Fischer . . . demonstrated in his history of the telephone. But there is something special in the case of the Internet. New uses of the technology, as well as the actual modifications introduced in the technology, are communicated back to the whole world, in real time. Thus, the timespan between the process of learning by using and producing by using is extraordinarily shortened, with the result that we engage in a process of learning by producing, in a virtuous feedback between the diffusion of technology and its enhancement.

*Id.*

40. See Langlois, *supra* note 14.

41. See Benkler, *Coase's Penguin*, *supra* note 12, at 22-23.

Peer production is emerging as an important mode of information production because of four attributes of the pervasively networked information economy. First, the object of production – information – is quirky, in that (a) it is purely non-rival and (b) its primary non-human input is the same public good as its output – information. Second, the physical capital costs of information production have declined dramatically with the introduction of cheap-processor-based computer networks. Third, the primary human input – creative talent – is highly variable, more so than traditional labor, and the individuals who are the “input” possess better information than anyone else about the variability and suitability of their talents and level of motivation and focus at a given moment to given production tasks. Fourth and finally, communication and information exchange across space and time are much cheaper and more efficient than ever before, which permits the coordination of widely distributed potential sources of creative effort and the aggregation of actual distributed effort into usable end products.

Peer production better produces information about available human capital, and increases the size of the sets of agents and resources capable of being combined in projects – where there are increasing returns to scale for these sets.

*Id.*

The impact of this shift in information production is not limited to new organizational forms (such as peer-to-peer production). Those who have studied corporate changes in the last quarter of the twentieth century have found similar patterns.<sup>42</sup> The new thrust of corporate organization, based on distributed intelligence and a flat structure, reflects these forces.<sup>43</sup> Hierarchy is out; horizontal is in.<sup>44</sup> The ability to coordinate at a distance dramatically alters the nature of centralized control, transferring much decision-making to dispersed management. A Harvard Business School Press publication, graphically titled *Blown to Bits*, summarized the dramatic change compelling corporate adjustment as follows:

Digital networks finally make it possible to blow up the link between rich information and its physical carrier. The Internet stands in the same relation to television as did television to books, and books to stained-glass windows. The traditional link . . . between the economics of information and the economics of things – is broken.<sup>45</sup>

When such a dramatic change takes place in a technology that is critical to a variety of activities the effects are felt throughout society.

#### b. Increasing Competition and Innovation

These developments in information space proved to be extremely pro-competitive. The economic arguments in favor of competition are familiar<sup>46</sup> – efficient allocation of resources, absence of excess profit, lowest cost production, and a strong incentive to innovate.<sup>47</sup> To be sure, industrial age economics, with its large economies of scale, renders perfect or atomistic competition rare, but the competitive goal itself remains important.<sup>48</sup> Therefore, the relative competitiveness of markets receives a great deal of attention, specifically upon the conditions that make markets more competitive or workably competitive.<sup>49</sup>

The Internet unleashed competitive processes and innovation exhibiting the fundamental characteristics of audacious or atomistic

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42. See Cooper, *Inequality*, *supra* note 3, at 93.

43. MARINA V.N. WHITMAN, *NEW WORLD, NEW RULES* 17, 32-37, 55-62 (1999).

44. See MANUEL CASTELLS, *THE RISE OF NETWORK SOCIETY* (1996); RICHARD C. LONGWORTH, *GLOBAL SQUEEZE* (1998).

45. PHILIP EVANS & THOMAS S. WURSTER, *BLOWN TO BITS: HOW THE NEW ECONOMICS OF INFORMATION TRANSFORMS STRATEGY* 17 (2000) (footnote omitted).

46. See SCHERER & ROSS, *supra* note 1, at 20.

47. See *id.* at 19-21.

48. See *id.* at 16-17.

49. See *id.* at 53-54.

competition.<sup>50</sup> Decentralized experimentation by users who had command over increasing computing power created the conditions for a dramatic increase in innovation.<sup>51</sup> Openness of the communications network was central to this newly dynamic environment. Moreover, the flourishing of a new, collaborative mode of information production may provide a substantial improvement in the competitive dynamic by introducing sustainable competition between very different institutions.<sup>52</sup>

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50. See Langlois, *supra* note 14, at 207. Langlois offers a general proposition of system products:

[I]nnovation normally proceeds fastest when a large number of distinct participants are trying multiple approaches simultaneously. Because of the complexity that system products normally exhibit, and because of the qualitative uncertainty inherent in the process of innovation, multiple approaches and numerous participants provide greater genetic variety than would a single innovator (or small number of innovators), which leads to more rapid trial-and-error learning.

*Id.* (citations omitted).

51. François Bar et al., *Defending the Internet Revolution in the Broadband Era: When Doing Nothing is Doing Harm* (1999), at <http://e-economy.berkeley.edu/publications/wp/ewp12.pdf> [hereinafter *Bar*].

Experimentation by users and competition among providers, across the range of segments that constitute the Internet, generated a surge of self-sustaining innovation . . . . This network openness and the user-driven innovation it encouraged were a distinct departure from the prevailing supply-centric, provider-dominated, traditional network model. In that traditional model a dominant carrier or broadcaster offered a limited menu of service options to subscribers; experimentation was limited to small-scale trials with the options circumscribed and dictated by the supplier.

Diversity of experimentation and competition on an increasingly open network were key, since nobody could foresee what would eventually emerge as successful applications. Openness allowed many paths to be explored, not only those which phone companies, the infrastructure's monopoly owners, would have favored. Absent policy-mandated openness, the Regional Bell Operating Companies (RBOCs) and monopoly franchise [cable television] networks would certainly have explored only the paths of direct benefit to them. It is doubtful that without such policy-mandated openness the Internet Revolution would have occurred.

*Id.* at 8-9.

52. Benkler, *Toward a Common Core Infrastructure*, *supra* note 8, at 41.

A non-proprietary core common infrastructure threatens the business models of those companies that relied on the exclusivity of private commercial provisioning. While on its face the problem the core common infrastructure presents is of competition from a competitor that is insensitive to the bottom line, in fact something more fundamental is at stake. The main problem for private providers of physical infrastructure, like AOL-Time Warner or AT&T, is the introduction of meaningful choice of an infrastructure that is not biased in favor of one provider or another, but is truly free. The addition of a single alternative provider of commodified infrastructure or resources would weaken incumbent's market power, but not fundamentally alter the choice set of users. The addition of noncommodified, open infrastructure would destabilize the supposed inevitability of the incumbents' way of serving communications needs.

*Id.*

In some geographic and product areas, this form of cooperative organization has expanded in the late industrial age.<sup>53</sup> By developing relationships between consumers or producers these entities have addressed specific needs for specific subsets of consumers and producers—all within the context of an industrial society – and utilized factors of production in new ways to their advantage.<sup>54</sup> The benefits of institutional diversity have long been noted in the cooperative sector.<sup>55</sup> These include observations that institutions of different types provide yardstick competition that adds another dimension to competitive forces in the economy. Diversity of institutional types has long been one objective of non-profit institutions.<sup>56</sup>

Thus, the revolution in communications and computing technology combined with the institutional innovation of the Internet to effect a potentially profound change in the environment in which information is produced and distributed. It opened the door to greater competition among a much wider set of producers and a more diverse set of institutions.

### *B. Open Communications Platforms Promote Civic Discourse*

No discussion of communications platforms can be complete without specifying the impact of communications policy alternatives on political discourse. The configuration of political institutions that results from decisions about communications platforms is at least as important as the configuration of economic institutions.

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53. NONPROFIT ORGANIZATIONS IN THE MIXED ECONOMY 28 (Avner Ben-Ner & Benedetto Gui eds., 1996); Paul J. DiMaggio & Helmut K. Anheier, *The Sociology of Nonprofit Organizations and Sectors*, 16 ANN. REV. SOC., 137, 138 (1990).

54. Peter Normark, *A Role for Cooperatives in the Market Economy*, ANNALS OF PUB. & COOPERATIVE ECON. 429, 430 (1996).

Several factors support the growth of the cooperative form of organization in a more knowledge- or service-oriented society. One factor is the increasing importance of human capital in the development of new businesses, whereas previously financial capital was dominant during the industrial epoch. Since the cooperative form of organization has its comparative advantages in its orientation towards the human capital and its disadvantages in relation to financial capital, the future for cooperatives seems promising.

*Id.*

55. *Id.* at 430; TO PROFIT OR NOT TO PROFIT 69 (Bruce A. Weisbrod ed., 1998). At the same time that nonprofits are under going attack they are being increasingly relied upon to respond to changing economic and social conditions. There is increasing demand for trustworthy institutions as a geographically mobile population and an array of increasingly complex goods pose problems for consumers who seek assurance that they expect.

56. See Lee Clarke & Carroll L. Estes, *Sociological and Economic Theories of Markets and Nonprofits: Evidence from Home Health Organizations*, 97 AM. J. SOC. 945, 948 (1992).

The relevance of information's economic characteristics has deep roots in the American political economy. Thomas Jefferson's belief "[t]hat ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition,"<sup>57</sup> and the desire of the framers of the Constitution to have ideas circulate with relative ease<sup>58</sup> have become a rallying point for advocates of open communications platforms.

The spillover of the procompetitive and inclusionary elements of the revolution in the information environment for the democratic ideals of the polity is obvious. An active, informed citizenry has always been of special concern in America because an informed citizenry is the lifeblood of democracy, as Justice Brandeis explained in his concurrence in *Whitney v. California*,

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57. See James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, Conference on the Public Domain, Duke University School of Law, November 9-11, 2001, at <http://www.law.duke.edu/pd/papers/boyle.pdf> (citing Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in *The Writings of Thomas Jefferson* 326, 333-34 (Albert Ellery Bergh ed., 1907) [hereinafter *Jefferson Letter*] (urging that Jefferson's comment should only be quoted in context to fully convey Jefferson's message as "a skeptical recognition that intellectual property rights *might* be necessary, a careful explanation that they should not be treated as natural rights, together with a warning of the monopolistic dangers that they pose."))

If nature has made anyone thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been particularly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot in nature, be a subject of property.

Society may give an exclusive right to the profits arising from [inventions] as an encouragement to men to pursue ideas which [sic] may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from any body. Accordingly, it is a fact, as far as I am informed, that England was, until we copied her, the only country on earth which ever, by a general law, gave a legal right to the exclusive use of an idea. In some other countries it is sometimes done, in a great case, and by a special and personal act, but, generally speaking, other nations have thought that these monopolies produce more embarrassment than advantage to society; and it may be observed that the nations which [sic] refuse monopolies of invention, are as fruitful as England in new and useful devices.

*Jefferson Letter*, at 333-34.

58. LESSIG, *CODE*, *supra* note 2, at 130-35.

Those who won our independence believed that the final end of the State was to make men free to develop their faculties; . . . that the greatest menace to freedom is an inert people; that public discussion is a political duty; and that this should be a fundamental principle of the American government.<sup>59</sup>

The ability of the Internet to transform consumers into producers of information is a potentially dramatic improvement in the involvement of the citizenry in civic discourse.

Of course, there are those who reject the notion that communications platforms can or should be viewed in anything but a purely economic light.<sup>60</sup> Mark Fowler, the first Chairman of the Federal Communications Commission in the Reagan administration, declared that television, the dominant mass media of the time, “is just another appliance . . . a toaster with pictures.”<sup>61</sup> In other words, there is a tendency to reduce communications to commodities and simple economics, forgetting the importance of information and media to civic discourse. If speech were just an economic commodity as these commentators suggest, we would not have needed the First Amendment. Fortunately, neither the U. S. Constitution, the Supreme Court, nor Congress accepted that view.

In order to appreciate why communications cannot be treated as a pure commodity we must review the role of information in the political process. This discussion starts from the First Amendment role of the press. It then points out how powerful the Internet could be in realizing First Amendment rights. It concludes by underscoring the importance of achieving this order of magnitude improvement in civic discourse in a highly complex and interconnected information society.

### 1. Civic Discourse

In 1945, Justice Black rendered the Supreme Court’s opinion in *Associated Press v. United States*, which has set the tone for open civic discourse in the past half century, declaring that “[the First] Amendment rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public.”<sup>62</sup> Justice Frankfurter, concurring in *Associated Press*, rejected the claim that the means of communications are just “a

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59. *Whitney v. California*, 274 U.S. 357, 375 (1927).

60. See Weiser, *supra* note 5, at 22 (mentioning the obligations of the FCC to consider other values, but devoting no attention to the analysis).

61. BAKER, *supra* note 6, at 3 (citing Caroline E. Mayer, *FCC Chief’s Fears: Fowler Sees Threat in Regulation*, WASH. POST, Feb. 6, 1983, at K6.).

62. *Assoc. Press v. United States*, 326 U.S. 1, 20 (1945).

toaster with pictures,” although he used different commodities as his point of reference.

A free press is indispensable to the workings of our democratic society. The business of the press, and therefore the business of the Associated Press, is the promotion of truth regarding public matter by furnishing the basis for an understanding of them. Truth and understanding are not wares like peanuts and potatoes. And so, the incidence of restraints upon the promotion of truth through denial of access to the basis for understanding calls into play considerations very different from comparable restraints in a cooperative enterprise having merely a commercial aspect.<sup>63</sup>

Since the *Associated Press* decision, the Supreme Court has reaffirmed this view with respect to newspapers<sup>64</sup> and has unflinchingly applied it to all forms of mass media including broadcast TV<sup>65</sup> and cable TV.<sup>66</sup> In the panoply of media jurisprudence, the Internet “has the potential to make the First Amendment’s freedom of the press just as much an individual right as have long understood freedom of speech to be.”<sup>67</sup> Lessig points out that at the time of the framing of the Constitution the press had a very atomistic trait.

The “press” in 1791 was not the *New York Times* or the *Wall Street Journal*. It did not comprise large organization of private interests, with millions of readers associated with each organization. Rather, the press then was much like the Internet today. The cost of a printing press was low, the readership was slight, and anyone (within reason) could become a publisher – and in fact an extraordinary number did. When the Constitution speaks of the rights of the “press,” the architecture it has in mind is the architecture of the Internet.<sup>68</sup>

In dealing with the print media, the Supreme Court adopted the view that private market power should not be allowed to infringe on civic discourse when it opined:

Surely a command that the government itself shall not impede the free flow of ideas does not afford non-governmental combinations a refuge if they impose restraints upon that constitutionally guaranteed

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63. *Id.* at 28.

64. *See generally* FCC v. Nat’l Citizens Comm. for Broad., 436 U.S. 775 (1978).

65. *See generally* Red Lion Broad. v. FCC, 395 US 367 (1969).

66. Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622, 638-39 (1994) (*Turner I*); Time Warner Entm’t Co. v. FCC, 240 F.3d 1126 (D.C. Cir. 2001) (*Time Warner III*)

67. MARK GODWIN, CYBER RIGHTS 286 (1998).

68. LESSIG, *CODE*, at 183 (citations omitted).

freedom. Freedom to publish means freedom for all and not for some. Freedom to publish is guaranteed by the Constitution, but freedom to combine to keep others from publishing is not. Freedom of the press from governmental interference under the First Amendment does not sanction repression of that freedom by private interests.<sup>69</sup>

Liberal economists recognize that there are political reasons to prefer atomistically competitive markets.<sup>70</sup> The most prominent among them recognize that the analysis should begin with the political implications of economic institutions.<sup>71</sup> They identify a number of characteristics of competitive markets that also support the democratic aspirations of the polity.

Atomistic competition decentralizes and disperses power. It relies on objective processes.<sup>72</sup> Autonomy and freedom of entry are two other economic characteristics of atomistically competitive markets that converge with democratic principles. Atomistic competition tends to promote individualistic, impersonal decisions by its relatively low resource requirements for entry. There is a close symmetry between the end-to-end principle and the fundamental institutional principles of our democracy. This observation applies with particular force to communications platforms.<sup>73</sup>

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69. *Assoc. Press.*, 326 U.S. at 20.

70. SCHERER & ROSS, *supra* note 1, at 18.

71. *Id.*

We begin with the political arguments, not merely because they are sufficiently transparent to be treated briefly, but also because when all is said and done, they, and not the economists' abstruse models, have tipped the balance of social consensus toward competition. One of the most important arguments is that the atomistic structure of buyers and sellers required for competition decentralizes and disperses power. The resource allocation and income distribution problem is solved through the almost mechanical interaction of supply and demand forces on the market, and not through the conscious exercise of power held in private hands (for example, under monopoly) or government hands (that is, under state enterprise or government regulation). Limiting the power of both government bodies and private individuals to make decisions that shape people's lives and fortunes was a fundamental goal of the men who wrote the U.S. Constitution.

*Id.*

72. *Id.* at 19.

A closely related benefit is the fact that competitive market processes solve the economic problem *impersonally*, and not through the personal control of entrepreneurs and bureaucrats. . .

[Another] political merit of a competitive market is its freedom of opportunity. When the no-barriers-to-entry condition of perfect competition is satisfied, individuals are free to choose whatever trade or profession they prefer, limited only by their own talent and skill and by their ability to raise the (presumably modest) amount of capital required.

73. LESSIG, *CODE*, *supra* note 2, at 166-67 (citations omitted).

The *Associated Press* decision expressed a concern about the sheer size of news organizations and the undue influence that could result.<sup>74</sup> In the industrial age the size of media organizations presents a growing mismatch between those who control media organizations and average citizens.<sup>75</sup> Horizontal market power detracts from civic discourse.<sup>76</sup> As discussed below, vertical market power, which is an increasing concern in the economy, is also a concern in the polity.<sup>77</sup>

Institutional diversity—different media business models, with different cultural and journalistic traditions—plays a special role in promoting civic discourse. Unique perspectives provided by different institutions should be highly valued as sources of information. Judge Learned Hand painted a picture of diversity that was properly complex, noting that a newspaper “serves one of the most vital of all general interests: the dissemination of news from as many different sources, and with as many different facets and colors as is possible.”<sup>78</sup> Moreover, the unique perspective of different media types is important to present a multidimensional perspective – in terms of intensity and point of view.<sup>79</sup>

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Relative anonymity, decentralized distribution, multiple points of access, no necessary tie to geography, no simple system to identify content, tools of encryption – all these features and consequences of the Internet protocol make it difficult to control speech in cyberspace. The architecture of cyberspace is the real protector of speech there; it is the real “First Amendment in cyberspace,” and this First Amendment is no local ordinance. . .

The architecture of the Internet, as it is right now, is perhaps the most important model of free speech since the founding. This model has implications far beyond e-mail and web pages.

*Id.*

74. Maurice E. Stucke & Allen P. Grunes, *Antitrust and the Marketplace of Ideas*, 69 ANTITRUST L.J. 249, 262-63 (2001).

Nor did the majority of justices jump through the typical hoops of defining a relevant market, determining market share and the restraints’ impact on price and examining issue of entry or expansion by the other news wire services. Rather the majority was satisfied that AP was sufficiently large to impact the marketplace of ideas, in that it was “a vast, intricately reticulated, organization, the largest of its kind, gathering news from all over the world, the chief single source of news for the American press, universally agreed to be of prime consequence.”

*Id.*

75. Lawrence Anthony Sullivan, *Economics and More Humanistic Disciplines: What are the Sources of Wisdom for Antitrust*, 125 U. PA. L. REV. 1214, 1223 (1977) (“Americans continue to value institutions the scale and workings of which they can comprehend. Many continue to value the decentralization of decision making power and responsibility. Many favor structures in which power in one locus may be checked by power in another.”)

76. See MARK COOPER, *CABLE MERGERS AND MONOPOLIES: MARKET POWER IN DIGITAL MEDIA AND COMMUNICATIONS NETWORKS* (2002) [hereinafter COOPER, *CABLE MERGERS*]

77. See *infra* Part IV(B)(2).

78. *United States v. Assoc. Press*, 52 F.Supp. 362, 372 (D.C.N.Y. 1943), *aff’d* 326 U.S. 1 (1945).

79. Stucke & Grunes, *supra* note 74, at 282-83.

Thus, the unique characteristics of the Internet and the open communications platforms that support it create more competitive forms of information production, but they also promote more open and democratic discourse.

## 2. Expanding Needs, Promising Capabilities

There is no such thing as “enough” democratic discourse. As the means of communications have changed over the course of the twentieth century, from print to radio, to broadcast television, to multichannel cable and satellite TV, Congress and the Supreme Court have renewed their commitment to diversity and richer civic discourse. At each stage of development, public policy has required that each new means of communication promote diversity to preserve a variety of different kinds of media institutions. Differing business models and journalistic cultures promote public debate. Had the Supreme Court originally not adopted an open-ended goal, it would have been all too easy to declare a single victory in the struggle to deepen and defend civic discourse and stop there—but our democracy would be much poorer as a result.

As the world becomes a more complex place, the need for diverse sources of information becomes more important.<sup>80</sup> Mobility, social fragmentation, and globalization of the economy have placed a greater pressure on communications networks to enable citizens to be informed about increasingly complex issues. The power of digital communication will be greatly enhanced by improved video images, and the impact heightened by real-time interactivity and personalized ubiquity.<sup>81</sup> But,

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[I]t is problematic, or as Judge Learned Hand asserted “impossible,” to treat different news services as “interchangeable” . . . . A newspaper reflects the biases and views of its writers, editors, and perhaps owners. One newspaper may downplay and truncate a news wire story, while the other newspaper may carry it as a headline. These are not fungible commodities. Thus, the marketplace is not about consumers switching from one homogenous product to another. Rather, it is the net increase in consumer welfare from having many competing news sources and editorial voices. As Judge Hand aptly stated about the marketplace of ideas – and it bears repeating – “it is only by cross-lights from varying directions that full illumination can be secured.” Unlike restraints on ordinary commodities (where consumers may turn to less-desirable alternatives but the overall societal impact is not significant), for restraints in the media, the alternatives may be inherently unsatisfactory and the costs imposed on society may be significant.

*Id.* (citations omitted).

80. JEREMY RIFKIN, *THE AGE OF ACCESS: THE NEW CULTURE OF HYPERCAPITALISM, WHERE ALL LIFE IS A PAID-FOR EXPERIENCE*, Chs. 11 and 12 (2000); SHAPIRO, *supra* note 28, at Chs. 20 & 21.

81. See SHAPIRO & VARIAN, *supra* note 16, at 7. “The Net allows information vendors to move from the conventional broadcast form of advertising to one-to-one marketing. . . . The information amassed by these powerful Web servers is not limited to their users’ current

these dramatic increases in the ability to control media messages may result in a greater ability to manipulate and mislead, rather than to educate and enlist citizens in a more intelligent debate.<sup>82</sup> Thus, while it is true that there is a great deal more information available to more educated citizens today than fifty years ago, it is also true that they need more information and better ways to participate in civic discourse. The same changes in the information environment that have made the development of more complex and rapid communications possible, also make it more difficult for citizens to comprehend and respond effectively to new conditions.

Fortunately, if allowed, the new form of information production will support deeper forms of democratic expression. This is a long-standing aspiration, as Baker describes in his discussion of complex democracy, which “seeks a political process that promotes both fair partisan bargaining and discourses aimed at agreement.”<sup>83</sup> It is the participatory nature of discourse that allows citizens to reach agreement and sustain disagreement. “Agreement on a common good, however, is really only acceptable from the perspective of each group’s own needs, projects and commitments.”<sup>84</sup> This autonomy arises through “self-reflective and self-defining activities [that] also points to the crucial role of media forms, such as fiction, art, and dance that are largely ignored in the democratic vision of the elitist or pluralist.”<sup>85</sup>

Benkler articulates a political goal, mirroring his economic goal, which embodies a convergence of the economic and political aspirations of society in this new information environment. “Technology now makes possible the attainment of decentralization and democratization by enabling small groups of constituents and individuals to become *users*—participants in the production of their information environment – rather than by lightly regulating concentrated commercial mass media to make them better serve individuals conceived as passive consumers.”<sup>86</sup>

Benkler calls for policies to ensure that this new form of organization thrives.<sup>87</sup> In doing so, he seeks to protect the opportunity for a more meaningful form of democratic participation, and the increased diversity of institutions that flow from this structure.<sup>88</sup> Lessig

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behavior; they can also access vast databases of information about customer history and demographics.”

82. SHAPIRO, *supra* note 28, at 118-20.

83. BAKER, *supra* note 6, at 149.

84. *Id.* at 149-50.

85. *Id.* at 150.

86. Benkler, *Consumers to Users*, *supra* note 7, at 562.

87. See Benkler, *Toward a Core Common Infrastructure*, *supra* note 8, at 1.

88. *Id.* at 3.

The freedom for all users to participate in building our information and cultural environment is the greatest promise of networked communications. It is a freedom

too points out that technology can shift the balance between freedom and control of expression.<sup>89</sup> The point of policy is to direct this equation in order to support greater innovation and liberty. The key is to preserve a balance that allows diverse civic discourse.<sup>90</sup>

Because our communications methods are far more than “toasters with pictures,” civic discourse becomes constrained when the communications platform is closed. More importantly, the potential to enrich civic discourse in the Internet age would be lost.<sup>91</sup>

### *C. The Role of Public Policy In Creating Open Communications Platforms*

As the previous sections suggest, the key governmental role of requiring an open system at a fundamental level gave rise to a powerful

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tied directly to the core values of democracy and autonomy that underlie the American commitment to freedom of speech and a free press. To secure this freedom, however, we must build a core common infrastructure that will allow commercial and noncommercial, professional and amateur, commodified and noncommodified, mainstream and fringe to interact in an environment that allows all to flourish and is biased in favor of none.

*Id.*

89. LESSIG, *CODE*, *supra* note 2, at 43-60.

90. LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, at 138-39.

The innovations that I have described flow from the environment the Net is. The environment is a mix of control and freedom. It is sensitive to changes in that mix. If the constraints on the content layer are increased, innovation that depends upon free content will be restricted. If the access guaranteed by a commons at the code layer becomes conditioned or restricted, then innovation that depends upon this access will be threatened. The environment balances the free against the controlled. Thus, preserving this environment means preserving this balance.

*Id.*

91. Benkler, *Institutional Ecosystem*, *supra* note 12, at 88.

Liberal democracies developed their prevailing answers to the question of how shall individuals be free, productive, and live in a just society when the core resources and outputs in their economies (such as coal, ore, and grains) were scarce traditional economic goods, costly to produce and distribute. They found that organizing production under these conditions requires boxing freedom into the categories of “public-political” and “private-personal,” keeping both to a greatest extent out of the productive realm. We discovered that too much focus on equality could lead to a serious decline in productivity, to the serious compromise of freedom, or both. But these answers no longer have the same purchase when the most valuable inputs and outputs of our society – information, knowledge, culture, and human creativity – are either public goods in the strict economic sense or uniquely personal to creative, nonfungible individuals.

The point is that simply copying the settlement from the economy of stuff to the economy of information is unnecessary. In that portion of our lives increasingly occupied by information, we can be free in a richer sense and more egalitarian in the distribution of wealth while maintaining or increasing productivity.

*Id.*

wave of innovation. There must be no mistake about the critical role that government policy played in the process of creating this new information environment.

Leaving aside the origin of the Internet in national security concerns,<sup>92</sup> a determined commitment by the government to open communications networks was critical to the widespread development of the Internet. It is clear that the communications platform of the Internet was founded on, and thrived on, the principle that facility owners in the physical layer could not discriminate against innovators or speakers.<sup>93</sup> The FCC required access to the telecommunications network at rates based on cost and terms and conditions that allowed experimentation and user choice.<sup>94</sup> At the same time, the FCC refused to regulate the service offered.<sup>95</sup>

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92. JANET ABBATE, *INVENTING THE INTERNET*, Chs. 1 & 2 (1999).

93. Bar, *supra* note 51.

The FCC allowed specialized providers of data services, including Internet Service Providers (ISPs), and their customers access to raw network transmission capacity (through leased lines) on cost-effective terms. First, regulatory policy forced open access to networks where the monopoly owners would try to keep things closed. Second, the resulting competition allowed the FCC to free the service providers from detailed regulation that would have kept them from using the full capabilities of the network in the most open and free manner.

Thanks to the FCC policy of "openness" and competition, specialized networks and their users could unleash the Internet revolution. This assured the widest possible user choice and the greatest opportunities for users to interact with the myriad of emerging new entrants in all segments of the network. To be sure, the FCC strategy emerged haltingly but it followed a rather consistent direction. . . . The Commission supported competition and innovation by keeping the critical network infrastructure open to new architectures and available to new services on cost effective terms. The instruments of FCC policy were to make leased lines (and, lately, network functions) available on cost-oriented terms and to forebear from regulating Internet and other data services. It set in motion a virtuous cycle of cumulative innovation, new services, infrastructure development, and increased network usage with evident economic benefits for the U.S. economy.

*Id.*

94. Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 936.

We certainly do not claim that a communications network would have been impossible without the government's intervention. We have had telecommunication networks for over a hundred years, and as computers matured, we no doubt would have had more sophisticated networks. The design of those networks would not have been the design of the Internet, however. The design would have been more like the French analogue to the Internet—Minitel. But Minitel is not the Internet. It is a centralized, controlled version of the Internet, and it is notably less successful.

*Id.*

95. NorthNet, Inc., An Open Access Business Model For Cable Systems: Promoting Competition & Preserving Internet Innovation On A Shared, Broadband Communications Network, Ex Parte, *Application of America Online Inc. & Time Warner, Inc. for Transfers of Control*, F.C.C., CS-Docket No. 0030, October 16, 2000 [hereinafter *NorthNet*] (on file with author); see also Earl W. Comstock & John W. Butler, *Access Denied: The FCC's*

Lessig states the political issue in extremely charged terms, drawing an analogy between open communications platforms and freedom:

We are remaking the values of the Net, and the question is: Can we commit ourselves to neutrality in this reconstruction of the architecture of the Net?

I don't think that we can. Or should. Or will. We can no more stand neutral on the question of whether the Net should enable centralized control of speech than Americans could stand neutral on the question of slavery in 1861.<sup>96</sup>

The rich information environment that evolved on the Internet is a positive externality of both technological development and public policy. The threat to this rich environment is precisely the threat that private actors and actions will not take these positive externalities into account, and thus will destroy the environment.<sup>97</sup>

This section has argued that the policy of promoting an open communications platform interacted with technological developments to create a dramatic improvement in the production and distribution of information. These were beneficial to the economy and civic discourse. They are now threatened by a movement among facilities owners to close the communications platform.

#### IV. THE CASE AGAINST CLOSED COMMUNICATIONS PLATFORMS

Active government policy to promote open communications platforms provided a basis for the fundamental improvement in competitive dynamics and robust civic discourse in our economy. But

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Failure to Implement Open Access to Cable as Required by the Communications Act, *COMMLAW CONSPECTUS*, at 5 (Winter 2000).

96. LESSIG, *CODE*, *supra* note 2, at 205 (citation omitted).

97. See JOHN B. TAYLOR, *ECONOMICS* 420 (1995).

A direct analogy to biodiversity in the physical environment is appropriate. Taylor offers the following discussion of positive externalities from biodiversity and the threats of private actions, particularly the intergenerational threat: Biodiversity – the rich variety of plant and animal life in the world – has been recognized as having important benefits for pharmaceutical and medical research. Ideas for many important pharmaceutical products throughout history...have been discovered in the natural environment and then modified or improved by researchers...

*Id.*

Those governments or individuals who own the rain forests suffer little if any cost from cutting them down and losing the biodiversity. The cost is external to them, spread around the world and indeed, to future generations, who must forego the opportunity of better drugs or other benefits that the variety of plant and animal life might bring.

*Id.*

facility owners are constantly pressing regulators and legislators to abandon the principal of an open communications platform.

This Section offers a theoretical response to the economic claim that closed platforms are more efficient by weaving together post-Chicago thinking about the exercise of market power and the developing body of theoretical literature on the economic properties of the Internet.

### *A. Questioning The Theory Of Monopoly As A Superior Source Of Value Creation*

#### 1. Incentives to Invest

As the FCC put it, “[s]ome economists, most notably Schumpeter, suggest that monopoly can be more conducive to innovation than competition, since monopolists can more readily capture the benefits of innovation.”<sup>98</sup> Thus, some argue that facility owners, exercising their property rights to exclude and dictate uses of the network, will produce a more dynamic environment than an open communications platform.<sup>99</sup> The hope is that a very small number of owners engaging in the rent seeking behavior of innovators will stimulate more investment, and that this enlightened self-interest will probably convince them to open their network.<sup>100</sup> Notwithstanding the clear success of the open

98. Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992, *Further Notice of Proposed Rulemaking*, 16 F.C.C.R. 17,312, ¶ 36 (2001) (citation omitted). *See also* 47 C.F.R. §§ 21, 73 & 76 (2001).

99. *See* Weiser, *supra* note 5 (stating “in markets where more than one network standard battle it out in the marketplace, users can benefit from a greater degree of dynamism.”).

100. *See* Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 957-59.

The only argument we have been able to find suggesting that eliminating ISP competition might actually be desirable is that eliminating competition gives cable companies supercompetitive revenues that in turn will encourage them to deploy broadband Internet access more quickly. . . . Cable companies will deploy broadband access and open it to competition, but only if they are “able to charge unaffiliated ISPs and other content providers the full monopoly price for interconnection and access.” . . . [The author] assumes that no one will buy broadband cable services initially unless the cable company itself provides high-bandwidth content. And the cable companies will have no incentive to invest in developing broadband infrastructure unless they can reap monopoly profits from that endeavor. . . . In effect, the argument is that we must expand the cable companies’ monopoly over the wires into competitive markets in order to give them an incentive to implement broadband access.

*Id.* (citations omitted).

The need for investment incentives is a fair point. But it is worth noting at the outset that this “monopoly incentives” argument contradicts every other argument made by opponents of ISP competition. For cable companies to reap monopoly returns from prices charged to ISPs means, among other things, that the cable companies will not voluntarily open their lines to ISP competition. If cable

communications platform,<sup>101</sup> and the demonstrated unwillingness of incumbent facility owners to open their platforms when they are not required to do so,<sup>102</sup> monopoly proponents tell us that the next generation of the Internet cannot succeed under the same rules of open communications that were responsible for its birth.

This argument is conceptually linked to long-standing claims that “firms need protection from competition before they will bear the risks and costs of invention and innovation, and a monopoly affords an ideal platform for shooting at the rapidly and jerkily moving targets of new technology.”<sup>103</sup> Lately this argument is extended to claims that, in the new economy, “winner take all” industries exhibit competition for the entire market, not competition within the market. As long as monopolists are booted out on a regular basis, or believe they can be, monopoly is in the public interest.<sup>104</sup>

In a sense, this argument is a return to the pre-Internet logic of communications platforms, in which it is assumed that the center of value creation resides in the physical layer.<sup>105</sup>

The contrast between the demonstrated impact of freeing the code and content layers to innovate and add value, while running on top of an open physical layer, could not be more dramatic.<sup>106</sup>

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companies are collecting monopoly profits from ISPs, it means that facilities-based competition by other forms of broadband Internet access has not served to restrict cable’s power over price. It means that broadband cable service is a monopoly, and therefore within the jurisdiction of the antitrust laws. And it assumes that, contrary to the Chicago-school theory of tying, cable companies will make more money from bundling ISP service with the provision of access than they would merely by charging an unregulated price for access alone.

*Id.* (citations omitted).

101. LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, Ch. 8 (2001).

102. *Id.* at Ch. 10.

103. SCHERER & ROSS, *supra* note 1, at 31.

104. See STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, *WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY* (2001) (using the term ‘serial monopoly’, as do a bevy of other Microsoft supported experts); Mark Cooper, *Antitrust as Consumer Protection in the New Economy: Lessons from the Microsoft Case*, 52 HASTINGS L.J. 813 (2001) [hereinafter Cooper, *Antitrust*] (Pointing out that there is nothing serial in Microsoft’s monopolies. Rather, Microsoft conquers market after market using leverage and anticompetitive tactics, never relinquishing any of its previous monopolies).

105. Weiser, *supra* note 5, at 29.

ISPs cannot compete on the core value proposition in a broadband world unless they are offering a facilities-based service that enables them to compete on price and quality with a cable provider of Internet service. To the extent that a cable provider desires to find new marketing channels, it may well strike arrangements with ISPs to assist on that score, but the ISPs are not competing on the core product.

At best, the ISPs are able to offer differentiated content on the portal screen, added security features, more reliable privacy policies and the like.

*Id.* (footnote omitted).

106. Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 943-44.

The theory supporting Schumpeterian rents is particularly ill-suited to several layers of the Internet information platform. It breaks down if the monopoly is not transitory, a likely outcome in the physical layer. In the physical layer, with its high capital costs and other barriers to entry, monopoly is more likely to quickly lead to anticompetitive practices that leverage the monopoly power over bottleneck facilities into other layers of the platform.

The theory has also been challenged for circumstances that seem to typify the code and applications layers of the Internet platform.<sup>107</sup> The monopoly rent argument appears to be least applicable to industries in which rapid and raucous technological progress is taking place within the framework of an open platform, as has typified the Internet through its first two decades.<sup>108</sup> The “winner take all” argument was firmly rejected

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One should not think of ISPs as providing a fixed and immutable set of services. Right now, ISPs typically provide customer support as well as an Internet protocol (IP) address that channels the customer's data. Competition among ISPs focuses on access speed and content.

...The benefits of this competition in the Internet's history should not be underestimated. The ISP market has historically been extraordinarily competitive. This competition has driven providers to expand capacity and to lower prices. Also, it has driven providers to give highly effective customer support. This extraordinary build-out of capacity has not been encouraged through the promise of monopoly protection. Rather, the competitive market has provided a sufficient incentive, and the market has responded.

*Id.*

107. SCHERER & ROSS, *supra* note 1, at 660.

Viewed in their entirety, the theory and evidence [in support of monopoly power] suggest a threshold concept of the most favorable climate for rapid technological change. A bit of monopoly power in the form of structural concentration is conducive to innovation, particularly *when advances in the relevant knowledge base occur slowly*. But very high concentration has a positive effect only in rare cases, and more often it is apt to retard progress by restricting the number of independent sources of initiative and by dampening firms' incentive to gain market position through accelerated R&D. Likewise, given the important role that technically audacious newcomers play in making radical innovations, it seems important that barriers to new entry be kept at modest levels. Schumpeter was right in asserting that perfect competition has no title to being established as the model of dynamic efficiency. But his less cautious followers were wrong when they implied that powerful monopolies and tightly knit cartels had any strong claim to that title. What is needed for rapid technical progress is a subtle blend of competition and monopoly, with more emphasis in general on the former than the latter, and with the role of monopolistic elements diminishing when rich technological opportunities exist.

*Id.* (emphasis added).

108. Daniel L. Rubinfeld & John Hoven, *Innovation and Antitrust Enforcement, in DYNAMIC COMPETITION AND PUBLIC POLICY: TECHNOLOGY, INNOVATION, AND ANTITRUST ISSUES* 65, 75-76 (Jerry Ellig ed., 2001).

One policy implication for antitrust is the need to preserve a larger number of firms in industries where the best innovation strategy is unpredictable. . . . Another

in the Microsoft case.<sup>109</sup> The Internet seems to fit the mode of atomistic competition much better than the monopoly rent model, as did the development and progress of its most important device, the PC.<sup>110</sup>

Current theoretical literature provides an ample basis for concerns that the physical layer of communications platforms will not perform efficiently or in a competitive manner without a check on market power. In this layer, barriers to entry are substantial, and go far beyond simple entrepreneurial skills that need to be rewarded.<sup>111</sup> At the structural level, new entry into these physical markets is difficult.

The dominant players in the physical layer have the power to readily distort the architecture of the platform to protect their market interests.<sup>112</sup> They have a variety of tools to create economic and entry barriers<sup>113</sup> such as exclusive deals,<sup>114</sup> retaliation,<sup>115</sup> manipulation of

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implication is . . . that “Technical progress thrives best in an environment that nurtures a diversity of sizes and, perhaps especially, that keeps barriers to entry by technologically innovative newcomers low.” . . . A third implication is the awareness that dominant firms may have an incentive to act so as to deter innovative activities that threaten the dominant position . . .

*Id.* (citation omitted).

109. See *United States v. Microsoft*, 253 F.3d 34, 103 (D.C. Cir. 2001) (*per curiam*); Cooper, *Antitrust*, *supra* note 104, at 815-25

110. See Langlois, *supra* note 14, at 215.

In the case of the personal computer, the rise of a single dominant – but largely open and nonproprietary – standard focused innovation in modular directions. [I]t is the ensuing rapid improvement in components, including not only the chips but various peripheral devices like hard disks and modems, as well as the proliferation of applications software, that has led to the rapid fall in the quality-adjusted price of the total personal computer system.

*Id.* (citation omitted).

111. See Legal Rights Satellite Org., *Communications Convergence of Broadcasting and Telecommunications Services*, (arguing that there were barriers to entry into physical facilities) at <http://www.legal-rights.org/Laws/convergence.html> (last visited Jan. 17, 2003).

In the opinion of AT&T Canada LDS, the supply conditions in broadband access markets are extremely limited. There are significant barriers to entry in these markets including lengthy construction periods, high investment requirements and sunk costs, extensive licensing approval requirement (including the requirements to obtain municipal rights-of-way) . . . Under these circumstances, the ability for new entrants or existing facilities-based service providers to respond to non-transitory price increases would be significantly limited, not to mention severely protracted.

*Id.*

112. See *id.* See also Franklin M. Fisher, *Innovation and Monopoly Leveraging*, in DYNAMIC COMPETITION AND PUBLIC POLICY: TECHNOLOGY, INNOVATION, AND ANTITRUST ISSUES 138 (Jerry Ellig ed., 2001).

113. See Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940, 948-51 (1986); Michael L. Katz & Carl Shapiro, *Product Introduction with Network Externalities*, 40 J. INDUS. ECON. 55, 73 (1992); Richard Makadok, *Can First-Mover and Early-Mover Advantages Be Sustained in an Industry with Low Barriers to Entry/Imitation?*, 19 STRATEGIC MGMT. J. 683, 685-86 (1998); Ulrich Witt, *“Lock-in” vs. “Critical Masses” – Industrial Change Under Network Externalities*, 15 INT’L J. INDUS. ORG. 753, 768-69

standards,<sup>116</sup> and strategies that freeze customers.<sup>117</sup> Firms can leverage their access to customers to reinforce their market dominance<sup>118</sup> by creating ever-larger bundles of complementary assets.<sup>119</sup> As the elasticity of demand declines over the course of the product life cycle, market power lodged in the physical layer results in excessive bundling<sup>120</sup> and overpricing of products under a variety of market conditions.<sup>121</sup> Control over the product cycle can impose immense costs by creating incompatibilities,<sup>122</sup> forcing upgrades,<sup>123</sup> and by spreading the cost increases across layers of the platform to extract consumer surplus.<sup>124</sup>

In information markets, creating incompatibilities or blocking the flow of information undermines consumer value.<sup>125</sup> Because of the

(1997); Robin Mansell, *Strategies for Maintaining Market Power in the Face of Rapidly Changing Technologies*, 31 J. ECON. ISSUES 969, 970 (1997).

114. See Melissa A. Schilling, *Technological Lockout: An Integrative Model of the Economic and Strategic Factors Driving Technology Success and Failure*, 23 ACAD. MGMT. REV. 267, 276 (1998).

115. See Willow A. Sheremata, "New" Issues in Competition Policy Raised by Information Technology Industries, 43 ANTITRUST BULL. 547, 573-74 (1998); Glenn A. Woroch et al., *Exclusionary Behavior in the Market for Operating System Software: The Case of Microsoft*, in OPENING NETWORKS TO COMPETITION: THE REGULATION AND PRICING OF ACCESS 221 (David Gabel & David F. Weiman eds., 1998).

116. See Sheremata, *supra* note 115, at 560-61; see also CHARLES H. FERGUSON, HIGH ST@KES, NO PRISONERS: A WINNER'S TALE OF GREED AND GLORY IN THE INTERNET WARS 307 (1999); Mark A. Lemley & David McGowan, *Could Java Change Everything? The Competitive Propriety of a Proprietary Standard*, 43 ANTITRUST BULL. 715, 732-33 (1998).

117. See Joseph Farrell & Michael L. Katz, *The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL. 609, 643-50, (1998); Sheremata, *supra* note 115, at 547, 573-74.

118. See Makadok, *supra* note 113, at 685.

119. See David B. Yoffie, *CHESS and Competing in the Age of Digital Convergence*, in COMPETING IN THE AGE OF DIGITAL CONVERGENCE 1, 27 (David B. Yoffie ed., 1997); see also Robert E. Dansby & Cecilia Conrad, *Commodity Bundling*, 74 AM. ECON. REV. 377 (1984).

120. See Carmen Matutes & Pierre Regibeau, *Compatibility and Bundling of Complementary Goods in a Duopoly*, 40 J. INDUS. ECON. 37 (1992).

121. See *id.*; see also Joseph P. Guiltinan, *The Price Bundling of Services: A Normative Framework*, J. MKTG. April 1987, at 74; Lester Telser, *A Theory of Monopoly of Complementary Goods*, 52 J. BUS. 211 (1979); Richard Schmalensee, *Gaussian Demand and Commodity Bundling*, 57 J. BUS. 211 (1984).

122. See Jay Pil Choi, *Network Externalities, Compatibility Choice, and Planned Obsolescence*, 42 J. INDUS. ECON. 167, 171-73 (1994).

123. See Glenn Ellison & Drew Fudenberg, *The Neo-Luddite's Lament: Excessive Upgrades in the Software Industry*, 31 RAND J. ECON. 253 (2000); Drew Fudenberg & Jean Tirole, *Upgrades, Trade-ins, and Buybacks*, 29 RAND J. ECON. 235, 235-36 (1998).

124. See *id.* at 176-77; K. Sridhar Moorthy, *Market Segmentation, Self Selection, and Product Lines Design*, 3 MKTG. SCI. 256 (1985); Marcel Thum, *Network Externalities, Technological Progress, and the Competition of Market Contract*, 12 INT. J. INDUS. ORG. 269 (1994).

125. See Langlois, *supra* note 14, at 52 ("The owner of a dominant standard may thus want to manipulate the standard in ways that close off the possibilities for a competitor to achieve compatibility. This has a tendency to retard the generational advance of the system.")

interconnected nature of the information platform and the decentralized nature of participation, practices that restrict flows undermine a broader range of activities and harm a wider set of actors.

Claims that monopoly rents cannot be increased by conquering neighboring markets have been refuted by recent analyses that indicate there is ample evidence that these anti-competitive behaviors may be attractive to a new economy monopolist for static and dynamic reasons.<sup>126</sup> Market power in a core product can be preserved by conquering neighboring markets, erecting cross-platform incompatibilities, raising rivals' costs, or preventing rivals from achieving economies of scale. Profits in the core product may also be increased by taking advantage of the ability to price discriminate. By driving competitors out of neighboring markets, new monopolies may be created or the ability to preserve market power across generations of a product may be enhanced by diminishing the pool of potential competitors.

### 3. The Negative Externalities of a Closed Communications Platform

Even without intentional anticompetitive behavior, closure of the communications platform imposes a cost in two ways, by distorting incentives for innovation and by undermining institutional options for the production of information. First, restricting the range of experimentation and shifting incentives reduces the quality and quantity of innovation and innovators because it shifts the balance between incumbents and disruptive entrants. The hand of incumbents, who shy away from disruptive innovation, would be strengthened.<sup>127</sup> Incumbents behave rationally by developing their core competence and then by

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126. See *id.*, at 19-24; see also Michael Katz & Carl Shapiro, *Antitrust and Software Markets*, in COMPETITION, INNOVATION AND THE MICROSOFT MONOPOLY: ANTITRUST AND THE DIGITAL MARKETPLACE, 70-80 (Jeffrey A. Eisenach & Thomas M. Lenard eds., 1999); Lansuz A. Ordoover & Robert D. Willig, *Access and Bundling in High Technology Markets*, in COMPETITION, INNOVATION AND THE MICROSOFT MONOPOLY: ANTITRUST AND THE DIGITAL MARKETPLACE (Jeffrey A. Eisenach & Thomas M. Lenard eds., 1999); Steven C. Salop, *Using Leverage to Preserve Monopoly*, in COMPETITION, INNOVATION AND THE MICROSOFT MONOPOLY: ANTITRUST AND THE DIGITAL MARKETPLACE (Jeffrey A. Eisenach & Thomas M. Lenard eds., 1999).

127. See LESSIG, *CODE*, *supra* note 2, at 91.

But we can see in the Internet a strategy for dealing with the very same blindness. . . . If the platform remains neutral, then the rational company may continue to eke out profit from the path it has chosen, but the competitor will always have the opportunity to use the platform to bet on a radically different business model.

This again is the core insight about the importance of end-to-end. It is a reason why concentrating control will not produce disruptive technology. Not necessarily because of evil monopolies, or bad management, but rather because good business is focused on improving its lot, and disruptive technologists have no lot to improve.

*Id.*

seeking structures that reward it.<sup>128</sup> The incentives for innovators are also dampened.<sup>129</sup> Second, Benkler's economic analysis predicts that dominant commercial mass media firms have incentives to expand by commercializing, concentrating, and homogenizing information space. As a result,

[n]oncommercial producers will systematically shift to commercial strategies. Small-scale producers will systematically be bought up by large-scale organizations that integrate inventory management with new production. Inventory owners will systematically misallocate human creativity to reworking owned-inventory rather than to utilizing the best information inputs available to produce the best new information product.<sup>130</sup>

Potential sources of disruptive innovation would shrink.<sup>131</sup> Physical layer owners control access to the network to protect their franchise,

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128. See Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 937-38 (citing Charles R. Morris & Charles H. Ferguson, *How Architecture Wins Technology Wars*, HARV. BUS. REV. 86, 88-89 (Mar.-Apr. 1993)).

129. *Id.* at 932, 946.

Innovation is most likely when innovators can expect to reap rewards in a fair marketplace. Innovation will be chilled if a potential innovator believes the value of the innovation will be captured by those that control the network and have the power to behave strategically. To the extent an actor is structurally capable of acting strategically, the rational innovator will reckon that capacity as a cost to innovation.

If that strategic actor owns the transmission lines itself, it has the power to decide what can and cannot be done on the Internet. The result is effectively to centralize Internet innovation within that company and its licensees. While there is a debate in the economic literature about the wisdom of centralizing control over improvements to any given innovation, we think the history of the Internet compellingly demonstrates the wisdom of letting a myriad of possible improvers work free of the constraints of a central authority, public or private. Compromising e2e [end-to-end] will tend to undermine innovation by putting one or a few companies in charge of deciding what new uses can be made of the network . . .

The point is not that cable companies would necessarily discriminate against any particular technology. Rather, the point is that the possibility of discrimination increases the risk an innovator faces when deciding whether to design for the Internet. Innovators are likely to be cautious about how they spend their research efforts if they know that one company has the power to control whether that innovation will ever be deployed. The increasing risk is a cost to innovation, and this cost should be expected to reduce innovation.

*Id.*

130. Benkler, *Intellectual Property*, *supra* note 12, at 29.

131. See *id.*, at 32-38 (noting two feedback effects that "amplify the direction and speed of the shift in strategies, and lock them in institutionally." First, "organizations invest in creating demand for their products." This rebounds to the advantage of dominant commercial firms. Second, dynamic adjustment of organizations will accelerate changes in behaviors. Expectations about commercial mass media actions will result in adopting such "strategies sooner than might otherwise be warranted by a static assessment of market conditions immediately following an increase in property rights. Moreover, expectations regarding the

which includes other layers of the platform when they are vertically integrated. The implication here is that we cannot just wait for the platform to open. Doing nothing in the face of accelerating closure of the communications platform is doing harm.<sup>132</sup> Some of the harm cannot be undone.<sup>133</sup> Rectifying what can be fixed after the fact is immensely time consuming, costly and inevitably more intrusive.<sup>134</sup>

### *B. The Transmission Bottleneck And Vertical Market Power*

#### 1. Transmission as a Choke Point

The empirical evidence suggests that Benkler's observation about physical capital is correct at one level, but it underestimates the strategic value of transmission facilities. The size of investment in devices has grown dramatically, but at a rapidly declining cost per device (especially quality adjusted), which has fueled the shift to distributed computing. Technological devices have become affordable on an expanding scale. Technology use, then, should be expanding at a similar pace. When it comes to the Internet, however, control over the transmission network has become an obstacle to proliferation of advanced Internet services because network owners are using strategic control over the physical layer to retard developments at other layers. Transmission is the chokepoint. Shrinking in relative importance in the overall industry (measured by dollars of investment), and declining in cost per unit, those in control of transmission networks retain immense leverage because the network requires centralized, fixed investments that are capital intensive.

Physical capital is not the barrier the advocates of closed platforms make it out to be. The amount of investment needed is not extraordinary, compared to the total investment being made at all the layers of the communications platform. No sooner does the political movement in support of claims that higher returns are needed to promote investment in the physical layer crystallize, than we discover that the needed investment has already been made or is not needed. For example, the "fiber-to-the outhouse" movement of the late 1980s claimed that fiber optic capacity had to be deployed on an accelerated basis not

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dynamic effects on institutional development will create particularly intense incentives to adopt" the dominant commercial strategy.).

132. See Bar, *supra* note 51.

133. See Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 16 (rejecting this on two grounds, first because it causes much greater costs when one decides to open the market after it has been deployed as closed and second because it is difficult to know what the costs of closure are. They argue that the prudent course is to start with open platforms, given their clear superiority and wait and see).

134. See *id.* at 956-57.

only throughout the network backbone, but also to the smallest end-user.<sup>135</sup> This argument failed to carry the day—we still enjoyed the Internet explosion. Today again, we find that between 75 and 85 percent of the country is already wired for high-speed access.<sup>136</sup> With availability running far ahead of subscription, it has become clear that applications are the missing ingredient, not facilities.<sup>137</sup>

What proves to be the most important characteristic of transmission facilities is that the capital assets are centralized and fixed, which gives the owners an incentive to exploit their leverage over their geographic area of deployment.<sup>138</sup> Leverage over the first (or last mile), which connects the end user to the communications network is key, particularly if one entity combines control over the physical layer with control at other layers, achieving vertical integration.<sup>139</sup>

Most communications markets have a small number of competitors. In the high speed Internet market, there are now two main competitors and the one with the dominant market share has a substantially superior technology.<sup>140</sup> When or whether there will be a third, and how well it will be able to compete, is unclear. This situation is simply not sufficient to sustain a competitive outcome.<sup>141</sup> The physical facilities do not invite

135. Mark Cooper, *The Importance of ISPs in The Growth of The Commercial Internet: Why Reliance on Facility-Based Competition Will Not Preserve Vibrant Competition and Dynamic Innovation on the High-Speed Internet*, Attachment A to “Comments of the Texas Office of People’s Council, et al,” *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities Universal Service Obligations of Broadband Providers Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards And Requirements*, Federal Communications Commission, CC Dockets Nos. 02-33, 98-10. 95-20, (July 1, 2002) [hereinafter Cooper, *The Importance of ISPs*].

136. See Jonathan Krim, *FCC Rules Seek High-Speed Shift; Phone Firms Would Keep Cable Rights*, WASH. POST, Feb. 15, 2002, at E1.

137. See, e.g., Todd Spangler, *Crossing the Broadband Divide*, PCMAGAZINE, February 12, 2002, at 102.

138. See Weiser, *supra* note 5, at 9. Weiser’s central assumption is that the capital investment required for communications platforms is not fixed:

In short, particularly in information industries where a network is not built on fixed capital investment which may give rise to natural monopolies, competition may well be procompetitive by increasing innovation in a manner that would not occur under a lowest common denominator standard, such as that which often results from joint standard setting.

*Id.*

139. COOPER, *CABLE MERGERS*, *supra* note 76, at chs. 4 and 5.

140. NATIONAL RESEARCH COUNCIL, *BROADBAND: BRINGING HOME THE BITS* (2002).

141. See Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 953;

It is true that DSL lines are currently open to certain indirect forms of ISP competition. But this is not the result of the operation of the market. Rather, it is the result of regulation. DSL service is provided by phone companies, and Congress and the FCC have historically been willing to regulate phone companies and to require open interconnection during their deregulation. It would be ironic if

vibrant competition. The existence of too few competitors can slow the innovation process if those in control seek to use their position to block innovation.<sup>142</sup> Controlling access to the physical platform (via use of market power) confers a great ability to affect the entire platform because of the ease of manipulating its core.<sup>143</sup> Denial of access to the physical layer can distort innovation located in the code, applications and content layers by masking what may seem to be a software problem, by hardware/infrastructure actions.<sup>144</sup>

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competition over DSL lines were to be cited as an example of the market at work, when in fact those DSL lines are open to competition only because regulators have forced them to be.

Given that historical accident, should we assume that DSL and the future wireless and satellite technologies provide enough competition that we don't need to encourage any more? We think not. First, it is admittedly true that the existence of facilities-based competition lessens the harm cable companies will do by closing the ISP market. But lessening the harm is not the same thing as eliminating it. Even if DSL does provide a partially competitive market for some ISPs who want to serve broadband access to some customers, it simply makes no sense as a matter of economic policy to foreclose the largest possible market for ISP competition, particularly when doing so serves no good end.

*Id.*

142. See Langlois, *supra* note 14, at 44 (noting that it is possible for system competition to have beneficial effects, but there must be many competing systems)

Another way to see this issue is to note that, when there is vibrant intersystem competition, there are more possible entry points for innovation. Multiple competing systems provide a way not only of providing variety but also of experimenting with organizational and design alternatives.

*Id.*

143. See *id.* at 51 (calling this "scope" and seeing this as a fundamental issue);

Here the idea of the "scope" of the standard becomes important. The owner of a standard that control the compatibility of a large fraction of the components of a system is in a much better position to close off avenues of innovation that threaten the rent-earning potential of the standard. The owner of a standard with relatively smaller scope is always in danger of being "invented around" or made obsolete if it closes off access or otherwise exercises market power unduly.

*Id.*

144. See *id.* at 216; Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 939-40 (quoting FRANÇOIS BAR & CHRISTIAN SANDVIG, RULES FROM TRUTH: POST-CONVERGENCE POLICY FOR ACCESS 22 (Sept. 2000) (unpublished manuscript, on file with The UCLA Law Review)) (Flexibility in design is a feature of digital networks. The use of the network becomes a question of software implementation separable in fundamental ways from the ownership or even the nature of the network itself. Francois Bar and Christian Sandvig explain);

In past networks, the communication platform and its configuration were "hard-wired" in the specific arrangement of electro-mechanical devices that formed a particular communication network—the logical architecture of the network precisely reflected its physical architecture. One had to own the network to change that arrangement. By contrast, platform configuration in digital networks depends on ability to program the network's control software. Control over network configuration thus becomes separable from network ownership. Multiple network

## 2. Vertical Leverage in Communications Networks

For the last several decades of the 20<sup>th</sup> century general analysis concerning vertical integration in market structure was muted. However, a number of recent mergers in the communications industries, between increasingly large owners of communications facilities, have elicited vigorous analysis of the abuse of vertical market power. (e.g. AT&T/MediaOne, AOL/Time Warner (and Time Warner/Turner before it), SBC Communications Inc. (SBC)/Ameritech, and Bell Atlantic/GTE)<sup>145</sup> As one former antitrust official put it, “[t]he increasing number of mergers in high-technology industries has raised both horizontal and vertical antitrust issues . . . the interest in and analysis of vertical issues has come to the forefront.”<sup>146</sup>

Where concerns about vertical integration have traditionally been raised, they focused on integration for critical inputs across markets. The traditional anticompetitive conduct and negative market performance that can emerge from vertical integration are well known. By integrating across stages of production, incumbents can create barriers to entry by forcing potential competitors to enter at more than one stage, making competition much less likely due to increased capital requirements.<sup>147</sup> Vertical mergers can also foreclose input markets to competitors.<sup>148</sup>

Exclusive and preferential deals for the use of facilities and products compound the problem. They “reduce the number of alternative sources for other firms at either stage, [which] can increase the costs of market or contractual exchange.”<sup>149</sup> Integrated firms can impose higher costs on their rivals, or degrade their quality of service to gain an advantage. “[F]or example, the conduct of vertically integrated firms increase[s] risks for nonintegrated firms by exposing downstream specialists to regular or

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platforms, supporting a variety of communication patterns, can simultaneously co-exist on a single physical infrastructure.

Thus, the decision to build intelligence into the network may not be an all-or-nothing proposition. Rather, we can preserve the viability of e2e systems by keeping intelligence out of the hardware design and instead building it into some software layers on an as-needed basis.

*Id.*

145. See Time Warner Inc., 123 F.T.C. 171 (1997) [hereinafter *Time Warner/Turner/TCI*]. In the Time Warner/Turner/TCI merger analysis, the FTC found that entry into the distribution market was difficult in part because of vertical leverage.

146. Daniel L. Rubinfeld & Hal J. Singer, *Open Access to Broadband Networks: A Case Study of the AOL/Time Warner Merger*, 16 BERKELEY TECH. L.J. 631 (2001).

147. See Martin, K. Perry, *Vertical Integration: Determinants and Effects*, in HANDBOOK OF INDUSTRIAL ORGANIZATION 183, 247 (Richard Schmalensee & Robert D. Willig eds., 1989); SCHERER & ROSS, *supra* note 1, at 526.

148. See WILLIAM G. SHEPHERD, THE ECONOMICS OF INDUSTRIAL ORGANIZATION 289-290 (3d ed. 1990).

149. Perry, *supra* note 147, at 246; see also SHEPHERD, *supra* note 148, at 294.

occasional price squeezes.”<sup>150</sup> Vertical integration facilitates price squeezes and enhances price discrimination.<sup>151</sup>

Moreover, the small number of communications facilities in the physical layer can create a transmission bottleneck that would lead directly to the problem of vertical leverage or market power. “[A] vertically integrated broadband provider such as AT&T will have a strong incentive and opportunity to discriminate against unaffiliated broadband content providers.”<sup>152</sup> There is a growing body of theoretical and empirical analysis reinvigorating concerns about the anti-competitive impacts of vertical integration, especially in the cable industry.<sup>153</sup> Facility owners with large market shares do not hesitate to criticize the anticompetitive impacts of other facility owners who gain a large market share.<sup>154</sup> They understand all too well that closed communications facilities means market leverage, which creates the incentive to discriminate against both alternative transmission media, and alternative suppliers.

Problems caused by vertical integration are particularly troubling in communications markets because a communications provider with control over essential physical facilities can exploit its power in more than one market. For example, a local voice service provider with control over physical transmission can provide vertically integrated digital subscriber line (DSL) service, preventing competition from other Internet providers

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150. SCHERER & ROSS, *supra* note 1, at 526.

151. Other behavior effects may occur, for example, collusion, mutual forbearance and reciprocity may exist where the small number of interrelated entities in the industry recognize and honor each others’ spheres of influence. The final behavioral effect is to trigger a rush to integrate and concentrate. Being a small independent entity at any stage renders the company extremely vulnerable to a variety of attacks. See SHEPHERD, *supra* note 148, at 290.

Economists describe the process as follows: [s]ubstitution elasticities of unity and less normally imply that inputs are indispensable, that is, that no output can be produced until at least some use is made of each relevant input. When the monopolist of an input indispensable in this sense integrates downstream, it can make life difficult for remaining downstream competitors. It can refuse to sell the input to them, driving them out of business. Or it can sell it to them at monopoly prices, meanwhile transferring input at marginal cost to its affiliated downstream units, which, with their lower costs, can set end product prices at levels sufficiently low to squeeze the rivals out of the market.

SCHERER & ROSS, *supra* note 1, at 524.

152. Jerry A. Hausman et al., *Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers*, 18 YALE J. ON REG. 129, 134 (2001).

153. For general arguments see Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986); J.A. Odover et al., *Nonprice Anticompetitive Behavior by Dominant Firms Toward the Producers of Complementary Products*, in ANTITRUST AND REGULATION: ESSAYS IN MEMORY OF JOHN J. MCGOWAN 115 (Franklin M. Fisher ed., 1985).

154. COOPER, *CABLE MERGERS*, *supra* note 76, at 77-85.

over the same network.<sup>155</sup> At the same time, the company can bundle its voice services with the DSL service. Consumers may be more likely to choose the communications service that can provide for all of their needs, thereby inhibiting competition in the voice market as well.

#### V. PHYSICAL FACILITIES AS A SOURCE OF MARKET POWER IN COMMUNICATIONS PLATFORMS: THE BROADBAND INTERNET

The previous section rejects the theoretical claim of the superiority of closed communications platforms. This Section rejects the claim on the basis of historically observed strategic behaviors surrounding the emerging closed platform of the high speed Internet. The section following this one will examine the same issues in the context of the long-standing closed video platform world of the cable TV companies. The behavioral analysis in this section relies on a variety of analyses from participants in the sector including AT&T,<sup>156</sup> AOL,<sup>157</sup> analyses prepared by experts for local<sup>158</sup> and long distance<sup>159</sup> telephone companies,

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155. Cooper, *The Importance of ISPs*, *supra* note 135.

156. AT&T in Canada before it became the nation's largest cable company. See AT&T Canada Long Distance Services, *Comments of AT&T Canada Long Distance Services Company*, before the Canadian Radio-television and Telecommunications Commission, Telecom Public Notice CRTC 96-36: Regulation of Certain Telecommunications Service Offered by Broadcast Carriers, (1997) [hereinafter *AT&T Canada*]. The AT&T policy on open access after it became a cable company was first offered in a Letter from David N. Baker, Vice President, Legal & Regulatory Affairs, Mindspring Enterprises, Inc., James W. Cicconi, General Council and Executive Vice President, AT&T Corp., and Kenneth S. Fellman, Esq., Chairman, FCC Local & State Government Advisory Committee, to William E. Kennard, Chairman of FCC (Dec. 6, 1999), available at <http://www.fcc.gov/mb/attmindspringletter.txt>. Virtually no commercial activity took place as a result of the letter, which was roundly criticized. Subsequently their activities were described in Peter S. Goodman, *AT&T Puts Open Access to a Test: Competitors Take Issue with Firm's Coveted First-Screen Presence*, WASH. POST, Nov. 23, 2000, at E1. AT&T in the U.S. in situations where it does not possess an advantage of owning wires, see AT&T Corp., Reply Comments, *Deployment of Wireline Servs. Offering Advanced Telecomms. Capability* CC Docket No. 98-147, (1998); see AT&T Corp., Reply comments, *Opposition to Southwestern Bell Tel. Co. Section 271 Application for Tex., Application of SBC Communications Inc., Southwestern Bell Tel. Co., & Southwestern Bell Communications Servs., Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Servs. in Tex.* (2000), at [http://gullfoss2.fcc.gov/prod/ecfs/comsrch\\_v2.cgi](http://gullfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi) [hereinafter *AT&T SBC*].

157. See America Online, Inc., Comments, *Transfer of Control of FCC Licenses of MediaOne Group Inc., To AT&T Corp.*, CS Docket 99-251, (filed Aug. 23, 1999) (providing, at the federal level, AOL's most explicit analysis of the need for open access) [hereinafter *AOL, FCC*]; America Online Inc., "Open Access Comments of America Online, Inc.," before the Department of Telecommunications and Information Services, San Francisco, October 27, 1999 [hereinafter, *AOL, SF*] (on file with author).

158. See Hausman et al., *supra* note 152.

159. John B. Hayes, Jith Jayaratne, and Michael L. Katz, *An Empirical Analysis of the Footprint Effects of Mergers Between Large ILECS*, citing "Declaration of Michael L. Katz and Steven C. Salop," submitted as an attachment to *Petition to Deny of Spring Communications Company L.P.*, in *Ameritech Corp. & SBC Communications, Inc.*, for

Wall Street analyses of the business models of dominant, vertically integrated cable firms,<sup>160</sup> and observations offered by independent ISPs<sup>161</sup> and small cable operators.<sup>162</sup>

The observable behavior of the incumbent wire owners contradicts the theoretical claims made in defense of closed platforms.<sup>163</sup> The track record of competition in the physical facilities of telephony certainly should not be a source of encouragement for those looking for dynamic Schumpeterian monopolists.<sup>164</sup>

### A. The Physical Choke Points

Whether we call them essential facilities,<sup>165</sup> choke points<sup>166</sup> or anchor points,<sup>167</sup> the key leverage point of a communications network is

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*Consent to Transfer of Control*, CC Dkt. No. 98-141 (filed Oct. 15, 1998) and *Petition to Deny of Spring Communications Company L.P.*, in *GTE Corporation and Bell Atlantic Corp. for Consent to Transfer of Control*, CC Docket. No. 98-184 (filed Nov. 23, 1998) (on file with author).

160. Sanford C. Bernstein and McKinsey and Company, *Broadband!*, January, 2000 [hereinafter Bernstein] (on file with author); Merrill Lynch, *AOL Time Warner*, February 23, 2000 [hereinafter *Merrill Lynch*]; Paine Webber, *AOL Time Warner: Among the World's Most Valuable Brands*, March 1, 2000 [hereinafter Paine Webber]; Goldman Sachs, *America Online/ Time Warner: Perfect Time-ing*, March 10, 2000 [hereinafter *Goldman Sachs*] (on file with author).

161. Earthlink, the first ISP to enter into negotiations with cable owners for access, has essentially given up and is vigorously seeking an open access obligation. See Notice of Ex Parte, Presentation Regarding the Applications of America Online, Inc. & Time Warner Inc. for Transfers of Control CS Docket No 00-30 (filed Oct. 18, 2000), available at [http://gulfoss2.fcc.gov/prod/ecfs/comsrch\\_v2.cgi](http://gulfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi) [hereinafter *Earthlink*]; *Northnet*, CS-Docket No. 0030.

162. Cf. American Cable Association, Comments, *In re* Implementation of the Cable Television Consumer Protection & Competition Act of 1992, Development of Competition in Video Programming Distribution: Section 628(c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition, CS Docket No. 01-290 (filed Dec. 3, 2001) [hereinafter *ACA*] available at [http://gulfoss2.fcc.gov/prod/ecfs/comsrch\\_v2.cgi](http://gulfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi).

163. See Lemley & Lessig, *The End of End-to-End*, *supra* note 26, at 13 (pointing out that claims in which “economic theory holds that” cable companies “will have no incentive to do so” are contradicted and cautioned by the adage that, “One should be skeptical of a theory whose predictions are so demonstrably at odds with reality.”).

164. See Weiser, *supra* note 5, at n.136 (suggesting that we “ask whether, 18 years after the rollout of this technology, will consumers benefit from a number of alternative providers. . .” He then answers the question by looking at the wrong industry (cellular instead of cable)).

165. See Langlois, *supra* note 14, at 195.

166. See Cooper, *Open Access*, *supra* note 3, at 1013.

167. Bernstein, *supra* note 160, at 18, 21.

[T]he current set of alternatives for reaching customers with broadband connections is inadequate. At least for the time being, cable is closed, meaning that much of the value is, in effect, ceded to the platform rather than captured by the content/applications providers

. . . [B]roadband access platforms are the anchor points for much of the value at stake and vehicles for accessing new revenue streams. Furthermore, access is

controlling access to facilities.<sup>168</sup> Experts for the local telephone companies, in opposing the merger of AT&T and MediaOne, made this point arguing that “the relevant geographic market is local because one can purchase broadband Internet access only from a local residence”<sup>169</sup> and that “a dominant market share is not a necessary condition for discrimination to be effective.”<sup>170</sup> “[A] hypothetical monopoly supplier of broadband Internet access in a given geographic market could exercise market power without controlling the provision of broadband access in neighboring geographic markets.”<sup>171</sup>

The essential nature of the physical communication platform was the paramount concern for AT&T in determining interconnection policy for cable networks in Canada.<sup>172</sup> AT&T attacked the claim made by cable companies that their lack of market share indicates that they lack market power, arguing that small market share does not preclude the existence of market power because of the essential function of the access input to the production of service.<sup>173</sup> AT&T further argued that open

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currently a bottleneck, and access winners have the potential to leverage their privilege positioned to ensure long-term value creation.

*Id.*

168. That is exactly what AOL said about AT&T, when AOL was a nonaffiliated ISP. See *AOL, FCC*, *supra* note 157, at 13.

The key, after all, is the ability to use “first mile” pipeline control to deny consumers direct access to, and thus a real choice among, the content and services offered by independent providers. Open access would provide a targeted and narrow fix to this problem. AT&T simply would not be allowed to control consumer’s ability to choose service providers other than those AT&T itself has chosen for them. This would create an environment where independent, competitive service providers will have access to the broadband “first mile” controlled by AT&T – the pipe into consumers’ homes – in order to provide a full, expanding range of voice, video, and data services requested by consumers. The ability to stifle Internet-based video competition and to restrict access to providers of broadband content, commerce and other new applications thus would be directly diminished.

*Id.*

169. Hausman et al., *supra* note 152, at 135.

170. *Id.* at 156.

171. *Id.* at 135.

172. *AT&T Canada*, *supra* note 156, at 12.

Each of these pronouncements made by regulators, policy makers and individual members of the industry reflects the strongly held view that access to the underlying facilities is not only necessary because of the bottleneck nature of the facilities in question, but also because it is critical for the development of competition in the provision of broadband services. AT&T Canada LDS shares this view and considers the control exercised by broadcast carriers over these essential inputs is an important factor contributing to the dominance of broadcast carriers in the market for access services

*Id.*

173. *Id.* at 8-9.

By contrast, the telephone companies have just begun to establish a presence in the broadband access market and it will likely take a number of years before they have

access “obligations are not dependent on whether the provider is dominant. Rather they are necessary in order to prevent the abuse of market power that can be exercised over bottleneck functions of the broadband access service.”<sup>174</sup>

AT&T maintained that the presence of a number of vertically integrated facilities owners does not solve the fundamental problem of access that nonintegrated content providers face, and that AT&T would inevitably be at a severe disadvantage. AT&T pointed out that since independent content providers will always outnumber integrated providers, competition could be undermined by vertical integration. In order to avoid this outcome, even multiple facilities owners must be required to provide non-discriminatory access.<sup>175</sup> This also applies in the ISP arena. AOL also believed that the presence of alternative facilities does not eliminate the need for open access.<sup>176</sup>

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extensive networks in place. This lack of significant market share, however, is overshadowed by their monopoly position in the provision of local telephony services

*Id.* at 8.

[I]n any event, even if it could be argued that the telephone companies are not dominant in the market for broadband access services because they only occupy a small share of the market, there are a number of compelling reasons to suggest that measures of market share are not overly helpful when assessing the dominance of telecommunications carriers in the *access* market.

*Id.* at 9 (emphasis in original).

174. *Id.* at 24.

175. *Id.* at 12.

Because there are and will be many more providers of content in the broadband market than there are providers of carriage, there always will be more service providers than access providers in the market. Indeed, even if all of the access providers in the market integrated themselves vertically with as many service providers as practically feasible, there would still be a number of service providers remaining which will require access to the underlying broadband facilities of broadcast carriers.

*Id.*

176. *AOL, FCC, supra* note 157, at 14.

[A]n open access requirement] would allow ISPs to choose between the first-mile facilities of telephone and cable operators based on their relative price, performance, and features. This would spur the loop-to-loop, facilities-based competition contemplated by the Telecommunications Act of 1996, thereby offering consumers more widespread availability of Internet access; increasing affordability due to downward pressures on prices; and a menu of service options varying in price, speed, reliability, content and customer service

*Id.*

Another indication that the availability of alternative facilities does not eliminate the need for open access policy can be found in AOL's conclusion that the policy should apply to both business and residential customers. If ever there was a segment in which the presence of two facilities competing might alleviate the need for open access requirement, the business segment is it. AOL rejected the idea.

*Id.* at 1-2.

Two or three vertically integrated facilities in the broadband arena will not be enough to ensure free competition.<sup>177</sup> It is also important to note the consensus that cable is the dominant and preferred technology. Wall Street analysts dismiss satellite and wireless as near-term competitors for cable modem service and have an increasingly pessimistic view of DSL's ability to compete given the applications that will drive residential video markets.<sup>178</sup> Cable's advantages are substantial, and DSL is not likely to be able to close the gap.<sup>179</sup>

One simple way to understand the relative capabilities of the two major competing broadband networks is to see how the market values them. Cable TV system owners sell their systems for three to four times what telephone and satellite subscribers do, in spite of the fact that the revenue per subscriber in the core monopoly service is about the same in the industries.<sup>180</sup> Hazelett and Bittlingmayer have recently shown that when firms possess market power, and law enforcement authorities declare that they are not going to restrain the abuse of that power, the stock market revalues the firm's assets to reflect the future value of monopoly rents.<sup>181</sup> This is an unremarkable result that has been demonstrated in the cable TV industry since deregulation in 1984. This also demonstrates why the abuse of market power can be good for stockholders, who enjoy a higher rate of profit, while perhaps not for consumers or the economy in general.

### *B. Implementing Closed Platforms In The New Product Space*

It is hard to imagine private entities that possess such clear market power would refrain from using it to their advantage. Proprietary control of the physical facilities has not led to open networks. There was never any reason to expect otherwise, as AT&T foresaw. In Canada, AT&T tied the domination of access over the last mile to proprietary standards.

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177. See Mark Cooper, "Breaking the Rules", attached to Petition to Deny of Consumers Union, Consumer Federation of America and Media Access Project, Applications for Consent to Transfer of Control of Licenses, MediaOne Group, Inc. Transferor to AT&T Corp., Transferee, CS 99-251 (filed August 23, 1999) (on file with author).

178. See Bernstein, *supra* note 160, at 30, 33, 50-51.

179. See *id.* at 7; Merrill Lynch, *supra* note 160, at 33.

180. See Mark Cooper, *Transforming the Information Superhighway Into a Private Toll Road*, (1999), (discussion of cable and telephone subscriber sales. Cable subscribers sell for \$4500 to \$5000. Telephone subscribers sell for \$1000 to \$1500. Satellite subscribers sell for about \$2000.) available at <http://www.consumerfed.org/bbreport.pdf> (on file with author).

181. Thomas W. Hazlett & George Bittlingmayer, *The Political Economy of Cable "Open Access,"* (AEI-Brookings Joint Center for Regulatory Studies, Working Paper No. 01-06, 2001), available at [http://www.aei.brookings.org/publications/working/working\\_01\\_06.pdf](http://www.aei.brookings.org/publications/working/working_01_06.pdf).

To the extent that standards are developed for interfacing with broadband access services, the carriers who provide these services should not be permitted to implement any non-standard, proprietary interfaces, as this would be contrary to the development of an open “network of networks”. In addition, any new network or operational interface that is implemented by a broadband access provider should be made available on a non-discriminatory basis . . .<sup>182</sup>

As concern over this leverage has grown, analysts have identified two distinct types of discrimination. Vertically integrated broadband providers may practice content discrimination or conduit discrimination.<sup>183</sup>

### 1. Content Discrimination

Content discrimination has been the focal point of concern in relation to high-speed Internet services. Content discrimination involves an integrated provider “insulating its own affiliated content from

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182. *AT&T Canada*, *supra* note 156, at 23.

183. *See Time Warner / Turner / TCI*, *supra* note 145, at 180. The FTC’s enumeration of the ways in which the Time Warner/Turner/TCI merger was a threat to lessen competition is instructive for both the cable TV and the broadband Internet markets. The vertical integration and horizontal concentration would increase the incentive and ability to engage in both conduit discrimination and content discrimination.

38a. Enabling Respondent Time Warner to increase prices on its Cable Television Programming Services sold to MVPDs, directly or indirectly (e.g., by requiring the purchase of unwanted programming). Through its increased negotiating leverage with MVPDs, including through purchase of one or more “marquee” or “crown jewel” channels on purchase of other channels.

b. Enabling Respondent Time Warner to increase prices on its Cable Television Programming Services sold to MVPDs by raising barriers to entry by new competitors or to repositioning by existing competitors, by preventing such rivals from achieving sufficient distribution to realize economies of scale; these effects are likely, because

(1) Respondent time Warner has direct financial incentives as the post-acquisition owner of the Turner Cable Television Programming Services not to carry other Cable Television Programming Services that directly compete with Turner Cable Television Programming Services; and

(2) Respondent TCI has diminished incentives and diminished ability to either carry or invest in Cable Television Programming Services that directly compete with the Turner Cable Television Programming Services because the PSA agreements require TCI to carry Turner’s CNN, Headline News, TNT and WTBS for 20 years, and because TCI, as a significant shareholder of Time Warner, will have significant financial incentives to protect all of Time Warner’s Cable Television Programming Services; and

c. Denying rival MVPDs and any potential rival MVPDs of Respondent Time Warner competitive prices for Cable Television Programming Services, or charging rivals discriminatorily high prices for Cable Television Programming Services.

*Id.*

competition by blocking or degrading the quality of outside content.”<sup>184</sup> It benefits the vertically integrated entity “by enhancing the position of its affiliated content providers in the national market by denying unaffiliated content providers critical operating scale and insulating affiliated content providers from competition.”<sup>185</sup>

AT&T identified four forms of anticompetitive leveraging—bundling, price squeeze, service quality discrimination, and first mover advantage.<sup>186</sup> It describes the classic vertical leveraging tools of price squeezes and quality discrimination as content discrimination. Even after AT&T became this nation’s largest cable TV company, it criticized local telephone companies for abusing their monopoly control over their telephone wires. AT&T complained about bottleneck facilities, vertical integration, anticompetitive bundling of services, and the distortion of competition when it opposed the entry of SBC into the long distance market in Texas.<sup>187</sup> These are the very same complaints AOL made about AT&T at about the same time.<sup>188</sup> AOL expressed related concerns about the manipulation of technology and interfaces:

. . . allowing a single entity to abuse its control over the development of technical solutions – particularly when it may have interests inconsistent with the successful implementation of open access – could indeed undermine the City’s policy. It is therefore vital to ensure that unaffiliated ISPs can gain access comparable to that the cable operators choose to afford to its cable-affiliated ISP.<sup>189</sup>

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184. Hausman et al., *supra* note 152, at 158.

185. *Id.* at 159.

186. *AT&T Canada*, *supra* note 156.

187. *AT&T SBC*, *supra* note 156.

188. *AT&T Canada*, *supra* note 156, at 15-16.

The dominant and vertically integrated position of cable broadcast carriers requires a number of safeguards to protect against anticompetitive behaviour. These carriers have considerable advantages in the market, particularly with respect to their ability to make use of their underlying network facilities for the delivery of new services. To grant these carriers unconditional forbearance would provide them with the opportunity to leverage their existing networks to the detriment of other potential service providers. In particular, unconditional forbearance of the broadband access services provided by cable broadcast carriers would create both the incentive and opportunity for these carriers to lessen competition and choice in the provision of broadband service that could be made available to the end customer . . .

The telephone companies also have sources of market power that warrant maintaining safeguards against anticompetitive behaviour. For example, telephone companies are still overwhelmingly dominant in the local telephony market and, until this dominance is diminished, it would not be appropriate to forebear unconditionally from rate regulation of broadband access services.

*Id.*

189. *AOL, SF*, *supra* note 157, at 8.

Long distance companies and competitive local exchange carriers have similar concerns about the merging local exchange carriers. As their experts argued in the proposed SBC-Ameritech and Bell Atlantic-GTE mergers:

These mergers will have competition in local exchange, interexchange, and combined-service markets due to footprint effects. The economic logic of competitive spillovers implies that the increase in [the incumbent local exchange carrier (ILEC)] footprints resulting from these proposed mergers would increase the ILECs' incentive to disadvantage rivals by degrading access services they need to compete, thereby harming competition and consumers.<sup>190</sup>

The experts for the local telephone companies identified a series of tactics that a vertically integrated broadband provider could use to disadvantage competing unaffiliated content providers.<sup>191</sup>

Wall Street analysts point out that the key to controlling the supply side is controlling essential functions through proprietary standards.<sup>192</sup> Independent ISPs point out that cable operators like AOL use control over functionalities to control the services available on the network.<sup>193</sup>

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190. Hayes et al., *supra* note 159, at 1.

191. Hausman et al., *supra* note 152, at 160-62.

First, it can give preference to an affiliated content provider by caching its content locally. . . Such preferential treatment ensures that affiliated content can be delivered at faster speeds than unaffiliated content.

Second, a vertically integrated broadband provider can limit the duration of streaming videos of broadcast quality to such an extent that they can never compete against cable programming. . . Third, a vertically integrated firm such as AT&T or AOL-Time Warner could impose proprietary standards that would render unaffiliated content useless. . . Once the AT&T standard has been established, AT&T will be able to exercise market power over customers and those companies trying to reach its customers.

*Id.*

192. See Bernstein, *supra* note 160, at 57.

Thus, the real game in standards is to reach critical mass for your platform without giving up too much control. This requires a careful balance between openness (to attract others to your platform) and control over standards development (to ensure an advantaged value-capture position). Of course, the lessons of Microsoft, Cisco, and others are not lost on market participants, and these days no player will willingly cede a major standards-based advantage to a competitor. Therefore, in emerging sectors such as broadband, creating a standards-based edge will likely require an ongoing structural advantage, whether via regulatory discontinuities, incumbent status, or the ability to influence customer behavior.

*Id.*

193. See Hausman et al., *supra* note 152, at 133.

Video streaming has received an immense amount of attention not only because it might compete directly with the cable TV product, but also because it embodies the qualitative leap in functionality and quantum jump in speed that broadband Internet provides.

Cable operators have continued to insist on quality of service restrictions by unaffiliated ISPs, which places the ISPs at a competitive disadvantage.<sup>194</sup>

Cable operators must approve new functionalities whether or not they place any demands on the network. AT&T's control of the architecture is just as explicit. It will pick and choose which service providers get the fastest speeds. The favored service providers are those affiliated with AT&T.<sup>195</sup>

Price squeeze and extraction of rents are apparent in the implementation of closed platforms. Hazlett and Bittlingmayer cite Excite@Home executive Milo Medin describing the terms on which

Video streaming is foreclosed as a threat to Time Warner's services. By singling out current cable TV customers for an extremely high floor price for independent ISP broadband Internet service, Time Warner is leveraging its monopoly position in cable into the broadband Internet market.

Time Warner asserts complete control over video streaming by controlling the economic terms on which Quality of Service is offered.

Time Warner goes on to build a wall around the video market with pricing policy that dissuades ISPs from competing for the Internet business of cable TV customers. Time Warner buttresses that wall with a marketing barrier and a service quality barrier that can further dissuade ISPs from competing for TV customers

*Northnet*, *supra* note 95, at 6-7.

194. Time Warner's Term Sheet and AT&T public statements about how it will negotiate commercial access after its technical trial give a clear picture of the threat to dynamic innovation on the Internet. The companies' own access policies reveal the levers of market power and network control that stand to stifle innovation on the Internet. Under the imposed conditions, the commercial space available for unaffiliated and smaller ISPs (where much innovation takes place) is sparse and ever shrinking.

195. The AT&T preference is illustrated as follows:

Radio GoGaGa [is] a music radio network that transmits over the Internet [and] depends on word-of-mouth and bumper stickers to attract users. . . . [Radio GoGaGa f]ounder Joe Pezzillo worries that the competitive gap could widen as broadband brings new business models.

He envisions AT&T making deals with major music labels to deliver its own Internet radio, with AT&T providing the fastest connections to its partners and slower connections to sites like his. "Someone's not going to wait for our page to load when they can get a competitor's page instantly," Pezzillo said.

AT&T says it has yet to formulate business models with partners, but the software the company has designed for the Boulder trial – demonstrated at its headquarters in Englewood, Colo[rado] last week – clearly includes a menu that will allow customers to link directly to its partners. Company officials acknowledge that AT&T's network already has the ability to prioritize the flow of traffic just as Pezzillo fears.

"We could turn the switches in a matter of days to be able to accommodate that kind of environment," said Patrick McGrew, an AT&T manager working on the technical details of the Boulder trial.

Though the Boulder trial is focused on technical issues alone, AT&T will study the way customers navigate the system as it negotiates with ISPs seeking to use its network.

Goodman, *supra* note 156.

cable operators would allow carriage of broadband Internet to AOL (before it owned a wire) as follows:

I was sitting next to [AOL CEO] Steve Case in Congress during the open access debates. He was saying that all AOL wanted was to be treated like Excite [®]Home. If he wants to be treated like us, I'm sure he could cut a deal with [the cable networks], but they'll take their pound of flesh. We only had to give them a 75 percent equity stake in the company and board control. The cable guys aren't morons.<sup>196</sup>

Time Warner established a high price floor under sales of Internet service to cable TV customers, and demanded 75 percent of subscriber revenues and 25 percent of ancillary revenues. This squeezes the margin on such customers and renders potential video stream competitors vulnerable to price squeeze. ISPs are concerned that Time Warner also proposes to charge for bit consumption, rather than minimum speeds. This could make video streaming a very expensive proposition. Smaller ISPs have complained about minimum payments. They are also concerned about Time Warner's one-year minimum subscriber level requirement.

In the Internet age, leveraging control over the facility can accomplish more than content discrimination. The other layers of the platform, code or applications, can also be the victims of discrimination as well.

## 2. Conduit Discrimination

In the high speed Internet area, conduit discrimination has received less attention than content discrimination. This is opposite to the considerable attention it receives in the cable TV video service area.<sup>197</sup> Nevertheless, there are examples of conduit discrimination in the high speed Internet market.

In implementing conduit discrimination, the vertically integrated company would refuse to distribute its affiliated content over competing transmission media.<sup>198</sup> In so doing, it seeks to drive consumers to its

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196. Hazlett & Bittlingmayer, *supra* note 181, at 17 n.47 (quoting Jason Krause & Elizabeth Wasserman, *Switching Teams on Open Access?*, THE INDUSTRY STANDARD, Jan. 24, 2000, available at <http://www.thestandard.com/article/display/1,1153,8903,00.html>).

197. See *infra* Part V.C.

198. See Hausman et al., *supra* note 152, at 159.

[A] cable broadband provider will engage in conduit discrimination if the gain from additional access revenues from broadband users offsets the loss in content revenues from narrower distribution. . .

transmission media and weaken its rival. This is profitable as long as the revenue gained by attracting new subscribers exceeds the revenue lost by not making the content available to the rival. Market size is important here, to ensure adequate profits are earned on the distribution of service over the favored conduit.<sup>199</sup> Although some argue that “the traditional models of discrimination do not depend on the vertically integrated firm obtaining some critical level of downstream market share,”<sup>200</sup> in reality, the size of the vertically integrated firm does matter since “a larger downstream market share enhances the vertically integrated firm’s incentive to engage in discrimination.”<sup>201</sup>

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To capture the gains from such discrimination, the vertically integrated cable provider must have a cable footprint in which to distribute its broadband portal service, either through direct ownership or through an arrangement to share the benefits of foreclosure with other cable providers.

*Id.*

199. See Rubinfeld & Singer, *supra* note 146, at 657.

Hence, a cable broadband provider will engage in conduit discrimination if the gain for additional access revenues from broadband users offsets the loss in content revenues from narrower distribution. What determines whether conduit discrimination will be profitable? Simply put, if a cable broadband transport provider that controls particular content only has a small fraction of the national cable broadband transport market, then that provider would have little incentive to discriminate against rival broadband transport providers *outside of its cable footprint*. The intuition is straightforward: out-of-franchise conduit discrimination would inflict a loss on the cable provider’s content division, while out-of-region cable providers would be the primary beneficiaries of harm done to non-cable competitors.

*Id.* (footnote omitted).

200. Hausman et al., *supra* note 152, at 156 (footnote omitted). The ACA provides the calculation for cable operators:

The major MSOs will be the clear winners in these transactions. MSOs granted exclusive distribution rights will have an opportunity to attract DBS subscribers with exclusive programming, resulting in increased subscriber revenues (a minimum of \$40-\$50 per subscriber) and increased system values (at least \$3,500-\$5,000 per subscriber).

...

Where do ACA members fit into these transactions? Nowhere. ACA members operate locally, not regionally or nationally. In situations involving regional or national exclusive distribution rights, there is little incentive to carve out exceptions for smaller cable systems. For each small system subscriber lost under exclusivity, the vertically integrated program provider will likely lose revenue between \$0.10 and \$0.75 per month, depending on the service. In contrast, for each former DBS subscriber gained through regional or national exclusive program offerings, the MSO with exclusive distribution rights will gain all monthly revenue from that subscriber, plus increased system value. In economic terms, an external cost of this gain will be the cost to small cable companies and consumers of reduced program diversity.

*ACA*, *supra* note 162, at 13-14.

201. Hausman et al., *supra* note 152, at 156 (footnote omitted).

AT&T has been accused of conduit discrimination in the high speed Internet market.<sup>202</sup> The AOL-Time Warner merger has also raised similar concerns. The significance of AOL's switch to cable-based broadband should not be underestimated. This switch has a powerful effect on the hoped-for competition between cable modems and DSL.<sup>203</sup> Although telephone companies are reluctant to admit that their technology will have trouble competing, their experts have identified the advantages that cable enjoys.<sup>204</sup> Fearing that once AOL became a cable owner it would abandon the DSL distribution channel, the FTC required AOL to continue to make its service available over the DSL conduit.<sup>205</sup>

### C. Bundling and Customer Lock In

The focal point of a leveraging strategy is bundling early in the adoption cycle to lock in customers. AOL has also described the threat of vertically integrated cable companies in the U.S.<sup>206</sup> Once AT&T

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202. See Comments of the Competitive Broadband Coalition, *Implementation of the Cable Television Consumer Protection & Competition Act of 1992*, Cable Services Bureau Dkt. No. 01-290, at 10-11 (Dec. 3, 2001).

CTCN [CT Communications Network Inc.], a registered and franchised cable operator, has been unable to purchase the affiliated HITS transport service from AT&T Broadband, the nation's largest cable operator, despite repeated attempts to do so. . . . Based on its own experience and conversations with other companies who have experienced similar problems, CTCN believes that AT&T is refusing to sell HITS to any company using DSL technology to deliver video services over existing phone lines because such companies would directly compete with AT&T's entry into the local telephone market using both its own cable systems and the cable plant of unaffiliated cable operators. AT&T simply does not want any terrestrial based competition by other broadband networks capable of providing bundled video, voice and data services.

*Id.* (footnotes omitted).

203. Bernstein, *supra* note 160, at 12-14; *Merrill Lynch*, *supra* note 160, at 33.

204. See Hausman et al., *supra* note 152, at 149.

It is possible that at some point in the future new technologies will emerge, or existing technologies will be refined, in such a way that they will compete effectively with cable-based Internet services. . . . [W]ithin the relevant two-year time horizon, neither DSL nor satellite-based Internet service will be able to offer close substitutes for cable-based Internet service. Hence, neither will be able to provide the price-disciplining constraint needed to protect consumer welfare.

*Id.*

205. See Am. Online, Inc., No. C-3989, at 12 (Fed. Trade Comm'n Apr. 17, 2001), available at <http://www.ftc.gov/os/2001/04/aoltwdo.pdf>.

206. AOL has argued:

At every key link in the broadband distribution chain for video/voice/data services, AT&T would possess the ability and the incentive to limit consumer choice. Whether through its exclusive control of the EPG or browser that serve as consumers' interface; its integration of favored Microsoft operating systems in set-top boxes; its control of the cable broadband pipe itself; its exclusive dealing with its

became the largest vertically integrated cable company selling broadband access in the U.S.,<sup>207</sup> it set out to prevent potential competitors from offering bundles of services.<sup>208</sup> Bundles could be broken up either by not allowing Internet service providers to have access to video customers, or by preventing companies with the ability to deliver telephony from having access to high-speed content.

AOL has argued that requiring open access early in the process of market development would establish a much stronger structure for a pro-consumer, pro-competitive market.<sup>209</sup> Early intervention prevents the architecture of the market from blocking openness, and thus avoids the difficult task of having to reconstruct an open market at a later time.<sup>210</sup> AOL did not hesitate to point out the powerful anticompetitive effect that integrating video services in the communications bundle could have. AOL argued that, as a result of a vertical merger, AT&T would take an enormous next step toward its ability to deny consumers a choice among competing providers of integrated voice/video/data offerings – a communications marketplace that integrates, and transcends, an array of communications services and markets previously viewed as distinct.<sup>211</sup>

Wall Street sees the first mover advantage both in the general terms of the processes that affect network industries, and in the specific advantage that cable broadband services have in capturing the most attractive early adopting consumers.<sup>212</sup> First mover advantages have their greatest value where consumers have difficulty switching or substituting

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own proprietary cable ISPs; or the required use of its own “backbone” long distance facilities; AT&T could block or choke off consumers’ ability to choose among the access, Internet services, and integrated services of their choice. Eliminating customer choice will diminish innovation, increase prices, and chill consumer demand, thereby slowing the roll-out of integrated service.

*AOL, FCC, supra* note 157, at 11 (footnotes omitted).

207. AT&T was the largest stockholder in Excite @Home and controlled the largest number of cable modem lines in the country.

208. AT&T’s demands in the open access negotiations spurred by the FCC, its multiple ISP trial, and its deal with AOL all indicate it sought to control bundling.

209. *AOL, FCC, supra* note 157.

210. See Krim, *supra* note 136 (on the higher cost of addressing problems *ex post*).

211. *AOL, FCC, supra* note 157, at 9-10.

212. See *Merrill Lynch, supra* note 160, at 38 (“If the technology market has a communications aspect to it, moreover, in which information must be shared (spreadsheets, instant messaging, enterprise software applications), the network effect is even more powerful.”); Bernstein, *supra* note 160, at 26:

Thus, if the MSOs can execute as they begin to deploy cable modem services in upgraded areas, they have a significant opportunity to seize many of the most attractive customers in the coming broadband land grab. These customers are important both because they represent a disproportionate share of the value and because they are bell weathers for mass-market users.

*Id.*

away from the dominated product.<sup>213</sup> Several characteristics of Broadband Internet access are conducive to the first mover advantage, or “lock-in”.

The local telephone companies have outlined a series of concerns about lock in.<sup>214</sup> First, high-speed access is a unique product. The Department of Justice determined that the broadband Internet market is a separate and distinct market from the narrowband Internet market.<sup>215</sup> Once this economic fact is accepted, the severe concentration in the broadband market – resulting in a high degree of market power – and the blatantly anti-competitive effect of the exclusionary tactics of the dominant broadband firms, become apparent.<sup>216</sup>

The local telephone company experts devote a great deal of attention to demonstrating that the broadband market is a distinct market.<sup>217</sup> There is no doubt that “high-speed seems to be a distinctive product, making it a credible wedge for cable to sell a broader bundle.”<sup>218</sup> For the Wall Street analysts, bundling seems to be the central marketing strategy for broadband.<sup>219</sup>

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213. SHAPIRO & VARIAN, *supra* note 16.

214. *See* Hausman et. al., *supra* note 152, at 164.

Due to the nature of network industries in general, the early leader in any broadband Internet access may enjoy a “lock-in” of customers and content providers – that is, given the high switching costs for consumers associated with changing broadband provider (for example, the cost of a DSL modem and installation costs), an existing customer would be less sensitive to an increase in price than would a prospective customer.

*Id.*

215. Amended Complaint of the Dep’t of Justice at 6, U.S. v. AT&T Corp., 2000 WL 1752108 (D.C. Cir. 2000) (No. 1:00CV01176), *available at* <http://www.usdoj.gov/atr/cases/indx4468.htm>.

216. *AT&T Canada*, *supra* note 156, at 12.

AT&T Canada notes that narrowband access facilities are not an adequate service substitute for broadband access facilities. The low bandwidth associated with these facilities can substantially degrade the quality of service that is provided to the end customer to the point where transmission reception of services is no longer possible.

*Id.*

217. *See generally* Hausman et. al., *supra* note 152, at 136-48.

218. Bernstein, *supra* note 160, at 8.

219. *See Goldman Sachs*, *supra* note 160, at 14, 17.

AOL Time Warner is uniquely positioned against its competitors from both technology and media perspectives to make the interactive opportunity a reality. This multiplatform scale is particularly important from a pricing perspective, since it will permit the new company to offer more compelling and cost effective pricing bundles and options than its competitors. Furthermore, AOL Time Warner will benefit from a wider global footprint than its competitors” “. . .[W]e believe the real value by consumers en masse will be not in the “broadband connection” per se, but rather an attractively packaged, priced, and easy-to-use service that will bundle broadband content as an integral part of the service.

*Id.*

Second, there are significant switching costs that will hinder competition. The equipment (modems) and other front-end costs are still substantial and unique to each technology. There is very little competition between cable companies (i.e. overbuilding). Thus, switching costs remain a substantial barrier to competition. Combining a head start with significant switching costs raises the fear among the independent ISPs that consumers will be locked in. In Canada, AT&T argued that the presence of switching costs could impede the ability of consumers to change technologies, thereby impeding competition.<sup>220</sup>

The emerging model for closed communications platforms is one in which the facility owner with a dominant technology that is a critical input for service delivery can leverage control of transmission facilities to achieve domination of content services. With proprietary control over the network for which there is a lack of adequate alternatives, they can lock in consumers and squeeze competitors out of the broader market. Lock-in occurs because the high-speed access is a distinct market for a product with significant switching costs.

#### *D. The Strategies of Dominant Players at Other Layers*

The centrality of leveraging facilities is underscored by the war to control (or not allow a rival to control) cable wires by companies whose core strategic competences lie at other layers of the platform. Neither the dominant content company, AOL, nor the dominant code company, Microsoft, can sit by and watch the wires get snapped up; nor will either invest in building a competitive network. Since head-to-head competition is non-existent, foreclosure becomes the only strategy.

AOL is fighting several battles to preserve the closed nature of its interfaces for content and code products (instant messaging, keyword functions) and has been embroiled in a dispute about upgrades that undermines the interoperability of competing services.<sup>221</sup> Closed

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220. *AT&T Canada, supra* note 156, at 12.

The cost of switching suppliers is another important factor which is used to assess demand conditions in the relevant market. In the case of the broadband access market, the cost of switching suppliers could be significant, particularly if there is a need to adopt different technical interfaces or to purchase new terminal equipment for the home or office. Given the fact that many of the technologies involved in the provision of broadband access services are still in the early stages of development, it is unlikely that we will see customer switching seamlessly from one service provider to another in the near-term.

*Id.*

221. The FCC order approving the AOL-Time Warner merger recognizes the instant messaging dispute, requiring AOL to render its service interoperable before it can provide enhanced instant messaging. See Applications for Consent to the Transfer of Control of Licenses & Section 214 Authorization by Time Warner Inc. & America Online, Inc.,

proprietary or non-portable products such as e-mail, instant messaging, buddy lists, calendar management, and keyword search engines, have become the basic utilities of Internet communications and usage. Consumers hesitate to give these up, since changing ISPs comes with significant switching costs, such as significant changes in identification (e-mail address), cutting the consumer off from communities of interest (instant messaging and buddy lists), and significant learning costs (new keyword searches and calendar management routines).

These interfaces are the sticky features that glue the customer to the service provider, but sticky features are not enough. After supporting open access, AOL determined it could not endure a world with closed cable wires.<sup>222</sup> It changed course and has tried to become the largest cable company in the country. Dominant in content and reaching back into code with proprietary standards, AOL still needed physical access. It could not leave its fate to a closed communications physical platform it did not own.

Microsoft's rollout of its new operating system and bundled services (Windows XP and .NET) follows a similar course at the code layer, and is a repeat of its strategy to preserve its operating system leverage from the browser wars.<sup>223</sup> Microsoft's own description of the "Windows XP/.NET" strategy leaves no doubt that this is what its new bundle does.<sup>224</sup> Microsoft declares this set of software programs and services as "the next generation of the Windows desktop platforms. An operating system for the internet...with one infrastructure for developing for it."<sup>225</sup> The bundle is built on commingled code,<sup>226</sup> proprietary languages,<sup>227</sup> and

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Transferors, to AOL Time Warner Inc., Transferee, *Memorandum Opinion and Order*, 16 F.C.C.R. 6547 (2001).

222. Mark Cooper, *Who Do You Trust? AOL and AT&T... When They Challenge The Cable Monopoly or AOL and AT&T... When They Become The Cable Monopoly?* (2000)

223. Consumer Federation of America, *Competitive Processes, Anticompetitive Practices and Consumer Harm in the Software Industry: An Analysis of the Inadequacies of the Microsoft-Dep't of Justice Proposed Final Judgment*, (Jan. 23, 2002) in United States of America v Microsoft, no. 98-1232 (Tunney Act comments of Consumer Federation of America et. al., Appendix A).

224. Dominic Gates and Mark Boslet, *The Redmond Menace*, THE INDUSTRY STANDARD, Apr. 30, 2001, at <http://www.thestandard.com/article/0,1902,23797,00.html>.

225. Maggie Holland, *Microsoft Users Face .NET Lock-In*, COMPUTING, Mar. 22, 2001; *Web Services, an Interview with Robert Hess*, March 19, 2001.

226. The distinction between technological bundling and contractual bundling presents complex analytic questions that provided some of the most dramatic courtroom incidents as various experts sparred over how code could be removed and what impact that would have on the functionality. See JOHN HEILEMANN, PRIDE BEFORE THE FALL 181-86 (2001). See generally *The Project to Promote Competition and Innovation in the Digital Age, Microsoft's Expanding Monopolies: Casting a Wider .NET* (2001) (alleging a great deal of commingling of code), at <http://www.procompetition.org/headlines/051501Overview.html>; *The Project to Promote Competition and Innovation in the Digital Age, Passport to Monopoly: Windows*

exclusive functionalities<sup>228</sup> that are promoted by restrictive licenses,<sup>229</sup> refusal to support competing applications,<sup>230</sup> embedded links,<sup>231</sup> and deceptive messages.<sup>232</sup> Microsoft aims to control communications<sup>233</sup> as well through proprietary e-mail and messaging technology,<sup>234</sup> and by

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*XP, Passport, and the Emerging World of Distributed Applications*, (2001) (commingling of code appears to be supported by the journalistic discussion of embedded applications), at [http://www.procompetition.org/headlines/WhitePaper6\\_21.pdf](http://www.procompetition.org/headlines/WhitePaper6_21.pdf).

227. Microsoft's proprietary run time environment pervades Windows XP and its browsers. See MICROSOFT, *RUNTIME HOSTS, MICROSOFT .NET FRAMEWORK DEVELOPERS GUIDE*, 2001, available at <http://msdn.microsoft.com/library/default.asp?url=/library/en-us/cpguide/html/cpconruntimehosts.asp>.

228. See John Markoff, *A Growing Rivalry Derails AOL Talks For Microsoft Deal*, N.Y. TIMES, June 18, 2001, at A1 (talks end after AOL officials said they could not agree to Microsoft's demand for effective exclusivity of its music software).

229. At a minimum, the restrictive licenses are the subject of the dispute over placement of icons. See Dina Bass, *Microsoft Requires PC Makers to Put MSN With Links*, BLOOMBERG, July 27, 2001; Don Clark, *Microsoft Broadens Rules on Icon Use for PC Makers*, WALL ST. J., Aug. 9, 2001, at B9.

230. While Microsoft advances its run time environment, it has pulled back on support for competitors. See John Wilke & Don Clark, *Microsoft Pulls Back Its Support for Java: New Windows XP System Won't Include Software Needed to Run Programs*, WALL ST. J., July 18, 2001 at A3; Lee Copeland, *Sun Lashes Out at Microsoft for Javaless Windows XP*, COMPUTERWORLD, Aug. 27, 2001 at 22.

231. See Consumer Federation of America, *supra* note 223, at 59; Bass, *supra* note 229.

232. Electronic Privacy Information Center, *Complaint and Request for Injunction, Request for Investigation and for Other Relief*, July 26, 2001, available at [http://www.epic.org/privacy/consumer/MS\\_complaint.pdf](http://www.epic.org/privacy/consumer/MS_complaint.pdf).

233. Charles Cooper, *Allchin Bangs the Drum for XP*, ZDNET NEWS, Aug. 29, 2001, at <http://zdnet.com.com/2100-1104-530605.html>.

I want to talk about what's in Windows XP and what it talks to on the back end.

There are meta-Internet services we talk about which we consider to be pretty fundamental, architecturally, for building and making the Internet a little easier for people to use. Authentication and presence – in the future, we may have others – both those two, for the present, are core. And we're trying to support both of those in Windows XP.

*Id.*

There's also a dark side to Office XP. Microsoft is planning to try to sell a wide variety of Web-based services, and this new version of Office is partly designed to help the company peddle them . . . Not only that, but many of these Web enabled services enabled by Smart Tags will likely require you to sign in with a Microsoft-owned authentication system called Passport.

Walter Mossberg, *New Microsoft Office Has Nice Additions, But There's a Hitch*, WALL ST. J., May 17, 2001, at B1.

234. See John Markoff, *Microsoft is Ready to Supply a Phone in Every Computer*, N.Y. TIMES, June 12, 2001, at A1.

The real value of instant messaging lies not in the advertising potential of the platform, but in the strategic connection to Web services. Microsoft's Web services foundation, code named Hailstorm, will enhance instant messaging with Web services, most importantly, private identity tools to enable instant commerce, such as stock trading, purchasing and even corporate procurement in real time.

Press Release, Gartner, Inc., *Gartner Examines Microsoft Versus America Online Impending War in Instant Messaging and Web Services Space, AOL Has Eyeballs and Marketing Edge*,

leveraging its existing monopoly to provide a new platform for a wide range of new applications.<sup>235</sup> The goal is to capture the consumer and vendor interfaces for the next generation of computing, and to drive its proprietary languages into the interface between vendors and the Internet,<sup>236</sup> frustrating potential competition from Internet,<sup>237</sup> or distributed computing.<sup>238</sup>

Similar to AOL's concerns, Microsoft simply could not allow AOL to capture a dominant position in the physical layer. It backed the bids of all the other suitors for AT&T Broadband.<sup>239</sup> With Microsoft's dominance in the code layer, coupled with its current reaching up into the content layer, it still could not allow physical access to be dominated by a rival in services. Hence follows a conclusion that conduct by dominant firms at other layers stresses the importance of the physical layer, and the threat that the effect of a monopoly at this level would have across the others.

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*Microsoft has the Vision and Technology* (May 1, 2001), at [http://www3.gartner.com/5\\_about/press\\_room/pr20010501a.html](http://www3.gartner.com/5_about/press_room/pr20010501a.html).

235. See Jon Fortt, *Battle Rages for Future of Internet Messaging*, SAN JOSE MERCURY NEWS, Jan. 13, 2001, at 1C. (quoting Bob Visse, Project Manager for Microsoft Network, "The way I look at instant messaging is, it is a platform for all these different types of rich communications. I consider it very critical.")

236. See Cooper, *supra* note 233 (quoting Microsoft President and CEO, Steve Ballmer, "We are taking elements of the user interface and programming model, and nicely and tightly integrating them, first into the client, and then into the server"); see also Mary Jo Foley, *Microsoft's .NET: Integration to the Max*, ZDNET NEWS, June 22, 2000, at <http://www.zdnet.com/windows/stories/main/0,4728,2592779,00.html>.

237. See Paul Thurrott, *Microsoft Responds: Win2K is the Cornerstone of .NET*, WINDOWS 2000 MAGAZINE, Nov. 7, 2000, at <http://www.win2000mag.com/Articles/Index.cfm?ArticleID=16068> (quoting Microsoft Director of Marketing for the Windows .NET server group, Mark Parry, "The role that the Windows platform played in the past and the role it plays in the future is absolutely the same. Today, we have a world of applications and Web sites, and we think of those as two different worlds. With .NET, they become one.")

238. See Consumer Federation of America, *supra* note 223, at 59; John Fontana, *Deciphering Microsoft's .Net Puzzle*, NETWORK WORLD, Apr. 16, 2001, available at <http://www.nwfusion.com/news/2001/0416dotnet.html>. ("Microsoft is shooting for the same degree of dominance in Web computing that it had in the client/server model.")

239. Ariz. Consumers Council, et. al., Application for Consent to the Transfer of Control of Licenses, Comcast Corp. & AT&T Corp., Transferors to AT&T Comcast Corp., Transferee, Federal Communications Commission, *Petition to Deny*, Docket NO. MB 02-70, Apr. 29, 2002, p. 25.

## VI. THE HISTORY OF ANTICOMPETITIVE DISCRIMINATORY BEHAVIOR AMONG CLOSED PLATFORMS

### *A. The Anticompetitive Track Record of Cable*

Defenders of closed platforms frequently argue that it is too early to conclude that these platforms will be anticompetitive. The history of the cable industry, as a closed platform, is directly relevant to this argument.<sup>240</sup> Cable fought hard to be exempted from requirements for nondiscriminatory carriage for video, and it has exploited that exemption with great vigor. There is nothing in the history of the past two decades to suggest that firms will voluntarily submit to the open platform model. Indeed, the anticompetitive conduct of the cable industry was so blatant that Congress stepped back in to reintroduce various requirements for nondiscrimination and restraints on market power less than a decade after the industry was deregulated.<sup>241</sup>

While those requirements are often flaunted, every loophole exploited to prevent competition and nondiscriminatory access serves to show just how important active regulation is to maintain an open and competitive market.

#### 1. Lack of Head-to-Head Competition

Almost two decades after deregulation, the market share of cable operators in their core product and geographic markets is still approximately 85 percent.<sup>242</sup> While the cable companies complain about being prevented from buying up more TV eyeballs, they have not seriously considered entering new markets by building new systems, which they have been allowed to do for decades. They never compete head-to-head.<sup>243</sup> They operate on a monopoly model that frustrates competition. Over the past several years, the (soon to be) largest cable

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240. Implementation of Section 11 of the Cable Television Consumer Prot and Competition Act of 1992; Implementation of Cable Act Reform Provisions of the Telecomms. Act of 1996; The Comm'n's Cable Horizontal and Vertical Ownership Limits and Attribution Rules; Review of the Comm'n's Regulations Governing Attribution of Broadcast and Cable MDS Interests; Review of the Comm'n's Regulations and Policies Affecting Investment in the Broadcast Indus.; Reexamination of the Commission's Cross-Interest Policy, *Further Notice of Proposed Rulemaking*, 16 F.C.C.R. 17312 (2001).

241. Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, §2, 106 Stat. 1460 (1992).

242. About 40 percent of satellite subscribers are located in areas not served by cable. See Mark Cooper, *The Failure of 'Intermodal' Competition in Cable Markets*, available at <http://consumer.fed.org> (Apr. 2002).

243. See Mark Cooper, (*Statement of Dr. Mark N. Cooper*) Roundtable on FCC Ownership Policies, Roundtable On FCC Ownership Policies, available at [http://www.fcc.gov/ownership/roundtable\\_docs/cooper-stmt.pdf](http://www.fcc.gov/ownership/roundtable_docs/cooper-stmt.pdf) (Oct. 29, 2001).

company frustrated the entry of a head-to-head competitor into its most important market, and led the industry in denying access to crown jewel sports programming.<sup>244</sup>

Contrary to the central premise of the Internet, that physical place does not matter, cable owners are aggressively clustering systems to create local leverage, which they exploit by raising prices<sup>245</sup> and impairing competition.<sup>246</sup> Physical place did not matter on the Internet because policy did not allow the owner of the local facility to make it matter.

Entry from outside of each player's entrenched industry is not expected; the most likely entrants have demonstrated that it will not occur. While the Baby Bells complain about not being allowed into long distance, or of being forced to keep their wires open, they have never seriously tried to enter long distance outside of their service territories. They have not used their own proprietary networks to deliver video. They have all but abandoned overbuilding cable networks. They have been allowed to engage in all of these clearly competitive activities, at least since the passage of the 1996 Telecommunications Act- but competition is not what these industries are about.

The cable industry has engaged in the opposite of penetration pricing, with substantial price increases early in the adoption cycle.<sup>247</sup> Its policies on the use of its network are clearly intended to prevent the cannibalization of its monopoly product by preventing streaming video from competing over their wires.<sup>248</sup> Of equal importance, these restrictions on use short circuit the critical flow of the Internet. The closure of the platform can undermine competition at other layers.<sup>249</sup>

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244. Comcast vigorously opposed RCN in Philadelphia while it shifted the distribution of local sports teams programming (which it owns) to terrestrial distribution to avoid the requirement under the Cable Consumer Protection Act of 1992 to provide nondiscriminatory access to programming.

245. Recent FCC statistics show a very strong trend to clustering. Contrary to claims of "efficiency" gains in clusters, which should lead to lower prices, the FCC finds higher prices.

246. Cable operators have begun avoiding the obligation to make access to content (especially sports programming) available by distributing it terrestrially.

247. See Spangler, *supra* note 137, at 97.

248. See Weiser, *supra* note 5, at 15-16.

Significantly, the history of AT&T highlights how dominant providers in tipped markets have not shied away from denying interconnection (or compatibility) to rivals seeking to provide an alternate product. Perhaps more pernicious to innovation, a company in control of a dominant standard may block the development or deployment of enhanced products that threaten to siphon users from the original product, for fear that such products will "cannibalize" the company's installed base.

*Id.*

249. AT&T rejected the notion that competition for narrowband Internet service is sufficient to discipline the behavior of vertically integrated broadband Internet companies and it expressed the concern that leveraging facilities in the broadband market might damage competition in the whole content market:

Instead, the contrary has occurred. A ubiquitous open standard is being Balkanized by leveraging the existing monopoly base of customers from a neighboring market through exclusion and product bundling. The track record in the cable industry bears little resemblance to a pro-competitive standards war.<sup>250</sup>

## 2. Defending and Expanding the Monopoly Core

The first effect of allowing facility owners to exercise their market power in the high speed Internet sector is a vigorous defensive stance relative to their core monopoly. AOL saw this as the first outcome of the failure to ensure open communications platforms.<sup>251</sup>

Experts for the local telephone companies pointed out that the control over streaming video was part of a clear pattern of frustrating competition for the core monopoly service.<sup>252</sup> Cable companies abused their market power over coaxial cable to prevent streaming video from competing against their core monopoly cable TV service.<sup>253</sup>

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As noted above, even though the market for Internet access service generally demonstrates a high degree of competition (with the exception of co-axial cable Internet access services), the potential exists for providers who also control the underlying access to undermine the continuation of such competition. Accordingly, AT&T Canada LDS submits that safeguards against anti-competitive behaviour should be applied to the provision of information service by those broadcast or telecommunications carriers who own and operate broadband access networks  
*AT&T Canada, supra* note 156, at 17.

Thus, in evaluating whether a regulator should mandate a standard, antitrust enforcers should allow a joint venture or patent pool to facilitate a compatible standard, or intellectual property law should facilitate horizontal compatibility through a reverse engineering right, it is critical to recognize that an early adoption or imposition of horizontal compatibility can thwart critical innovation and competition.

Weiser, *supra* note 5, at 16.

251. *AOL, FCC, supra*, note 157.

252. *See* Hausman et al., *supra* note 152, at 133.

253. *Id.*

AT&T's acquisition of MediaOne [represented] a traditional cable strategy of controlling alternative source of delivery for video programming. Before AT&T's recent cable acquisition initiative, the most recent implementation of this anticompetitive strategy was the attempt by a coalition of cable firms to control satellite delivery of video programming, the first alternative medium for multichannel video programming. The acquisition of MediaOne will allow AT&T to control broadband Internet delivery of video programming, the second alternative medium for multichannel video programming. Even AT&T's own economic experts admit that "Internet video streaming clearly competes, at a minimum, with video programming offered by cable systems, satellite companies, and television broadcasters.

*Id.*

Wall Street analysts have tended to agree. A key source of market power on the supply-side is vertical integration.<sup>254</sup> To the extent that any cable operators have voluntarily negotiated with unaffiliated ISPs, they have insisted on such extremely high charges for access that it is impossible for competitors to effectively enter the market.<sup>255</sup>

In conclusion, we should not expect firms to cross compete based upon their past behavior. We should focus on the discriminatory practices they employ in their own arenas and extrapolate to their current conduct to show how, even though the medium may be changing, their anticompetitive behavior remains predictable.

### *B. Discriminatory Practices in the Cable Video Market*

#### 1. Conduit Discrimination

Examples of anti-competitive practices litter the cable industry landscape. These include exclusive deals with independents that freeze-out overbuilders,<sup>256</sup> refusals to deal for programming (permitted by loopholes in the law requiring non-discriminatory access to programming),<sup>257</sup> tying arrangements,<sup>258</sup> and denial of access to facili-

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254. See *Merrill Lynch*, *supra* note 160, at 10-11.

For example, over the next several years, cable assets are likely to be critical to the development of both broadband PC-based Internet services such as music downloading and streaming audio and video, as well as interactive television. As an owner of major cable assets *and* content assets, AOL Time Warner will be in an excellent position to drive the development of new services.

Above and beyond content and distribution, however, we believe that the key competitive advantage the company will gain in the current market environment will stem from owning both the content and the distribution at this critical point in time. Specifically, we believe that by owning both offline content and an online platform, as well as online content and an offline platform, the company is in a better position than either entity is separately to drive the evolution of interactive services to the next level – breaking the convergence logjams that, in many sectors of the media and communications industries, are inhibiting the growth of the medium.

*Id.* (emphasis in the original).

255. See *Northnet*, *supra* note 161.

256. *Before House Subcomm. on Telecommunications, Trade and Consumer Protection, Comm. on Commerce*, 105th Cong. 4 (July 29, 1997) (testimony of William Redderson on Behalf of Bell South Enterprises) (citing examples of suspected exclusive arrangements involving Eye on People, MSNBC, Viacom, and Fox) [hereinafter *Bell South*]; *Before House Subcomm. on Telecommunications, Trade and Consumer Protection, Comm. on Commerce*, 105th Cong. 7 (July 29, 1997) [hereinafter *Ameritech*] (testimony of Deborah L. Lenart, President Ameritech New Media, Inc.).

257. The loophole will be terrestrial transmission to regional clusters, thereby avoiding the requirement to provide non-discriminatory access to satellite delivered programming. Bell South gives examples of Comcast in Philadelphia and Time Warner in Orlando. *BellSouth*, *supra* note 256, at 5. Ameritech cites Cablevision in New York. *Ameritech*, *supra* note 256, at 8.

ties.<sup>259</sup> Overbuilders faced vigorous efforts to prevent competition through exclusion from access to programming and regulatory tactics of incumbent cable operators.<sup>260</sup> Exclusive arrangements prevent competing technologies from obtaining programming, as well as preventing competition from developing within the cable industry.<sup>261</sup>

A specific example of conduit discrimination is the denial of access to vertically integrated programming. Comcast and Cablevision have shifted some sports programming to terrestrial delivery, thereby avoiding the open access requirement of the 1992 statute.<sup>262</sup> As cable operators become larger and more clustered, this strategy will become increasingly attractive to them. Specific areas where such programming has been denied are Phoenix, Kansas, Philadelphia and New York.<sup>263</sup> The denial of access to marquis sport programming can have a devastating effect; satellite providers in markets where foreclosure has occurred achieve a market penetration only one-quarter of the national average.<sup>264</sup>

Integrated Multichannel System Operators (MSOs) wield immense power against smaller cable companies, exploiting loopholes in the

258. Bell South gives examples including NBC/CNBC, Scripps Howard/Home and Garden. *BellSouth*, *supra* note 256, at 5.

259. See *Before House Subcomm. on Telecommunications, Trade & Consumer Protection, Comm. on Commerce*, 105th Cong. (July 29, 1997) (testimony of Michael J. Mahoney on behalf of C TEC Corp.).

260. See *RCN Telecom Service of New York, Inc. v. Cablevision Corp.*, et. al, FCC Doc. No. 01-127 (2001); *DIRECTV Inc. v. Comcast, Corp.*, et al, 13 F.C.C.R. 21,822, 21,834 (1998); *EchoStar Communications Corp. v. Comcast Corp.* et al, 14 F.C.C.R. 2089, 2099 (1999). Problems can also occur on an event-by-event basis. See *Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition & Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, FCC Doc. No. 01-290 at 4 (Dec. 3, 2001), at [http://www.ncta.com/pdf\\_files/ReplyComCS01-290.pdf](http://www.ncta.com/pdf_files/ReplyComCS01-290.pdf) (comments by Everest Midwest Licensee LLC dba Everest Connections Corp.) [hereinafter *Everest*]; *In the Matter of Implementation of the Cable Television Consumer Protection & Competition Act of 1992, Development of Competition & Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, FCC Doc. No. 01-290 at 3 (Dec. 3, 2001) (comments of Gemini Networks, Inc.).

261. HBO, a subsidiary of Time, played a key role in the effort to prevent TVRO operators from obtaining programming (see Sylvia Chan-Olmstead, and Barry R. Litman, "Antitrust and Horizontal Mergers in the Cable Industry," J. OF MEDIA ECON. 11 (1988), and the effort to sell overbuild insurance *Competitive Issues in the Cable Television on Industry, Subcomm. on Antitrust, Monopolies and Business Rights, Comm. on the Judiciary*, U. S. Cong., March 17, 1988, at 127, 152-74 [hereinafter *Competitive Issues*]). The current efforts to impose exclusive arrangements have raised numerous complaints from potential competitors. See *Bell South*, *supra* note 256; *Ameritech*, *supra* note 256.

262. COOPER, *CABLE MERGERS*, *supra* note 76, at 48-49.

263. *Id.*

264. See *Implementation of the Cable Television Consumer Protection & Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, FCC Doc. No. 01-290 at 14 (Dec. 3, 2001) [hereinafter *Joint Comments*], at <http://www.wcai.com/pdf/2002/fccJan7.pdf>.

program access rules.<sup>265</sup> For the smaller entities, the current refusals to deal are not limited to sports programming. Other services have been denied, such as video on demand.<sup>266</sup>

Where the large MSOs do not have direct ownership of video services, they have obtained exclusive arrangements, thereby denying competitors and potential competitors access to programming.<sup>267</sup> The exclusionary tactics apply not only to head-to-head cable operators and satellite providers, but also to DSL-based providers seeking to put together a package of voice, video, and data products.<sup>268</sup>

Because the dominant MSOs are so large, they can influence important programmers not to sell to competitors and potential competitors. All of the Baby Bells, in addition to others, have complained about denial of access to programming to support their entry into the cable TV industry.<sup>269</sup> Small cable operators observe the same problem.<sup>270</sup>

One of the more dynamic negative effects of discrimination is the potential to devalue competitors, either driving them out of business or making them attractive takeover targets.<sup>271</sup> This would also be a dynamic benefit to the content provided by the affiliated supplier.<sup>272</sup>

265. See *ACA*, *supra* note 162, at 15 - 16. "The incentives to deny programming and the consequences to program diversity are not hypothetical. In circumstances outside of Section 628(c)(2)(D), these incentives are already resulting in denial of programming to small cable companies." See also *Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, FCC Doc. No. 01-290 at 14 (Dec. 3, 2001) (comments of Braintree Electric Light Department) (discussing the possible results of satellite companies' withholding programming), available at [http://www.ncta.com/pdf\\_files/ReplyComCS01-290.pdf](http://www.ncta.com/pdf_files/ReplyComCS01-290.pdf).

266. See *Everest*, *supra* note 260, at 6; *Implementation of the Cable Television Consumer Protection & Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, FCC Doc. No. 01-290 at 4 (Dec. 3, 2001) [hereinafter *Qwest*] (comments of Qwest Broadband Services, Inc), available at [http://ntca.org/leg\\_reg/filings/CS01-290.pdf](http://ntca.org/leg_reg/filings/CS01-290.pdf).

267. See *Everest*, *supra* note 260, at 6 (using a different example).

268. Cf. *Joint Comments*, CS Docket No. 01-290.

269. See *Bell South*, *supra* note 256; *Ameritech*, *supra* note 256.

270. See *ACA*, *supra* note 162, at 13.

Vertically integrated programming providers will have an incentive to enter into regional or national exclusive programming contracts aimed at DBS competitors.

To gain a competitive advantage over EchoStar/DirecTV, owners of vertically integrated programming will likely enter into exclusive programming contracts with preferred regional or national MSOs, both affiliated and non-affiliated. The most efficient and valuable basis to grant exclusivity will be on a regional or national basis, rather than on a franchise-by-franchise basis.

*Id.*

271. *Id.* at 14.

Vertically integrated programming providers will have an incentive to deny programming to small cable companies that are competitors.

## 2. Content Discrimination

Integrated MSOs have a long history of granting preferential access to subscribers for affiliated programmers and denying access to those who are not affiliated. Evidence of these problems is both qualitative and quantitative.<sup>273</sup> Other examples of anticompetitive conduct include efforts to impose or obtain exclusive arrangements, price discrimination, and “dial disadvantage.”<sup>274</sup> One of the more prominent examples was summarized in the recent program access proceeding.<sup>275</sup>

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In competitive situations, owners of vertically integrated programming have a powerful incentive to deny programming to small cable companies. A handful of ACA members already have service areas that overlap those of some major MSOs. Because of the expansion of MSO facilities and the expansion of independent cable systems, competition between MSO's and ACA members will likely increase. By offering exclusive programming, an MSO will gain an overwhelming competitive advantage over an independent cable operator. As discussed above, the MSO will gain subscribers and monthly revenues worth far more than any license fees lost (or higher license fees paid) through exclusive distribution arrangements.

Vertically integrated programming providers will have an incentive to deny programming to acquisition targets. . .

Many ACA members own cable systems adjacent to systems owned by major MSOs. A common transaction in the industry, and an important exit strategy for smaller systems, is the sale of a system to a major MSO. As in any acquisition, the buyer has an incentive to obtain the system at the lowest price.

Cable systems are generally valued on revenues or cash flow, with the subscriber base being a key factor in those measures. By denying access to programming, an owner of vertically integrated programming could readily decrease the revenues and subscriber base of a small acquisition target. The MSO buyer could then acquire the system at a deflated price. A less obvious exercise of market power would occur in the context of sale negotiations, where the threat of denial of program access could force price concessions.

*Id.*

272. *Id.* at 12,149-50. The cable-affiliated programmer will probably win in these transactions as well. The competitive advantage from exclusive distribution rights will increase MSO demand for exclusive programming deals, supporting higher license fees. The increased license fees will offset, and probably exceed, loss of revenues from excluded distributors. In this way, vertically integrated programmers can also gain from exclusivity.

273. See Hoedyun Ahn & Barry R. Litman, *Vertical Integration and Consumer Welfare in the Cable Industry*, 41(4) J. BROADCASTING & ELECTRONIC MEDIA, 231-40 (1997).

274. A comprehensive catalogue of practices is provided in *Competitive Issues*, *supra* note 261. More recently, for example, The Time Warner-Turner merger as originally proposed included preferential treatment for TCI. See *Separate Statement of Chairman Pitofsky and Commissioners Steiger and Varney*, In the Matter of Time Warner, Inc., FTC File No. 961-0004, at <http://www.ftc.gov/os/1996/9609/twother.htm>.

275. *Joint Comments*, *supra* note 264, at 7-10.

It is well known, for example, that News Corp. abandoned its 1997 joint venture with DBS operator EchoStar Communications Corporation (EchoStar) after incumbent cable operators responded to the transaction by refusing to discuss carriage of Fox cable programming. Unwilling to put the financial viability of Fox's programming at risk, News Corp. took the path of least resistance, left Echostar at

As Qwest points out, the problem is not simply one of complete exclusion.<sup>276</sup> Dominant, vertically-integrated MSOs can inflict discriminatory or excessively burdensome terms and conditions of programming distribution.<sup>277</sup> The dominant, integrated firms get the best deals. For example, large MSOs often secure “most favored nation” clauses from programmers. Such clauses are supposed to guarantee an MSO as good a price for programming as any other operator, sometimes excluding Time Warner and TCI.<sup>278</sup> In the case of Fox, noted above, programmers who did not have an investment in the country’s then largest MSO suffered. “To make room (for Fox News), Malone cleared out existing networks like a bowling ball cracking into the tenpin. The arrival of Fox News in Denver pushed Court TV to split the programming day with Spice, a pay-per-view sex network.”<sup>279</sup>

Recent comments in the program access proceeding<sup>280</sup> point to an even more stark demonstration of the power of cable to engage in content discrimination. These comments point out that the “retransmission consent process has provided even more evidence of the economic power that incumbent cable operators hold over programming services, even those owned by NBC, CBS and ABC.”<sup>281</sup> Here, cable market power is evidenced not by pricing, but by the ability to deny content to competing conduit providers.<sup>282</sup>

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the altar and switched its affections to the cable-controlled PrimeStar DBS service. . .

It is also well known that Fox News Channel (FNC) owes its very existence to Telecommunications, Inc. (TCI) (since acquired by AT&T), whose agreement to carry FNC on systems serving 90% of TCI’s subscribers was critical to the successful launch of the network. Not coincidentally, Fox made FNC available to incumbent cable operators on an exclusive basis. Like the saga of News Corp./EchoStar, FNC’s launch and subsequent exclusivity to the cable MSOs is a case study of how the largest incumbent cable operators control the destiny of new programming services, and why programmers sell to cable’s competitors at their own risk.

*Id.*

276. See *Qwest*, *supra* note 266, at 3.

277. *Id.* at 2-3.

278. See John M. Higgins, *Hangover from Takeovers*, BROADCASTING & CABLE, Apr. 19, 1999.

279. STEPHEN KEATING, CUT THROAT: HIGH STAKES AND KILLER MOVES ON THE ELECTRONIC FRONTIER 18 (1999) (characterizing the incident as described in this paragraph).

280. See *Joint Comments*, *supra* note 264.

281. *Id.* at 9.

282. *Id.* at 9-10.

NBC, for example, surrendered exclusivity for the MSNBC cable network to incumbent cable operators in exchange for carriage of NBC broadcast stations. Similarly, during retransmission consent negotiations for carriage of CBS stations, CBS surrendered exclusivity for its own news-oriented cable channel, Eye on People. [Also,] ABC surrendered exclusivity for the Soap net cable network to MSO Charter Communications in the Los Angeles market during retransmission

Other large programmers have had similar problems, including such powerhouses as the BBC,<sup>283</sup> Black Entertainment Television (BET), before it was acquired by Viacom,<sup>284</sup> and Belo.<sup>285</sup>

Furthermore, small cable companies point out the clear incentive that large cable companies have to discriminate. They give examples of discrimination that takes place in spite of the program access rules, and make a strong case that larger entities have larger incentives to discriminate.<sup>286</sup>

Needless to say, AT&T refuses to accept the same public policy obligation to provide open access to the approximately 20 million cable homes that its cable wires pass. Examples of these two scenarios involve AT&T's control over its programming arm, HITS.<sup>287</sup>

The previous section identified a series of theoretical and conceptual arguments that rejected the claim that vertically integrated monopolies in information platforms should be presumed to be efficiency enhancing. By showing they could behave like abusive monopolists, the question of the performance of vertically integrated monopolies becomes an empirical one. By reviewing the behavior of cable monopolists, who now dominate both the video and the high speed Internet markets, this

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consent negotiations for ABC broadcast stations. In other words, when confronted with dominance of the largest cable MSOs in local markets, NBC, CBS and ABC, like Fox, acquiesced to the MSOs' demand that they withhold their cable programming from competing distributors.

*Id.*

283. See Heidi Przybyla, *BBC Uses D.C. as Beachhead for American Invasion*, WASHINGTON BUSINESS JOURNAL (July 17, 1998) (characterizing the incident described in this paragraph).

284. Steve Donohue, *BET's Lee Searches for Viacom Synergies*, 22 MULTICHANNEL NEWS 3844, (Dec. 3, 2001).

285. See R. Michelle Breyer, *CNN-Style Channel Planned for Austin*, AUSTIN-AMERICAN STATESMAN, Aug. 22, 1998, at D1; *New Cable Operation to Tex-ize the News*, AUSTIN-AMERICAN STATESMAN, Jan. 1, 1999, at B2; Kim Tyson, *Belo Adds KVUE to Texas TV Holdings*, AUSTIN-AMERICAN-STATESMAN, Feb. 26, 1999, at A1 (characterizes the incident described in this paragraph); Dianne Holloway, *TV's new motto: All the News That's Fit to Air—and Then Some*, AUSTIN-AMERICAN STATESMAN, May 29, 2000, at E1; Heather Cocks, *Time Warner Cable to Carry Belo's Texas News Channel*, AUSTIN-AMERICAN STATESMAN, Sept. 26, 2000, at D1; Missy Turner, *Local Cameras Will Roll on 24-hour News Channel*, HOUS. BUS. J. (Apr. 27, 2001).

286. See *ACA*, *supra* note 162; *Joint Comments*, *supra* note 264..

287. *Joint Comments*, *supra* note 264, at 15.

AT&T owns Headend in the Sky ("HITS"), a wholesale distributor of digital programming via satellite. HITS services have been instrumental in enabling many smaller systems to expand channel offerings through digital services, and ACA has been a prime supporter of this service. Among the digital services carried by HITS is TVLand, a popular entertainment channel. But of all the channels carried by HITS, ACA members cannot receive digital TVLand from HITS. AT&T apparently has a national exclusive contract for the service.

*Id.*

section shows that the “monopoly is bad” view provides a much more plausible explanation. In both markets we observe the classic signs of monopoly abuse – aggressive actions to restrict competition and retard innovation, combined with rising prices and excess profits.

## VII. CONCLUSION

### *A. Closed Communications Platforms*

There is an eerie parallel between AT&T’s hostile reaction to innovation as a telephone company confronted with the concept of building an Internet-like network, and AT&T’s reaction as a cable company confronting the prospect of Internet-based video content; as demonstrated by AT&T’s statements: “damned if we are going to allow the creation of a competitor to ourselves,”<sup>288</sup> and “[W]e didn’t spend \$56 billion on a cable network to have the blood sucked out of our veins.”<sup>289</sup>

There is also a parallel between what AT&T and AOL argued about open communications platforms before they decided to buy cable wires, and what most non-owners of the wires continue to say. The key to understanding this situation is to watch what these firms are doing, not what their expert theoreticians say they could or should do.<sup>290</sup> Further, these firms will not submit to openness on their own. The platform will remain closed until policymakers open it.

Decades of experience with closed cable networks, and the actual behavior of high-speed owners (and would be owners), undermines the claim that competition between a limited number of facilities owners will

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288. LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, at 32.

289. *Id.* at 158.

290. The analogy to the Microsoft antitrust case is clear. I have argued that this was the central theme in the Microsoft case. *See* Cooper, *Antitrust*, *supra* note 104, at 817-27.

Microsoft did not lose this case “by defending too much too often.” It did not lose because of a remarkably inept defense, or because of allegation that crucial pieces of evidence were rigged, or because of an irrational or biased Judge. It lost because its acts were simply indefensible. The intent and effect of its behavior was so blatantly anti-competitive and the economic assumption necessary to excuse it so narrow and unrealistic, that not even a conservative judge – Ronald Reagan’s first judicial [sic] nominee – could do anything but find Microsoft guilty by a reasonable interpretation of the antitrust rule. . .

Microsoft executives knew full well that each of the problems that Schmalensee/NERA

[Microsoft experts] dismissed is actually a “huge” barrier. Through their words and deeds Microsoft’s senior executives demonstrated that they believed the opposite of what the experts said and acted in exactly the opposite manner in the market. Microsoft’s witnesses asked the court to disregard their words and deeds and believe that Microsoft executives did not understand their own market.

*Id.*

result in increased innovation and access. At the micro-level of business strategies, and the macro-level of market structure, these closed networks look and act a lot more like anticompetitive fortresses than dynamic combatants in a cross platform war.

Facilities in the physical layer are few, dumb, and slow compared to the code and content layers. Through four years of legislative, legal, and regulatory battling over the closure of high-speed transmission facilities, the claim has been that the proprietary interests of facility owners would lead them to open their networks voluntarily.<sup>291</sup> That simply has not happened to a significant degree. As an example to the contrary, those obligated to keep their networks open have gone to great lengths to frustrate competing ISPs from selling services to the public, and now they demand the right to close their networks. It is hard to imagine that these firms will make life easier for potential competitors, without required open access.

The closure of communications platforms is potent and persistent. This is caused by entities leveraging their scale and barriers to entry in the physical layer, along with the inherent characteristics of information production, the differentiation of information products, and the network effects captured by vertically integrated facility owners.

In the past, closed communications platform owners have failed to provide non-discriminatory access, in the present they are not doing so, and there is no credible reason to believe that they will do so in the future. If closed communications platforms are to be defended, they must be based on the claim that monopoly is better for consumers and the economy. That claim has been rightly and roundly rejected.<sup>292</sup>

### *B. Some Practical Suggestions*

The enlightened form of common carrier regulation embodied in the Computer Inquiries took us a long way into the information age.<sup>293</sup> There are no insurmountable technical obstacles to developing a similar

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291. See Speta, *supra* note 26.

292. The Microsoft case again comes to mind. See Cooper, *Antitrust*, *supra* note 104, at 817-818. "Microsoft . . . asked the court to abandon its traditional view of competition and accept the proposition that markets will inevitably be dominated by very few, very large companies . . ." Evidence at trial revealed that precisely the opposite was true. Because the nature of the industry was not sufficient to entrench its monopoly, Microsoft resorted to repeated, well-documented and protracted campaigns of anti-competitive behaviors to squash the competition. If network externalities would have been sufficient to entrench Microsoft, the immense amount of managerial time and effort and the hundreds of millions, if not billions, of dollars burned up foreclosing the market to competing products was wasted.

293. See BAKER, *supra* note 6, at 34-35; See also Benkler, *From Consumers to Users*, *supra* note 7 (Benkler notes that common carriage may be necessary under certain circumstances, but is not preferable).

set of rules for high-speed communications networks. Unfortunately, the FCC's current light-handed regulation is not enough.

One alternative is structural separation. Isolating the physical layer may be a reliable way to neutralize the strategic interest in discrimination.<sup>294</sup> The moment the facility owners are let into the other layers, the trouble begins. A firm's economic interests compel it to exploit the market power that small numbers and barriers to entry inevitably confer.

Separating the ownership of facilities from code and content is a simple, content-neutral principle that provides an easily enforceable bright line test. Facility owners could be paid handsomely for the use of their facilities, but they must have no interest in the code or the content. The cost may be a king's ransom, but it will be worth it if code and content are liberated from the tyranny of closed facilities. Unfortunately, persuading policy makers to undertake divestiture is extremely difficult to sell, even though it is a better solution on policy grounds.

Another option is the highway model – building a new transmission network that is not proprietary. This concept includes a publicly funded wire that can be compelled to be open.<sup>295</sup> The analogy between the superhighways of the industrial age and the information superhighway of the Internet age is a strong one.<sup>296</sup> With regulation, or even separation of ownership, there are always suspicions about side deals and hidden agendas. It is important to recognize that highways are neither free, nor free of substantial political wrangling and unintended consequences. Resistance will be great, as indicated by the outrage of some at the prospect of municipally owned dark fiber.<sup>297</sup> Still, given the ability of road systems to resist privatization for centuries, this would likely be a viable long-term solution, if it could be brought into existence.

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294. See LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, at 166 (“Keeping the medium and the content separate is a good rule in most media. When I turn on the television, I don’t expect it to deliberately jump to a particular channel, or to give a better picture when I choose a channel that has the ‘right’ commercials.” (quoting Berners-Lee)). See also BAKER, *supra* note 6, at 296 (“[P]rohibiting enterprises that own and operate transmission facilities from also owning and marketing media content is a clean, structural solution that does not require constant regulatory monitoring and largely eliminates this incentive to block or burden outsider’s expression. In many situations, this separation should be the preferred policy response.”).

295. See LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, at 244.

296. The highway analogy draws the discussion squarely into the realm of the commons debate. Those arguing for closure are troubled by the prospect. See Weiser, *supra* note 5, at 18 (putting it “not protecting the user interface threatened to make the interface – and the community of users trained on the interface—a “common resource” in which no particular company would want to invest”).

297. *Id.*

A final alternative is to identify a space where transmission is not subject to property rights.<sup>298</sup> The spectrum could be managed as a commons.<sup>299</sup> This would work, but the inertia of public policy is running strongly in the opposite direction, with vigorous efforts to propertize as much of the spectrum as quickly as possible. As difficult as it was to free a little piece of an early twentieth century technology over the objections of incumbents (low power radio spectrum), it would be even more difficult to free a 21<sup>st</sup> century transmission medium.

Regardless of the political difficulty of opening the communications platform for the Internet age, there is no doubt that the economic and democratic benefits of true competition and enhanced civic discourse that flow from genuinely open communications platforms are well worth the effort.

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298. See LESSIG, *THE FUTURE OF IDEAS*, *supra* note 13, at 241-44.

299. This is the proper way to frame the issue since it is important to recognize that commons are not unruly and neglected spaces and that these types of resources are far from uncommon (infrequent).