FAILURE OF IMAGINATION: WHY INACTION ON NET NEUTRALITY REGULATION WILL RESULT IN A DE FACTO LEGAL REGIME PROMOTING DISCRIMINATION AND CONSUMER HARM

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I. INTRODUCTION

Since its inception, the Internet has been the focus of competing visions for its proper regulation. At one extreme is the vision of cyberlibertarian and commons advocates such as John Perry Barlow, who announced in 1996 that neither government nor big business would control cyberspace. See Langdon Winner, Cyberlibertarian Myths and the Prospects for Community, 27 ACM SIGCAS COMPUTERS AND SOC’Y 14 (1997) (describing and critiquing “cyberlibertarianism”).

"Commons," for the purposes of this article, is “a resource to which anyone within the relevant community has a right without obtaining the permission of anyone else.” LAWRENCE LESSIG, THE FUTURE OF IDEAS 19-20 (2001). “[T]he Internet forms an innovation commons.” Id. at 23.

At the other extreme are those who advocate for a more traditional scheme in which government and corporations direct and manage the development and dissemination of the Internet.⁴ The United States government struck a course somewhere between these competing visions in its passage of the Telecommunications Act of 1996 ("1996 Act")⁵ and subsequent Federal Communications Commission ("FCC" or "Commission") initiatives, which have largely declined to exercise oversight of the Internet except to ensure that some interconnection, law enforcement, and other public interest concerns are met.⁶ This regulatory restraint can be linked to the economic theories of deregulation⁷ that permeated U.S. industrial policy at the end of the 20th Century.⁸

The Internet has evolved into a hybrid of competing visions. Although the Internet has facilitated a remarkable dissemination of information as an arbiter of worldwide communication and collaboration, it is increasingly subject to oversight and direction by government entities.⁹ Moreover, the Internet, the very platform that enabled innovation and meritocratic business growth, now offers opportunities and incentives for the exertion of

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⁴ See, e.g., James Boyle, Foucault in Cyberspace: Surveillance, Sovereignty, And Hardwired Censors, 66 U. CIN. L. REV. 177, 178 (1997) (critiquing "digital libertarianism" as "inadequate because of its blindness to the effects of private power, and . . . also surprisingly blind to the state's own power in cyberspace.").


⁶ See infra Part III.A-C. for a full discussion of Congressional and Commission regulation of the Internet.

⁷ Deregulation is "[t]he reduction or elimination of governmental control of business, [especially] to permit free markets and competition." BLACK'S LAW DICTIONARY 475 (8th ed. 2004).

⁸ See, e.g., Richard D. Cudahy, The Folklore of Deregulation (with Apologies to Thurman Arnold), 15 YALE J. ON REG. 427, 427 (1998) ("At the dawn of the new millennium, deregulation has spread like wildfire . . . ."); Joseph D. Kearney & Thomas W. Merrill, The Great Transformation of Regulated Industries Law, 98 COLUM. L. REV. 1323, 1324 (1998) ("The law governing . . . regulated industries has been undergoing a great transformation in the last twenty-five years. These changes are typically referred to as 'deregulation.'").

greater controls by corporate entities. In response to concerns that network operators could exercise such control, the 109th Congress is considering legislation to ensure Internet neutrality by enforcing freedom of access principles. The passage or failure of such legislation will have tremendous impact on the future of the Internet.

Technological advances now permit network operators—or, more accurately, the networks themselves—to identify the types of traffic carried over the network and to prioritize packets. The ability to distinguish among packetized data is a tremendous advancement, particularly for those Internet applications and content most susceptible to latency. The transmission of voice calls over the Internet (Voice over Internet Protocol or “VoIP”), for example, has benefited from the ability of network technology to recognize, sort, and prioritize delivery of sequenced packets of a voice call. Advances in network intelligence and packet management have resulted in a reduction in call latency, increased reliability of service, and an overall improvement in consumer confidence in the quality of the service. The recent explosion in VoIP adoption and the promising forecast of continued growth in the industry are evidence of the way in which

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10 See Christopher Stern, The Coming Tug of War Over the Internet, WASH. POST, Jan. 22, 2006, at B01 (“The telecommunications companies’ proposals have the potential, within just a few years, to alter the flow of commerce and information—and your personal experience—on the Internet . . . represent[ing] a break with the commercial meritocracy that has ruled the Internet until now.”).

11 A packet is a segment of digitized data (whether the data is voice, text, image, video, sound or a combination of these) containing a header element and the bits of the transmitted data. The header carries “control” information for the network to route the packet from the sender to the destination, including destination addressing, synchronization and assembly instructions, and the size (in bits) of the packet. See HARRY NEWTON, NEWTON’S TELECOM DICTIONARY 610 (20th ed. 2004).

12 “Latency” in telecommunications refers to the time delay associated with the transmission of data through a network. Latency in communications over the Internet can occur as a result of limited network capacities and speeds, the size of the packets being sent and delivered, and processing delays. Real-time, interactive applications such as voice and video conferencing are particularly vulnerable to latency because even slight delays are more noticeable to participants. See id. at 473.


14 See Nicolas Thompson, Sir, to Whom May I Direct Your Free Call?, N.Y. TIMES, Ocl. 12, 2003, § 3, at 1 (“[Early VoIP was] plagued by confusing technology and connections that made users sound as though they were talking in caves, and with mouths full of cotton candy. Now, though, new engineering, faster connections and agreements on standards have solved many of those problems.”)
packet traffic management enables and bolsters the development and deployment of Internet applications.\(^{15}\)

Internet traffic management appears reasonable and even advantageous. A real-world vehicular traffic scenario is illustrative: while a commuter may feel impatient and annoyed when waiting at a red light, in truth, she appreciates the fundamental need for traffic management to allow traffic to flow in an orderly manner. When faced with a choice between chaos and a slight delay at a traffic light, society chooses the latter. In other words, individuals surrender small freedoms to the government in exchange for the assurance that traffic will be managed in a nondiscriminatory, orderly fashion that will benefit society as a whole. But, what if one day that traffic light allowed only cars from the eastbound road to pass through the intersection? What if the cars in the southbound lane were permitted passage, but only via a detour through potholed streets? What if traffic from all directions was denied passage except for a certain make of SUVs? What if the manufacturer of that make of SUVs happens to be a vertically-integrated subsidiary of the company that owns and manages the traffic lights? The Internet, without neutrality regulation, has the potential to devolve into just such a disturbing scenario.

As the increasing ubiquity of broadband access and the corresponding expanded utility of the Internet transform it from a secondary communications network to the primary platform for the delivery of all media and communications,\(^{16}\) the nature of the debate over the future of the Internet, and the future of network traffic management, has changed. Today, the


\(^{16}\) The trend among telecommunications and cable providers is the so-called “triple-play,” or “three screens,” service offering in which phone, video, and Internet service are offered as a bundled product that is delivered to the home over a single high-speed IP connection. See Matt Richtel, *The Year Ahead: Consolidation and Competition as an Industry Grows Up*, N.Y. TIMES, Dec. 29, 2003, at C4; see also Robert Marich, *Telcos Press Low Price In Basic TV Battle But Parity Prevails With Bigger Bundles*, KAGAN RESEARCH INSIGHTS, Mar. 22, 2006, http://www.kagan.com/ContentDetail.aspx?group=5&id=168 (“The triple play is TV, voice and broadband. Telcos use fat-pipe fiber optic connections to deliver Internet protocol (IP) TV or alternatively team up with direct broadcast satellite (DBS) providers to supply the missing element of TV channels.”). The addition of wireless to this bundle of services is known as “quadruple-play.” See Ken Benson, *Cable Companies, Taking Aim at the Bells, Bulk Up in Wireless Phone Services*, N.Y. TIMES, Apr. 10, 2006, at C4 (“In the race with the Bell companies to become one-stop shops for communications services, the country’s biggest cable companies are developing wireless products, the missing piece of their so-called quadruple-play bundle.”).
social-utopian Internet envisioned by John Perry Barlow must be recon-
ciled with “broadband infrastructure, applications, and content; the rapid
increase in users; demand for latency-sensitive applications such as video-
on-demand and IP telephony; demand for security measures and spam
regulation measures implemented at the ‘core’ of the Internet; and, more
generally and importantly, demand for increased returns on infrastructure
investments.”17 As Senator Ted Stevens noted in his opening remarks be-
fore a Senate Commerce, Science, and Transportation Committee hearing
in February, 2006, “how we decide the [net neutrality] issue will determine
whether cable companies and the telephone companies can generate the
revenue needed to justify billions of dollars in investment to deploy fiber
and upgrade existing broadband networks.”18

The Senate hearing was held partly in response to assertions by broad-
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traffic and access over their networks to promote efficient use of the resource, and thereby produce maximum returns for users as well as network owners.\textsuperscript{22} Content providers, consumer groups, and pro-regulation advocates respond that the Internet's value as "an enormous engine for market innovation, economic growth, social discourse, and the free flow of ideas" will be quashed if network operators are permitted to assert control over access and content.\textsuperscript{23} The crux of the debate is whether, and to what extent, government regulation should mandate "net neutrality"\textsuperscript{24}—the concept that network owners should be precluded from discriminatory practices in the management of access to and use of the Internet over their "pipes."\textsuperscript{25}

Some regulatory policy theorists and economists advocate a turn toward a light-hand, \textit{laissez faire} model bolstered by antitrust laws. The legacy of FCC regulation on emerging products and services, they argue, was one of artificial constraints on competitive free enterprise that impeded growth

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\item See Christopher S. Yoo, \textit{Network Neutrality and the Economics of Congestion}, 94 Geo. L.J. 1847, 1864-65 (2006). Yoo argues that although [use restrictions, access tiering and usage-sensitive pricing] would place some limits on end users' ability to run applications, access content, and attach devices as they see fit, they can also provide a new way to internalize the congestion costs that high-volume users impose on others. They can also create consumer benefits by reducing the congestion costs and by lowering the access prices that low-volume end users must pay. \textit{Id. at 1874.}
\item "There is no single accepted definition of 'net neutrality.'" ANGELA GILROY, CRS REPORT FOR CONGRESS, NET NEUTRALITY: BACKGROUND AND ISSUES 1 (2006), available at http://www.fas.org/sgp/crs/misc/RS22444.pdf. For purposes of this Comment, net neutrality is defined as "the general principles that owners of the networks that compose and provide access to the Internet should not control how consumers lawfully use that network; and should not be able to discriminate against content provider access to that network." \textit{Id.} It is important to note that the net neutrality issue shares some of the concerns and characteristics of other recent policy debates with which it is often lumped together. One issue easily confused with net neutrality is the narrower debate over "open access" or "multiple ISP access"—a policy which would require a broadband subscriber to connect to the Internet via an ISP of their choice, rather than being limited to the ISP associated with the network provider. See JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE 159-68 (2005) for a discussion of the open access debate.
\item "Pipe" is a common term in policy and legal descriptions of the Internet and generally refers to the physical infrastructure comprising the network over which Internet data flows. \textit{See, e.g.,} Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 125 S. Ct. 2688, 2715 (2005) (Scalia, J., dissenting) ("[C]ustomers will regard the competing cable-modem service as giving them both computing functionality and the physical pipe by which that functionality comes to their computer . . . ."). Internet "pipes" are not limited to traditional cables and wires: "[b]roadband wireless service has the potential to compete with wireline technologies in urban and suburban markets as a primary pipe to the home and business . . . ." FED. COMM'NS COMM'N, WIRELESS BROADBAND TASK FORCE REPORT 46 (2005), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-257247A1.pdf
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and innovation. Proponents of the antitrust model argue that the consumer welfare benefits arising from an unencumbered free market will be great, whereas imposition of regulation on the Internet could spell its demise. This Comment will argue that, in the case of net neutrality, antitrust laws are insufficient and that the Internet’s free market platform risks capture by the oligarchs through the invisible hand of technology if net neutrality policies are not codified.

The argument for a statutory net neutrality solution begins in Part II with a discussion of the inherent design aspects and technological attributes of the Internet that have influenced its development and governance over time. Part III provides an overview of the various legal regimes which have provided governance over the Internet since its inception, including: federal statutes, regulations, antitrust law, and the technology itself. Part IV exposes the need for net neutrality oversight in the context of historical and inevitable antitrust and regulatory failures. Moreover, Part IV explains that the economic incentives for discrimination by network firms cannot be addressed by traditional market theory and antitrust safeguards. Finally, Part V critiques the legislative solutions proposed by the 109th Congress and proffers remedies for ensuring non-discrimination of content and the continuance of unfettered public access to the Internet. This Comment will demonstrate that the FCC is the proper venue for regulating network neutrality, but that Congress must adopt legislation to mandate the FCC’s oversight and to ensure that technology and market economics do not become the *de facto* rulers of behavior in cyberspace.

II. INTERNET DESIGN PRINCIPLES AND THE EMERGING CONTROLLED NETWORK

Net neutrality, in addition to its policy debate implications, is a fluid term often invoked to explain the design principles and fundamental architecture of the Internet, positing that the facilities themselves are essentially “dumb” and, therefore, neutral. Vint Cerf, one of the founders of the

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Internet, contends that the “remarkable success of the Internet can be traced to a few simple network principles—end-to-end design, layered architecture, and open standards—which together give consumers choice and control over their online activities.” The importance of each of these principles to the evolution of the Internet and the debate over net neutrality regulation are discussed in turn below.

A. The End-to-End Design Principle

During the Cold War, the possibility of annihilation of large portions of the public communications network by a nuclear strike was a plausible reality. In an effort to find an alternative communications network permitting communication among the government and military in such a crisis, the Defense Department-sponsored ARPANet was developed. The ARPANet was a distributed, decentralized digital network with no single point of failure. This “packet-switched” network was a phenomenal innovation over AT&T’s hierarchical circuit-switched network in which the “intelligence” or ability to control the range of permissible applications and the quality of service for each application was held in the central switch. Because there was no predetermined path over which packets must flow, the packet-switched network could dynamically alter its routing of packets upon encountering bottlenecks or downed nodes along the way, thereby eliminating the problem of the single, bottleneck switch facility.

Any proprietary code, applications, or software included. An intelligent network, by contrast, would integrate some of all of those things into the system.”). Net Neutrality Hearing, supra note 18 (written testimony of Vint Cerf), available at http://commerce.senate.gov/pdf/ cerf-020706.pdf.

Reliance on proprietary commercial networks for all public and government communications was seen as a strategic vulnerability, particularly because the network was circuit-switched. In a circuit, failure at any point will cause a failure throughout, not unlike what happens when a single bulb in a string of Christmas lights goes dim. See, e.g., STEVEN SHEPARD, TELECOM CRASH COURSE 126-28 (2002) (describing how service to 170,000 telephones was disrupted when a single New York Telephone central office was destroyed by fire). See also ACLU v. Reno, 929 F. Supp. 824, 831 (E.D. Penn. 1996), aff’d, 521 U.S. 844 (1997) (“Among other goals, this redundant system of linked computers was designed to allow vital research and communications to continue even if portions of the network were damaged, say, in a war.”).

NUECHTERLEN & WEISER, supra note 24, at 129. “ARPANet” combines the acronym for the Advanced Research Projects Agency, a Defense Department think tank, with the word “net” for network. Id.


ARPANet embodied the "end-to-end" design principle because the "intelligence" resided on the edges of the network—the "ends"—rather than in a centralized hierarchy.

The end-to-end design of ARPANet, and what later evolved into the commercial Internet, enabled much of its growth and innovation. The distributed nature of the network required that any of the nodes along the path be dispensable in response to disruptions in service. Therefore, it was logical to limit the intelligence in the nodes to the minimum necessary to pass along a message. This principle encouraged the design of the "dumb" network in which packets are delivered on a first-come, first-serve, unfiltered basis, without regard to content, origin, or destination. In the modern Internet, however, the "dumb" network has given rise to a smarter network in which some intelligence is incorporated into the network rather than relegated to the ends in order to ensure the quality of service necessary for the delivery of real-time applications.

B. Layers Model

The National Research Council has observed that "[t]he original architects of the Internet made a key design decision to use the principle of layering to separate applications from the underlying transport infrastructure of the Internet." This "layering" evolved into the following model: at the bottom lies physical infrastructure; transport protocols and switching technologies operate above this layer; and the higher-level applications and content "ride" atop that layer. The original layers model for network architecture was adopted by the International Standards Organization in 1978 and described a seven-layer "open systems interconnection" ("OSI")

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37 See ACLU v. Reno, 929 F. Supp. 824, 831 (E.D. Penn. 1996), aff'd, 521 U.S. 844 (1997) ("[The Internet] was designed to be a decentralized, self-maintaining series of redundant links between computers and computer networks, capable of rapidly transmitting communications without direct human involvement or control, and with the automatic ability to re-route communications if one or more individual links were damaged or otherwise unavailable.").
38 NUECHTERLEIN & WEISER, *supra* note 24, at 124.
39 See discussion infra Part II.D.
40 NAT'L RESEARCH COUNCIL COMPUTER SCI. AND TELECOMM. BD., *supra* note 34, at 37.
model of digital networking environments. Most policy discussions of Internet layer architecture today simplify the OSI model into four layers: the physical infrastructure layer, the logical or code layer, the applications layer, and the content layer. Some advocates of telecommunications regulatory reform have even argued for the incorporation of the layer architecture to a policy framework for communications law. The net neutrality debate might be described as tension over the blending of the layers. Legacy regulatory regimes and economic models have until recently maintained a segmented industry in which providers of specialized services and equipment competed at each layer level. Today, the economic incentives to internalize all of the layers within a single firm challenge the layer paradigm.

C. Open Standards

The Internet is a "global, packet-switched network of networks that are interconnected through the use of the common network protocol—IP." A protocol is essentially a design rule implemented in a communications network to govern the transmission of data. The Internet actually relies upon two protocols, known collectively as the Transfer Control Protocol and Internet Protocol ("TCP/IP") suite. The TCP and IP protocols are open standards, meaning that they are non-proprietary, unlicensed, and unrestricted. This openness is credited as the most important technical fea-

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43 See NUECHTERLEIN & WEISER, supra note 24, at 552 n.3.
44 See, e.g., Thierer, supra note 28, at 279; NUECHTERLEIN & WEISER, supra note 24, at 552-53, n.3 & Fig. A.
46 In re IP-Enabled Services, Notice of Proposed Rulemaking, 19 F.C.C.R. 4863 n.23 (Feb. 12, 2004).
47 See Oxman, supra note 33, at 12 n.29.

"Internet" refers to the global information system that—(i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons; (ii) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein.

ture of the Internet because it allows anyone to develop applications and content, and permits any user to communicate with any other user. The advance of more intelligent networks infrastructure, however, threatens to undermine this openness by restricting access according to proprietary network rules.

D. The “Neutral” Network

The explosive growth of the Internet as a social and commercial tool can be credited to the combination of the end-to-end principle, the layers model, and open standards. As Vint Cerf explains:

This “neutral” network has supported an explosion of innovation at the edges of the network, and the growth of companies like Google, Yahoo, eBay, Amazon, and many others. Because the network is neutral, the creators of new Internet content and services need not seek permission from carriers or pay special fees to be seen online. As a result, we have seen an array of unpredictable new offerings—from Voice-over-IP to wireless home networks to blogging—that might never have evolved had central control of the network been required by design.

However, today’s Internet is one in which technological advances, driven by market demand for broadband, integrate greater intelligence into the network infrastructure. Intelligent facilities obviously provide network owners greater control over their own customers’ experience, but they also create a less “neutral” Internet overall. Unlike the nascent commercial Internet which hewed more closely to the principles discussed above, the Internet of 2006 is comprised of application-aware networks capable of exerting varying amounts of control over transiting applications and content. In many respects, the development of a more intelligent facilities layer is the product of free market economics at their best: increased consumer demand for higher bandwidth and the correlated demands on network capacity and management spurred innovation that has shifted some of the end intelligence to the center. Much of this increased intelligence in the network remains “neutral” in that it simply serves to route data packets

49 See Oxman, supra note 33, at 5 (“The most important technical feature of the Internet is its openness, which allows any user to develop new applications and to communicate with virtually any other user. This openness is driven by the sharing of . . . the Internet protocol. No one owns the Internet protocol, no one licenses its use, and no one restricts access to it.”); see also Joseph Farrell & Philip J. Weiser, Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age, 17 HARV. J. L. & TECH. 85, 91 (2003) (explaining that openness in the logical layer—TCP/IP—is the key to the success of both the physical layer and the content and applications layer of the Internet).


more efficiently, regardless of the content or source of the packets.\textsuperscript{52} However, this same technology also can be used by network operators to protect and advance dominant positions in the telecommunications, video, and broadband marketplaces at the expense of consumer freedoms and the chilling of innovation.\textsuperscript{53} Since the majority of American consumers have little or no choice in broadband providers,\textsuperscript{54} permitting the use of such technology for non-neutral purposes, such as to discriminate among applications or content, is akin to ceding control of individual online activity to the commercial interests of network providers.\textsuperscript{55}

III. THE INTERNET LEGAL REGIME

Internet law is comprised of statute, regulation, and federal case law. However, because of an institutional hands-off approach, a fourth governing structure has evolved: the technology itself. In the absence of authority, the technological underpinnings of the Internet have evolved into a \textit{de facto} legal regime in which the underlying code or software provides the owner of the network the ability to control access and usage of the facility. This Part will address the way in which these various regimes have developed and established policies of nondiscrimination and interconnection, precursors to the current net neutrality debate.

A. Statutory Internet Legal Regime

In the 1996 Act, a historic rewriting of the Communications Act of 1934, as amended (the "Communications Act"),\textsuperscript{56} Congress explicitly declined to exercise much authority over the Internet, and expressed that "[i]t is the policy of the United States . . . to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation."\textsuperscript{57} Congress defined the Internet as "the international computer network of both Federal and non-

\textsuperscript{52} See, e.g., discussion of advances in network intelligence enabling VoIP, \textit{supra} Part I.

\textsuperscript{53} See discussion \textit{infra} Part III.D.

\textsuperscript{54} See discussion \textit{infra} Part III.C.2 (regarding competition and consumer choice in broadband providers).


\textsuperscript{56} The Communications Act of 1934, as amended, refers to the body of statutory law regulating all communications industries and governing public use of communications technologies, including radio, television, telephone, satellite and, now, Internet. The 1934 Act, as amended, is codified in Title 47 of the United States Code, and encompasses the Telecommunications Act of 1996 as well as a multitude of other amendments. See 47 U.S.C. § 151 et. seq. (2000).

Federal interoperable packet switched data networks." The Internet is also described in the statute as "the combination of computer facilities and electromagnetic transmission media, and related equipment and software, comprising the interconnected worldwide network of computer networks that employ the TCP/IP or any successor protocol to transmit information."

Within the 1996 Act, Congress also codified a new classification of services, defining information services as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing . . . ." Curiously, the language of the 1996 Act does not establish a clear regulatory regime for information services, nor does it explicitly assign jurisdiction over such services to the FCC. The absence of statutory language and congressional intent has led to extensive litigation regarding the Commission's attempts to exercise ancillary authority over information services.

Although Congress declined to enact explicit regulations to govern the Internet, it adopted a national policy posture toward the Internet's development and deployment that is instructive in the discussion of net neutrality. In contrast to its expressed aversion to federal and state regulation of the Internet, Congress articulated that it is the policy of the United States is to "encourage the development of technologies which maximize user control over what information is received by individuals, families, and schools who use the Internet . . . ." Protection of individual autonomy over the private Internet experience, as contemplated by this policy statement, is central to the net neutrality debate. Congress also issued a mandate to the Commission and state regulatory bodies to "encourage the deployment . . . of advanced telecommunications capability to all Americans . . . by utilizing . . . price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment."

This instruction highlights another issue central to the net neutrality debate: how to promote the deployment of "advanced telecommunications capability" (broadband) without discouraging infrastructure investment. To date, the Commission has employed a regulatory forbearance approach, in

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61 See discussion infra Part III.B.5.
63 See supra note 56 and accompanying text.
part, according to Chairman Kevin Martin, "because we don't want to im-
pede companies' ability to invest."  

B. FCC Regulation by Rulemaking  

Contrary to the widely-held belief that the FCC has shied away from the
regulation of the Internet, the Commission has both implicitly and explic-
itly regulated the Internet for more than forty years. The Commission’s
Computer Inquiries, a series of regulatory decisions regarding the use of
computer technologies in communications networks, laid a foundation for
the policies affecting the Internet today. Robert Cannon, FCC Senior
Counsel for Internet Issues, contends that the Computer Inquiries “were a
necessary precondition for the success of the Internet.” Moreover, be-
cause the deployment of the commercial Internet primarily occurred over
telecommunications and cable infrastructure, the FCC implicitly shaped
the deployment of the Internet through its legacy common carrier tele-
phone and cable television regulatory regimes, and through ancillary jurisdic-
tion applied to information services under Title I of the Act. Finally,

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66 Ken Belson, Senate Bill to Address Fears of Blocked Access to Net, N.Y. TIMES, Mar.
67 See generally In re Regulatory and Policy Problems Presented by the Interdependence
of Computer and Communication Services and Facilities, Notice of Inquiry, 7
F.C.C.2d 11 (Nov. 1966) [hereinafter Computer I NOI]; In re Regulatory and Policy Prob-
lems Presented by the Interdependence of Computer and Communications Services and
Computer I Tentative Decision]; In re Regulatory and Policy Problems Presented by the
Interdependence of Computer and Communications Services and Facilities, Final Decision
and Order, 28 F.C.C.2d 267 (Mar. 1971) [hereinafter Computer I Final Decision]; Amend-
ment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer
Inquiry), Tentative Decision and Further Notice of Inquiry and Rulemaking, 72 F.C.C.2d
358 (May 1979) [hereinafter Computer II Tentative Decision]; In re Amendment of Section
64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry), Final
Decision, 77 F.C.C.2d 384 (Apr. 1980) [hereinafter Computer II Final Decision]; In re
Amendment of Section 64.702 of the Commission’s Rules and Regulations (Third Com-
puter Inquiry), Report and Order, 104 F.C.C.2d 958 (May 1986) [hereinafter Computer III].
68 Robert Cannon, The Legacy of the Federal Communications Commission’s Computer
69 See generally In re Appropriate Framework for Broadband Access to the Internet
over Wireline Facilities; Universal Service Obligations of Broadband Providers; Review of
Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services;
Computer III Further Remand Proceedings: Bell Operating Company Provision of En-
hanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Conditional Petition of the Verizon Telephone Companies
for Forbearance Under 47 U.S.C. § 160(c) with Regard to Broadband Services Provided Via Fiber
to the Premises; Petition of the Verizon Telephone Companies for Declaratory Ruling
or, Alternatively, for Interim Waiver with Regard to Broadband Services Provided Via Fiber
the Commission has initiated a proposed rulemaking on IP-enabled services seeking comments and guidance as to whether to regulate at all; and, if so, to what extent, and for which services. Each of these regulatory regimes, past and proposed, is discussed in turn.

1. The Computer Inquiries

In this series of rulemakings spanning the 1960s, 1970s, and 1980s, the Commission developed and honed a distinction between “enhanced services” and “basic” communications services. In the first series of rulemakings, known as Computer I, the FCC distinguished computer network data exchange from traditional telephony communications, noting that, even as it was dependent upon the underlying communications network to transmit the data between computers, data processing was a distinct product from voice telephony service. The Commission also recognized that permitting the underlying monopolist communications network providers to enter the nascent data processing market could squelch competitive entry. It determined that voice and data processing services should be treated differently in terms of regulation and adopted the so-called “maximum separation policy,” which permitted common carriers to enter the data processing market only by effecting a complete structural separation in which the data processing service would be provided by an affili-
ated company rather than the carrier. The imposition of regulation on the method by which carriers could offer a service rather than regulating the provision of the service itself marked a turning point and presaged the Commission’s approach to the Internet: unregulated data processing (information) services would be legally distinct from the regulated communications networks over which they were provided.

In the second series of data processing decisions, known collectively as Computer II, the Commission moved closer to the current Internet regulatory regime. First, it eased back from the “maximum separation” posture to permit all but the monopolist common carriers to remain in the data processing market without mandatory separation. The Commission also instituted an access requirement much like those being called for by net neutrality advocates today: basic service carriers who sought to offer enhanced services had to also provide to other enhanced service providers non-discriminatory access to their basic services. However, as technological advances made distinguishing between data processing and traditional communications more difficult, “the Commission created a framework in Computer II that defined and distinguished between ‘basic services’ and ‘enhanced services’” with greater specificity than in Computer I. Computer II also marked the end of Title II jurisdiction over enhanced services, since they were determined not to be communications common carrier services. The Commission rejected a need for regulating enhanced services, but reserved authority to do so as needed per ancillary jurisdiction.

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76 See Computer I Final Decision, supra note 67, ¶ 16 (“In order to implement our concept of ‘maximum separation,’ we have sought to establish requisites affecting the mode of operation of common carriers and their data processing affiliates.”).

77 See id. ¶ 30 (“[W]e are not seeking to regulate data processing as such, nor are we attempting to regulate the substance of any carrier’s offerings of data processing. Rather, we are limiting regulation to requirements respecting the framework in which a carrier may publicly offer particular non-regulated services, the nature and characteristics of which require separation before predictable abuses are given opportunity to arise.”).

78 In the Computer II Final Decision, the Commission retreated from a “maximum separation” policy applicable to all telecommunications providers, in favor of a more nuanced, light-hand approach in which only AT&T and GTE would be subject to structural separation requirements. See Computer II Final Decision, supra note 67, ¶ 228 (“[W]e believe that continued application of our maximum separation policy to all carriers is inappropriate . . . . Separation is appropriate [only] in those cases in which there is a substantial threat of injury to the communications ratepayer and where other regulatory tools would not suffice.”).

79 Id. ¶ 231.

80 Wireline Broadband Report and Order, supra note 69, ¶ 23 (citing In re Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry), Final Decision, 77 F.C.C.2d 384 [citations incorrect in original; see ¶¶ 90–97] (Apr. 1980)).

81 Computer II Final Decision, supra note 67, ¶ 132. A “common carrier” is “any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or interstate or foreign radio transmission of energy . . . .” 47 U.S.C. § 153(10) (2000).
under Title I of the Communications Act,\textsuperscript{82} precisely where jurisdiction over the Internet remains today.

The \textit{Computer III} proceedings removed all structural separation, instead imposing comparably efficient interconnection ("CEI") and open network access ("ONA") requirements on the monopoly carriers.\textsuperscript{83} Under \textit{Computer III}, a host of tariff, reporting, interconnection, and unbundling requirements were imposed on common carriers in exchange for permission to provide enhanced services themselves,\textsuperscript{84} a regime which continued until 2005.\textsuperscript{85}

2. \textit{Wireline Regulation}

The mandate of the FCC is to regulate telecommunications in the United States.\textsuperscript{86} For much of the 20th Century, the focus of telecommunications regulation involved oversight of a single company, AT&T (and its subsidiaries), which enjoyed a "natural monopoly"\textsuperscript{87} throughout the majority of the country.\textsuperscript{88} In exchange for permission to retain this monopoly power, the Commission imposed retail rate regulations to limit AT&T's ability to extract monopoly rents.\textsuperscript{89} The Commission initially refrained, however,

\begin{itemize}
  \item \textsuperscript{82} In re Amendment of Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry); and Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Thereof; Communications Protocols under Section 64.702 of the Commission's Rules and Regulations, \textit{Report and Order}, 104 F.C.C.2d 958, \textsuperscript{83} pp. 3-4 (May 15, 1986).
  \item \textsuperscript{84} See \textit{Wireline Broadband Report and Order}, supra note 69, pp. 26-28.
  \item \textsuperscript{85} See id. \textsuperscript{86} p. 30 (describing the continued application of the Computer III regime to the Bell Operating Companies) and \textsuperscript{87} p. 41 (rejecting the continued application of the regime to wireline broadband providers).
  \item \textsuperscript{88} See Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 652 ("AN ACT \textsuperscript{89} to provide for the regulation of interstate and foreign communication by wire or radio, and for other purposes."); 47 U.S.C. \textsuperscript{1028} § 151 (2000) ("[T]here is created a commission to be known as the 'Federal Communications Commission,' which shall be constituted . . . , and which shall execute and enforce the provisions of this chapter.").
  \item \textsuperscript{89} A natural monopoly is "[a] monopoly resulting from a circumstance over which the monopolist has no power, as when the market for a product is so limited that only one plant is needed to meet demand." \textit{Black's Law Dictionary} 1028 (8th ed. 2004); \textit{see also} Frischmann, \textit{supra} note 17, at 930 ("The concept of a natural monopoly recognizes that for certain markets, it may be socially desirable to have a single producer, in which case government regulation may be necessary for a variety of reasons (e.g., to constrain monopoly pricing).")
  \item \textsuperscript{84} While the vast majority of the United States was dependent upon AT&T for telephone service, those areas not served by AT&T local exchanges were served instead by state-sanctioned monopolies such as New York's GTE. \textit{See Nuechterlein & Weiser, supra} note 24, at 55.
  \item \textsuperscript{89} In cases of natural monopoly, regulators historically awarded the most efficient firm (or in the case of telephony, perhaps the only firm in the market) and obtained an agreement from the firm to provide dependable service at low rates in exchange for
\end{itemize}
from imposing restrictions on profit-seeking in adjacent markets such as telecommunications equipment.\textsuperscript{90} Beginning around 1970, however, the “naturalness” of the telephony monopoly came under fire as competitors sought entry into the market.\textsuperscript{91} The \textit{Computer Inquiries} decisions and the economic policies of deregulation shaped the Commission’s regulation of wireline\textsuperscript{92} common carriers until the 1996 Act.

3. \textit{Information or “IP-Enabled” Services}

Upon enactment of the 1996 Act, the Commission quickly moved to designate all of the wireline services previously defined as “enhanced services” under the \textit{Computer Inquiries} as “information services” under the Act.\textsuperscript{93} Beginning in 2004, the Commission issued Notices of Proposed Rulemaking seeking guidance on the treatment of information services, also known as “IP-enabled services,” in regulatory proceedings before the Commission.\textsuperscript{94} Finally, the Commission lifted most of the remaining restrictions and access requirements for legacy common carrier broadband Internet provisions in August 2005, reclassifying digital-subscriber-line (“DSL”) and other wireline broadband provisions as information services.\textsuperscript{95}

4. \textit{Cable Modem Regulation}

Whereas historically the common carriers were required to unbundle their transmission services to allow competitor services access to the underlying facility, cable providers have never been held to such obliga-

\textsuperscript{90} \textit{See} \textit{Cannon}, \textit{supra} note 68, at 185.
\textsuperscript{91} \textit{See} \textit{Nuechterlein & Weiser}, \textit{supra} note 24, at 14–15.
\textsuperscript{92} \textit{See id. 31 (“[T]he term ‘wireline’ [means] those line networks—that are designed chiefly to provide point-to-point voice and data services.”).
\textsuperscript{94} \textit{In re IP-Enabled Services, Notice of Proposed Rulemaking, 19 F.C.C.R. 4863, ¶ 1 (Feb. 12, 2004).
\textsuperscript{95} \textit{See} \textit{Wireline Broadband Report and Order, supra} note 69, ¶¶ 1–3. The Report and Order refers to “wireline broadband Internet access service,” which includes DSL. \textit{Id.} ¶ 9 n.15.
As cable modem broadband services proliferated at the turn of the 21st Century, however, some state and local franchising authorities attached an open access, or multiple Internet Service Provider ("ISP") access, requirement as a precondition for approval or renewal of a cable provider’s franchise agreement.97 Cable operators challenged these requirements, demanding that the cable broadband network be opened to competitor ISPs, arguing that only the FCC had the statutory authority to regulate cable modems. The Ninth Circuit sided with the cable operators in AT&T Corp. v. City of Portland, stripping local authorities’ ability to make network access demands on cable companies in exchange for franchise rights.98 The Commission bolstered this position by issuing a declaratory ruling in 2002 in which it exercised Title I ancillary authority to designate cable modem services as “information services” and declined to impose a common carrier-like forced-access regime.99 This decision was challenged and ultimately upheld by the U.S. Supreme Court in NCTA v. Brand X Internet Services ("Brand X").100 Brand X effectively released all Internet access services from the strictures of common carrier regulation.101

5. Ancillary Jurisdiction

Although the 1996 Act adopted a definition of information services, it refrained from providing a clear indication of the regulatory jurisdiction and FCC authority over this classification of services.102 The Commission responded to this void by applying ancillary authority under Title I of the Communications Act,103 to a number of rulemakings regarding information services.104 In Brand X, the Supreme Court affirmed the FCC’s determina-

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96 See NUECHTERLEIN & WEISER, supra note 24, at 160.
97 See id. at 162.
98 See AT&T Corp. v. City of Portland, 216 F.3d 871, 877 (9th Cir. 2000).
99 Cable Modem Order, supra note 48, ¶ 72.
101 See Wireline Broadband Report and Order, supra note 69, ¶ 1 (“In this Order, we establish a new regulatory framework for broadband Internet access services offered by wireline facilities-based providers . . . reinforced by and consistent with the Supreme Court’s recent opinion in NCTA v. Brand X.”).
102 See discussion supra Part III.A.
103 See Brand X, 125 S.Ct. at 2696 (“Information-service providers, by contrast, are not subject to mandatory common-carrier regulation under Title II, though the Commission has jurisdiction to impose additional regulatory obligations under its Title I ancillary jurisdiction to regulate interstate and foreign communications . . . .” (citing 47 U.S.C. §§ 151-161)).
104 See, e.g., In re Implementation of Section 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996, Report and Order and Further Notice of Inquiry, 16 F.C.C.R. 6417, ¶¶ 93–108 (July 14, 1999) (invoking ancillary authority to impose section 255–like disability access obligations on providers of voicemail
tion that information service providers are not subject to common carrier regulation under Title II of the Communications Act, and affirmed the Commission's invocation of its Title I ancillary jurisdiction to regulate information services.

C. FCC Policies of Nondiscrimination

In recent years, the FCC has at times appeared to adopt a non-discrimination posture regarding Internet access. In 2005, the Commission uncharacteristically intervened on behalf of an Internet communications provider who was being blocked from traversing a rival's network. What made this move "uncharacteristic" is that the Commission had never formally enacted Internet non-discrimination regulations, opting instead to encourage neutral practices via a non-binding policy statement.

1. Madison River

In March of 2005, the FCC entered into a consent decree with Madison River Communications, LLC ("Madison River"), in which the company agreed to pay a fine of $15,000 for blocking Vonage's VoIP services from traversing its network. Although the enforcement action resulted in a consent decree rather than a finding of liability, the unprecedented action indicated a possible trend in enforcing neutral networks. However, in testimony before the Senate Commerce, Science and Transportation Committee on February 7, 2006, Vonage chief executive Jeffrey Citron expressed concern that "should Madison River reengage in blocking today, the FCC may not be able to act appropriately to stop them . . . ." His uncertainty derives from the fact that the Madison River consent decree was entered into under the pre-Brand-X regulatory regime in which DSL was regulated as a telecommunications service. After Brand X, it is unclear whether the

and interactive menu services); *Cable Modem Order, supra* note 48, ¶ 75–76, 96 (describing precedent for the assertion of ancillary jurisdiction under Title I authority over cable modem service).

103 *Brand X*, 125 S.Ct. at 2695 (affirming the Commission's decision to exempt information services from mandatory common carriage regulation under Title II); *see also Cable Modem Order, supra* note 48, ¶ 75–76.

106 *Brand X*, 125 S.Ct. at 2696.


109 *Id.* (answers of Jeffrey Citron).
Madison River consent decree is reliable precedent for enforcement actions against future allegations of Internet traffic blocking by Madison River or others.

2. The Internet Policy Statement

In conjunction with its order to re-classify DSL service from a telecommunication to an information service in August 2005, the Commission issued a Policy Statement in which it adopted principles “to ensure that broadband networks are widely deployed, open, affordable and accessible for all consumers.” The statement formally adopted principles advocated in 2004 by former Commission Chairman Michael K. Powell, who urged industry to adopt “Internet Freedom” principles as a measure to insure against future regulation. In the Statement, the Commission reasserted its ancillary jurisdiction “to ensure that providers of telecommunications for Internet access or Internet Protocol-enabled (IP-enabled) services are operated in a neutral manner.” The Commission further asserted that it has “a duty to preserve and promote the vibrant and open character of the Internet as the telecommunications marketplace enters the broadband age.” However, the Commission indicated a reticence to implement this duty through mandatory network operator compliance obligations, noting that the Commission intends only to apply the principles “subject to reasonable network management.” Nonetheless, because a policy statement is not a rule and is nonbinding, the Commission is free to pursue an entirely different

110 Wireline Broadband Report and Order, supra note 68, ¶ 12.
113 Internet Policy Statement, supra note 111, ¶ 4.
114 Id. ¶ 5.
115 Id. ¶ 5, n.15.
approach than these articulated principles. The fact that the Commission
was inclined to issue such a statement, however, is indicative of the impor-
tance of the net neutrality issue and the inherent role of the FCC in Internet
governance.

D. Technology as *De Facto* Regulation


As the commercial Internet emerged in the 1990s as the seemingly unfet-
ttered frontier of Barlow’s manifesto, legal scholars like Lawrence Lessig
applied theories of architecture-as-regulation to posit that computer code
and network architecture could serve as alternative means of regulation. Just
as a variety of forces—including social norms, values, religion, and
economics, in addition to state and federal laws—create architectures of
constraints regulating human social behavior, code and network design
provide the definitions and architecture through which the development,
dissemination, and uses of the Internet manifest. As network technology
becomes more advanced, the opportunity for *de facto* regulation of online
activity increases, and the need for laws ensuring a neutral network be-
come imperative.

2. Deep Packet Inspection

Deep packet inspection ("DPI") is a technology that allows the network
to examine the data within a through-passing packet. Prior to DPI devel-
opment, packet inspection was “shallow,” meaning that the network only
“looked” at header information on packets, which contains simple routing
and addressing information. DPI-capable network devices can identify

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\[\text{[it]}\] presages an upcoming rulemaking or announces the course which the agency intends to
follow in future adjudications.” (quoting Pacific Gas & Elec. Co. v. FPC, 506 F.2d 33
(D.C. Cir. 1974)).

that “[c]ode is law”) (emphasis in original).

See supra note 24, at 122 (likening the header of an Inter-
net packet to a label on a package, “convey[ing] information about the packet’s destina-
tion.”). The “header” of a packet can be thought of as the information on the outside of
a piece of mail sent through the postal service: it contains information as to who sent it,
where it is going, and what sort of priority it might require, as signified by the type of post-
and classify the traffic passing through the network at a more detailed content level, according to specifications determined by the network owner.\textsuperscript{122} This classification mechanism permits the network to automatically regulate the conditions for network traffic, including controlling bandwidth allocations, differentiating quality of service, charging for individually metered services and access rights, and identifying “premium” traffic for preferred treatment through the network.\textsuperscript{123}

Industry leaders in networking technology products vaunt the capabilities DPI and similar technologies offer to the vertically-integrated company seeking to maximize profit across all consumer service offerings.\textsuperscript{124} One marketing document is illustrative:

> With the Internet becoming the main channel for combined data, voice and video services communication for both residential and business subscribers, the quality available by using the Internet’s inherent “best effort” approach does not satisfy customer expectations. \textit{In order for carriers to develop premium surcharges for these new premium services, it is necessary to clearly identify and manage network traffic.}\textsuperscript{125}

Simply stated, the ability to packet-discriminate, coupled with the lack of regulatory incentive to protect the public interest,\textsuperscript{126} provides network op-

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\textsuperscript{122} See Deep Packet Inspection, supra note 120.


\textsuperscript{124} See the Center for Digital Democracy Web site for industry white papers and other documents extolling the benefits of deep packet inspection, particularly for the vertically-integrated network company that seeks to promote its own content and applications over those offered by third parties. Center for Digital Democracy, http://www.democraticmedia.org/issues/netneutrality.html.


\textsuperscript{126} By declaring DSL and cable modem services “information services” unburdened by traditional public interest regulations, the FCC effectively removed incentives for private firms to promote and protect the public interest in provision of broadband Internet. Because the Internet Policy Statement is non-binding, there currently exist no regulatory requirements designed to ensure public interest concerns regarding broadband service provision. \textit{See} Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs. (“Brand X”), 545 U.S.
operators the opportunity to realize returns on investment at the expense of social welfare. As Jeff Chester, executive director of the Center for Digital Democracy, explains, DPI is "the core of the new power held by phone and cable companies." The recent gush of public statements in which top officials of such vertically-integrated communications providers as Verizon and AT&T asserted their right to regulate what content is accessed over proprietary network "pipes," by whom, and for how much, might never have surfaced if such technology did not exist to implement the proposed strategies.

IV. FAILURES OF OVERSIGHT AND ANALYSIS IN THE CURRENT REGULATORY AND ANTITRUST REGIMES: THE CASE FOR STATUTORY NET NEUTRALITY

Some telecommunications policy reform advocates encourage the adoption of a paradigm of regulation relying more heavily on an antitrust model. But antitrust laws operate ex post, often after a competitor is driven out of business, and impose a heavy burden on the wronged party to prove anticompetitive behavior. Moreover, absent a demonstration of clear competitive harm, antitrust jurisprudence directs forbearance from interference or prohibition of the challenged business practice.

Antitrust law relies on economic analyses to demonstrate whether a market enjoys sufficient competition to withhold legal or regulatory intervention. Network industries, however, often challenge traditional economic model analyses. This Part argues that antitrust laws and traditional market competition analysis are insufficient as a regulator of Internet neutrality largely because the underlying economic analyses fail to present an accurate assessment of the true costs, benefits, and incentives inherent to network industries. The government's flawed regulatory approach to competition concerns in convergent telecommunications industries, reliance on antitrust and competition policy alone will fail to ensure a neutral Internet.

967, 125 S.Ct. 2688 (2005) (holding that information services are not bound by common carrier regulations and the corresponding public interest concerns).

127 See Frischmann, supra note 17, at 1011.

128 Jeff Chester, The End of the Internet?, THE NATION, Feb. 1, 2006, http://www.thenation.com/doc/20060213/chester. Chester further notes that, while [t]hese 'deep packet inspection' technologies are partly designed to make sure that the Internet pipeline doesn't become so congested it chokes off the delivery of timely communications[...]. . . video-driven material requires a great deal of Internet bandwidth as it travels online, [and] phone and cable companies want to make sure their television 'applications' receive preferential treatment on the networks they operate.

Id.

129 See sources cited, supra note 19.

130 See, e.g., Nuechterlein & Weiser, supra note 26.

A. Failures of Imagination: the Verizon-MCI and SBC-AT&T Mergers

Comments submitted to the Commission by the American Antitrust Institute ("AAI") regarding the Verizon-MCI merger identified a major flaw in the current approach to competitive market analysis, at least in the merger context. The Horizontal Merger Guidelines created by the Department of Justice and Federal Trade Commission are the standard by which horizontal mergers are assessed for antitrust concerns. However, AAI explained, the guidelines assume that product markets are distinct and separate, and instruct competitive analyses within each relevant antitrust market rather than an analysis that takes an industry-level approach of examining the relationships between related product markets within the larger industry.

By relying on the narrower approach, regulators fail to recognize the inherent danger of monopoly leveraging in the vertically-integrated telecommunications industry. The recently approved mergers of Verizon with MCI and SBC with AT&T illustrate how this failure in competitive market analysis results in the potential for leverage of bottleneck facilities to gain or retain competitive advantage in related markets.

Significant portions of the FCC orders approving the mergers are devoted to analyses of the potential impact each merger would impart on the Internet backbone market. The "Internet backbone" refers to the physical infrastructure interconnecting the networks over which the digitized packets of information of the Internet flow. The approach and subsequent determinations of the FCC with regard to the Internet backbone market's control by the now-merged companies is a case study of the insufficiency of traditional antitrust principles to evaluate competition in a vertically-integrated, highly interdependent industry such as the converging telecommunications, video, and information services industries.

The Commission focused on the impact of both the Verizon-MCI and the SBC-AT&T mergers on the Internet backbone market solely in terms of

\[132\] In re Verizon Communications, Inc. and MCI, Inc., Applications For Approval Of Transfer Of Control, Comments of the American Antitrust Institute, WC Docket 05-75, at 7 (May 9, 2005) [hereinafter AAI Comments], available at http://www.fcc.gov/transaction/verizon-mci.html#record.


\[134\] See AAI Comments, supra note 132, at 5.

\[135\] In re Verizon Communications, Inc. and MCI, Inc., Applications For Approval Of Transfer Of Control, Memorandum Opinion and Order, 20 F.C.C.R. 18,433 (Oct. 31, 2005) [hereinafter Verizon-MCI Merger Order].

\[136\] In re SBC Communications Inc. and AT&T Corp. Applications For Approval Of Transfer Of Control, Memorandum Opinion and Order, 20 F.C.C.R. 18,290 (Oct. 31, 2005) [hereinafter SBC-AT&T Merger Order].

\[137\] See id. ¶¶ 108–144; Verizon-MCI Merger Order, supra note 135, ¶¶ 109–144 (discussing Internet backbone competition in the context of the proposed mergers).

\[138\] Verizon-MCI Merger Order, supra note 135, ¶¶ 110–12.
effect on competition within that distinct market\textsuperscript{139} and not, as urged by some commentators,\textsuperscript{140} in terms of the effects of vertical integration of Internet backbone providers (MCI and AT&T) with “last-mile” monopolists\textsuperscript{141} (Verizon and SBC). In other words, third parties argued for an approach rejecting the traditional “silo” regulation model in which each communications service is treated as if it existed in isolation from other services.\textsuperscript{142}

Numerous commentators in both dockets called upon the Commission to approach the Internet backbone competition analysis more holistically, arguing that by focusing solely on the issue of competition between backbone providers, the Commission was ignoring the impacts of Internet backbone concentration on the vast range of industries that rely on the backbone for the delivery of their services and content to the market.\textsuperscript{143} Many of the concerns raised in the comments centered on the creation of market conditions to permit or encourage discrimination against third-party Internet traffic through prioritization of proprietary packets\textsuperscript{144}—a practice contrary to net neutrality principles in general, and specifically contrary to the principles in the Commission’s own Policy Statement.\textsuperscript{145} In response, the Commission noted that,

while the merged entity may have an incentive to prioritize its own traffic using queuing or other such differentiated service mechanisms, by recent measures significant excess capacity remains on backbone networks. Thus, in the absence of affirmative ef-

\textsuperscript{139} Much of the Internet backbone market competition and concentration analysis within the approval Orders is redacted, so it is difficult to assess the exact figures upon which the Commission made its decisions. See id. at Appendix E. However, referenced comments and declarations indicate that while the merged companies’ market power would likely fall short of the level at which the Department of Justice determined would create monopoly power in the Internet backbone market, the post-merger firms would enjoy two of the top five positions in the Tier 1 market. See, e.g., In re SBC Communications Inc. and AT&T Corp. Applications For Approval Of Transfer Of Control, Declaration of Marius Schwartz, WC Docket No. 05-65, ¶ 20–26, available at http://www.fcc.gov/transaction/sbc-att.html#appdocs.

\textsuperscript{140} See In re Verizon Communications and MCI, Inc. Applications for Approval of Transfer of Control, Petition to Deny of EarthLink, Inc. and Request for Adjustment to the Schedule, WC Docket No. 05-75, at 7–8 (May 9, 2005), available at http://www.fcc.gov/transaction/verizon-mci.html#record.

\textsuperscript{141} “Last mile,” or “local loop,” refers to the telecommunications carrier’s physical wires or cables connecting the individual user premises to the nearest central circuit switch. They are bottleneck facilities and, because of cost, are difficult for competitors to duplicate, resulting in a monopoly market structure. See NUECHTERLEIN & WEISER, supra note 24, at 33.

\textsuperscript{142} See Thierer, supra note 28, at 280 (“The traditional vertical ‘silo’ model of communications industry regulation views each industry sector as a distinct set of entities that do not interact and which should be regulated under different principles.”).

\textsuperscript{143} See, e.g., AAI Comments, supra note 132.

\textsuperscript{144} See Verizon-MCI Merger Order, supra note 135, ¶ 140 and accompanying notes; SBC-AT&T Merger Order, supra note 136, ¶ 141 and accompanying notes.

\textsuperscript{145} See Internet Policy Statement, supra note 111, ¶ 4.
forts to degrade a competitor’s traffic, queuing and packet prioritization is likely to yield only very small increases in latency and packet loss in many cases.  

With this statement, the FCC asserted its belief that excess capacity on the Internet backbone would mitigate any possibility of anticompetitive leveraging of bottleneck facilities through packet discrimination. The Commission also rejected commenter claims that the mergers would dramatically alter peering arrangements among Tier 1 backbone providers and causing a fundamental shift that could force smaller, lower tier network providers out of business.

In the end, the Commission determined that the non-binding promises made by the merging companies to maintain public information about their peering and traffic management policies, and to refrain from packet or traffic discrimination of any sort, would suffice to ease any concerns raised. The Commission did not propose enforcement mechanisms which might be invoked should the merged entities renge on these promises, nor did the Commission anticipate the possibility that such nefarious conduct might easily occur without detection. In a final measure underscoring the Commission’s lack of concern over the possibility of discriminatory Internet traffic practices, the few meager non-discrimination merger conditions the Commission did impose are scheduled to end in November 2007.

B. Antitrust Laws are Insufficient Deterrents to Discrimination

Harold Feld, senior vice president of the Media Access Project, recently observed:

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146 Verizon-MCI Merger Order, supra note 135, ¶ 142 (internal citations omitted).
147 In a peering arrangement, two Internet backbone providers of roughly equal size agree to hand-off to each other the traffic originating on one backbone network for delivery to a point on the other’s network. Because these arrangements are mutually beneficial, they rarely involve an exchange of money. See NUECHTERLEIN & WEISER, supra note 24, at 132.
148 Internet backbone providers whose global networks are of such scale and capacity that they have no need to purchase transit services from other backbone providers are considered “Tier 1.” Id. at 133.
149 See Verizon-MCI Merger Order, supra note 135, ¶ 128; SBC-AT&T Merger Order, supra note 136, ¶ 129; see also In re SBC Communications Inc. and AT&T Corp. Applications For Approval of Transfer Of Control, Opposition of Broadwing Communications, LLC, and SAVVIS Communications Corporation, WC Docket No. 05-65 (Apr. 25, 2005), available at http://www.fcc.gov/transaction/sbc-att.html#record.
150 See Verizon-MCI Merger Order, supra note 136, ¶ 109; SBC-AT&T Merger Order, supra note 134, ¶ 108.
151 See Verizon-MCI Merger Order, supra note 135, app. G; SBC-AT&T Merger Order, supra note 136, app. F; see also Arshad Mohammed, The Titans of Telecom Face Off, Wash. Post, Mar. 7, 2006, at B1 (“As a condition of approval for both the Verizon-MCI and SBC-AT&T mergers last year, the companies agreed not to impose restrictions on Internet traffic, which in effect would enable some programs to work better than others. That provision sunsets two years after the close of those mergers.”).
Anyone taking a serious look at the track record on antitrust in network environments understands why antitrust doesn't cut it. As I have observed before, Netscape won its antitrust action against [Microsoft]. While no doubt providing some moral satisfaction, it did little to restore Netscape's fortunes or restore the benefits of browser competition to consumers.\(^{152}\)

Even with its reminder of the unfortunate effects of a long-fought litigation, Feld's observation presumes that a network firm today could raise an antitrust claim sufficient to triumph over a rogue dominant player. Current antitrust laws purport to serve as a deterrent to discriminatory and predatory behavior by dominant firms, but often in fact serve to bolster dominant players through a litigation system which demands a non-uniform case-by-case adjudication, a lengthy fact-finding procedure, and an adversarial process which can undermine business models, endangering a litigant's economic success while it seeks relief through litigation.\(^{153}\)

Furthermore, recent precedent indicates that once-reliable doctrines such as the essential facilities doctrine are no longer available as foundations for antitrust actions. At the same time, economic theory has not yet infiltrated the courts to permit a finding on whether vertical foreclosure is a viable antitrust claim in network industries.

1. Essential Facilities Doctrine

An essential facility is a facility over which a monopolist controls access and which is not easily duplicated by competitors but necessary for their success.\(^{154}\) Although a monopolist by definition does not normally "share" its facilities, an antitrust concern arises where there is opportunity to "extend monopoly power from one stage of production to another, and from one market into another."\(^{155}\) The "essential facilities doctrine"\(^{156}\) obliges firms that control such a facility to make it available to rivals and complementary firms on non-discriminatory terms,\(^{157}\) and imposes liability\(^{158}\) where a failure to

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\(^{154}\) "To be 'essential' a facility need not be indispensable; it is sufficient if duplication of the facility would be economically infeasible and if denial of its use inflicts a severe handicap on potential market entrants." Hecht v. Pro-Football, Inc., 570 F.2d 982, 992 (D.C. Cir. 1977) cert. denied, 436 U.S. 956 (1978).

\(^{155}\) MCI Commc’ns Corp. v. AT&T, 708 F.2d 1081, 1132 (7th Cir. 1983).

\(^{156}\) *See Hecht*, 570 F.2d at 992-93 ("The essential facility doctrine, also called the ‘bottleneck principle,’ states that ‘where facilities cannot practicably be duplicated by would-be competitors, those in possession of them must allow them to be shared on fair terms. It is illegal restraint of trade to foreclose the scarce facility.’" (quoting A.D. Neale, *The Antitrust Laws of the United States* 67 (2d ed., 1970))).

\(^{157}\) MCI Commc’ns Corp., 708 F.2d at 1132.
provide such access demonstrates an unlawful use of monopoly power under Section 2 of the Sherman Act.\textsuperscript{159}

In *Otter Tail Power Co. v. United States*, the Supreme Court held that an electrical utility had illegally monopolized an essential facility in violation of the Sherman Act by refusing to deal through interconnection and wholesale agreements.\textsuperscript{160} Otter Tail Power denied competitors interconnection to its electric power supply and distribution, thereby foreclosing competition in wholesale sales.\textsuperscript{161} Although the power generation and distribution network is never explicitly referred to as an “essential facility,” the Court in *Otter Tail Power Co.* implicitly adopted the rationale later explicated by the 7th Circuit in *MCI v. AT&T* to impose liability under the essential facilities doctrine.\textsuperscript{162} It follows that a broadband network provider who denies a third-party content or VoIP provider access to its subscribers in order to preserve its market power is also illegally monopolizing an essential facility.\textsuperscript{163} Because most Internet users access the Internet through a single provider, that provider has a monopoly over the consumer’s Internet experience. Furthermore, because the vast majority of United States markets have two or fewer broadband network access providers, those providers control an essential facility through which consumers access content.\textsuperscript{164}

\begin{itemize}
\item \textsuperscript{158} “[F]our elements [are] necessary to establish liability under the essential facilities doctrine: (1) control of the essential facility by a monopolist; (2) a competitor’s inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility.” *Id.*, at 1132-33 (citing *Hecht*, 570 F.2d at 992–93).
\item \textsuperscript{159} “The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.” *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966). Once monopoly power is proven, a § 2 violation occurs where that power is used to """to foreclose competition, to gain a competitive advantage, or to destroy a competitor."" *Eastman Kodak Co. v. Image Technical Servs.*, Inc., 504 U.S. 451, 482–83 (1992) (quoting *United States v. Griffith*, 334 U.S. 100, 107 (1948)).
\item \textsuperscript{160} “Otter Tail used its monopoly power in the towns in its service area to foreclose competition or gain a competitive advantage, or to destroy a competitor, all in violation of the antitrust laws.” *Otter Tail Power Co. v. United States*, 410 U.S. 366, 377 (1973).
\item \textsuperscript{161} See *id.*
\item \textsuperscript{162} *Id.* at 378 (comparing the difficulty faced by competitors in duplicating the facilities to the relative ease with which Otter Tail Power could interconnect and resell the power to competitors, and concluding that Otter Tail Power’s refusals were solely to preserve its monopoly); accord. *MCI Commc’ns. Corp.*, 708 F.2d at 1133. Holding AT&T liable for illegally denying access to its essential facility, the 7th Circuit found that “Otter Tail provide[d] an analogy to the instant problem,” and applied the analysis employed in that case to the dispute between MCI and AT&T. *Id.*
\item \textsuperscript{164} P E W  I N T E R N E T & A M. L I F E  P R O J E C T, R U R A L  B R O A D B A N D  I N T E R N E T  U S E  2 (2006), http://www.pewinternet.org/pdfs/PIP_Rural_Broadband.pdf (finding that 90% of consumers have two or fewer choices in broadband providers).
\end{itemize}
Unfortunately, the essential facilities antitrust doctrine is an inadequate deterrent to discriminatory behavior by broadband network operators because it is not an independent cause of action.\(^6\) Moreover, it is not a doctrine specifically recognized by the Supreme Court, although it has been adopted by a majority of the lower federal courts and incorporated without name by the Supreme Court in the past.\(^6\) In order to prevail on an antitrust claim, a competitor must assert a claim of unlawful monopolization under the Sherman Act,\(^6\) with the preclusion of access to the "essential facility" as the supporting fact. It is well-settled that monopolization gained through lawful means is not illegal under antitrust law.\(^6\) Unless control of the facility confers monopoly power that is being used in a manner that is \textit{per se} illegal, the essential facilities doctrine offers no relief. Given that the broadband facility provider market is not considered to be monopolized, as evidenced by the Department of Justice and the FCC’s approval of mergers between major broadband network providers, SBC-AT&T and Verizon-MCI, with no divestiture requirements,\(^6\) a claim of illegal exertion of monopoly power would be very difficult to prove.

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\(^6\) See Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP ("Trinko"), 540 U.S. 398, 410-11 (2004) ("This conclusion would be unchanged even if we considered to be established law the 'essential facilities' doctrine crafted by some lower courts . . . . We have never recognized such a doctrine, and we find no need either to recognize it or to repudiate it here."); see also AT&T Corp. v. Iowa Utilities Bd., 525 U.S. 366, 428 (1999) (Breyer, J., concurring in part and dissenting in part) (noting that the Court has never adopted the essential facilities doctrine). \textit{But cf.} Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 611 n.44 (1985) (acknowledging the existence of the "essential facilities" doctrine, but declining to analyze its relevance to the instant case). Nevertheless, the Court has in numerous instances applied the principles of the essential facilities doctrine in antitrust cases in which there is an alleged refusal to deal. See generally Pitofsky, et al., supra note 161, for a discussion of applications of the principles of the "essential facilities doctrine" in Supreme Court decisions since 1912.

\(^6\) Sherman Act, 15 U.S.C. § 2 (2000); see also United States v. Microsoft Corp., 253 F.3d 34, 50 (D.C. Cir. 2001) ("The offense of monopolization has two elements: '(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.").") (quoting United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966)).

\(^6\) "The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system . . . . To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive \textit{conduct}." \textit{Trinko}, 540 U.S. at 407; see also United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966). A monopoly is illegal only where the monopolist also demonstrates "the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." \textit{Id.}

\(^6\) See discussion supra Part III.A.
2. Vertical Foreclosure and Refusal to Deal

Vertical foreclosure is the exclusion of competitors from a sub-market by a dominant firm who refuses to sell to sub-rivals access to an essential facility or "bottleneck." Economists and courts have long dismissed anti-trust claims based on vertical foreclosure for the simple reason that classical economic theory presumes that no firm would willingly refuse sales, even temporarily, as a strategy to achieve dominance in a vertically-related market in the distant future. New economic theory challenges this belief and points toward an opposite conclusion: owners of a bottleneck facility may actually find tremendous incentives to refuse to deal with vertical input providers, and by doing so may in fact enhance existing market domination in the bottleneck market. In the presence of economic incentives to discriminate, regulation to preserve net neutrality is crucial. However, this theory has yet to be recognized by the courts and therefore vertical foreclosure law does not offer a viable deterrent to exclusive behavior.

C. Market Economics Are an Insufficient Control: Concentrated, Vertically-Integrated Networked Markets Create Incentives to Discriminate

The problem of competition among traditional cable and telephone monopolies is complex. On the one hand, the deregulatory spirit guiding economic regulation in the United States for the past quarter of a century has realized its goal: the elimination of state-sanctioned monopolists in favor of a more competitive landscape. However, the nature of network industries necessarily implicates concentration and vertical integration, eviscerating idealistic visions of multiple telecommunications, video and broadband providers in every market. Furthermore, whereas traditional market economics teaches that monopolistic and oligopolistic industries usually do not present incentives to discriminate against providers of complementary services, the economics of networked industries and their increasing vertical integration changes the equation.

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171 *Id.* at 823–24.
172 See discussion of incentives to discriminate *infra* Part IV.C.3.
174 *Id.* at 540–41 (explaining that the only viable response to instability and competition in these industries is concentration).
1. Nature of Network Industries

Network industries are those in which network effects, economies of scale, switching costs and lock-in, and standards have tremendous influence on the way in which the market behaves. Network effects are the phenomenon in which the average value of a network to current and potential customers increases dramatically as the size of the network increases. This is true in telecommunications, where a single telephone has no value unless connected to a network linking other telephones; in cable television, because a cable operator needs the appropriate revenue and audience demographics to acquire programming, which then attracts more subscribers and greater revenue; and the Internet, which benefits from both the value of communication and the audience for content development. Network effects often create an occurrence in the market known as “tipping,” an effect of positive feedback forces common to network industries. Positive feedback is the propensity of firms in a network market, once on a trajectory, to continue on that trajectory. In such a scenario, consumers select and perpetuate larger networks based on the value imbued by network effects, thereby squeezing out lesser competitors. This

175 For an overview of network economics and networked industries, see generally CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY (1998).

176 Network effects are exhibited in “markets in which the value that consumers place on a good increases as others use the good.” Mark A. Lemley & David McGowan, Legal Implications of Network Economic Effects, 86 CAL. L. REV. 479, 481 (1998).

177 “[A]n individual consumer’s demand to use (and hence her benefit from) the telephone network . . . increases with the number of other users on the network whom she can call or from whom she can receive calls.” Howard A. Shelanski & J. Gregory Sidak, Antitrust Divestiture in Network Industries, 68 U. CHI. L. REV. 1, 8 (2001); see also Lemley & McGowan, supra note 169, at 488-89 (“[O]wning the only telephone . . . in the world would be of little benefit because it could not be used to communicate with anyone. The value of the telephone . . . one has already purchased increases with each additional purchaser . . . .”).


179 See Lemley & McGowan, supra note 176, at 560. Internet network effects are demonstrated in “the positive value placed on the ability to contact other people via the Internet and from the access to information from a wide variety of different sources.” Id.

180 See United States v. Microsoft Corp., 253 F.3d 34, 49 (D.C. Cir. 2001) (“In markets characterized by network effects, one product or standard tends towards dominance, because ‘the utility that a user derives from consumption of the good increases with the number of other agents consuming the good.’” (quoting Michael L. Katz & Carl Shapiro, Network Externalities, Competition, and Compatibility, 75 AM. ECON. REV. 424, 424 (1985))).

181 This trajectory can be a “virtuous cycle,” whereby the success of a firm feeds on itself, or the trajectory can become a “vicious cycle,” in which a failing firm continues to weaken. See SHAPIRO & VARIAN, supra note 175, at 175-76.

182 See id. at 176-77; see also Microsoft, 253 F.3d at 49 (“Once a product or standard achieves wide acceptance, it becomes more or less entrenched.”).
results in a concentrated or "tipped" market in which new competitive entry is essentially impossible. Because the value of the network is inextricably linked to the number of users with whom each consumer may communicate, or the number and variety of complimentary and compatible goods and services, network effects create demand-side economies of scale. Larger networks will continue gaining market share at the expense of smaller competitors until the market tips toward the domination of a single firm or a very small number of competing firms, known as an oligopoly.

Network industries are also defined by substantial supply-side economies of scale. Whereas in demand-side economies of scale, revenues increase as the demand scale increases, supply-side economies demonstrate an average cost decrease with scale. Network industries almost always exhibit tremendous fixed costs (the cost to build the physical network), with minimal marginal costs (the cost to add an additional user to the network, for example). As a result, network firms will see a declining average cost curve over time; yet, because of network effects, the firm will also enjoy increasing returns to scale in terms of revenues as demand increases over the majority of the downward cost curve. This cost structure has implications for product pricing and on the ability of new entrants to compete. First, the combination of demand-side and supply-side economies of scale results in "price-making," or the pricing of products at the discretion of the producer rather than the market. Firms with such discretion may engage in predatory pricing (pricing below marginal cost) in order to eliminate smaller

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183 See SHAPIRO & VARIAN, supra note 175, at 176–77.
184 See NAT'L RESEARCH COUNCIL COMPUTER SCI. AND TELECOMM. BD., supra note 34, at 42 (“This tippiness of the Internet marketplace suggests a pattern of highly concentrated markets and market leaders who greatly outdistance their competitors. . . .”)
185 See BLACK’S LAW DICTIONARY 1120 (8th ed. 2004) (“Oligopoly is the control or domination of a market by a few large sellers, creating high prices and low output similar to those found in a monopoly.”).
186 See id. at 24 (“[M]any information and technology-related businesses have cost structures with large fixed costs and small, or even zero, marginal costs.”). See also Hannibal Travis, Wi-Fi Everywhere: Universal Broadband Access as Antitrust and Telecommunications Policy, 55 AM. U.L. REV. 1697, 1716 (2006) (“[T]he marginal and average total costs of delivering broadband to the millionth user of an existing broadband network will tend to be much lower than to the tenth user to a newly constructed network.”).
187 Id. at 34 (discussing this phenomenon in the context of software).
188 Id. at 34 (discussing this phenomenon in the context of software).
189 See WILLIAM J. BAUMOL, AEI-BROOKINGS JOINT CTR. FOR REGULATORY STUDIES, REGULATION MISLED BY MISREAD THEORY: PERFECT COMPETITION AND COMPETITION-IMPOSED PRICE DISCRIMINATION 5 (2005), available at http://www.aei-brookings.org/admin/authorpdfs/page.php?id=1257 (asserting that, while it is well-established that firms with high sunk or fixed costs will price-discriminate, firms might also be forced to do so in competitive markets).
rivals from the market.\textsuperscript{190} Then, as their market power\textsuperscript{191} becomes entrenched, firms are able to raise prices well above cost because, in the absence of viable competition, traditional pressures on price are nonexistent.\textsuperscript{192}

The inherent pressure to retain market dominance, or at least the ability to enjoy demand-side economies of scale, causes some network firms to merge horizontally to capitalize on a larger network of users and the correlated increased value of the network.\textsuperscript{193} As the market reaches equilibrium, either naturally or through regulatory or antitrust conditions, firms must find creative ways to continue to retain value in order to retain pricing levels that allow sufficient investment returns. Because that ability is inexorably tied to demand-side economies of scale, network operators also are enticed to integrate vertically with applications and content input firms in order to satisfy current user demand and to protect the firm's position in the market.

\begin{quote}
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See BLACK'S LAW DICTIONARY 1120 (8th ed. 2004). Market power confers on a firm the "ability to reduce output and raise prices above the competitive level—specifically, above marginal cost—for a sustained period, and to make a profit by doing so. In antitrust law, a large amount of market power may constitute monopoly power." \textit{Id.}
\end{quote}

\begin{quote}
The United States Department of Justice described the scenario in which a network market tips and the dominant firm is able to control pricing thusly: [w]hen a single network grows to a point at which it controls a substantial share of the total Internet end user base and its size greatly exceeds that of any other network, network externalities may cause a reversal of its previous incentives to achieve efficient interconnection arrangements with its rival networks. In this context, degrading the quality or increasing the price of interconnection with smaller networks can create advantages for the largest network in attracting customers to its network . . . . Once the market begins to "tip," connecting to the dominant network becomes even more important to competitors. This, in turn, enables the dominant network to further raise its rivals' costs, thereby accelerating the tipping effect . . . . Ultimately, once rivals have been eliminated or reduced to "customer status," the dominant network can raise prices to users of its own network beyond competitive levels. Once this occurs, restoring the market to a competitive state often requires extraordinary means, including some form of government regulation.
\end{quote}

Complaint ¶ 41, United States v. WorldCom, Inc. and Sprint Corp. (D.D.C. June 27, 2000).

\begin{quote}
See Noam, supra note 173, at 540–41. Noam explains that "low marginal costs, high fixed costs, inelastic demand, positive network externalities, lags in supply, disinvestment and regulation, and a Wall Street short-term perspective . . . ." promote industry concentration, effected by horizontal mergers. \textit{Id. See also} NUECHTERLEIN & WEISER, supra note 24, at 423.
\end{quote}
2. From Monopoly to Competition to Oligopoly

Both telecommunications and cable television were the products of monopoly regimes.\textsuperscript{194} Telecommunications provided by AT&T were regulated as a "natural" monopoly spanning the majority of the United States. Cable was subjected to less federal oversight but beholden to state public utility commissions for franchise rights, which usually granted a single cable firm monopoly rights for specific geographic areas.\textsuperscript{195} The relevant product markets were distinct (no one was likely to confuse a phone for a television) and the facilities for delivery of the respective services were markedly different.\textsuperscript{196} The advent of the Internet during the 1990s as a commercial offering for public use\textsuperscript{197} began to blur these distinctions. Cable and telecommunications companies encountered a prospect unprecedented in the "silo" regulatory era: cross-industry competition in service provision—here, the provision of Internet access. Alas, while proliferation of broadband Internet access has occurred, the numbers of providers, and consumer choice in providers, has fallen short of the ideal. In 2006, according the Pew Internet and American Life Project, "90% of [all residential broadband] subscribers have cable modems or DSL, with cable and DSL splitting that market share."\textsuperscript{198} Thus, broadband Internet provision across the United States as a whole is a highly concentrated,\textsuperscript{199} oligopolistic industry, with the majority of local markets served by a monopoly or duopoly of firms.\textsuperscript{200}

\textsuperscript{194} See NUECHTERLEIN & WEISER, supra note 24, at 12–13.
\textsuperscript{195} See discussion of cable regulation, supra Part III.B.4.
\textsuperscript{196} Traditionally, telecommunications services were provided via copper wires strung or laid between homes and business and a central circuit switch. See NUECHTERLEIN & WEISER, supra note 24, at 32–36. Cable television was historically provided over coaxial cables connecting homes and buildings to a central office from which programming was distributed. Id.; see also DAVID GARBIN & JOSEPH PECAR, THE McGRAW-HILL NEW TELECOM FACTBOOK 364 (2d. ed. 2000). Copper telecommunications wires lacked the capacity to distribute video services, and technologies for the delivery of real-time voice were not advanced enough to reliably transmit telecommunications over coaxial cable as late as the year 2000. Id. at 355.
\textsuperscript{197} The National Science Foundation ("NSF") developed the NSFNET in the 1980s, hoping to replicate the success of ARPANET to connect universities across the United States; the NSFNET rapidly expanded to become the first nationwide Internet backbone. In 1993, the NSF began to privatize portions of the network, until a complete hand off to commercial entities occurred in 1998. See National Science Foundation, A Brief History of NSF and the Internet, August 13, 2003, http://www.nsf.gov/news/news_summ.jsp?cntn_id=103050.
\textsuperscript{198} PEW INTERNET & AM. LIFE PROJECT, supra note 164, at 2.
\textsuperscript{199} See Travis, supra note 187, at 1721 ("[T]he typical local broadband market has an HHI concentration level of 5,000, three times what the Department of Justice considers to be highly concentrated.").
\textsuperscript{200} See PEW INTERNET & AM. LIFE PROJECT, supra note 164, at 2; see also Travis, supra note 187, at 1721 ("Many consumers have only one broadband choice to make: between a single DSL and a single cable broadband provider.").
3. Incentives to Discriminate

In a perfect economic world, network operators and consumers would share the same goal for the Internet: a neutral platform that supports the emergence of innovative and desirable content and applications. Accordingly, network operators focused on long-term results will recognize that the more robust the availability of content and applications, the greater demand and use of the network, and the greater the ability to capitalize on that demand. The idea that dominant firms will welcome rather than exclude independent producers of complementary products is known as the "internalization of complementary efficiencies." Thus, the "network owner's natural instinct [will] be to open up its network to all content and applications providers, because doing so [will] maximize the value of its network and thus maximize the amount that it [can] charge for network access." Network operators should therefore find the benefits of inclusion so advantageous as to adhere to net neutrality principles voluntarily, eliminating the need for prescriptive regulation. However, network operators often implement limits and discriminatory policies against emerging applications because the firms are focused on protectionist short-term gains associated with stifling competition and limiting network capacity.

Recent economic analysis by Barbara van Schewick expands the bases on which network operators might justify such conduct, positing that the nature of network industries creates tremendous incentives to discriminate even in the face of competition. Van Schewick notes that "[i]t is usually assumed that competition in the market for Internet services will restrict a network operator's ability and incentive to discriminate against independent content, portals or applications." In other words, a network operator depends on the existence of varied and abundant content and services in

202 See van Schewick, supra note 51, at 5; see also Farrell & Weiser, supra note 49, at 100-105 for a more thorough discussion of the internalization of complementary efficiencies concept in the Internet industry.
203 See Yoo, supra note 22, at 1888.
204 See Yoo, supra note 130, at 7.
84. Wu & Lessig explain that prior concerns regarding cable companies' restrictions on customers use of Virtual Private Networks highlighted "a problematic tendency: the restriction of new and innovative applications that broadband operators see as either unimportant, a competitive threat, or a chance to make money." Id.
206 See van Schewick, supra note 51, at 25-27.
207 Id. at 26.
order to generate demand among consumers for his conduit service. He would therefore be disinclined to discriminate against those offerings because a competitor conduit service could lure customers away by offering a less-, or non-discriminatory service. This assumption supports the policy approach that “fostering facilities-based competition, i.e., increased competition between operators of different physical networks, will mitigate a network provider’s ability and incentive to discriminate.” This assumption is remarkably similar to the assumptions employed by the FCC in concluding that the amount of excess infrastructure capacity in the Internet backbone market would mitigate discrimination by the post-merger firms AT&T and Verizon.

Van Schewick argues that such assumptions are incorrect, primarily because they presume a traditional, “one monopoly rent” market structure in which there is only one monopoly profit source in a market and therefore no incentives to discriminate or exclude rivals in complementary, adjacent markets. In network industries, increasing returns to scale in fact offer incentives similar to those in antitrust tying scenarios, in which complementary products allow the single firm to collect in excess of the one monopoly rent where additional revenue streams may be associated with the complementary product. For example, a company selling monopolized broadband Internet service bundled with a portal service could, per the “one monopoly rent” theory, only collect one monopoly price for the bundled service; because the company controls the underlying facility and can therefore charge the monopoly price for access to it, monopolizing the complementary portal market would not offer additional profit. However, if the portal is supported by an outside revenue stream like advertising, the company has an incentive to capture the portal market in order to garner the additional revenue stream. This example demonstrates that the broadband provider may reap monopoly profits in the bundled service market as well as the market for portal advertisers.

There is an argument to be made that vertical integration enabling a firm to realize multiple monopoly profits is simply a demonstration of superior business acumen, and not behavior to be maligned. As Tim Wu points out,

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208 See Yoo, supra note 22, at 1888.
209 See van Schewick, supra note 51, at 26.
210 See discussion supra Part IV.A.
211 van Schewick, supra note 51, at 5, 26. A proponent of the one monopoly rent theorem, Christopher Yoo argues that “owners of bottleneck facilities have [no] systematic incentives to expand into vertically related markets for the simple reason that there is only one monopoly rent generated by any vertical chain of production and a monopolist can extract the entirety of that rent without vertically integrating simply by charging the monopoly price for the bottleneck facility.” Yoo, supra note 22, at 1888.
212 See Lemley & McGowan, supra note 176, at 496 (“Increasing returns also raise questions about the possibility of effectively leveraging a monopoly from one market to another, an argument most commonly associated with antitrust tying claims.”)
even monopolists theoretically have an incentive to minimize input costs.\[^{213}\] If a firm elects to internalize a complementary function for cost and efficiency reasons, should the firm be penalized for failure to offer equal access to less efficient competitors? The problem with this approach is that it is nearly impossible to determine, without the sort of disclosures revealed in litigation, that a firm has engaged in exclusion strictly for efficiency rather than for leveraging reasons.\[^{214}\] Moreover, exclusion of rivals, vertical and horizontal, is usually believed to require monopoly power.

The traditional definition of monopoly includes the ability to exclude rivals from the market.\[^{215}\] In the Internet industry, however, technology provides the ability to exercise exclusionary tactics with or without monopoly power, offering companies in competitive markets the ability to exclude rivals in a way never before possible.\[^{216}\] Through excluding a rival’s complementary product from access to the network provider’s customers, the network provider can increase the sales and the perceived value of its own complementary product.\[^{217}\] “The exclusion of rivals may protect the network provider’s competitive position in the market for Internet services, even if it faces competition in this market. Such an incentive may occur when an Internet transport provider offers proprietary content and applications exclusively to its transport customers.”\[^{218}\] Even more disturbing, exclusionary tactics appear to have few negative repercussions for network providers. Theoretically, the existence of competing firms in a market increases the costs of exclusionary behavior to that individual firm.\[^{219}\] In a competitive environment, the incentive for consumers to switch from a provider engaged in exclusionary tactics is expected to discipline errant firms.\[^{220}\] In the market for broadband network provision, however, several factors alter this typical result.

The first factor is the general lack of competition among broadband network providers in the United States.\[^{221}\] The majority of Americans who do enjoy a choice among broadband providers have only two options: DSL

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\[^{214}\] See id.


\[^{216}\] See *supra* Part II.D. for a discussion of the technological means available to exclude rivals.

\[^{217}\] van Schewick, *supra* note 51, at 27.

\[^{218}\] Id. at 29.

\[^{219}\] See id. at 30.

\[^{220}\] See Yoo, *supra* note 22, at 1888 (“The failure of early proprietary services provided by America Online, CompuServe, and Prodigy attests to the market’s ability to discipline network owners who attempt to impose closed architectures on consumers who prefer open ones.”).

Due to a difference in capacity and bit-rates, however, DSL and cable are arguably not adequate substitutes. High-bandwidth consumers—people who dedicate much of their Internet usage to high-bandwidth content and applications such as streaming media and online gaming—are not likely to perceive a DSL product offering a maximum download speed of less than 10 megabytes per second as an acceptable substitute for cable modem service offering download speeds that are three times faster. Because "consumers perceive cable modem service as being premium," high-bandwidth cable customers in particular will have a high threshold for tolerating exclusionary behavior by the network operator. The amount of exclusionary conduct tolerated by the consumer illustrates the high switching costs inherent in the broadband network provider market.

Second, even assuming healthy competition, exclusionary conduct by a network operator, particularly one with a large, established customer base, can drive the producers of the excluded application or content from the market entirely. Once the producers of the excluded content are no longer in operation, the consumer has no incentive to switch network providers because the desired, excluded product no longer exists. For example, should a large network service provider such as Comcast desire to eliminate a rival to their nascent VoIP offering through exclusion, there is minimal threat of customer leakage. This is both because the alternative is a less-than-perfect substitute and because the rival VoIP firm’s inability to access the vast network of Comcast subscribers (and the positive network effects associated with such access) could diminish the viability of the firm to the point of bankruptcy. The relatively low cost of such exclusionary behavior is compelling for firms seeking to minimize the burdens of

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222 See supra notes 198–200 and accompanying text.
223 For two products to be competitors, they must be seen as substitutes, meaning that a consumer could select either one for a particular use. Cable and DSL Internet access are not perfect substitutes. Robert Marich, *Cable Modem Vs. DSL: Rivals Side-Step Big Price Wars So Far*, KAGAN RESEARCH INSIGHTS, July 06, 2006. http://www.kagan.com/ContentDetail.aspx?group=5&id=216.
224 See id. ("Cable systems have increased their download speeds to a maximum of 30 mbps . . . . Telephone-wire based digital subscriber lines (DSL) generally have slower download speeds in the low-single-digits of Mbps . . . .")
225 Id.
226 Id. at 30.
227 Van Schewick, supra note 51, at 27.
228 See Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 YALE L.J. 209, 224 (1986). Exclusion by use of code is less complicated and taxing than the traditional methods in which firms seek to exclude rivals, thus the costs may be internalized. For example, "contracts for exclusionary rights can have the effect of raising rivals’ costs by restraining the supply of inputs available to rivals, thereby giving the purchaser power to raise prices in its output market." Id. However, in order to achieve that result, the firm must first enter into long-term contracts requiring negotiations, compromises and changes to business practices, all of which are costly to the business (at least in the short-term) and raise the potential for public scrutiny
high-bandwidth or high-volume exterior traffic on their network. The incentive to exclude is even greater when the excluding firm offers a product which will gain market share in the absence of the excluded competing product.

Finally, increasingly intelligent networks offer operators the ability to discriminate against, rather than completely exclude, rivals.229 Technological advancements such as DPI permit instantaneous detection of the type of application or content attempting to traverse the network, and provide the network operator the ability to deploy methods for allocating and delivering that traffic according to proprietary specifications.230 The incentives to discriminate are even greater than the incentives for exclusion. Because “discrimination works indirectly by changing the consumers’ perception of the quality of a rival’s offering[,]” consumers are likely to assume the rival offering is less desirable and may abandon its use without investigating the true cause of the deterioration of service quality.231 The consumer is then induced to embrace the competing product offered by the network operator because it is believed to be of a higher quality.232 Discriminatory practices are more insidious and therefore more detrimental to the market than direct exclusion because the consumer does not perceive that her choice has been restricted.233 Where there is no perceived wrong, there is no incentive to switch providers and no outcry to alert government or consumer groups to foul play. As the network provider market grows increasingly concentrated and vertically integrated, the incentive to capture monopoly profits at all levels of the vertical hierarchy intensifies,234 and the ability to employ discrimination to achieve those goals without negative impact becomes all the more enticing.

V. THE NEED FOR STATUTORY SOLUTIONS

Some have argued that addressing network neutrality through statute or FCC action would create a solution in need of a problem.235 Indeed, Com-

See id. Technological exclusion mechanisms place far fewer demands on the business. See supra Part II.D.

See van Schewick, supra note 51, at 31.

See, e.g., discussion supra Part III.D.2.

See van Schewick, supra note 51, at 31.

Id.

Id.

Id.

234 This is mostly a result of the fact that the cost to add a range of complementary service subscriptions onto a current broadband subscription will be lower than finding and adding an unfamiliar customer. The promise of customer retention is great, given the switching costs and perceived lower quality of rival offerings. See supra Part III.C.1.

mission Chairman Kevin Martin told the *Wall Street Journal* in August, 2005, that there is no evidence that network owners are implementing content restrictions.\footnote{Schatz & Squeo, supra note 235, at A1. Chairman Martin also expressed his belief that, even if there was a problem, the market would correct abuses. *Id.*} The U.S. Internet Industry Association claimed, in a 2006 white paper arguing against net neutrality legislation, that “no dire plans to choke off Internet access have been implemented, no consumers have been injured, and none of the parties have announced programs (or have any incentive to implement programs) that would be to the detriment of the nation or its consumers.”\footnote{DAVID P. MCCLURE, U.S. INTERNET INDUS. ASSN., NETWORK NEUTRALITY: PHANTOM PROBLEM, UNINTENDED CONSEQUENCES: A PRIMER FOR REGULATORS, LEGISLATORS AND THE MEDIA ON ‘NETWORK NEUTRALITY’ 3 (2006), available at http://www.usiia.org/pubs/NNPrimer.doc.} Assertions that no problem currently exists are immaterial where evidence of desire, incentive, and ability point to a different conclusion. Nevertheless, opponents of net neutrality assume that the market, bolstered by competition among broadband providers and the ability for consumers to switch providers is sufficient to prevent anti-competitive exclusion, and they disregard the insidiousness of discriminatory traffic management.\footnote{See, e.g., Hazlett, supra note 27. Hazlett also opposes net neutrality regulation, arguing that “[t]he [I]nternet is built, and grows, on the back of private property rights. Market structures that nurture innovative entrants have not been imposed by ‘design,’ but have spontaneously emerged from ‘invisible hand’ of self-interest.” *Id.*; see also Randolph J. May, A Better Idea For Net Neutrality, CNET NEWS.COM, Mar. 15, 2006, http://news.com.com/2010-1028_3-6048882.html (“ Adoption of a broad Net neutrality prohibition will impose monopoly-era public-utility-style regulation on new broadband services in an era characterized by competition.”).}

Whether discriminatory or exclusionary practices by network operators can be rationalized or rejected based on competition theory or market economics is irrelevant to the reality of industry conditions today. The rationale for regulatory intervention in network neutrality may be found not in explicit evidence of abusive or restrictive behavior of network operators, but in the lack of such evidence. Technology now provides network operators with the means to implement exclusion and discrimination without the knowledge of consumers or regulators. Absent flagrant and cognizable conduct by which consumers and rival providers become aware of a discrimination or exclusion, network providers could easily implement such tactics undetected.\footnote{The blocking of VoIP traffic by Madison River is an example of detection of exclusionary tactics by a rival. *See supra* note 107 and accompanying text.} Moreover, because the economic incentives for such conduct are so great and the current penalties are meager to non-existent, it is foolish to assume that the same companies publicly advocating rejection

of net neutrality will suddenly elect against employing discrimination and exclusion on their networks. Regardless, says James Suloweicki of the New Yorker, "providers insist that they have no plans to block access or degrade service to those who don’t pay a premium rate. But if some companies are getting better service, then all the others are getting worse service." 240

Some net neutrality regulation opponents stress that there are already safeguards in place at the federal level to protect consumers, contending that "the FCC or Congress will step in if incumbent networks are blocking or discriminating in ways that consumers can observe." 241 Given the previous reticence of these bodies to interfere with the Internet, it is difficult to imagine the FCC or Congress swooping in to rescue the consumer from such discrimination without a mandate. 242 Furthermore, the flaw in this argument is not only that it assumes the government will intervene on behalf of the wronged consumer, but that the consumer is only wronged if the discriminatory or exclusionary behavior is readily observed. The premise ignores the possibility and, indeed, the probability, that network operators will discriminate in a manner likely to go undetected by the average consumer.

As part of an overall effort to rewrite or reform the Communications Act, several bills have been proposed that address, among other issues, the concern over net neutrality. 243 For any net neutrality legislation to be effective, Congress must ensure that it contains enforcement mechanisms to hold the industry accountable, or risk leaving users of the Internet at the mercy of undisclosed control by the owner-operators of the network. Because network facilities operators currently are not required to disclose their packet prioritization or routing preference policies, consumers could become captives of a regulated market—one artificially regulated by the corporations themselves.

Detractors of net neutrality regulation argue that a truly robust, competitive broadband market will emerge only if broadband network operators are permitted to discriminate using models that vary the levels of access a user is allowed, and by traffic discrimination. 244 Thomas W. Hazlett, a former FCC chief economist, contends that "no single [net neutrality] policy mandate, articulate or clumsy, would capture the efficiencies that emerge from the trials and errors of the market." 245 This theory ignores the

242 See discussion supra Part III.A–B.
243 As of August 19, 2006, the 109th Congress passed a bill in the House of Representatives that addresses the issue of net neutrality, and the Senate Committee on Commerce, Science and Transportation approved a bill absent net neutrality language to go to the full Senate for vote.
244 See, e.g., Yoo, supra note 22.
245 Hazlett, supra note 27.
negative impact discriminatory and exclusionary tactics will have on competition by discouraging investment, innovation, and entry. Furthermore, Hazlett and others operate on the presumption that any net neutrality regulation would necessarily involve prescriptive pricing models and unbundling requirements, echoing problems with the 1996 Act.

Extreme measures like prescriptive pricing, however, are unnecessary to ensure net neutrality. Moreover, net neutrality does not inherently require that network operators be precluded from devising product differentiation tactics, such tiered subscription plans based on broadband speeds. These strategies are currently employed by some DSL operators, in which different levels of broadband access speeds are offered according to tiered price plans. Net neutrality regulation can permit such reasonable differentiation while prohibiting broadband providers from "tiering" content by giving their own content, or content from integrated or network-preferred providers, preferential treatment. Regulatory intervention and competition are not mutually exclusive, and policies designed to protect the consumer can, and should, also provide protection for legitimate competitive enterprise.

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246 See Wu & Lessing Letter, supra note 205 (arguing that discrimination will actually suppress competition among broadband networks, and will depress innovation and entry in the applications and content markets).

247 Hazlett, supra note 27.

248 Tiered pricing plans, in which companies differentiate products according to maximum download and upload bit rates, should not be conflated with what some net neutrality advocates call "access tiering." Lawrence Lessig explains that, "by 'access-tiering,' I mean any policy by network owners to condition content or service providers' right to provide content or service to the network upon the payment of some fee... independent of basic Internet access fees." Net Neutrality Hearing, supra note 18 (testimony of Lawrence Lessig), available at http://commerce.senate.gov/pdf/lessig-020706.pdf. Lessig describes permissible discrimination in which consumers pay differentiated rates depending on the speed of their Internet service as "consumer-tiering." Id.

249 Verizon, for example, offers two levels of DSL service for the home. Prices for each level vary according to length of contract commitment, bundling of additional Verizon services, etc., but generally increase commensurate with the connection speed. See Verizon Online DSL, http://www22.verizon.com/ForHomeDSL/channels/dsl/packages/default.asp (last visited Sept. 7, 2006).

250 See Adam L. Pennenberg, Internet Freeloaders: Should Google Have to Pay for Bandwidth?, SLATE.COM, Jan. 17, 2006, http://www.slate.com/id/2134397 ("By tagging content, broadband providers would ensure that their own packets (or those from companies paying them protection money) get preferential treatment and reach subscribers faster than second-tier content."). Pennenberg proposes that the solution to net neutrality is a pay-for-use system in which the flat-rate system of broadband access is replaced with billing based on usage, similar to the system for cellular phones. Id. See also John Markoff, 'Neutrality' is New Challenge for Internet Pioneer, N.Y. TIMES, Sept. 27, 2006 (interviewing Tim Berners-Lee, who explains that charging more for high-bandwidth connectivity is not antithetical to net neutrality).
VI. PROPOSALS FOR NET NEUTRALITY

The need for federal guidance in the area of net neutrality is urgent. It should not, however, be an invitation to burden a vigorous and innovative industry with cumbersome restrictions, mandates and pricing mandates. The 1996 Act is looked to by many as a prime example of the way in which regulatory efforts to create \textit{ex post} parity result in massive distortions.\footnote{Richard A. Epstein, \textit{What We Need is Regulatory Bed Rest}, \textit{Fin. Times (London)}, Mar. 20, 2006, http://www.ft.com (search for “Regulatory Bed Rest”; then follow “Thomas W. Hazlett: Neutering the Net” hyperlink).} Implementation of a regulatory framework that demands transparency and accountability without specific technical or managerial requirements can ensure continued normal market function while preserving the robustly competitive and innovative nature of the Internet.

A. The Failures of Legislative Efforts to Address Net Neutrality

Comprehensive legislation addressing myriad telecommunications and media concerns under consideration in 2006 is likely to fail before the end of the 109th Congress precisely because of a lack of targeted net neutrality language.\footnote{Ann Broache, \textit{Net Neutrality Bill May Die This Year}, \textit{CNET News.com}, Sept. 13, 2006, http://news.com.com/2102-1028_3-6115016.html (“A rift over Net neutrality is the No. 1 issue holding up a massive communications bill and could cause it to be derailed this year . . ..”).} However, the bills proposed in this session offer a blueprint for net neutrality legislation in the 110th Congress. While it is clear that the FCC has a history of Internet oversight, the reticence of Chairman Kevin Martin to take initiative on the issue and the current uncertainty over the precedent set by the Madison River intervention underscores the need for a Congressional mandate to the FCC to regulate and enforce a neutral Internet.

1. \textit{Communications Opportunity, Promotion, and Enhancement Act of 2006}

In June, the House passed the Communications Opportunity, Promotion, and Enhancement Act of 2006 (“COPE Act”),\footnote{Communications Opportunity, Promotion, and Enhancement Act of 2006, H.R. 5252, 109th Cong. (as passed by House, June 8, 2006).} a bill drafted to narrowly address issues involving cable video franchising, the provision of communications services by municipalities, VoIP 911 services, unbundled broadband, and the development of wireless broadband devices.\footnote{See H.R. REP. NO. 109-470, at 2 (2006).} The legislation also addresses net neutrality, but only insofar as to grant the Commission authority to investigate and enforce violations of the principals identi-
fied in the *Internet Policy Statement* on a case-by-case basis.\(^{255}\) Moreover, the COPE Act explicitly denies the Commission "the authority to adopt or implement rules or regulations regarding enforcement of the policy statement and principles."\(^{256}\)

2. The Communications Act of 2006

Upon passage in the House, the COPE Act was referred to the Senate Committee on Commerce, Science and Transportation, where it was substituted by an amended bill, known as the Advanced Telecommunications and Opportunities Reform Act, or the Communications Act of 2006.\(^{257}\) This bill is more sweeping in its reforms than the House bill,\(^{258}\) but, like the House bill, also falls short of a true net neutrality mandate.

The Senate bill incorporates The Internet Consumer Bill of Rights Act of 2006,\(^{259}\) in which the Senate approved general principles by which the Commission should conduct itself with regard to regulation of the Internet\(^{260}\) and adopted a list of rights accorded to subscribers of Internet service providers.\(^{261}\) The enumerated rights generally stand to ensure that subscribers may use and access the applications and content of their choosing.\(^{262}\) Under this bill, the Commission is granted authority to devise a complaint and enforcement procedure for consumer-reported violations.\(^{263}\) Beyond this explicit power, however, the Commission would be precluded from promulgating any rules of its own regarding regulation of the Internet.\(^{264}\)

The Senate Act fails to address the reality of net neutrality. True, § 903(a) enumerates rights accorded to all consumers for which they may seek redress for violation, but this consumer protection is rendered all but irrelevant by a clause in § 903(b) that limits the exercise of the enumerated rights subject to the contract for service with the Internet service provider.\(^{265}\) Thus, the ISP could craft service agreements to curtail subscriber

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\(^{255}\) *Id.* (referring to the statement as the "Broadband Policy Statement").

\(^{256}\) *Id.* at 27.


\(^{259}\) Communications Act of 2006, H.R. 5252, Title IX, §§ 901-13; *see supra* note 253.

\(^{260}\) *Id.* § 902.

\(^{261}\) *Id.* § 903(a).

\(^{262}\) *Id.*

\(^{263}\) *Id.* § 907.

\(^{264}\) *Id.* § 908.

\(^{265}\) *Id.* § 903(b):
rights without violating the language of the statute. Moreover, because
nothing in the bill attempts to address actions by broadband operators to
discriminate among content, this same clause could be invoked to defend
against allegations of discrimination. If, in customer contracts, the operator
reserves the right to offer preferential treatment to its own content or to a
provider with whom it has special agreements, the customer’s “freedom”
to access content and applications of her choosing is rendered meaningless
by the limitation permitted under § 903(b). Thus, the Internet Consumer
Bill of Rights transforms rights that should be guaranteed to all consumers
into rights each Internet provider decides to afford its subscribers.

Furthermore, the Senate legislation fails to account for the insidious na-
ture of Internet content discrimination and places the onus of detection and
reporting on the consumer. As discussed above, technologies now permit
network operators the ability to differentiate packets instantaneously and
direct their delivery through the network according to proprietary traffic
management schemes that are undetectable to the average consumer.266 If
consumers are to take the role of investigators, Congress must provide
them with the necessary information and tools to recognize when they have
been the victim of discriminatory Internet practices. The inclusion of the §
903(b) limitation clause, however, eliminates the opportunity for any stan-
dardized detection tools because it permits the terms of violations to be set
by the providers themselves.

B. The Right Solution for Net Neutrality: Mandated Obligations and Public
Monitoring

Congress must adopt net neutrality legislation that will shift the burden
of compliance from consumers to the network operators, require that the
FCC promulgate rules and procedures to enforce the law, and demand ac-
countability from network operators by encouraging public monitoring of
the Internet.

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NO INTERFERENCE WITH THE INTERNET.—A subscriber may exercise any of
the rights enumerated in [the Internet Consumer Bill of Rights]—

(1) without interference from any Federal, State, or local government, except as
specifically authorized by law;
(2) without interference from an Internet service provider, except as otherwise
provided by law;
(3) for any legal purpose; and
(4) subject to the limitations of the Internet service such subscriber has purchased.

266 See discussion supra Part III.D.
1. The Internet Non-Discrimination Act of 2006

Senator Ron D. Wyden has threatened to block a vote on the Senate’s Communications Act of 2006 if it does not include language similar to the provisions in his own net neutrality bill, the Internet Non-Discrimination Act of 2006. Wyden’s measure is narrowly construed and focuses only on the issue of net neutrality, presenting a framework whereby discrimination by network operators is per se illegal and outlining explicit obligations of broadband network providers in ensuring net neutrality.

The Internet Non-Discrimination Act of 2006 as introduced is not perfect. For example, the requirement that network operators “treat all data traveling over or on communications in a non-discriminatory way” demonstrates a lack of appreciation for Internet content and applications such as VoIP and streaming video which demand a certain amount of “discrimi-

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267 See John Eggerton, Wyden Puts ‘Hold’ on Telecom Bill, BROADCASTING & CABLE, June 29, 2006, http://www.broadcastingcable.com/article/CA6348408.html; see also Anne Veigel, Rush Backs Lobby Efforts Pushing Telecom Bill in Senate, COMM. DAILY, Sept. 20, 2006 (“HR-5252’s future is unclear. Sen. Wyden (D-Ore.) has a hold on the measure, meaning a cloture petition must be filed to override his objection.”).


269 S. 2360 § 4:

(a) In General—A network operator shall—

(1) not interfere with, block, degrade, alter, modify, impair, or change any bits, content, application or service transmitted over the network of such operator;

(2) not discriminate in favor of itself or any other person, including any affiliate or company with which such operator has a business relationship in—

(A) allocating bandwidth; and

(B) transmitting content or applications or services to or from a subscriber in the provision of a communications;

(3) not assess a charge to any application or service provider not on the network of such operator for the delivery of traffic to any subscriber to the network of such operator;

(4) offer communications such that a subscriber can access, and a content provider can offer, unaffiliated content or applications or services in the same manner that content of the network operator is accessed and offered, without interference or surcharges;

(5) allow the attachment of any device, if such device is in compliance with part 68 of title 47, Code of Federal Regulations, without restricting any application or service that may be offered or provided using such a device;

(6) treat all data traveling over or on communications in a non-discriminatory way;

(7) offer just, reasonable, and non-discriminatory rates, terms, and conditions on the offering or provision of any service by another person using the transmission component of communications;

(8) provide non-discriminatory access and service to each subscriber; and

(9) post and make available for public inspection, in electronic form and in a manner that is transparent and easily understandable, all rates, terms, and conditions for the provision of any communications.

270 S.2360 § 4(6).
nation" in order to ensure basic functionality and quality of service. Addressing this is concern is a matter of minor edits and should not halt the inclusion of the language into the Senate’s omnibus bill so it can move to conference. Provided that this issue is addressed, Wyden’s proposal is the best option for mandating that the Internet remains a vibrant platform for content and applications innovation.

Furthermore, Wyden’s legislation would not preclude the ability of broadband network providers to develop tiered access plans, whereby they could set prices for consumer services according to traditional methods of profit maximization, including price discrimination. Contrary to much of the rhetoric conflating the two, net neutrality and price discrimination are not necessarily mutually exclusive. Moreover, it behooves networked companies to engage in price discrimination in order to recoup their investments while gaining the critical customer mass necessary to enjoy positive network effects. In markets where consumers can be identified and separated according to their individual demand elasticity, employing legal price discrimination increases overall economic welfare: consumers can access the product at the level at which they are willing to pay, and the company is able to capture revenue across the demand curve, thereby maximizing profits.

2. Performance Monitoring: Public Enforcement

While the Internet Non-Discrimination Act of 2006 solves much of the concerns regarding net neutrality, it does not prescribe models for identifying violations of the neutrality obligations. A lack of empirical measures to ensure accountability could undermine the efficacy of the law. To that end, the bill should include language requiring the FCC inquire into methodologies that permit consumer monitoring of Internet access and make the results of that inquiry available to the public.

Some technologists advocate the adoption of a volunteer distributed computing system in which individual users connect their computers via the Internet to provide constant performance monitoring of network providers’ Web traffic management processes. One possible system would model the SETI@home scheme, which harnesses the power of thousands

271 See discussion supra Part V.
272 See discussion of positive network effects, supra Part IV.C.1.
273 See BAUMOL, supra note 189, at 9.
of personal computers when they are not in use to analyze radio signals for signs of extra-terrestrials. As one Internet activist notes,

[a] SETI@home-style client that measured the performance of different networks and ISPs from millions of points on the Internet could go far toward creating an impartial, empirical picture of how ISPs, telcos and long-haul carriers do business. It would help . . . users hold our ISPs to account for bad practices. . . . And of course, it would be useful for giving an enforcer the inferential basis for investigating potential cases of [net neutrality violations].

If the Commission made such a client available to the public for download, the need for actual enforcement might well disappear as the pressure of public accountability would force network operators to voluntarily comply with the statute rather than face the negative publicity of a breach.

VII. CONCLUSION

The Internet Non-Discrimination Act is a workable solution acceptable to the disparate interests in the net neutrality debate. By codifying net neutrality principles into an enforceable legal framework, Congress can minimize the likelihood that those the economic incentives of discrimination and the technological tools to facilitate it are not abused to optimize commercial output and control at the expense of consumer and public welfare. Furthermore, network owners should be allowed and encouraged to practice legitimate economic maximization techniques, but be prohibited from engaging in tactics that leverage market power and facility control to exclude rivals. This compromise should assuage some of the concerns regarding the ability of network owners to extract sufficient revenue to recoup investment, and will create the additional incentive for continued infrastructure investment in order to capture differentiated customers. Finally, in promoting public participation in the form of monitoring network provider performance, the Congress and the Commission can ensure compliance through empirical evidence and public pressure. Only through a combination of these approaches will net neutrality and the future of the Internet be preserved.


277 See Frischmann, supra note 17, at 979.