Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In Re	)	
	)	
Review of Regulatory Requirements	)	CC Docket No. 01-337
for Incumbent LEC Broadband	)	
Telecommunications Services	)	

REPLY COMMENTS
OF
CONSUMER FEDERATION OF AMERICA, CONSUMERS UNION, MEDIA ACCESS PROJECT, CENTER FOR DIGITAL DEMOCRACY, UNITED CHURCH OF CHRIST, OFFICE OF COMMUNICATION, INC., THE ASSOCIATION FOR INDEPENDENT VIDEO AND FILMMAKERS, AND THE NATIONAL ASSOCIATION FOR MEDIA ARTS AND CULTURE

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FOR INDEPENDENT VIDEO AND FILMMAKERS, AND
THE NATIONAL ASSOCIATION FOR MEDIA ARTS AND CULTURE

INTRODUCTION

This proceeding purports to address a simple competition question subject to a straightforward economic analysis: do incumbent local exchange carriers (ILECs) have the ability to dominate the broadband market.

At the same time, however, the Commission acknowledges that this proceeding is one element of a broader set of proceedings designed to resolve the overall question of the Commission's policy on broadband. *NPRM* at ¶¶1-3. Indeed, in the NPRM the Commission invokes broader policy concerns on deployment and deregulation. *NPRM* at ¶7. Sadly, however, the item chooses to ignore the statutory goals Congress actually directed the Commission to employ, "favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest." 47 USC §257(b).

As representatives of the general public, whose First Amendment rights to receive information

are "paramount," *Red Lion Broadcasting Co., Inc. v. FCC*, 395 U.S. 367, 390 (1969), Commentors maintain that the Commission cannot ignore its responsibility to ensure that the Internet remains a medium of communication "as diverse as human thought." *ACLU v. Reno,* 521 U.S. 844, 870 (1997). This diversity does not flow from handing control of broadband competition to a few monopoly gatekeepers that control the means of access. It comes from genuine competition among a multiplicity of providers – a fact Congress recognized when it instructed the Commission to use regulation to eliminate barriers to entry and promote competition. 47 USC §257(a)-(c).

As the attached economic analysis – first submitted to the Commission in its *Triennial Review* of its UNE policy, Docket No. 01-338 – shows, "intermodal" competition as envisioned by the Commission will not produce a free marketplace of goods or fo speech. Under the "intermodal competition model," members of the public will have at best a choice of two or three national providers, and most will face either a monopoly or a duopoly.

By contrast, the vibrant competition now enjoyed by the vast majority of Americans in the narrowband Internet flows from what the Commission now chooses to call "intramodel" competition. As a result of the Commission's previous orders creating open access to the telephone network and creating the potential for "intramodel" competition, the average subscriber has access to 10 or more access providers. The Commission should seek to continue these rules that have served the public and the industry so well, and extend them to the emerging broadband networks.

COMMENTORS

The Consumer Federation of America (CFA),[1] Consumers Union (CU),[2] Media Access Project (MAP),[3] the Center for Digital Democracy (CDD),[4] the Office of Communication of the United Church of Christ, Inc. (UCC),[5] the Association of Independent Video and Filmmakers (AIVF),[6] and the National Alliance for Media Arts and Culture ("NAMAC"),[7] share several common interests in

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[1]CFA is the nation's largest consumer advocacy group, composed of two hundred and eighty state and local affiliates representing consumer, senior, citizen, low-income, labor, farm, public power and cooperative organizations, with more than fifty million individual members.

[2]CU, publisher of Consumer Reports, is an independent, nonprofit testing and information organization serving only consumers.

[3]MAP is a 28 year-old non-profit, public interest telecommunications law firm which represents civil rights, civil liberties, consumer, religious and other citizens groups before the FCC, other federal agencies and the Courts.

[4]CDD is committed to preserving the openness and diversity of the Internet in the broadband era, and to realizing the full potential of digital communications through the development and encouragement of noncommercial, public interest programming.

[5]UCC is a non-profit corporation, charged by the Church's Executive Council to conduct a ministry in media advocacy to ensure that historically marginalized communities (women, people of color, low income groups, and linguistic minorities) have access to the public airwaves. The United Church of Christ has 1.4 million members and nearly 6,000 congregations. It has congregations in every state and in Puerto Rico.

[6]AIVF is a 25-year-old professional organization serving international film- and videomakers from documentarians and experimental artists to makers of narrative features. AIVF represents a national membership of 5,000, of whom 4,000 are active independent producers. AIVF provides services to the field including: informative seminars and networking events, trade discounts and group insurance plans, advocacy for media arts issues, a public resource library, advice and referral support, and publication of books and directories.

[7]NAMAC is a nonprofit association composed of diverse member organizations who are dedicated to encouraging film, video, audio and online/multimedia arts, and to promoting the cultural contributions of individual media artists. NAMAC's regional and national members collectively provide a wide range of support services for independent media, including media education, production, exhibition, distribution, collection building, preservation, criticism and advocacy. NAMAC's member organizations include media arts centers, production facilities, university-based

this proceeding. Commentors and their members rely upon ISPs and the networks that service them to communicate, publish content, gather information, and conduct business. All have enjoyed the fruits of the Commission's and Congress' decisions to open the telephone networks and mandate non-discrimination. All would suffer under a regime that allows owners of networks to discriminate against rivals or to discriminate among content providers.

SUMMARY

The attached economic analysis refutes demonstrates why the Commission must consider ILECs to be dominant providers of DSL and refutes the ILEC filings to the contrary.

Part I focuses on the disastrous effects a declaration of non-dominance coupled with relieving the ILECs' of their responsibilities to maintain open access to their networks would have for the public interest. If the Commission deregulates the ILECs by declaring them non-dominant, CU, *et al.* will find themselves in a world of higher prices and fewer services, a world of reduced innovation and fewer information sources. Indeed, CU, *et al.* and their members can look forward to a drastic reduction in their own ability to disseminate information or develop and deliver innovative content and services.

CU, *et al.* further observe that even a declaration of non-dominance does not alter the statutory requirement that the Commission maintain regulations that require ILECs to provide access to necessary network elements to rival DSL providers. Section 259 requires the Commission to maintain such regulations regardless of whether ILECs dominate the broadband services market. This reflects Congress' recognition that competitive providers of information services must have access to the

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programs, museums, film festivals, media distributors, film archives, multimedia developers, community access TV stations and individuals working in the field. Combined, the membership of these organizations totals around 400,000 artists and other media professionals.

telecommunications network. Even if the Commission disagrees with this judgment, it has no authority to substitute its own judgment for that of Congress.

Finally, CU, *et al.* also address the Commission's interpretation that Section 706 of the Communications Act, especially when read in conjunction with Section 230, requires the Commission to deregulate to encourage deployment.

Section 706 contains no bias toward deregulation. It requires the Commission to remove barriers to deployment through both regulatory and deregulatory means. Nor can the Commission fairly read Section 230 as being in any way relevant to interpreting Section 706. To the contrary, the explicit and far more relevant bias ***in favor*** of regulation embodied in Section 257 (which instructs the Commission to remove barriers to market entry via regulation), and in light of the mandatory regulation imposed by Section 259, the Commission cannot fairly impute a deregulatory bias to Section 706 in this context.

ARGUMENT

I. THE COMMISSION'S INITIAL DECISION THAT ILEC'S ARE DOMINANT IN PROVISION OF DSL HAVE PERMITTED COMPETITION AND DIVERSITY TO FLOURISH TO THE BENEFIT OF THE PUBLIC.

As a previous paper from the Office of Plans and Policies recognized:

> The Internet is a community, and users need to move in and out of that community with ease. The Internet has grown up over this country's telephone lines, a technological development that has made it possible for virtually any American to join the online community. Because of the vast expanse of telephone penetration in this nation, and because of the openness of that network, the Internet has exploded. Every American with a phone line and a computer can be part of the Internet. The phone network has historically been open in two senses: phone customers are permitted to access any Internet service provider of their choosing, and those customers are permitted to attach their own equipment to the phone line, allowing them to use modems to transform their phone lines into their own information superhighways.

Jason Oxman, *The FCC and the Unregulation of the Internet*, OPP #31.

The Commission's threat to deregulate the wireline broadband network threatens the very foundation of this openness that drives deployment and development.

Commentors depend on broadband for a number of purposes. For Commentors such as NAMAC and AIVF, whose members produce independent movies or audio presentations and wish to distribute them over the Internet, access to competitive broadband providers is essential. Similarly, for organizations such as CU, CFA and UCC, whose members wish to receive these independent creations or even generate their own, access to competitive broadband connections is equally essential.

A. Unregulated ILECs Would Have the Ability and Incentive To Discriminate Against Rival Service Providers, to Discriminate Against Disfavored Content, and to Extort Concessions From "Favored" Content or Service Providers.

As Commentors have explained at length numerous times to the Commission and elsewhere, the technology currently deployed to make the Internet possible gives those who maintain the networks the ability to control what traffic flows through those lines and at what speeds. *See, e.g.,* Comments of CU, *et al.*, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GEN Docket No. 00-185 (filed December 1, 2001) at 9-11; *Letter of Andrew Schwartzman to FCC Chairman William Kennard*, December 6, 1999 at 4; *Letter from Jeffrey Chester for Media Education, Mark Cooper, Consumer Federation of America, Gene Kimmelman, Consumers Union, Andrew Jay Schwartzman, Media Access Project, Patrice McDermott, OMB Watch, to FCC Chairman William Kennard*, (July 29, 1999).

Although Commentors have filed these comments in proceedings pertaining to Internet access via cable, providers of DSL networks have the same technical capability. Indeed, because network

providers must manage traffic for efficiency purposes, any network must have a technical capacity to discriminate. At present, the Commission's regulations constrain the ILECs and require them to manage traffic in a neutral manner. If the Commission removes this legal constraint, no technical constraints prevent the ILECs from discriminating against rivals and extorting "tolls" from would-be content providers.

Congress, the Commission and the Courts have long recognized that where the holder of a network has the technical ability to discriminate and control traffic, it will do so absent laws prohibiting otherwise. *See* 47 USC §251(g) (leaving Commission's open access regime in place); *In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry*), 77 FCC.2d 384 (1980) (*Computer II Final Decision)*; *United States v. Western Electric Co., Inc.*, 673 F. Supp. 525, 585-86 (D.D.C. 1987); *United States v. Am. Tel. & Tel. Co.*, 552 F. Supp. 131, 184-85 *aff'd sub nom Maryland v. United States*, 460 U.S. 1001 (1983). *See also* Mark A Lemley & Lawrence Lessig, *The End of End to End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L.Rev. 925, 940-46 (2001)("*End to End*"); Harold Feld, *Whose Line Is It Anyway? The First Amendment and Cable Open Access*, 8 CommLaw Conspectus 23, 34-40 (2000) ("*Whose Line*").

This is not an academic exercise in projecting possible motivations. As the Wall St. Journal recently reported, rival cable companies have declined to permit AOL Time Warner to offer AOL's service on their systems because rival cable companies wish to "own" the customer and fear AOL's ability to deliver competing content and services. *AOL Rethinks Its Game Plan*, Wall St. Journal A3 (April 19, 2002). Cable companies have already taken steps to limit the range of services available to customers where these services potentially threaten cable's core video programming business.

See Whose Line, 8 CommLaw Conspectus at 34 n. 115 (citing limits on streaming media). It takes little predictive judgment to foresee that, if permitted, the ILECs will likewise discriminate against rival content and rival access providers.

B. Commentors And The Public Would Suffer In A Deregulated Regime

This course of events would prove disastrous for Commentors and for the general public. Commentors NAMAC and AIVF represent independent producers of video and other media. Broadband platforms offer not merely a new medium, but a new mechanism for reaching willing viewers. Especially in light of the continued consolidation permitted by the Commission and the courts, broadband Internet remains the only possible conduit through which these members can hope to reach a broader audience than that found in their local neighborhood.

If the Commission deregulates DSL through the contrivance of declaring ILECs non-dominant, AIVF and NAMAC members will find themselves reduced to the same position they now occupy vis-a-vis cable and the broadcast networks: subject to the whims of the few media gatekeepers who hold the keys to audiences AIVF and NAMAC members wish to reach.

Worse, AIVF and NAMAC members will lose an entire new medium of production. Unregulated cable broadband prohibits subscribers from operating servers and receiving streaming media. *Whose Line*, 8 CommLaw Conspectus at 38 & n.153. As such, AIVF and NAMAC members find the very nature of the content they wish to offer restricted. If the Commission permits DSL to follow the closed cable model, where the network provider rather than technology dictates the limits of innovation, AIVF and NAMAC members will literally lose the ability to create new, interactive art. This would harm not merely AIVF, but members of the public at large (represented here by Commentors UCC and CFA), who have a paramount First Amendment right "to receive suitable

access to social, political, esthetic, moral, and other ideas and experiences." *Red Lion*, 395 U.S. at 391.

Commentors MAP, CU, CFA, and CDD, engage in controversial speech often disfavored by large corporate interests, particularly telecommunications interests. As such, these commentors would face the specter of seeing reception of their information degraded. For example, if CU published an issue of *Consumer Reports* critical of a new model car produced by Ford, Ford could use its influence as a major advertiser to induce the handful of broadband gatekeepers to slow delivery of packets from the *Consumer Reports* website and otherwise make it difficult for people to find or read the material.

Even without deliberate discrimination, all Commentors face the danger of higher prices and poorer service denying them the benefits of broadband. Cable already distinguishes between "residential" and "commercial" customers, although there is no difference in cost to the cable provider to provision one over the other. Again, if permitted, the Commission can expect ILECs to follow suit.

Again, the loss effects not only Commentors, but the public at large. Thousands of small businesses and home-based businesses use DSL. This has become a significant element of the U.S. economy (as well as vitally important to members of AIVF, NAMAC, and UCC). If the Commission deregulates DSL, however, and ILEC DSL providers can impose restrictions on commercial use in the same way that cable providers now can, this entire sector of the economy will suffer.

Finally, ISPs themselves offer innovative services that further the "diversity of media voices" Congress instructed the Commission to promote with its policies. 47 USC §257(b). For example, ISPs exist that advertise enriched content and server-based filtering that matches one's religious preferences. *See* http://www.christianliving.com (advertising itself as "a Christian AOL");

http://site.safelines.net/ (advertising "Koshernet" and promising Jewish-based content controls). Members of UCC, and the public generally, have a First Amendment right to avail themselves of such services.

Without maintaining open access to DSL lines, however, such services will quickly wither and vanish. This is contrary to the result mandated by Congress in Section 257(b), by the Commission's general public interest standard, and by the First Amendment.

II. SECTION 259 MAKES A FINDING OF DOMINANCE IRRELEVANT TO THE COMMISSION'S OPEN ACCESS REQUIREMENTS.

Even if the Commission does find ILECs to be non-dominant in the provision of broadband services, Section 259 of the Communications Act requires the Commission to maintain the existing open access requirements.

Section 259 requires the Commission to prescribe:

> regulations that require [ILECs] to make available to any qualifying carrier such public switched network infrastructure, technology, information, and telecommunications facilities and functions as may be requested by such qualifying carrier for the purpose of enabling such qualifying carrier to provide telecommunications services, or to ***provide access to information services*** . . .

§259(a) (emphasis added).

Nothing in this statutory mandate (entitled "Regulations Required") hinges on an ILEC's status as a dominant carrier or provider of services. To the contrary, the statute directs itself exclusively to the carrier's status as an "incumbent local exchange carrier (as defined by Section 251(h)). Thus, whether the Commission considers ILEC's dominant in the provision of DSL or broadband services generally, ***it cannot relieve the ILECs of their obligations under Section 259***.

This statutory requirement makes perfect sense. The ILEC controls the necessary infrastruc-

ture on which all rivals must depend, even in a nascent market where the ILEC has no retail dominance. This gives the ILEC power over its rivals regardless of the market power it may posses in the retail market. *See United States v. Western Electric Co., Inc.*, 673 F. Supp. 525, 585-86 (D.D.C. 1987) (upholding narrowband open access requirements on RBOCs).

Even if the Commission disagrees with this reasoning, it cannot relieve itself of the requirement that it prescribe regulations that require ILECs to make available to rivals network elements necessary to provide broadband services.[8] The courts have made it clear that the Commission has no authority to relieve itself of statutory requirements to regulate, even where the Commission would prefer to do otherwise and finds that regulation interferes with the broader purposes of the Act. *See, e.g.*, *MCI Telecommunications Corp. v. AT&T*, 512 U.S. 218 (1994) (Commission may not eliminate statutory tariffing requirement despite repeated findings that eliminating it for non-dominant carriers would serve the public interest); *Assoc. of Communications Enterprises v. FCC*, 235 F.3d 662 (D.C. Cir. 2001) (Commission may not allow ILEC's to avoid statutory resale obligations despite finding that allowing such avoidance would serve the public interest).

MCI v. AT&T provides particularly useful guidance here. There, the Commission sought to "modify" the mandatory tariffing scheme Congress enacted in 1934 by allowing carriers found non-dominant to avoid filing tariffs on their service. *MCI v. AT&T*, 512 U.S. at 221-22. The Supreme Court found that such regulatory relief superceded the Commission's statutory authority. The Commission could not waive the requirement because it found that effective competition existed. *Id*. at 232. The Court rejected the Commission's argument that the new policy served the broader

[8]This is true whether the Commission defines DSL as a "telecommunications service" or an "information service." Section 259 requires the Commission to prescribe regulations requiring ILEC's to provide network elements to qualified carriers for either purpose.

purposes of the Act. As the Court observed:

> petitioners earnestly urge that their interpretation of §203(b) furthers the Communications Act's broad purpose of promoting efficient telephone service....We have considerable sympathy with these arguments...But our estimations, and the Commission's estimations, of desirable policy cannot alter the meaning of the federal Communications Act of 1934....and the Commission's desire "to 'increase competition' cannot provide [it] authority to alter [the statute]. As we observed in the context of a dispute over the filed-rate doctrine more than 80 years ago, "such considerations address themselves to Congress, not to the courts,"

Id. at 233-34 (citations omitted).

Here as well, the Commission's estimations of desirable policy and its perception that relieving ILECs of the requirement to make network elements available to broadband competitors will serve the broader policy of speedy deployment of broadband services does not give the Commission the authority to alter Congress' statutory scheme. Section 259 requires the Commission to prescribe regulations that require ILECs to make network elements available to "qualifying carriers" who wish to provide telecommunications services or provide access to information services. Nothing in the statute authorizes the Commission to make an exception for non-dominant ILECs.

III. SECTION 706 DOES NOT REQUIRE A BIAS TOWARD A DECLARATION OF NON-DOMINANCE OR OTHER "DEREGULATORY" STEPS.

Section 706(a) of the Telecommunications Act codified Congress' intent that the Commission "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans." The Commission asks for comment on how Section 706 should affect its analysis here, generally interprets Section 706 as a creating a bias toward deregulation. *NPRM* ¶¶40-45. This interpretation mischaracterizes the law.

Section 706 directs the Commission not to remove regulations, but (where deployment remains untimely) to "take immediate action to accelerate deployment" by "removing barriers to

infrastructure investment and by promoting competition in the telecommunications market." 47 USC §706(b). This is a far cry from the language used elsewhere in the statute, where Congress intended the Commission favor deregulation. *See Fox Television Stations v. FCC,* 280 F.3d 1027 (D.C. Cir. 2002) *pet. for recon. pending* (interpreting language of Section 202(h) as expressing a Congressional preference for repealing rather than retaining regulations on media ownership).

By contrast, the ***first*** tool Congress suggests to the Commission in facilitating broadband deployment is "price cap regulation" – an intensely intrusive regulatory tool. *See* 47 USC §706(a). While the statute also lists "regulatory forbearance" as an available tool, it directs the Commission to employ other "measures that promote competition" and "other regulating methods" that facilitate deployment. *Id.*

In a related NPRM, the Commission has attempted to alter the meaning of this plain language directing the Commission to make full use of its regulatory toolkit by relying on Sections 230(a)(4) and 230(b)(2) of the Communications Act. *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities,* CS Docket No. 02-52 (released March 15) ¶4. These sections, also added in 1996, find that the Internet has flourished "with a minimum of government regulation," §230(a)(4), and announce a policy that "the Internet" remain "unfettered by Federal or State regulation." §230(b)(2).

These provisions have nothing to do with the Commission's Title II regulation of telecommunications services or with the Commission's requirements under Section 706 to ensure the timely deployment of broadband. Congress enacted these provisions as part of the Communications Decency Act of 1996, an amendment considered separately from the bulk of the 1996 Act. *See* Robert Cannon, *The Legislative History of Senator Exon's Communications Decency Act: Regulating*

Barbarians on the Information Superhighway, 49 Federal Communications Law Journal 51 (November 1996). The context makes it clear that Congress intended this policy to apply to those providing information services and deploying innovative new services and content on the Internet. Congress did not intend these policies to apply to the underlying networks, access to which made development of the Internet (as defined by Section 230) possible.

Congress knew that the Internet and other information services resulted from the Commission's *Computer* proceedings. Indeed, Congress deliberately chose to leave this regulatory regime in place. *See* 47 USC §251(g). The Commission cannot fairly read Section 230 to provide separate instruction to repeal these regulations, since it merely requires the Commission to preserve the status quo. 47 USC §230(b)(2).

By contrast, Section 259 ***requires*** the Commission to regulate ILECs to facilitate competition in the information service and telecommunicationservice markets. In addition, Section 257 directs the Commission to eliminate ***market entry barriers*** via ***regulation***. *See* 47 USC §257(a) and (c). Like Section 230, it announces a "National Policy," *i.e.*, "to promote the policies and purposes of this Act favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest, convenience, and necessity." Unlike Section 230, however, Section 257 is actually relevant to the regulation of telephone network providers.

As the US Court of Appeals for the DC Circuit has explained to the Commission, general policy statements cannot overcome the plain language of a specific section. *Time Warner Entertainment Co., L.P. v. FCC*, 240 F.3d 1126, 1135-36 (D.C. Cir. 2001). Here, Section 706, by its plain language, instructs the Commission to consider all regulatory tools to ensure timely deployment of advanced telecommunications capabilities. Similarly, Section 259 instructs the Commission to use

regulatory tools to ensure that providers of information services have access to the underlying telecommunications networks. Section 257 reinforces this with instructions to eliminate barriers to entry via regulation, and a national policy favoring regulation to promote diversity and competition. The policy statement of Section 230, even if they mean what the Commission says they mean, cannot overcome these explicit directions to the contrary.

CONCLUSION

For the reasons discussed above, the Commission should reject the arguments raised by the ILECs and their supporters that a finding of non-dominance and consequent deregulation of ILEC provision of DSL serves the public interest. Relieving ILECs of their obligations to share lines with rivals would have a profoundly harm the public interest. Members of the public would find their broadband options reduced from the plethora available in a genuinely competitive market to the few options a monopoly or duopoly provider chooses to offer. If this comes to pass, those who rely on the Internet to produce innovative non-mainstream content, develop new services that potentially undermine the business models of the broadband providers, will lack the bandwidth to bring their products to market and will lack a residential market capable of buying these products. Residential subscribers and non-profit organizations generally will face increased difficulties in using the Internet as a tool for communication and dissemination of knowledge and views to the public, ranging from higher prices to active discrimination by those with control of the network.

As a legal matter, even if the Commission does find ILECs non-dominant in the provision of broadband services, the Commission does not have the statutory authority to relieve ILECs of their obligation to make necessary elements of their networks available to rivals. Nor does Section 706 provide an independent grounds – or even a bias toward – removing the current open access regime.

WHEREFORE, the Commission should not find the ILECs non-dominant in the broadband market, and, even if the Commission does find the ILECs non-dominant, it should not alter its existing regulations.

Respectfully submitted,

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April 22, 2002

ATTACHMENT

Comments of Consumer Federation of America*, et al.*

CC Docket 01-338

CC Docket 96-98

CC Docket 98-147

(April 5, 2002)

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Section 251 Unbundling	)	CC Dockets Nos. 01-338
Obligations of Incumbent Local Exchange Carriers	)	
	)	
Implementation of the Local Competition Provisions	)	CC Dockets Nos. 96-98
of the Telecommunications Act of 1996	)	
	)	
Deployment of Wireline Services Offering Advanced	)	CC Dockets Nos. 98-147
Telecommunications Capability	)	

COMMENTS OF THE CONSUMER FEDERATION OF AMERICA, TEXAS OFFICE OF PUBLIC UTILITY COUNSEL, CONSUMERS UNION, AND CENTER FOR DIGITAL DEMOCRACY

April 5, 2002

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I. INTRODUCTION

A. COMMENTERS

The Consumer Federation of America,[1] Texas Office of Public Utility Counsel,[2] Consumers Union[3] and Center for Digital Democracy[4] respectfully submit these comments in response to the Federal Communications Commission's (FCC or the Commission) Notice of Proposed Rulemaking (NPRM).[5]

One or more of these organizations have participated in the implementation of the provisions of Telecommunications Act of 1996 (hereafter the 1996 Act) that are addressed in this NPRM at the federal level in virtually every section 271 proceeding and at the state level in over half-a-dozen

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[1] The Consumer Federation of America (CFA) is the nation's largest consumer advocacy group, composed of two hundred and eighty state and local affiliates representing consumer, senior, citizen, low-income, labor, farm, public power and cooperative organizations, with more than fifty million individual members. CFA is online at www.consumerfed.org.

[2] The Texas Office of Public Utility Counsel (Texas OPC) is the state consumer agency designated by law to represent residential and small business consumer interests of Texas. The agency represents over 8 million residential customers and advocates consumer interests before Texas and Federal regulatory agencies as well as State and Federal courts.

[3] Consumers Union is a nonprofit membership organization chartered in 1936 under the laws of the state of New York to provide consumers with information, education and counsel about goods, services, health and personal finance, and to initiate and cooperate with individual and group efforts to maintain and enhance the quality of life for consumers. Consumers Union's income is solely derived from the sale of *Consumer Reports*, its other publications and from noncommercial contributions, grants and fees. In addition to reports on Consumers Union's own product testing, *Consumer Reports* with more than 4 million paid circulation, regularly carries articles on health, product safety, marketplace economics and legislative, judicial and regulatory actions that affect consumer welfare. Consumers Union's publications carry no advertising and receive no commercial support. CU is online at www.consumersunion.org.

[4] The Center for Digital Democracy (CDD) is committed to preserving the openness and diversity of the Internet in the broadband era, and to realizing the full potential of digital communications through the development and encouragement of noncommercial, public interest programming. CDD is online at www.democraticmedia.org.

[5] *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Dockets Nos. 01-338, 96-98, 98-147, December 20, 2001.

section 251 and 271 proceedings. They also filed comments in the Notice of Inquiry dealing with cable modem service.[6]

B. OVERVIEW OF POLICY ANALYSIS

In paragraph 3 of the NPRM the Federal Communications Commission grudgingly notes that it must continue to support three approaches to local competition – resale of incumbent facilities, use of unbundled network elements, and construction of new facilities.[7] It then spends the remainder of the notice discussing reasons and ways to cut back on making network elements available in an effort to stimulate facilities-based, or intermodal competition.

This is bad law and bad public policy. Even if the Commission could build an evidentiary record to support such an approach, it would be the job of Congress to implement such a radical change in public policy. In fact, Congress explicitly rejected the policy of "deregulation first, ask questions latter" that runs throughout the NPRM. The 1996 amendments to the Communications Act made it clear that the consumer protections of the Act should not be sold cheaply. The Commission was authorized to relax those protections under one of two circumstances.

- Either, it would have to find under Section 10 that sufficient competition had developed in specific product and geographic markets to make regulation unnecessary, or

- it would have to find under Section 706 that there had been a major failure of deployment of advanced telecommunications capabilities, which could be addressed by regulatory forbearance or other relaxation of regulation.

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[6] In the Matter of Comments Of Texas Office Of Public Utility Counsel Consumer Federation Of America Consumers Union Inquiry Concerning High Speed Access to the Internet Over Cable and Other Facilities, GN Docket No. 00-185,January 11, 2001.
[7] NPRM, Para 3.

The Commission has made neither of these findings. Instead, it has set out to misinterpret other sections of the Act as a back door to deregulation.

The application of a new term, like intermodal competition – an expression that appears nowhere in the Act – does not substitute for the clear policy articulated by Congress in the Telecommunications Act of 1996. The theory of intermodal competition may sound enticing, but the reality is not.

The hope is that rivalry between different technologies, or modes of delivering telecommunications will be sufficient to create an effectively competitive market, while it speeds the deployment of facilities. The reality is that today there is certainly not sufficient intermodal competition to protect consumers and promote the public interest. If there were, the Commission would have found so under Section 10 of the Act.

Moreover, even if the Commission could succeed in accelerating the deployment of a small number of alternatives modes of service delivery by allowing the incumbent facility owners to exercise greater market power, the number of competitors will inevitably be too small to create an effectively competitive market. Congress did not invite the Commission to abandon consumers to the unfettered exercise of market power or experiment with the public interest and consumer protections of the Act by gutting intramodal competition to promote intermodal (small numbers) competition.

There is a very cruel irony in the Commission's embrace of intermodal competition at the expense of intramodal competition. Intramodal competition in communications is nothing more than an open communications platform in which content suppliers and applications developers compete for consumer attention and business over communications systems that

are made available on a non-discriminatory basis. This approach to intramodal competition has been remarkably successful in the past several decades.

Under the aegis of the Computer Inquiries, intramodal competition produced an essential ingredient for the flowering of the commercial Internet – open communications platforms. This policy struck an extremely effective balance between the obligation to provide non-discriminatory interconnection and carriage under the Communications Act and deregulation of enhanced services. So effective was it that Congress codified its terms and definitions in the 1996 Act.

The Commission is now prepared to abandon what is arguably the most successful policy in the agency's history in a misguided belief that only by tipping the scales sharply in favor of facility owners, at the expense of content suppliers and applications developers, can more facilities be built. The results will be disastrous. The Commission claims it will help the upstarts, but it will dramatically increase the power of incumbents, exactly the opposite of what the 1996 Act intended. Dominant facility owners will become gatekeepers, driving customers to affiliated content suppliers, and protecting incumbent market power over services by foreclosing of controlling innovations that threaten to compete with their core products, slowing innovation.

As the Commission notes, this proceeding is one of half a dozen interrelated proceedings, which, in our view contemplate a radical, anticompetitive shift in telecommunications policy from open communications platforms to closed, proprietary networks. Taken together they constitute a virtual repeal of the 1996 Act that far exceeds the authority of the Commission. In our opinion, this backdoor deregulation twists the words and invents conflicts between the goals of the statute. The Commission should not go down this

path. It should preserve the balance that Congress struck in the Act between competition and consumer protection.

C. PURPOSE AND OUTLINE OF THE COMMENTS

Since this is the first of many proceedings, these initial comments outline the analytic framework we will use throughout these proceedings. The comments demonstrate at a general level why the theory of intermodal, small-numbers competition is a bad bet for the consumer. Over the course of the proceedings, we will apply this framework to the empirical analysis of telecommunications markets.

The Commission has established a very broad scope for this proceeding. It has declared that

> we expressly focus on the facilities used to provide broadband and explore the role that wireless and cable companies have begun to play and will continue to play in the market for broadband services and the market for telephony services generally.[8]

Consequently, we propose a broad analytic framework to integrate both technology and economic analysis. The framework integrates traditional market structure analysis – the structure, conduct, performance paradigm – and the analysis of communications platforms.

These Comments are divided into four sections.

In Section II we review the success of intramodal competition in creating the dynamic environment of the narrowband Internet and the critical role that FCC policies to ensure open communications platforms played in creating that environment. We demonstrate that Congress appreciated this important principle and did not give the FCC leeway to fritter it away.

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[8] NPRM, Para. 3.

In section III we review contemporary economic thinking that leads to the conclusion that competition without competitors is a troubling prospect. We then present evidence that shows the current lack of facilities-based competition in both broadband and narrowband communications markets.

Section IV presents a general critique of "monopoly is better theories."

Section V discusses the many ways in which the owners of bottleneck transmission facilities can and do preserve and exercise their market power through control of their bottleneck transmission facilities, when they are allowed to operate them on a close-proprietary basis, as contemplated by the intermodal competition model.

Section VI discusses the severe damage that abandoning the principle of open communications platforms would impose on consumers and the economy.

II. INFORMATION AND COMMUNICATIONS MARKETS

Any discussion of public policy toward the industrial organization of the communications industry must start from the accomplishments of intramodal competition that was codified in the 1996 Act.

A. CREATING THE DYNAMICALLY COMPETITIVE INTERNET

It has long been recognized that information production and communications networks have unique economic characteristics. It is useful to think of a communications platform that provides an environment in which information is produced (see Exhibit 1). It is defined by three layers – the physical layer, the logical or code layer, and the content layer.[9] The

[9] Yochai Benkler, "From Consumers to Users: Shifting the Deeper Structure of Regulation Toward Sustainable Commons and User Access," *Federal Communications Law Journal*, 56 (2000) (hereafter Consumers to Users), "Intellectual Property and the Organization of Information Production,"

physical layer has two primary assets: devices and transmission media. The logical layer involves the codes and standards with which appliances interconnect, interoperate, and communicate. The content layer involves information products, both outputs and inputs. Applications can also be located at this layer. It is a platform because there are strong complementarities between the layers.[10]

Over the past century-and-a-half, information production and communications platforms have exhibited economies of scale typical of the industrial age. Capital-intensive technologies and high first-copy costs have created substantial economies that dictate very large-scale production. This was not always the case, nor need it be in the future, as discussed below, but it has been the fact of life for information production in the industrial age.

The code and content layers – constituting information production – exhibit characteristics of public goods, with positive externalities. Information is non-excludable and non-rivalrous. Once it is produced, it is difficult to prevent it from being shared. The consumption of information (by reading or viewing) by one person does not detract from the ability of others to derive value from consuming it. Information frequently has positive direct

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forthcoming in *International Journal of Law and Economics*, (hereafter, Intellectual Property); "Coase's Penguin, or Linux and the Nature of the Firm," *Conference on the Public Domain"* Duke University Law School, (November 9-11, 2001) (hereafter, Coase's Penguin); "The Battle Over the Institutional Ecosystem in the Digital Environment," *Communications of the ACM*, 44:2 (February, 2001); Lawrence Lessig, *The Future of Ideas* (New York: Random House, 2001), p. 23. Lessig notes that Tim Berners-Lee (*Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web by Its Inventor* (San Francisco: Harper San Francisco, 1999), identifies four layers, transmission, computer, software and content.

[10] Carl Shapiro and Hal R. Varian, *Information Rules* (Cambridge: Harvard Business School Press, 1999), pp. 9 – 15; Richard N. Langlois, "Technology Standards, Innovation, and Essential Facilities: Toward a Schumpeterian Post-Chicago Approach," in Jerry Ellig (Ed.), *Dynamic Competition and Public Policy: Technology, Innovations, and Antitrust Issues* (Cambridge: Cambridge University Press, 2001), p. 207, calls them system products – "Most cumulative technologies are in the nature of systems products, that is products that permit or require simultaneous functioning of a number of complementary components." Complementarities exist where standards knit the layers of the platform together.

and indirect externalities (and occasional negative externalities) associated with its production. It produces benefits to bystanders that cannot be easily captured in the transactions between the private parties.

In some respects information is also subject to network effects. Its production and distribution become more valuable as more people have access to it. Communications systems exhibit strong network effects. There are economic efficiencies inherent to building a large base of users with network technologies. Firms seek to capture these positive externalities and accomplish technological "lock-in."[11] After capturing the first generation of customers and building a customer and programming base tied to dominant software, it becomes difficult, if not impossible, for later technologies to overcome this advantage. Customers hesitate to abandon their investments in the dominant technology and customer acquisition costs rise for latecomers.

As the number of users grows, economic benefits are created on both the supply and the demand sides. By increasing the number of units sold, the cost per unit falls dramatically.[12] On the supply side, certain industries, like computing and network industries, tend to have high fixed and front-end costs. Cost savings apply not only to initial production costs, but also to service and maintenance costs.[13] As the installed base of hardware and

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[11] Shapiro, Carl and Hal R. Varian, *Information Rules*

[12] Arthur, Brian W., "Positive Feedback in the Economy," *Scientific American* 1990, p. 92...93.

[13] Katz Michael and Carl Shapiro, "Network Externalities, Competition and Compatibility," *American Economic Review, 1985*.

software deployed grows, learning and training in the dominant technology is more valuable since it can be applied to more users and uses.[14] Success breeds success.[15]

On the demand side, as more consumers use a particular technology, each individual consumer can derive greater benefit from it. The classic case is the telephone network (or the Internet), where each individual derives greater benefit through the ability to contact numerous other individuals directly.[16] This is a direct (communication) externality. There may be indirect benefits in virtual networks in which two consumers never actually come face-to-face or computer-to-computer. Larger numbers of users seeking specialized applications create a larger library of applications that become available to other users,[17] and secondary markets may be created.

Information is also a major input to its own output. Where these externalities are direct and strong, it exhibits positive feedback loops. Putting it into the world enables subsequent production at lower cost by its original producers or other producers. In the computer hardware industry positive feedback loops, or virtuous circles sustains change and productivity growth that are orders of magnitude larger than typified the industrial age.[18]

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[14] Schilling, Melissa A., "Technological Lockout: An Integrative Model of the Economic and Strategic Factors Driving Technology Success and Failure," *Academy of Management Review*, 1998, p.275.

[15] Arthur, 1990, p. 92...93 .

> Increased production brings additional benefits: producing more units means gaining more experience in the manufacturing process and achieving greater understanding of how to produce additional units even more cheaply. Moreover, experience gained with one product make it easier to produce new products incorporating similar or related technologies…

[16] Church Jeffrey and Neil Gandal, "Complementary Network Externalities and Technological Adoption," *International Journal of Industrial Organization, 1993*, p. 241.

[17] Church and Gandal, p. 241 (see also Chien-fu Chou and Oz Shy, "Network Effects without Network Externalities," *International Journal of Industrial Organization*,1990.

[18] Gaines, Brian, R., "The Learning Curve Underlying Convergence," pp. 30-31.

Advances in computing technology support more advances in computing technology. The feedback phenomenon in other industries is more of a "reinforcement mechanism" and not as "powerful" as that identified in computing, but it is said to account for much more dynamic economic development than simple efficiencies.[19] Standardized and pre-installed bundles of software appear to have allowed the rapidly expanding capabilities of computer hardware to become accessible and useful to consumers with little expertise in computing.[20] As computers got cheaper and cheaper and applications became more abundant and user-friendly, computers ceased being merely a workplace or laboratory tool and became a consumer electronic device.

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

A dramatic shift in the economics of the information environment has taken place over the past several decades that altered the relative cost and importance of the factors of information production. The growth of the Internet and its underlying technologies changed the fundamental economics of information production. "As rapid advances in computation lower the physical capital cost of information production, and as the cost of communications decline, human capital became the salient economic good involved in information production."[21]

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[19] Arthur, 1990, p. 95.
[20] Katz, Michael and Carl Shapiro, "Antitrust and Software Markets," in Jeffrey A. Eisenbach and Thomas M. Lenard (Eds.), *Competition, Innovation and the Microsoft Monopoly: Antitrust and the Digital Marketplace*, (Kluwer, Boston, 1999) (hereafter, Katz/Shapro Antitrust).
[21] Coase's Penguin, p. 1.

The computer and communications industries have high fixed and front-end costs, which result in economies of scale, as have many technologies developed over the past century. Computers and communications also exhibit virtuous circles and network effects. Advances in computing technology support more advances in computing technology. This process is observed at both the level of hardware[22] and in the organizational process.[23]

At the physical layer, cheap, powerful computers are the rapidly proliferating muscle of the digital economy.[24] Its vertebrae are the sprawling fiber-optic networks that allow these machines to communicate at rising speeds with falling costs.[25] In the code layer, a software revolution is the nervous system that enables the messages to be routed, translated, and coordinated.[26] At the content and logic layers every sound, symbol, and image can now be digitized.[27] The more complex the sound or image, the more data has to be encoded and decoded to accomplish the digital representation.[28] But, when computing speeds, storage capacity and transmission rates become big enough, fast enough, and cheap enough, it becomes feasible to move huge quantities of voice, data, and video over vast distance.

The resulting change arises not only because of the intensity of use of the factors of production, or even its speed, but a fundamental change in relationships between the factors of information production.

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[22] Brian R. Gaines, "The Learning Curves Underlying Convergence, "*Technological Forecasting and Social Change*, January/February 1998, at 20-21.
[23] Brian Arthur, "Positive Feedbacks in the Economy," *Scientific American*, February 1990, pp. 95, 98.
[24] Sara Baasen, *A Gift of Fire: Social, Legal and Ethical Issues in Computing* (1996).
[25] George F. Gilder, *Telecosm: How Infinite Bandwidth Will Revolutionize Our World* (2000).
[26] Gaines, p. 23.
[27] Bruce M. Owen, *The Internet Challenge to Television*, 29 (Harvard University Press 1999)
[28]*See id*. at 151.

> It is a proven lesson from the history of technology that users are key producers of the technology, by adapting it to their uses and values, and ultimately transforming the technology itself, as Claude Fischer demonstrated in his history of the telephone. But there is something special in the case of the Internet. New uses of the technology, as well as the actual modifications introduced in the technology, are communicated back to the whole world, in real time. Thus, the time span between the process of learning by using and producing by using is extraordinarily shortened, with the result that we engage in a process of learning by producing, in a virtuous feedback between the diffusion of technology and its enhancements.[29]

The institutional forms that economize on the most valuable factor of production (now human capital) by reducing cost or maximizing output will expand. Alternatively, the scarcest or most critical input becomes the focal point of attention in economic activity.[30] This makes it possible for a wholly new form of information production to exist on a sustainable basis.[31]

The impact is not limited to new organizational forms. The new thrust of corporate organization, based on distributed intelligence and flat structure, reflects these forces.[32] Hierarchy is out, horizontal is in.[33] The ability to coordinate at a distance dramatically alters the nature of centralized control, transferring much decision-making to dispersed management. A Harvard Business School Press publication, graphically titled *Blown to Bits*, summarized the dramatic change compelling corporate adjustment as follows:

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[29] Castells, *Internet Galaxy* (Oxford: Oxford University Press: 2001), p. 28. Note that the telephone is an industrial age communications platform with significant network effects, but does not exhibit the feedback loops or virtuous circles of information age communications platforms.
[30] Langlois, p. 206.
[31] Coase's Penguin, p. 23.
[32] Marina v. N. Whitman, *New World, New Rules* (Boston: Harvard Business School Press, 1999), Chapter 2.
[33] Manuel Castells, *The Rise of Networked Society* (Oxford: Blackwell, 1996)*;* Richard C. Longworth, *Global Squeeze* Chicago: contemporary Books, 1998).

> Digital networks make it possible to blow up the link between rich information and its physical carrier. The Internet stands in the same relation to television, as did television to books, and books to stained glass windows. The traditional link between the economics of information and the economics of things – is broken.[34]

This development in information space is extremely procompetitive. The Internet unleashed competitive processes and innovation exhibiting the fundamental characteristics of audacious or atomistic competition.[35]

> Experimentation by users and competition among providers, across the range of segments that constitute the Internet, generated a surge of self-sustaining innovation… This network openness and the user-driven innovation it encouraged were a distinct departure from the prevailing supply-centric, provider-dominated, traditional network model. In that traditional model a dominant carrier or broadcaster offered a limited menu of service options to subscribers; experimentation was limited to small-scale trials with the options circumscribed and dictated by the supplier.
>
> Diversity of experimentation and competition on an increasingly open network were key, since nobody could foresee what would eventually emerge as successful applications. Openness allowed many paths to be explored, not only those which phone companies, the infrastructure's monopoly owners, would have favored. Absent policy-mandated openness, the Regional Bell Operating Companies (RBOCs) and monopoly franchise [cable television] networks would certainly have explored only the paths of direct benefit to them. It is doubtful that without such policy-mandated openness the Internet Revolution would have occurred.[36]

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[34] Philip Evans and Thomas S. Wurster, *Blown to Bits*: *How the New Economics of Information Transforms Strategy* (Harvard Business School Press, 2000), p. 17.

[35] Langlois, p. 207, offers this as a general proposition of system products.

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

[36] Bar, Francois, et. al., *Defending the Internet Revolution in the Broadband Era: When Doing Nothing is Doing Harm*, August 1999 (hereafter, Bar, et. al.).

B. THE ROLE OF PUBLIC POLICY IN CREATING OPEN COMMUNICATIONS PLATFORMS

There must be no mistake about the critical role that government policy played in the process of creating this new information environment. The flexibility and fluidity we have achieved in the information age is in part a result of severing the link between the physical layer and the code and content layers. By allowing facility owners to reassert control over the higher layers, the FCC approach would slow and create a drag on the higher layers.

It has long been recognized that the economic characteristics of information production and communications networks render it highly likely that communications markets will not be made up of numerous companies competing vigorously (atomistically competitive).[37] Rather, they tend, at best to be tight, differentiated oligopolies or monopolistically competitive,[38] or natural monopolies.

Public policy has been centrally concerned with preventing the abuse of the market power stemming from small numbers. At various times and in different layers, this policy has included structural regulation of ownership, setting standards, requiring carriage of programming, public interest obligations, regulation of rates, and the like. In the last several

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[37] Shapiro and Varian, pp. 22-23.

> Information is costly to produce but cheap to reproduce.
> Once the first copy of an information good has been produced, most costs are sunk and cannot be recovered.
> Multiple copies can be produced at roughly constant per-unit costs.
> There are no natural capacity limits for additional copies.
> These cost characteristics of information foods have significant implications for competitive pricing strategy.
> The first and most important point is that markets for information will not, and *cannot*, look like textbook perfect competitive markets in which there are many suppliers offering similar products, each lacking the ability to influence prices.

[38] Shapiro and Varian, pp. 28, 54, 87-89,Joel Waldfogel, *Who Benefits Whom in Local Television Markets?* November 2001, Roundtable On FCC Ownership Policies October 29, 2001. *Preference Externalities: An Empirical Programming to Minorities*, (NBER, 2001) with Lisa George, *Who*

decades, promoting competition at all layers of the communications platform through a wide range of mechanisms has become a focal point of policy.

One of the more consistent obligations has been non-discriminatory carriage, ensuring that communications platforms are open and allowing the flow of information. In the most recent iteration of this policy that led to the development of the Internet, we find that the deeper the principle of openness is embedded in the communications system, the greater the ability of information production to stimulate innovation.

> The government's activism imposed a principle analogous to [end-to-end] design on the telephone network. Indeed, though it masquerades under a different name (open access), this design principle is part and parcel of recent efforts by Congress and the FCC to deregulate telephony... By requiring the natural monopoly component at the basic network level to be open to competitors at higher-levels, intelligent regulation can minimize the economic disruption caused by that natural monopoly and permit as much competition as industry will allow.[39]

Thus, a determined commitment to open communications networks was critical to the widespread development of the Internet. It is clear that the communications platform of the Internet was founded on, and thrived on, the principle that facility owners in the physical layer

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Benefits Whom in Daily Newspaper Markets?, (2000); as well as the statement *Comments on Consolidation and Localism* (2001).

[39] Mark Lemley and Lawrence Lessig, "End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era," *UCLA Law Review, 48 (2001)*, p. 7. The Lemley and Lessig piece is a direct response to Written Ex Parte of Professor James B. Speta at 1, In re Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T Corp. (FCC Dec. 15, 1999) (No. 99-251), James B. Speta, The Vertical Dimension of Cable Open Access, *University of Colorado Law Review,* 71 (2000); Phil Weiser, Competing Paradigms in Telecommunications Regulation, *University of Colorado Law Review,* 71 (2000), which were responses to an earlier piece Mark Lemley and Lawrence Lessig, Written Ex Parte: In the Matter of Application for Consent to Transfer Control of Licenses of MediaOne Group Inc. to AT&T Corp., Federal Communications Commission, CS Docket No. C99-251, November 10, 1999 (hereafter, Lemley and Lessig, MediaOne; numbers in parentheses refer to paragraphs).

could not discriminate against innovators or speakers. This was accomplished through government policy.

> The FCC allowed specialized providers of data services, including Internet Service Providers (ISPs) and their customers, access to raw network transmission capacity through leased lines on cost-effective terms. Regulatory policy forced open access to networks whose monopoly owners tried to keep closed. The resulting competition allowed the FCC to free the service providers from detailed regulation that would have kept them from using the full capabilities of the network in the most open and free manner.
> Thanks to the enduring FCC policy of openness and competition, specialized networks and their users could unleash the Internet revolution. Open network policy assured the widest possible user choice and the greatest opportunities for users to interact with the myriad of emerging new entrants in all segments of the network. To be sure, the FCC strategy emerged haltingly but its direction never changed. Indeed, the Commission consistently backed cost-based access to the network (initially through leased lines and later through unbundled network elements). The de facto result of this policy, and of more conscious choices symbolized by the *Computer III* policies, was to prevent phone company monopolies from dictating the architecture of new data-related services. The Commission thus supported competition and innovation, time and again, by unfailingly keeping the critical network infrastructure open to new architectures and available to new services on cost-effective terms. The instruments of FCC policy were to make leased lines (and, lately, network elements) available on cost-oriented terms and to forebear from regulating Internet and other data services. This steady policy set in motion, and sustained, a virtuous cycle of cumulative innovation, new services, infrastructure development, increasing network usage with evident economic benefits for the U.S. economy.[40]

> Even if the Commission is not ready to embrace the proposition that the cable "pipeline" is a telecommunication facility, the essential point is that policy of open telecommunications networks, including the mandate for nondiscriminatory interconnection pursuant to ONA/CEI is what has largely allowed the "narrowband" Internet to be as vibrant and competitive as it is today. It is hard to see how closed cable networks can obtain the same result in a broadband environment.[41]

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[40] Bar, et. al.

[41] NorthNet, Inc., An Open Access Business Model For Cable Systems: Promoting Competition And Preserving Internet Innovation On A Shared, Broadband Communications Network, file at the Federal Communications Commission, Ex Parte, In the Matter of Application of America Online Inc. and Time Warner, Inc. for Transfers of Control, Federal Communications Commission, CS-Docket No. 0030, October 16, 2000 (hereafter NorthNet),

Lessig is blunt about the government's role, claiming, "[p] hone companies…did not play… games, because they were not allowed to. And they were not allowed to because regulators stopped them."[42]

> We certainly do not claim that a communications network would have been impossible without the government's intervention. We have had telecommunication networks for over a hundred years, and as computers matured, we no doubt would have had more sophisticated networks. The design of those networks would not have been the design of the Internet, however. The design would have been more like the French analogue to the Internet--Minitel. But Minitel is not the Internet. It is a centralized, controlled version of the Internet, and it is notably less successful.[43]

C. COMPETITION WITHOUT COMPETITORS

The FCC's decision to contemplate a fundamental shift in communications policy by relying on intermodal competition at the expense of intramodal competition must confront one fundamental fact; there are very few modes as candidates for competition, particularly for the broadband service on which it focuses. Competition without competitors is a hard sell.

In the Notice, the Commission notes that current policy, which precludes facility owners from withholding use of their facilities, may not be providing adequate incentives to invest in new facilities. In a similar vein in another proceeding the Commission notes that there are those who see the struggle against monopoly power as folly. They offer an alternative theory which argues that monopoly is to be preferred over competition since "[s]ome economists, most notably Schumpeter, suggest that monopoly can be more conducive

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Earl W. Comstock and John Butler, "Access Denied: The FCC's Failure to Implement Open Access as Required by the Communications Act," *Journal of Communications Law and Policy*, Winter 2000.

[42] Lessig, *The Future of Ideas* (New York: Random House, 2001, p. 148.

[43] Lemley and Lessig, "End of End-to-End, p. 7.

to innovation than competition, since monopolists can more readily capture the benefits of innovation."[44]

Thus, some argue that facility owners, exercising their property rights to exclude and dictate uses of the network, will produce a more dynamic environment than an open communications platform. The hope is that a very small number of owners engaging in the rent seeking behavior of innovators will stimulate more investment, and their enlightened self-interest will probably convince them to open their network.[45] Notwithstanding the clear

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[44] "Further Notice of Proposed Rulemaking," *In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992, Implementation of Cable Act Reform Provisions of the 'Telecommunications Act of 1996, The Commission's Cable Horizontal and Vertical Ownership Limits and Attribution Rules, Review of the Commission's Regulations Governing Attribution of Broadcast and Cable MDS Interests, Review of the Commission's Regulations and Policies Affecting Investment in the Broadcast Industry, Reexamination of the Commission's Cross-Interest Policy,* CS Docket Nos. 98-82, 96-85; MM Docket Nos. 92-264, 94-150, 92-51, 87-154, September 13, 2001, para. 36.

[45] Lemley and Lessig, End of End-to-End, p. 17,

> The only argument we have been able to find suggesting that eliminating ISP competition might actually be desirable is that eliminating competition gives cable companies supercompetitive revenues that in turn will encourage them to deploy broadband Internet access more quickly… cable companies will deploy broadband access and open it to competition, but only if they are "able to charge unaffiliated ISPs and other content providers the full monopoly price for interconnection and access…" [The] assumes that no one will buy broadband cable services initially unless the cable company itself provides high-bandwidth content. And the cable companies will have no incentive to invest in developing broadband infrastructure unless they can reap monopoly profits from that endeavor... In effect, the argument is that we must expand the cable companies' monopoly over the wires into competitive markets in order to give them an incentive to implement broadband access.
>
> The need for investment incentives is a fair point. But it is worth noting at the outset that this "monopoly incentives" argument contradicts every other argument made by opponents of ISP competition. For cable companies to reap monopoly returns from prices charged to ISPs means, among other things, that the cable companies will not voluntarily open their lines to ISP competition. If cable companies are collecting monopoly profits from ISPs, it means that facilities-based competition by other forms of broadband Internet access has not served to restrict cable's power over price. It means that broadband cable

success of the open communications platform, and the demonstrated unwillingness of incumbent facility owners to open their platforms when they are not required to do so, monopoly proponents tell us that the next generation of the Internet cannot succeed under the same rules of open communications. This flies in the face of the overwhelming evidence from contemporary economic theory and the principles adopted with the 1996 Act.

Before we discuss why the approach contemplated by the Commission is contrary to economic theory and analysis, it should also be noted that it is contrary to the statute. The Congress recognized, as do we, that **real** competition is the best form of regulation or consumer protection. Moreover, and most critically, in Section 10 it articulated quite clearly the conditions under which public interest regulation could be exchanged for regulation by the market. In fact, in the comments filed by the groups authoring these comments in the Notice of Inquiry in the Cable Modem proceedings, which the Commission recognizes is intricately interconnected with this Notice, we called on the Commission to conduct just such an inquiry. The Commission has not issued this Notice under those provisions of the Act and, therefore, exposes consumers to the worst of both worlds, a market that is disciplined neither by competition nor by regulation.

It is interesting to ask why the Commission eschews the clearest and most direct path to deregulating telecommunications that is specified in the Act. Section 10 of Title I, provides "regulatory flexibility" to forbear from regulation stating that the

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service is a monopoly, and therefore within the jurisdiction of the antitrust laws. And it assumes that, contrary to the Chicago-school theory of tying, cable companies will make more money from bundling ISP service with the provision of access than they would merely by charging an unregulated price for access alone.

> Commission shall forbear from applying any regulation or any provision of this Act to a telecommunications carrier or telecommunications service, or class of telecommunications carriers or telecommunications services, in any or some of its or their geographic markets, if the Commission determines that –
>
> (1) enforcement of such regulation or provision is not necessary to ensure that the charges, practices, classifications, or regulations, by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory;
> (2) enforcement of such regulation or provision is not necessary for the protection of consumers; and
> (3) forbearance from applying such provision or regulation is consistent with the public interest.[46]

The key is that the conditions for forbearance are more stringent, not merely having to do with the speed of deployment, but addressing all of the broad purposes of the Act. To conclude that without regulation rates will be just, reasonable and non-discriminatory, and that enforcement of consumer protections will not be necessary, the Commission would have to conclude the market is effectively competitive.

The Commission cites section 706 of the Act as creating the impetus to its policy direction.[47] It invokes section 706 (a) which created an explicit obligation in public policy.

> The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing in a manner consistent with the public interest, convenience and necessity, price cap regulation, regulatory forbearance measures that promote competition in local telecommunications markets, or other regulating methods that remove barriers to infrastructure investment.[48]

Yet, Section 706 (b) also created an explicit process for the exercise of these authorities.

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[46] 47 U.S.C. s 10.
[47] NPRM, para. 22.

> The Commission shall, within 30 months after the date of enactment of this Act, and regularly thereafter, initiate a notice of inquiry concerning the availability of advanced telecommunications capabilities… In the inquiry, the Commission shall determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. If the Commission's determination is negative, it shall take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.[49]

The Commission has made no such finding. Thus, the Commission cannot rely on section 706 to vitiate the unbundling requirement.[50]

Reading sections 706 and 10 together provides a consistent set of public policy priorities. The Commission needs a substantial justification to forbear under section 706 before it can deny consumers the broad protections promoted under the Communications Act. If the Commission cannot find that the deployment of advanced telecommunications capabilities is not reasonable and timely, it should not abrogate the consumer protections of the Act. In the alternative, if finds that market forces have developed to a sufficient degree that the regulations no longer provide an independent benefit to consumers, it can forbear.

The legal context is important because it gets to the heart of the economic reality we will discuss in the next section. The Commission is trying to solve a problem that does not exist (unreasonable or untimely deployment), at great cost to the consumer and the public interest (loss of the consumer protections of the Act).

The Commission's emphasis on facility-based competition and overstatement of the role of intermodal competition must not be allowed to obscure the specific language of the

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[48] 47 U.S.C. s 706 (a).
[49] 47 U.S.C. s 706 (b).
[50] NPRM, paras. 22-24.

Act with regard to the standard under which new entrants are allowed to use the piece parts of the existing network. Section 251 states

> In determining what network elements should be made available for purposes of subsection [251] (c)(3), the Commission shall consider, at a minimum, whether –
>
> (A) access to such network elements as are proprietary in nature is necessary; and
> (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the service that it seeks to offer.

The Commission, on remand, adopted a straightforward definition of necessary and impair.[51] If the ability of a new entrant to offer service would be materially impaired in a practical, economic or operational manner by the withholding of a network element, that element should be made available on an unbundled basis.

III. ELEMENTS OF INDUSTRIAL ORGANIZATION ANALYSIS

A. FUNDAMENTALS

Economic public policy is primarily concerned with market performance (see Exhibit 2).[52] The concept of performance is multifaceted, including both efficiency and fairness.[53]

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[51] NPRM, paras 7- 11.

[52] Scherer, F. M. and David Ross, Industrial *Market Structure and Economic Performance* (Boston, Houghton Mifflin: 1990), p. 4. Shepherd, William, G., *The Economics of Industrial Organization* (Prentice Hall, Engelwood Cliffs, N.J., 1985), p. 5, presents a similar view. W. Kip Viscusi, John M. Vernon and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge, MIT Press, 2000), p. 62.

[53] Scherer and Ross, p. 4.

> Decisions as to what, how much and how to produce should be efficient in two respects: Scarce resources should not be wasted, and production decisions should be responsive qualitatively and quantitatively to consumer demands.
> The operations of producers should be progressive, taking advantage of opportunities opened up by science and technology to increase output per unit of input and to provide consumers with superior new products, in both ways contributing to the long-run growth of real income per person. The operation of producers should facilitate

The measures of performance to which we traditionally look are pricing, quality, and profits. They are the most direct measure of how society's wealth is being allocated and distributed.

The performance of industries is determined by a number of factors, most directly the conduct of market participants. Do they compete? What legal tactics do they employ? How do they advertise and price their products?[54]

Conduct is affected and circumscribed by market structure. Market structure includes an analysis of the number and size of the firms in the industry, their cost characteristics and barriers to entry.

Market structure is also influenced by basic conditions, [55] such as the elasticities of supply and demand, vertical integration, as well as the constraints of available technologies.[56]

Promoting market structures that support competition are the primary object of U.S. public policy because "[c]ompetition has long been viewed as a force that leads to an ideal solution of the economic performance problem, and monopoly has been condemned."[57] The predominant reason for the preference for competitive markets reflects the economic performance they generate, although there are political reasons to prefer such markets as well.[58] In particular, competition fosters an efficient allocation of resources, the absence of profit, the lowest cost production, and a strong incentive to innovate.[59] Where competition

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> stable full employment of resources… The distribution of income should be equitable. Equity is notoriously difficult to define, but it implies at least that producers do not secure rewards in excess of what is needed to call forth the amount of services supplied.

[54] Scherer and Ross, p. 4.
[55] Scherer and Ross, p. 5.
[56] Scherer and Ross, p. 5.
[57] Scherer and Ross, p. 15.
[58] Scherer and Ross, p. 18.
[59] Scherer and Ross, p. 20.

breaks down, firms are said to have market power[60] and the market falls short of these results.[61]

Market structure analysis identifies situations in which a small number of firms control a sufficiently large part of the market to make coordinated or reinforcing activities feasible. Through various implicit and explicit mechanisms, a small number of firms can reinforce each other's behavior rather than compete. Identification of when a small number of firms can exercise this power is not a precise science. Generally, however, when the number of significant firms falls into the single digits, there is cause for concern, as the following suggests.

> Where is the line to be drawn between oligopoly and competition? At what number do we draw the line between few and many? In principle, competition applies when the number of competing firms is infinite; at the same time, the textbooks usually say that a market is competitive if the cross effects between firms are negligible. Up to six firms one has oligopoly, and with fifty firms or more of roughly equal size one has competition; however, for sizes in between it may be difficult to say. The answer is not a matter of principle but rather an empirical matter.[62]

> One further benefit is sometimes attributed to the working of competition, although with less logical compulsion. Because of the pressure of prices on costs, entrepreneurs may have especially strong incentives to seek and adopt cost-saving technological innovation. Indeed, if industry capacity is correctly geared to demand at all times, the *only* way competitive firms can earn positive economic profits is through innovative superiority.

[60] Scherer and Ross, pp. 17…18.

> Pure monopolists, oligopolists, and monopolistic competitors share a common characteristic: each recognizes that its output decisions have a perceptible influence on price… All three types possess some degree of power over price, and so we say that they possess monopoly power or market power…
>
> The power over price possessed by a monopolist or oligopolist depends upon the firm's size *relative to* the market in which it is operating.

[61] Scherer and Ross, Chapter 18.

[62] J. W. Friedman, Oligopoly Theory (Cambridge: Cambridge University Press, 1983), pp. 8-9.

Pure and perfect competition is rare, but the competitive goal is central.[63] Therefore, public policy pays a great deal of attention to the relative competitiveness of markets as well as the conditions that make markets more competitive or workably competitive. Summarizing the literature, Scherer and Ross develop a useful list of these characteristics as follows:

Structural Criteria

- The number of traders should be at least as large as scale economies permit.
- There should be no artificial inhibitions on mobility and entry.
- There should be moderate and price-sensitive quality differentials in products offered.

Conduct Criteria

- Some uncertainty should exist in minds of rivals as to whether price initiatives will be followed.
- Firms should strive to attain their goals independently, without collusion.
- There should be no unfair, exclusionary, predatory, or coercive tactics.
- Inefficient suppliers and customers should not be shielded permanently.
- Sales promotions should be informative, or at least not misleading.
- There should be no persistent, harmful price discrimination.

Performance Criteria

- Firms' production and distribution operations should be efficient and not wasteful or resources.
- Output levels and product quality (that is variety, durability, safety, reliability, and so forth) should be responsive to consumer demands.
- Profits should be at levels just sufficient to reward investment, efficiency, and innovation.
- Prices should encourage rational choice, guide markets toward equilibrium, and not intensify cyclical instability.

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[63] Scherer and Ross, p. 16…17

> In modern economic theory, a market is said to be competitive (or more precisely, purely competitive) when the number of firms selling a homogeneous commodity is so large, and each individual firm's share of the market is so small, that no individual firm finds itself able to influence appreciably the commodity's price by varying the quantity of output it sells…
>
> Homogeneity of the produce and insignificant size of individual sellers and buyers relative to their market (that is, *atomistic* market structure) are sufficient conditions for the existence of pure competition, under which seller possess no monopoly power. Several additional structural conditions are added to make competition in economic theory not only "pure" but "perfect." The most important is the absence of barriers to entry of new firms, combined with mobility of resources employed.

- Opportunities for introducing technically superior new products and processes should be exploited.
- Promotional expenses should not be excessive.
- Success should accrue to sellers who best serve consumer wants.[64]

In simple terms, competition must be sufficiently developed within a market to produce a reasonable approximation of the performance results generally associated with competition for that market to be workably competitive.[65]

B. WHY SMALL NUMBERS RAISE MARKET POWER CONCERNS

We now turn to the central question: "Under what circumstances is market power a problem?" In order to assess the potential for the exercise of market power resulting from a merger, the Department of Justice analyzes the level of concentration as measured by the Herfindahl-Hirschman Index (HHI).[66] This measure takes the market share of each firm, squares it, sums the result, and multiplies by 10,000.[67] A second method that is frequently

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[64] Scherer and Ross, pp. 53-54.
[65] See also Peter Asch, *Industrial Organization and Antitrust Policy* (New York: John Wiley and Sons, 1983), pp. 100-104,
[66] U.S. Department of Justice, Merger Guideline, revised, 1997.
[67] Shepherd, p. 389, gives the following formulas for the Herfindahl-Hirschman Index (HHI) and the Concentration Ratio (CR):

$$H = \sum_{i=1}^{n} S_i^2$$

$$CR = \sum_{i=1}^{m} S_i$$

m i = 1
where
n = the number of firms
m= the market share of the largest firms (4 for the 4 firm concentration ratio)
S_i = the share of the ith firm.

used by economists to quantify market concentration is to calculate the market share of the largest 4 firms (4 firm concentration ratio or CR4).

Under its Merger Guidelines, the DOJ considers a market with an HHI of 1000 or less to be unconcentrated (see Exhibit 3). Such a market would have the equivalent of ten equal sized competitors. In such a market, the 4-firm concentration ratio would be 40 percent. Any market with a concentration above this level is deemed to be a source of concern by the DOJ.

The DOJ considers an HHI of 1800 as the point at which a market is considered highly concentrated. This level falls between five and six equal-sized competitors. Shepherd describes these thresholds in terms of four-firm concentration ratios as follows:[68]

> Tight Oligopoly: The leading four firms combined have 60-100 percent of the market; collusion among them is relatively easy.
>
> Loose Oligopoly: The leading four firms, combined, have 40 percent or less of the market; collusion among them to fix prices is virtually impossible.

There are several other specific types of markets where such behavior is more or less likely. First, the highly concentrated category can be broken down into two types of markets that are a special source of concern. Although the expression 'monopoly' technically refers to one firm, antitrust practice refers to monopoly power when the market share of a firm rises to the level of 60 to 70 percent. The HHI can vary, depending on the size of the second firm in the market. A dominant firm with a market share of 65 percent alongside ten small firms would result in an HHI of about 4,300. As a practical matter we observe that monopoly situations where the leading firm has over 65 percent of the market share exhibit HHIs of 5,300 or higher.

[68] Shepherd, p. 4.

A ‘duopoly’ refers to a market with only two firms. Two equal sized firms would be a duopoly with an HHI of 5,000. As a practical matter, we observe duopolies, where two firms generally fall in the 60/40 percent range, exhibiting HHIs between 3000 and 5300.

On the other hand, we should not forget that although ten firms constitute an unconcentrated market by the DOJ, that number does not ensure vigorous competition. Generally, a much higher number, perhaps fifty, is associated with the concept of vigorous or atomistic competition. With 50 equal size competitors, the HHI would be 200 and the CR 4 would be 8.

Shepherd refers to collusion in his discussion, but it is important to note that it is not the only concern of market power analysis or the Merger Guidelines. It is critical to keep in mind that merger policy is probabilistic and predictive. The DOJ Guidelines are oriented toward conditions under which certain types of anticompetitive behaviors are sufficiently likely to occur to require regulatory action.

> The rule of thumb reflected in all iterations of the Merger Guidelines is that the more concentrated an industry, the more likely is oligopolistic behavior by that industry.... Still, the inference that higher concentration increases the risks of oligopolistic conduct seems well grounded. As the number of industry participants becomes smaller, the task of coordinating industry behavior becomes easier. For example, a ten-firm industry is more likely to require some sort of coordination to maintain prices at an oligopoly level, whereas the three-firm industry might more easily maintain prices through parallel behavior without express coordination.

The Merger Guidelines recognize that market power can be exercised with coordinated, or parallel, activities and even unilateral actions.

> Market power to a seller is the ability profitably to maintain prices above competitive levels for a significant period of time.*/ In some circumstances, a sole seller (a "monopolist") of a product with no good substitutes can maintain a selling price that is above the level that would prevail if the market were competitive. Similarly, in some circumstances, where only a few firms account

> for most of the sales of a product, those firms can exercise market power, perhaps even approximating the performance of a monopolist, by either explicitly or implicitly coordinating their actions. Circumstances also may permit a single firm, not a monopolist, to exercise market power through unilateral or non-coordinated conduct --conduct the success of which does not rely on the concurrence of other firms in the market or on coordinated responses by those firms. In any case, the result of the exercise of market power is a transfer of wealth from buyers to sellers or a misallocation of resources.
>
> */ Sellers with market power also may lessen competition on dimensions other than price, such as product quality, service or innovation.[69]

Lawrence Sullivan and Warren S. Grimes, describe the DOJ approach as follows:

> The coordination that can produce adverse effects can be either tacit or express. And such coordination need not be unlawful in and of itself. According to the 1992 Guidelines, to coordinate successfully, firms must
> (1) reach terms of interaction that are profitable to the firms involved and
> (2) be able to detect and punish deviations. The conditions likely to facilitate these two elements are discussed separately, although they frequently overlap.
>
> In discussing how firms might reach terms for profitable coordination, the Guidelines avoid using the term "agreement," probably because no agreement or conspiracy within the meaning of Section 1 of the Sherman Act is necessary for the profitable interaction to occur. As examples of such profitable coordination, the Guidelines list "common price, fixed price differentials, stable market shares, or customer or territorial restrictions." Sometimes the facilitating device may be as simple as a tradition or convention in an industry.

They go on to note the mechanisms that might be used and the usefulness of the HHI in this regard.

> Oligopoly conditions may or may not require collusion that would independently violate Section 1 of the Sherman Act. A supracompetitive price level may be maintained through price leadership (usually the leader is the largest firm), through observance of a well-established trade rule (e.g., a convention of a 50 percent markup in price among competing retailers), or through strategic discipline of nonconforming members of the industry…
>
> To the extent that one or very few members of a concentrated industry have much higher market shares than other members, the opportunities for strategic disciplining may expand… The expanded ability of the larger firm to coerce

[69] Horizontal Merger Guidelines, at section 0.1.

> price discipline is reflected in the Herfindahl-Hirschman Index (HHI), which will assign a high concentration index to an industry with a very large participant. An industry with the same number of participants, each of them roughly equal in size, will have a lower index.[70]

The area of noncollusive, oligopoly behavior has received a great deal of attention.[71] A variety of models have been developed in which it is demonstrated that small numbers of market participants interacting in the market, especially on a repeated basis, can learn to signal, anticipate, and parallel one another to achieve outcomes that capture a substantial share of the potential monopoly profits.

C. THE CURRENT LACK OF COMPETITION IN BROADBAND AND LOCAL TELEPHONY

The recent report by the National Academy of Sciences proposed an interesting typology of broadband markets from the point of view of competition.

> Type 0 – no terrestrial providers of broadband.
> Type 1 – one terrestrial facility-based providers in the area (e.g., cable but not DSL or *vice versa*).
> Type 2 – two terrestrial facilities-based providers.
> Type 3 – one or more facilities based providers that install new infrastructure to compete with incumbents.[72]

Their approach to categorizing these markets reminds us that there are liable to be "no-opolies," situations in which no full service broadband facility is available. It also drives

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[70] Herbert Hovenkamp, *The Law of Antitrust: An Integrated Handbook*, Hornbook Series (West Group, St. Paul, 2000), pp. 596-597.

[71] Viscusi, Vernon, and Harrington, Chapter 5. Drew Fudenberg and Jean Tirole, "Noncooperative Game Theory for Industrial Organization: An Introduction and Overview," in Richard Schmalensee and Robert D. Willig, *Handbook of Industrial Organization* (New York: North-Holland, 1989), Carl Shapiro, "Theories of Oligopoly Behavior," in Richard Schmalensee and Robert D. Willig, *Handbook of Industrial Organization* (New York: North-Holland, 1989),

[72] Computer Science and Telecommunications Board, National Research Council, *Broadband: Bringing Home the Bits* (National Academy Press, Washington D.C.: 2002), p. 11 (hereafter Bits, p. 21.

home the point that terrestrial wire-based services (today: telephone wireline or cable modem service) are likely to dominate.

As a practical matter, using the Department of Justice Merger Guidelines, and general economic literature, as well as the National Academy of Science typology we arrive at the following categories to describe media markets.

"No-opoly" – no full service provider available

Monopoly – 1 dominant firm

Duopoly – 2, relatively equal-sized firms that dominate the market

Tight oligopoly – 3 to 5 large firms

Moderately concentrated – 6 to 9 firms

Unconcentrated – 10 or more firms

Atomistic Competition – 50 firms

1. BROADBAND MARKETS

The FCC publishes data on the availability of high-speed Internet services from ISPs[73] by zip codes, which shows the product space is highly concentrated at best (see Exhibit 4). A recent J.P. Morgan analysis of the availability of facilities reaches a similar conclusion.[74]

Both show that about one-fifth of the nation does not have high-speed service. The FCC's ISP data shows that another one-fifth of zip codes are monopolies, slightly less than one fifth are duopolies and a quarter are tight oligopolies. Only 10 percent of zip codes are moderately concentrated and four percent are unconcentrated. J. P. Morgan estimates that in

[73] Industry Analysis Division, *High-Speed Services for Internet Access: Subscribership as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Table 9 (hereafter High-Speed Access),

addition to the one-fifth of the country that has no supplier, almost one-half of the country is subject to a facility monopoly. The final one-third has a facility duopoly.

2. NARROWBAND

Competition for local telephone service is more widespread than broadband, but far from effectively competitive (see Exhibit 5). By zip codes, two fifths have no competition. Approximately 16 percent are a monopoly and 10 percent are a duopoly. Just under one fifth is a tight oligopoly. Only 6 percent are unconcentrated. Less densely populated areas are less likely to have competition, so the picture is somewhat better on a population-weighted basis. Approximately one tenth of the nation has no competition, with 9 percent being a monopoly and another 9 percent being a duopoly. Three-tenths are tight oligopolies. One quarter is moderately concentrated and one-sixth is unconcentrated.

This analysis mixes both intramodal and intermodal competition. If we think of facilities-based competition as customers who take their basic service over specific types of utilities, we conclude that about 90 percent of accounts are still based on wireline incumbent service.

Only a very small percentage of customers (2-4 percent) have given up wireline service and relies on wireless only. This reflects the fact that for basic local service, wireless is not an attractive alternative. For Internet access, it is not much of an alternative at all at present.

Another 1 percent of customers have taken cable telephone service. These are almost entirely in the residential customer class.

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[74] Jason Bazinet, *The Cable Industry* (J.P. Morgan Equity Research, November 2, 2001), Figure 36 (hereafter, Cable).

Another 3 percent receive service for entirely separate wireline facilities. These are largely in the business customer class.

Another 2 percent receive service from partially separate facilities (i.e. by using unbundled network elements).

Another 2 percent is based on UNE-P, which is overwhelmingly reliant on the incumbent network.

Another 4 percent is pure resale.

Intramodal competition – competition that relies at least in part on the use of the existing network through resale and UNE-based service – is about twice as large as pure facilities based competition.

To date, facilities-based intermodal competition has taken about a 4 percent market share.[75] Facilities-based intramodal competition that is not dependent on unbundled network elements has taken about a 4 percent market share. Intramodal competition based on unbundled network elements has taken an 8 percent market share.

IV. THE THEORY OF MONOPOLY AS A SUPERIOR SOURCE OF VALUE CREATION

The claim that we are better off with a small number of competitors is conceptually linked to long-standing claims that "firms need protection from competition before they will bear the risks and costs of invention and innovation, and a monopoly affords an ideal platform for shooting at the rapidly and jerkily moving targets of new technology."[76] Lately this

[75] The role of intermodal competition in local telephony raised in the NPRM, paras. 24-28, is small.
[76] Scherer and Ross, p. 31

argument is extended to claims that, in the new economy, "winner take all" industries exhibit competition for the entire market, not competition within the market. As long as monopolists are booted out on a regular basis, or believe they can be, monopoly is in the public interest.[77]

Claiming that a massive build-out of the physical infrastructure is needed, the owners of facilities insist that the cost savings on communications and information inputs should be transferred to the owners of physical capital. Under this line of argument, the generation of sufficient rents to incent the build-out must be achieved by either excluding competitive content from the networks or charging content producers such a high price (for transport or through demanding equity stakes) that the facility owners capture the bulk of the surplus.

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

> ISPs cannot compete on the core value proposition in a broadband world unless they are offering a facilities-based service that enables them to compete on price and quality with a cable provider of Internet service. To the extent that a cable provider desires to find new marketing channels, it may well strike arrangements with ISPs to assist on that score, but the ISPs are not competing on the core product. At best, the ISPs are able to offer differentiated content on the portal screen, added security features, more reliable privacy policies and the like.[78]

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[77] Stan J. Liebowitz and Stephen E. Margolis, *Winners, Losers & Microsoft* (Oakland: The Independent Institute, 2001), uses the term serial monopoly, as do a bevy of other Microsoft supported experts. Mark Cooper, "Antitrust as Consumer Protection: Lessons from the Microsoft Case," *Hastings Law Journal*, 52 (2001), points out that there is no serial in Microsoft's monopolies. Rather, Microsoft conquers market after market using leverage and anticompetitive tactics, never relinquishing any of its previous monopolies.

[78] Phil Weiser, *Networks Unplugged: Toward a Model of Compatibility Regulation between Communications platforms*, Telecommunications Policy Research Conference, October 27, 2001), p. 30.

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

> …[O] ne should not think of ISPs as providing a fixed and immutable set of services. Right now ISPs typically provide customer support, as well as an IP address that channels the customer's data. Competition among ISPs focuses on access speed, as well as some competition for content.
> The benefits from this competition in the history of the Internet so far should not be underestimated. The ISP market is extraordinarily competitive. This competition has driven providers to expand capacity and lower prices. It has also driven providers to give highly effective customer support. This extraordinary build-out of capacity has not been incented through the promise of monopoly protection. The competitive market has provided a sufficient incentive, and the market has responded.[79]

A. MONOPOLY DOES NOT FIT

1. INNOVATION

The "winner take all" argument faces considerable dispute, and was firmly rejected in the Microsoft case.[80] The theory supporting Schumpeterian rents breaks down when applied in modern circumstances.

> Viewed in their entirety, the theory and evidence [in support of monopoly power] suggest a threshold concept of the most favorable climate for rapid technological change. A bit of monopoly power in the form of structural concentration is conducive to innovation, particularly <u>when advances in the relevant knowledge base occur slowly</u>. But very high concentration has a positive effect only in rare cases, and more often it is apt to retard progress by restricting the number of independent courses of initiative and by dampening firms' incentive to gain market position through accelerated R&D. Likewise,

[79] Lemley and Lessig, MediaOne,

[80] Mark Cooper, "Antitrust as Consumer Protection: Lessons from the Microsoft Case," *Hastings Law Journal*, 52 (2001); Consumer Federation of America and Consumers Union, Competitive Processes, Anticompetitive Practices And Consumer Harm In The Software Industry: An Analysis Of The Inadequacies Of The Microsoft-Department Of Justice Proposed Final Judgment, United States v. Microsoft Corp., Civil No. 98-1232, before Judge Colleen Kollar-Kotelly of the U.S. District Court for the District of Columbia, January 25, 2002, analyzing U.S. v. Microsoft, 253 F.3d 34, 103 (D.C. Cir. 2001)(en banc).

> given the important role that technically audacious newcomers play in making radical innovations, it seems important that barriers to new entry be kept at modest level. Schumpeter was right in asserting that perfect competition has no title to being established as the model of dynamic efficiency. But his less cautious followers were wrong when they implied that powerful monopolies and tightly knit cartels had any strong claim to that title. What is needed for rapid technical progress is a subtle blend of competition and monopoly, with more emphasis in general on the former than the latter, and with the role of monopolistic elements diminishing when rich technological opportunities exist. [81]

The Internet seems to fit the mode of audacious or atomistic competition much better than the monopoly rent model, as did the development and progress of its most important device, the PC.[82] The monopoly rent argument appears to be least applicable to industries in which rapid and raucous technological progress is taking place within the framework of an open platform, as has typified the Internet through its first two decades.

Furthermore, the monopoly/closed platform situation raises antitrust concerns.

> One policy implication for antitrust is the need to preserve a larger number of firms in industries where the best innovation strategy is unpredictable…Another implication is… that "technical progress thrives best in an environment that nurtures a diversity of sizes and, perhaps especially, that keeps barriers to entry by technologically innovative newcomers low…A third implication is the awareness that dominant firms may have an incentive to act so as to deter innovative activities that threaten the dominant position.[83]

2. VERTICAL MARKET POWER RESULTS IN ANTICOMPETITIVE CONDUCT

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[81] Scherer and Ross, p. 660.

[82] Langlois, p. 215,

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

[83] Daniel Rubinfeld and John Hoven, "Innovation and Antitrust," pp. 75-76.

The discussion in the previous section focuses on horizontal marker power. Vertical issues are also a concern particularly where the physical layer of a communications platform is concerned.

Vertical integration can raise concerns, especially when dominant firms become integrated across markets for critical inputs. For the last several decades of the 20th century concern about vertical integration in market structure analysis was muted. However, a number of mergers in the communications industries between increasingly large owners of communications facilities have elicited vigorous analysis of the abuse of vertical market power. (AT&T/MediaOne, AOL/Time Warner (and Time Warner/Turner before it), SBC Communications Inc. (SBC)/Ameritech, and Bell Atlantic/GTE). As one former antitrust official put it, "the increasing number of mergers in high-technology industries has raised both horizontal and vertical antitrust issues… the interest in and analysis of vertical issues has come to the forefront.[84]

Vertical integration can create barriers to entry. By integrating across stages of production, incumbents may force potential competitors to enter at both stages, making competition much less likely.[85] Capital market hurdles are only one of the barriers to entry

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[84] Daniel Rubinfeld and Hal. J. Singer, "Open Access to Broadband Networks: A Case Study of the AOL/Time Warner Merger," *Berkeley Technology Law Journal* 16 (2001), p. 632.

[85] Martin K. Perry, "Vertical Integration: Determinants and Effects," in Richard Schmalensee and Robert D. Willig, *Handbook of Industrial Organization* (New York: North-Holland, 1989), p. 247.

> [V]ertical mergers may enhance barriers to entry into the primary industry if entrants must operate at both stages in order to be competitive with existing firms and if entry at both stages is substantially more difficult than entry at one stage.

Perry, p. 197.

> Bain popularized the concept of barriers to entry and also discussed the importance of potential competition. Bain argued that vertical integration creates a capital barrier to entry by forcing potential entrant to contemplate entry at two stages of production rather than just one.

that vertical integration and conglomeration can create. Such mergers can also foreclose input markets to competitors.

> When all production at a level of an industry is "in-house," no market at all exists from which independent firms can buy inputs. If they face impediments or delays in setting up a new supplier, competition at their level will be reduced. The clearest form of this is the rise in capital a new entrant needs to set up at both levels.[86]
>
> Ores, special locations, or other indispensable inputs may be held by the integrated firm and withheld from others. The integration prevents the inputs from being offered in a market, and so outsiders are excluded. A rational integrated firm might choose to sell them at a sufficiently high price.[87]

Exclusive and preferential deals for the use of facilities and products compound the problem.

> The first firms to integrate into neighboring stages reduce the number of alternative sources for other firms at either stage. This "thinning" of the market can increase the costs of market or contractual exchange. Subsequent integration by other firms then becomes more likely.[88]
>
> Restrictions may be set on areas, prices or other dimensions … Only when they are done by small-share firms may competition be increased. When done by leading firms with market shares above 20 percent, the restrictions do *reduce* competition.[89]
>
> Similarly, a dominant firm may also use vertical integration to raise the costs of its competitors … By leaving the open market thin, competitors may be unable to expand without significantly driving up the input price, they may be subject to higher prices set by the fewer remaining suppliers, or they may incur higher transaction costs for having to negotiate contracts with suppliers…[90]

Scherer and Ross, p. 526.

> To avoid these hazards, firms entering either of the markets in question might feel compelled to enter both, increasing the amount of capital investment required for entry

[86] Shepherd, pp. 289-290.
[87] Shepherd, p. 290.
[88] Perry, p. 247.
[89] Shepherd, p. 294.
[90] Perry, p. 197.

The market structural conditions that result from the concentration and integration of the industry make behavioral abuse more easily effective. Cross-subsidization becomes possible,[91] although this is by no means the only available instrument of anti-competitive conduct. Vertical integration facilitates price squeezes and enhances price discrimination.[92]

> This could happen, if, for example, the conduct of vertically integrated firms increased risks for nonintegrated firms by exposing downstream specialists to regular or occasional price squeezes or made it difficult for upstream specialists to find a market for their output in times of depressed demand.[93]

Concerns arise that not only will the dominant firm in the industry gain the leverage to profitably engage in anti-competitive conduct,[94] but also the dynamic processes in the

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[91] Asch, Peter and Rosalind Senaca, *Government and the Marketplace* (Dryden Press, Chicago: 1985), p. 248.

> Subsidization: The conglomerate firm can choose to behave in a predatory fashion in one market, subsidizing its predation from profits earned elsewhere.
>
> The simple concept involved in cross subsidizing is that conglomerates can use profits from branch A to support deep, "unfair" price cuts by branch B …

Shepherd, p. 302.

> If all branches of a diversified firm are dominant in their markets, their pooled resources are likely to increase their dominance through greater price discrimination, threats of punitive actions, and so forth. By contrast, a string of small-share branches is more likely to promote competition than to reduce it, if it can help its members at all.

[92] Scherer and Ross, p. 524.

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

[93] Scherer and Ross, p. 526.

[94] There is a growing body of theoretical and empirical analysis that has reinvigorated concerns about the anti-competitive impacts of vertical integration, particularly in the cable industry. On the cable industry see Ordover and Braunstein, op. cit. or more general arguments see Krattenmaker, T.G. and S. C. Salop, "Anti-competitive Exclusion: Raising Rivals' Costs to Achieve Power Over Prices," The Yale Law Journal, 92:2 (1986); Ordover, J., A. O. Sykes and R.D. Willig, "Non-price Anti-Competitive Behavior by Dominant Firms Toward the Producers of Complementary Products," in F. M. Fisher (Ed.), Antitrust and Regulation (Cambridge: MIT Press, 1985).

industry will clearly shift toward cooperation and coordination rather than competition. The issue is not simply collusion, although that is clearly a concern.[95] Beyond collusion, a mutual forbearance and reciprocity occurs as spheres of influence are recognized and honored between and among the small number of interrelated entities in the industry.

> Now we consider the big picture, rather than market-by-market effects. Imagine an extreme situation, with five big diversified firms extending into all major sectors. They coexist in parallel, touching one another in hundreds of markets. Whatever their effects on each market might be, they pose a larger problem of spheres of interest, or diplomatic behavior replacing competition …
>
> Reciprocity is an exchange of favors. Reciprocal buying is one form of it. At its simplest, firm A buys from firm B because of some purchase that B makes from A …
>
> Reciprocity: The large conglomerate may have numerous opportunities for reciprocal buying arrangements.
>
> Mutual forbearance: More generally (it is sometimes claimed) large firms treat each other with deference, avoiding competitive confrontation whenever possible.[96]

The final behavioral effect is to trigger a rush to integrate and concentrate. Being a small independent firm at any stage renders a company extremely vulnerable to a variety of attacks.

> It is possible that business firms undertake vertical integration mergers not to enhance the level of monopoly power at some stage, but to redistribute it. Oligopolies often settle down into behavioral patterns in which price competition atrophies, even though some or all sellers suffer from excess capacity. Non-price rivalry then becomes crucial to the distribution of sales. One form of nonprice competition is the acquisition of downstream enterprises, which, all else (such as prices) being equal, will purchase from their upstream affiliates. If acquisition of this sort deflects significant amounts of sales,

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[95] Perry, p. 247.

> The *Guidelines* do recognize three major competitive problems of vertical mergers in concentrated industries. First, forward mergers into retailing may facilitate collusion at the manufacturing stage by making it easier to monitor prices or by eliminating a "disruptive buyer."

[96] Asch and Senaca, p. 248.

> disadvantaged rivals are apt to acquire other potential customers in self-defense, and reciprocal fear of foreclosure precipitates a bandwagon effect in which the remaining independent downstream enterprises are feverishly sought.[97]
>
> Triggering: If there are 10 nonintegrated firms and only one of them integrates, then little affect on competition might occur. But if this action induces the other 9 to do the same, the ultimate impact of the first "triggering" move may be large. Any increase in market power is magnified.[98]

The theoretical literature provides ample basis for concern that the physical layer of communications platforms will not perform well without a check on inherent market power. In this layer, barriers to entry are substantial and go far beyond simple entrepreneurial skill that needs to be rewarded. At the structural level, new entry into these physical markets is difficult. Rents in markets with barriers to entry other than entrepreneurial skill are larger than they need to be to attract investment and do not dissipate so quickly.[99]

The dominant players in the physical layer can readily distort the architecture of the platform to protect their market power.[100] They have a variety of tools to create economic and entry barriers[101] such as exclusive deals,[102] retaliation,[103] manipulation of standards,[104] and

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[97] Scherer and Ross, pp. 526-527.
[98] Shepherd, p. 290.
[99] Langlois, p. 222,

> But in the case of a broad patent – or a broad standard – the remuneration that monopoly rights confer far outstrip the risk-discounted ex ante costs of innovation. Moreover, in the case of a broad patent or standard, the ability of the patent holder to block future innovation will do more to diminish the incentive for technological progress than will any weakening of intellectual property rights…
> Clearly, the narrower the scope of a technical standard, the more temporary – the more "Schumpeterian" – the rents are likely to be.

[100]Langlois, "Technical Standards; Franklin M. Fisher, Innovation and Monopoly Leveraging," in Jerry Ellig (Ed.), *Dynamic Competition and Public Policy: Technology, Innovations, and Antitrust Issues* (Cambridge: Cambridge University Press, 2001).
101. Joseph Farrell & Garth Saloner, Installed Base and Compatibility: Innovation, Product Preannouncements and Predation, 76 AM. ECON. REV. 940, 948-51 (1986) Michael Katz & Carl Shapiro, Product Innovation with Network Externalities, 40 J.INDUS. ECON. 55, 73

strategies that freeze customers.[105] Firms can leverage their access to customers to reinforce their market dominance[106] by creating ever-larger bundles of complementary assets.[107] As the elasticity of demand declines over the course of the product life cycle, market power lodged in the physical layer results in excessive bundling[108] and overpricing of products under a variety of market conditions.[109] Control over the product cycle can impose immense costs by

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(1992)..Richard Makadok, Can First-Mover and Early Mover Advantages Be Sustained in an Industry with Low Barriers to Entry/Imitation? 19 STRATEGIC MGMT. J. 683, 685 (1996).; Ulrich Witt, "Lock-in" vs. "Critical Masses"–Industrial Change Under Network Externalities, 15 INT'L J. INDUS. ORG., 753, 768-69 (1997). Robin Mansell, Strategies for Maintaining Market Power in the Face of Rapidly Changing Technologies, 31 J. ECON. ISSUES 969, 970 (1997).

102. Melissa A. Schilling, Technological Lockout: An Integrative Model of the Economic and Strategic Factors Driving Technology Success and Failure, 23 ACAD. MGMT. REV. 267, 270 (1998), at 276.

103. Willow A. Sheremata, New Issues in Competition Policy Raised by Information Technology Industries, 43 ANTITRUST BULL. 547, 573-74 (1998) Robert A. Woroch et al., Exclusionary Behavior in the Market for Operating System Software: The Case of Microsoft, in OPENING NETWORKS TO COMPETITION: THE REGULATION OF PRICE AND ACCESS (David Gabel & David Weiman eds., 1997).

104. *See* Sheremata, *New Issues in Competition*, , at 560; *see also* CHARLES H. FERGUSON, HIGH ST@KES NO PRISONERS: A WINNER'S TALE OF GREED AND GLORY IN THE INTERNET WARS 309 (Three Rivers Press ed., 1999), p. 307; Mark A. Lemley & David McGowan, *Could Java Change Everything? The Competitive Propriety of a Proprietary Standard*, 43 ANTITRUST BULL. 715 (1998), p. 732.

105 Joseph Farrell & Michael L. Katz, *The Effect of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL., 645, 650 (1998), pp. 643-45; Sheremata, *New Issues in Competition,*

106.Makadok, *xx*, at 693.

107.David B. Yoffie, "CHESS and Competing in the Age of Digital Convergence," *in Competing in the Age of Digital Convergence* 27 (Harvard Business School ed., 1997), p. 26; *see also* Robert E. Dansby & Cecilia Conrad, *Commodity Bundling*, 74 AM. ECON. REV. 377 (1984).

108.Carmen Matutes and Pierre Regibeau, *Compatibility and Bundling of Complementary Goods in a Duopoly*, 50 J. INDUS. ECON. 46 (1992);

109 Joseph P. Guiltnan, *The Price Bundling of Services: A Normative Framework*, 51 J. MKTG. 74 (1987); Carmen Matutes and Pierre Regibeau, *Compatibility and Bundling of Complementary Goods in a Duopoly*, 50 J. INDUS. ECON. 46 (1992); Lester Telser, *A Theory of Monopoly of Complementary Goods*, 52 J. BUS. 211-30 (1979); Richard Schmalensee, *Gaussian Demand and Commodity Bundling*, 57 J. BUS. 211-30.

creating incompatibilities,[110] forcing upgrades,[111] and by spreading the cost increases across layers of the platform[112] to extract consumer surplus.[113] In information markets, creating incompatibilities or blocking the flow of information undermines consumer value.[114]

There is ample evidence that these anti-competitive behaviors may be attractive to a new economy monopolist for static and dynamic reasons.[115] Conquering neighboring markets, erecting cross-platform incompatibilities, raising rivals' costs, or preventing rivals from achieving economies of scale, can preserve market power in the core product. Profits may be increased in the core product by enhanced abilities to price discriminate. By driving competitors out of neighboring markets, new monopolies may be created or the ability to

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

111.*See* Glenn Ellison & Drew Fudenberg, *The Neo-Luddite's Lament: Excessive Upgrades in the Software Industry*, 30 RAND J. ECON. 253, 272 (2000); Drew Fudenberg & Jean Tirole, *Upgrades, Trade-ins, and Buybacks*, 28 RAND J. ECON. 235, 236 (1998).

112. *See* FERGUSON, 309-10.

113.*Id.* at 176-77. K. Sridhar Moorthy, *Market Segmentation, Self Selection, and Product Lines Design*, 3 MKTG. SCI. 303 (1984); Marcel Thum, *Network Externalities, Technological Progress, and the Competition of Market Contracts*, 94 INT. J. INDUS. ORG. 280, 285-86 (1997).

114 Langlois, p. 221,

> The owner of a dominant standard may thus want to manipulate the standard in ways that close off the possibilities for a competitor to achieve compatibility. This has a tendency to retard the generational advance of the system.

115 Langlois, Technical Standards, pp. 195 –202; Michael Katz & Carl Shapiro, "Antitrust and Software Markets", in *Competition, Innovation And The Microsoft Monopoly: Antitrust And The Digital Marketplace* (Jeffrey A. Eisenbach & Thomas M. Lenard eds., 1999), pp. 70-80; Lansuz A. Ordover and Robert D. Willig, Access and Bundling in High Technology Markets, in *Competition, Innovation And The Microsoft Monopoly: Antitrust And The Digital Marketplace* (Jeffrey A. Eisenbach & Thomas M. Lenard eds., 1999) ; Rubinfeld, *supra* note, in *Competition, Innovation And The Microsoft Monopoly: Antitrust And The Digital Marketplace* (Jeffrey A. Eisenbach & Thomas M. Lenard eds., 1999)at 877-81; Steven C. Salop, *Using Leverage to Preserve Monopoly*, in *Competition, Innovation And The Microsoft Monopoly: Antitrust And The Digital Marketplace* (Jeffrey A. Eisenbach & Thomas M. Lenard eds., 1999)..

preserve market power across generations of a product may be enhanced by diminishing the pool of potential competitors.

B. TRANSMISSION AS A CHOKE POINT

Transmission remains a chokepoint. Shrinking in relative importance in the overall industry (measured by dollars of investment), and declining in cost per unit, those in control of transmission networks retain immense leverage because the network requires centralized, fixed investments that are capital intensive. Physical capital is not the open platform barrier the advocates of closed platforms make it out to be. The amount of investment needed is not extraordinary, compared to the total investment being made at all three layers of the communications platform.

The size of investment in the devices has grown dramatically, but at a rapidly declining cost per device (especially quality adjusted), which fuels the shift to distributed computing. Technological devices have become affordable on an expanding scale. Technology use, then, should be expanding at a similar pace. When it comes to the Internet, however, control over the transmission network is an obstacle to proliferating advanced Internet services

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

Most communications markets have a small number of competitors. In the high speed Internet, there are now, at most, two competitors and the one with the dominant market share has a substantially superior technology. When or whether there will be a third and how well it will be able to compete is unclear. This situation is simply not sufficient to sustain a competitive outcome.[116] The physical facilities do not invite vibrant competition. The existence of too few competitors can slow the innovation process.[117] Controlling access to the platform confers a great deal of market power on the owner of the physical facility because it dominates a large part of the platform with easily implemented manipulation.[118] Denial of

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[116] Lemley and Lessig, End of End-to-End, p. 15.

> It is true that DSL lines are currently open to certain indirect forms of ISP competition. But this is not the result of the operation of the market. Rather, it is the result of regulation. DSL service is provided by phone companies, and Congress and the FCC have historically been willing to regulate phone companies and to require open interconnection during their deregulation. It would be ironic if competition over DSL lines were to be cited as an example of the market at work, when in fact those DSL lines are open to competition only because regulators have forced them to be.
>
> Given that historical accident, should we assume that DSL and the future wireless and satellite technologies provide enough competition that we don't need to encourage any more? We think not. First, it is admittedly true that the existence of facilities-based competition lessens the harm cable companies will do by closing the ISP market. But lessening the harm is not the same thing as eliminating it. Even if DSL does provide a partially competitive market for some ISPs who want to serve broadband access to some customers, it simply makes no sense as a matter of economic policy to foreclose the largest possible market for ISP competition, particularly when doing so serves no good end.

[117] Langlois, pp. 217-218 notes that it is possible for system competition to have beneficial effects, but there must be many competing systems.

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

[118] Langlois, p. 221, call this scope and sees this as a fundamental issue.

> Here the idea of the "scope of the standard becomes important. The owner of a standard that control the compatibility of a large fraction of the components of a system is in a much better position to close off avenues of innovation that

access to the physical layer transforms innovation that should be located in the code and content layers, and is therefore relatively malleable (a software problem), into a hardware problem.[119]

V. STRATEGIC MANIPULATION OF ACCESS

The small number of communications facilities in the physical layer creates a transmission bottleneck that leads directly to the problem of vertical leverage or market power. "[A] vertically integrated broadband provider such as AT&T will have a strong incentive and opportunity to discriminate against unaffiliated broadband content

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> threaten the rent-earning potential of the standard. The owner of a standard with relatively small scope is always in danger of being "invented around" or made obsolete if it closes off access or otherwise exercises market power unduly.

[119] Langlois, p. 216, Lemley and Lessig, End of End-to-End, citing Francois Bar & Christian Sandvig, ("Rules from Truth: Post- Convergence Policy for Access," *TPRC*, (Sept. 2000),

> Flexibility in design is a feature of digital networks. The use of the network becomes a question of software implementation separable in fundamental ways from the ownership or even the nature of the network itself. Francois Bar and Christian Sandvig explain:
>
> In past networks, the communication platform and its configuration were "hard-wired" in the specific arrangement of electro-mechanical devices that formed a particular communication network--the logical architecture of the network precisely reflected its physical architecture. One had to own the network to change that arrangement. By contrast, platform configuration in digital networks depends on ability to program the network's control software. Control over network configuration thus becomes separable from network ownership. Multiple network platforms, supporting a variety of communication patterns, can simultaneously co-exist on a single physical infrastructure. Thus, the decision to build intelligence into the network may not be an all-or-nothing proposition. Rather, we can preserve the vi ability of e2e systems by keeping intelligence out of the hardware design and instead building it into some software layers on an as- needed basis.

providers."[120] Even facility owners with large market shares do not hesitate to hypocritically criticize the anticompetitive impacts of other facility owners who gain a large market share. They understand all too well that closed communications facilities provide leverage and an incentive to discriminate against both alternative transmission media and alternative content suppliers.

The behavioral analysis in this section relies on:

- filings presented by AT&T in Canada[121]before it became the nation's largest cable company and in the U.S. in situations where it does not possess an advantage of owning wires,[122]

- recommendations made by AOL[123] to local and federal governments before it decided to become the nation's second largest cable company,

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[120] Jerry A. Hausman, J. Gregory Sidak, and Hal J. Singer, "Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers," *Yale Journal on Regulation*, 18 (2001), p. 134.

[121] AT&T Canada Long Distance Services, "Comments of AT&T Canada Long Distance Services Company," before the *Canadian Radio-television and Telecommunications Commission*, Telecom Public Notice CRTC 96-36: Regulation of Certain Telecommunications Service Offered by Broadcast Carriers, February 4, 1997. The AT&T policy on open access after it became a cable company was first offered in a Letter to Chairman Bill Kennard, dated December 6, 1999, signed by David N. Baker, Vice President Legal & Regulatory Affairs; Mindspring Enterprises; James W. Cicconi, General Council and Executive Vice President, AT&T Corp.; and Kenneth S. Fellman, Esq., Chairman, FCC Local & State Government Advisory Committee. Virtually no commercial activity took place as a result of the letter, which was roundly criticized. Subsequently their policy was described in Goodman, Peter S., "AT&T Puts Open Access to a Test," *Washington Post*, November 23, 2000 (hereafter Goodman).

[122] Reply Comments of AT&T Corp. (CC Docket No. 98-147), filed October 16, 1998; "Comments of AT&T Corp. in Opposition to Southwestern Bell Telephone Company's Section 271 Application for Texas," *In the Matter of Application of SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas*, Federal Communications Commission, CC Docket No. 00-4, January 31, 2000 (hereafter AT&T SBC).

[123] America Online Inc., "Open Access Comments of America Online, Inc.," before the Department of Telecommunications and Information Services, San Francisco, October 27, 1999 (hereafter, AOL). At the federal level, AOL's most explicit analysis of the need for open

- analyses prepared by experts for local[124] and long distance[125] telephone companies complaining about various forms of closure of networks to which they need interconnection,

- Wall Street analyses of the business models of dominant, vertically integrated cable firms,[126] and

- observations offered by independent ISPs[127] and small cable operators[128] struggling with the dominant wire companies.

The observable behavior of the incumbent wire owners contradicts the theoretical claims made in defense of closed platforms.[129] The track record of competition in the

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access can be found in "Comments of America Online, Inc.," *In the Matter of Transfer of Control of FCC Licenses of MediaOne Group, Inc. to AT&T Corporation*, Federal Communications Commission, CS Docket No. 99-251, August 23, 1999 (hereafter, AOL, FCC).

[124] Jerry A. Hausman, J. Gregory Sidak, and Hal J. Singer, "Residential Demand for Broadband Telecommunications and Consumer Access to Unaffiliated Internet Content Providers," *Yale Journal on Regulation*, 18 (2001).

[125] John B. Hayes, Jith Jayaratne, and Michael L. Katz, *An Empirical Analysis of the Footprint Effects of Mergers Between Large ILECS*, April 1, 1999, p. 1; citing "Declaration of Michael L. Katz and Steen C. Salop," submitted as an attachment to *Petition to Deny of Spring Communications Company L.P*, in Ameritech Corp. and SBC Communications, Inc., for Consent to Transfer of Control, CC Dkt. No. 98-141 (filed Oct. 15, 1998) and *Petition to Deny of Spring Communications Company L.P*, in GTE Corporation and Bell Atlantic Corporation for Consent to Transfer of Control, CC Dkt. No. 98-184 (filed Nov. 23, 1998).

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

[127] Earthlink, the first ISP to enter into negotiations with cable owners for access has essentially given up and is vigorously seeking an open access obligation, see *Ex Parte Letter from Earl W. Comstock and John W. Butler Regarding the Application of America Online, Inc. and Time Warner Inc. for Transfer of Control*, Federal Communications Commission, Docket No. CS 0030, October 18, 2000 (hereafter Earthlink); NorthNet.

[128] "Comments of the American Cable Association, *In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition*, Federal Communications Commission, CS Dkt. No. 01-290, December 3, 2001.

physical facilities certainly cannot be a source of encouragement for those looking for dynamic Schumpeterian monopolists.

A. ESSENTIAL COMMUNICATIONS FUNCTIONS

Whether we call them essential facilities,[130] choke points[131] or anchor points,[132] the key leverage point is controlling access facilities.[133] That is exactly what AOL said about AT&T, when AOL was a nonaffiliated ISP.

> The key, after all, is the ability to use "first mile" pipeline control to deny consumers direct access to, and thus a real choice among, the content and services offered by independent providers. Open access would provide a targeted and narrow fix to this problem. AT&T simply would not be allowed to control consumer's ability to choose service providers other than those

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[129] Lemley and Lessig, MediaOne, p. 13, point out that claims that "economic theory holds that" cable companies "will have no incentive to do so" are contradicted by the fact, and caution that. "One should be skeptical of a theory whose predictions are so demonstrably at odds with reality."

[130] Langlois,

[131] Mark Cooper, "Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed Proprietary Networks," *University of Colorado Law Review*, Fall 2000).

[132] Bernstein, pp. 18…21,

> Broadband access platforms are the anchor points for much of the value at stake and vehicles for accessing new revenue streams.
> However, the current set of alternatives for reaching customers with broadband connections is inadequate. At least for the time being, cable is closed, meaning that much of the value is, in effect, ceded to the platform rather than captured by the content/applications providers…
> Furthermore, access is currently a bottleneck, and access winners have the potential to leverage their privilege positioned to ensure long-term value creation.

[133] AT&T, pp. 7, 12 (Arguing that there were barriers to entry into physical facilities.)

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

> AT&T itself has chosen for them. This would create an environment where independent, competitive service providers will have access to the broadband "first mile" controlled by AT&T – the pipe into consumers' homes – in order to provide a full, expanding range of voice, video, and data services requested by consumers. The ability to stifle Internet-based video competition and to restrict access to providers of broadband content, commerce and other new applications thus would be directly diminished.[134]

Experts for the local telephone companies, in opposing the merger of AT&T and MediaOne, made exactly the same point. They argued that "the relevant geographic market is local because one can purchase broadband Internet access only from a local residence"[135] and that "a dominant market share is not a necessary condition for discrimination to be effective."[136] .

> [A] hypothetical monopoly supplier of broadband Internet access in a given geographic market could exercise market power without controlling the provision of broadband access in neighboring geographic markets.[137]

The essential communications function was the paramount concern for AT&T in determining interconnection policy for cable networks in Canada.[138] AT&T attacked the claim made by cable companies that their lack of market share indicates that they lack market power. AT&T argued that small market share does not preclude the existence of market

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[134] AOL, FCC, p. 13
[135] Hausman, Sidak, and Singer, p.135.
[136] Hausman , Sidak and Singer, p. 156.
[137] Hausman, Sidak and Singer, p. 135.
[138] AT&T, 12.

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

power because of the essential function of the access input to the production of service.[139] AT&T argued that open access "obligations are not dependent on whether the provider is dominant. Rather they are necessary in order to prevent the abuse of market power that can be exercised over bottleneck functions of the broadband access service."[140]

AT&T maintained that the presence of a number of vertically integrated facilities owners does not solve the fundamental problem of access that nonintegrated content providers face, and that they would inevitably be at a severe disadvantage. AT&T pointed out that since independent content providers will always outnumber integrated providers, competition could be undermined by vertical integration. In order to avoid this outcome, even multiple facilities owners must be required to provide non-discriminatory access.

> Because there are and will be many more providers of content in the broadband market than there are providers of carriage, there always will be more service providers than access providers in the market. Indeed, even if all of the access providers in the market integrated themselves vertically with as many service providers as practically feasible, there would still be a number of service providers remaining which will require access to the underlying broadband facilities of broadcast carriers.[141]

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[139] AT&T, 9.

> By contrast, the telephone companies have just begun to establish a presence in the broadband access market and it will likely take a number of years before they have extensive networks in place. This lack of significant market share, however, is overshadowed by their monopoly position in the provision of local telephony services.
>
> In any event, even if it could be argued that the telephone companies are not dominant in the market for broadband access services because they only occupy a small share of the market, there are a number of compelling reasons to suggest that measures of market share are not overly helpful when assessing the dominance of telecommunications carriers in the access market.

[140] AT&T, p. 24

[141] AT&T, p. 12..

It is ironic to note the dispute over AOL's exclusionary practices in instant messaging. The fundamental importance of communications functions was argued by Excite@Home, which provides broadband service closed proprietary basis, in demanding access to AOL's customers.

> A bedrock principle of our approach to communications has been that users of critical communications functions should be able to communicate with all others, even those who use different service providers… It would have been a disaster for the Internet if e-mail had been held captive to a proprietary technology so that users of one e-mail system could not communicate with e-mail users of a different system or if one company could dictate the terms by which all other companies could use e-mail. Instant messaging must be subject to the same principle.[142]

AOL also believed that the presence of alternative facilities did not eliminate the need for open access; it argued that

> [an open access requirement] would allow ISPs to choose between the first-mile facilities of telephone and cable operators based on their relative price, performance, and features. This would spur the loop-to-loop, facilities-based competition contemplated by the Telecommunications Act of 1996, thereby offering consumers more widespread availability of Internet access; increasing affordability due to downward pressures on prices; and a menu of service options varying in price, speed, reliability, content and customer service.[143]

Two or three vertically integrated facilities will not be enough. At the same time, it is important to note the consensus that cable is the dominant and preferred technology. Wall Street analysts dismiss satellite and wireless as near-term competitors for cable modem service[144] and have an increasingly pessimistic view of DSL for the applications that will

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[142] Letter to Robert Pitofsky and William Kennard, June 7, 2000.

[143] AOL, FCC, p. 14. Another indication that the availability of alternative facilities does not eliminate the need for open access policy can be found in AOL's conclusion that the policy should apply to both business and residential customers. If ever there was a segment in which the presence of two facilities competing might alleviate the need for open access requirement, the business segment is it. AOL rejected the idea. *Id*. at 1-2).

[144] Bernstein, pp. 30… 33… 50 – 51.

drive the residential video markets.[145] Cable's advantages are substantial and DSL is not likely to be able to close the gap.[146]

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[145] Paul Allen, owner of Charter Communications, the nation's 4th largest cable company recently reiterated the proposition that cable will be the dominant medium for broadband delivery to residential customers.

> The problem and opportunity of bandwidth dominated the late 1990s, as investors, technologists and users considered where to place their bets for faster access. Today, cable appears to be the winning horse. Paul Allen realized early on that cable offers a pervasive, existing network, capable of robust bandwidth. Wireless and other channels will continue to play important roles, but cable will become the bandwidth solution for the masses

Bernstein, p. 46.

> Cable and DSL expected to dominate residential business; cable beats DSL near-term because of technology and operational advantages, but DSL wins in small-business because of coverage and performance...
> Cable is likely to stay ahead thanks to its early start, technical advantages, and its control of data displays on televisions in non-PC households.
> But xDSL has a number of significant limitations that make less than half of U.S. residential phone lines compatible with standard ADSL, and far fewer compatible with VDSL

[146] Bernstein, p. 7.

> As we go to press, the strategic merger of AOL and Time Warner has just been announced. The deal represents just the kind of shift in the broadband landscape that puts the access battle into a broader perspective. Assuming that the merger is consummated, resulting company will have extensive consumer content assets and asset connections to Time Warner's nearly 20 million cable households -- 85 percent of which are upgraded for two-way service.
> Obviously, this raises a large potential challenge for other companies' activity in either content or access, and may drive similar strategic counter moves.
> Above all else, AOL's decision is the strongest evidence to date that cable offers the broadest set of broadband assets available today. With AOL now aligned more closely with cable, DSL faces the challenge of competing in many markets without benefit of AOL as a *de facto* exclusive resale partner.
> Thus, the AOL-Time Warner deal indicates not only that cable is the advantaged platform today (as we observe elsewhere), but also that is likely to remain advantaged vis-à-vis DSL and other platforms in the future.
> Judicial, legislative and regulatory initiatives by RBOCs and ISPs (including AOL) to gain access to cable lines are seen as recognition of cable's strength, particularly in relation to the television set.

Merrill, p. 33.

> Now that AOL has its feet firmly the cable camp, access to negotiation should be much smoother. Second, we believe the AOLTWX merger reinforces the

The dramatic difference between the two technologies with major implications for future market structure can be seen the penetration of advanced services (see Exhibit 6). These are defined by the FCC as services that allow two way traffic in excess of 200 kbps. Cable, which is oriented toward the residential sector has a 75 percent market share of advances services in the residential/small business market. Telephone DSL, which is oriented toward business customers has almost a 90 percent market share in the medium and large business market.

B. IMPLEMENTING CLOSED PLATFORMS IN THE NEW PRODUCT SPACE

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

> To the extent that standards are developed for interfacing with broadband access services, the carriers who provide these services should not be permitted to implement any non-standard, proprietary interfaces, as this would be contrary to the development of an open network of networks. In addition, any new network or operational interface that is implemented by a broadband access provider should be made available on a non-discriminatory basis.[147]

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value of the cable pipe, as did Microsoft‘s investment in Comcast, Paul Allen’s acquisition binge that created the fourth largest MSO, Charter, and AT&T's acquisition of TCI, as well as its pending acquisition of MediaOne. Although competition will emerge against cable with viable technologies (DSL, DBS), cable has the most robust technology and four great technology oriented companies have voted with their pocketbooks.

[147] AT&T, p. 23

As concern over this leverage has grown, analysts have identified two distinct types of discrimination. Vertically integrated broadband providers may practice content discrimination or conduit discrimination.[148]

1. CONTENT DISCRIMINATION

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

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[148]The FTC's enumeration of the ways in which the Time Warner/Turner/TCI merger was a threat to lessen competition are instructive for both the cable TV and the broadband Internet markets. The vertical integration and horizontal concentration would increase the incentive and ability to engage in both conduit discrimination and content discrimination (Time Warner/Turner/TCI, pp. 8).

> enabling Respondent Time Warner to increase prices on its Cable Television Programming Services sold to MVPDs, directly or indirectly (e.g., by requiring the purchase of unwanted programming). Through it's increased negotiating leverage with MVPDs, including through purchase of one or more "marquee" or "crown jewel" channels on purchase of other channels.
> enabling Respondent Time Warner to increase prices on its Cable Television Programming Services sold to MVPDs by raising barriers to entry by new competitors or to repositioning by existing competitors, by preventing such rivals from achieving sufficient distribution to realize economies of scale; denying rival MVPDs and any potential rival MVPDs of Respondent Time Warner competitive prices for Cable Television Programming Services, or charging rivals discriminatorily high prices for Cable Television Programming services
> Respondent time Warner has direct financial incentives as the post-acquisition owner of the Turner Cable Television Programming Services not to carry other Cable Television Programming Services that directly compete with Turner Cable Television Programming Services; and
> Respondent TCI has diminished incentives and diminished ability to either carry or invest in Cable Television Programming Services that directly compete with the Turner Cable Television Programming Services because the PSA agreements require TCI to carry Turner's CNN, Headline News, TNT and WTBS for 20 years, and because TCI, as a significant shareholder of Time Warner, will have significant financial incentives to protect all of Time Warner's Cable Television Programming

affiliated content from competition by blocking or degrading the quality of outside content."[149]

> Content discrimination… would benefit the cable provider by enhancing the position of its affiliated content providers in the national market by denying unaffiliated content providers critical operating scale and insulating affiliated content providers from competition. Content discrimination would thus allow the vertically integrated content provider to earn extra revenues from its own portal customers who would have fewer opportunities to interact with competing outside content.[150]

AT&T identifies four forms of anticompetitive leveraging -- bundling, price squeeze, service quality discrimination, and first mover advantage. It describes the classic vertical leveraging tools of price squeezes and quality discrimination as content discrimination:

> This strategy entails setting the unbundled price of the basic local service and the price of the incremental cost of supplying the DSL service alone. In this scenario, the direct effect of the conduct is to squeeze out the competing suppliers of the enhanced service that might otherwise serve as attractive complements to the basic services offered by the incumbent local exchange carrier (LEC).
>
> Allowing incumbent LECs to bundle basic services with enhanced service provided over bottleneck facilities could also better enable them to squeeze out efficient potential competitors through non-price means – e.g. by offering lower quality monopoly bottleneck service to customers of their competitors, and by provider quicker or more complete disclosure of their network interface specifications and protocols to favored venders. That is so because bundling potentially 'covers up' discrimination.[151]

Even after AT&T became the nation's largest cable TV company, it criticized local telephone companies for abusing their monopoly control over their telephone wires. AT&T complained about bottleneck facilities, vertical integration, anticompetitive bundling of

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[149] Hausman, Sidak and Singer, p. 159.
[150] Hausman, Sidak and Singer, p. 159.
[151] AT&T NOI

services and distortion of competition when it opposed the entry of SBC into the long distance market in Texas.

These are the very same complaints AOL made about AT&T at about the same time.[152] AOL expressed related concerns about the manipulation of technology and interfaces:

> … allowing a single entity to abuse its control over the development of technical solutions – particularly when it may have interests inconsistent with the successful implementation of open access – could indeed undermine the City's policy. It is therefore vital to ensure that unaffiliated ISPs can gain access comparable to that the cable operators choose to afford to its cable-affiliated ISP.[153]

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

> These mergers will have competition in local exchange, interexchange, and combined-service markets due to footprint effects. The economic logic of competitive spillovers implies that the increase in [the incumbent local

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[152] AT&T, p. 15,

> The dominant and vertically integrated position of cable broadcast carriers requires a number of safeguards to protect against anticompetitive behaviour. These carriers have considerable advantages in the market, particularly with respect to their ability to make use of their underlying network facilities for the delivery of new services. To grant these carriers unconditional forbearance would provide them with the opportunity to leverage their existing networks to the detriment of other potential service providers. In particular, unconditional forbearance of the broadband access services provided by cable broadcast carriers would create both the incentive and opportunity for these carriers to lessen competition and choice in the provision of broadband service that could be made available to the end customer.
> Telephone companies also have sources of market power that warrant maintaining safeguards against anticompetitive behaviour. For example, telephone companies are still overwhelmingly dominant in the local telephony market, and until this dominance is diminished, it would not be appropriate to forebear unconditionally from rate regulation of broadband access services (

[153] AOL, p. 8

> exchange carrier (ILEC)] footprints resulting from these proposed mergers would increase the ILECs' incentive to disadvantage rivals by degrading access services they need to compete, thereby harming competition and consumers.[154]

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

> First, it can give preference to an affiliated content provider by caching its content locally… Such preferential treatment ensures that affiliated content can be delivered at faster speed than unaffiliated content. Second, a vertically integrated broadband provider can limit the duration of streaming videos of broadcast quality to such an extent that they can never compete against cable programming…Third, a vertically integrated firm such as AT&T or AOL-Time Warner could impose proprietary standards that would render unaffiliated content useless…Once the AT&T standard has been established, AT&T will be able to exercise market power over customers and those companies trying to reach its customers.[155]

Wall Street analysts point out that the key to controlling the supply side is controlling essential functions through proprietary standards.[156] Independent ISPs point out that cable

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[154] John B. Hayes, Jith Jayaratne, and Michael L. Katz, *An Empirical Analysis of the Footprint Effects of Mergers Between Large ILECS*, April 1, 1999, p. 1; citing "Declaration of Michael L. Katz and Steen C. Salop," submitted as an attachment to *Petition to Deny of Spring Communications Company L.P*, in Ameritech Corp. and SBC Communications, Inc., for Consent to Transfer of Control, CC Dkt. No. 98-141 (filed Oct. 15, 1998) and *Petition to Deny of Spring Communications Company L.P*, in GTE Corporation and Bell Atlantic Corporation for Consent to Transfer of Control, CC Dkt. No. 98-184 (filed Nov. 23, 1998).

[155] Hausman, Sidak and Singer, pp. 160-161.

[156] Bernstein, p. 57

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

operators like AOL use control over functionalities to control the services available on the network.[157] Cable operators have continued to insist on quality of service restrictions by unaffiliated ISPs, which places the ISPs at a competitive disadvantage.[158] Cable operators must approve new functionalities whether or not they place any demands on the network.[159] AT&T's control of the architecture is just as explicit. It will pick and choose which service providers get the fastest speeds. The favored service providers are those affiliated with AT&T.[160]

> whether via regulatory discontinuities, incumbent status, or the ability to influence customer behavior.

[157] Northnet.

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

[159] Time Warner Term Sheet,

> To the extent ISP wishes to offer any functionality as part of the Service which: (a) is outside the scope of the Network Architecture; (b) requires an Operator acquire equipment or software or implement a change in the way the Operator processes, TWC shall have the right to approve such new functionality , provided however that in the event TWC approves such functionality, ISP will be obligated to reimburse for TWC its direct, out-of-pocket costs in implementing such new functionality.

[160] Goodman,

> Founder Joe Pezzillo worries that the competitive gap could widen as broadband brings new business models.
>
> He envisions AT&T making deals with major music labels to deliver its own Internet radio, with AT&T providing the fastest connections to its partners and slower connections to sites like his. "Someone is not going to wait for our page to load when they can get a competitor's page instantly," Pezzillo said.
>
> AT&T says it has yet to formulate business models with partners, but the software the company has designed for the Boulder trial – demonstrated at its headquarters in Englewood, Colo. Last week – clearly includes a menu that will allow customers to link directly to its partners. Company officials acknowledge that AT&T's network already has the ability to prioritize the flow of traffic just as Pezzillo fears.

Price squeeze and extraction of rents are apparent in the implementation of closed platforms. Hazlett and Bittlingmayer cite Excite@Home executive Milo Medin describing the terms on which cable operators would allow carriage of broadband Internet to AOL (before it owned a wire) as follows:

> I was sitting next to [AOL CEO] Steve Case in Congress during the open access debates. He was saying that all AOL wanted was to be treated like Excite@Home. If he wants to be treated like us, I'm sure he could cut a deal with [the cable networks], but they'll take their pound of flesh. We only had to give them a 75 percent equity stake in the company and board control. The guys aren't morons.[161]

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

2. CONDUIT DISCRIMINATION

Conduit discrimination has received less attention in the high speed Internet area. Nevertheless, there are examples in the high speed Internet market.

> "We could turn the switches in a matter of days to be able to accommodate that kind of environment," said Patrick McGrew, an AT&T manager working on the technical details of the Boulder trial.
> Though the Boulder trial is focused on technical issues alone, AT&T will study the way customers navigate the system as it negotiates with ISPs seeking to use its network…

[161] Political Economy, p. 17.

In implementing conduit discrimination, the vertically integrated company would refuse to distribute its affiliated content over competing transmission media.[162] In so doing, it seeks to drive consumers to its transmission media and weaken its rival. This is profitable as long as the revenue gained by attracting new subscribers exceeds the revenue lost by not making the content available to the rival. Market size is important here, to ensure adequate profits are earned on the distribution of service over the favored conduit.[163] Although some argue that "the traditional models of discrimination do not depend on the vertically integrated firm obtaining some critical level of downstream market share,"[164] in reality, the size of the

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[162] Hausman, Sidak and Singer, p. 159.

> [A] cable broadband provider will engage in conduit discrimination if the gain from additional access revenues from broadband users offsets the loss in content revenues from narrower distribution…
>
> To capture the gains from such discrimination, the vertically integrated cable provider must have a cable footprint in which to distribute its broadband portal service, either through direct ownership or through an arrangement to share the benefits of foreclosure with other cable providers.

[163] Rubinfeld and Singer, p. 567.

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

[164] Hausman, Sidak and Singer, p. 156; "Comments of the American Cable Association, "In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition, Federal Communications Commission, CS Dkt. No. 01-290, December 3, 2001, p. 13 (hereafter ACA), provides the calculation for cable operators

> The major MSOs will be the clear winners in these transactions. MSOs granted exclusive distribution rights will have an opportunity to attract DBS

vertically integrated firm does matter since "a larger downstream market share enhances the vertically integrated firm's incentive to engage in discrimination."[165]

AT&T has been accused of conduit discrimination in the high speed Internet market.

> CTN [CT Communications Network Inc.], a registered and franchised cable operator, has been unable to purchase the affiliated HITS transport service from AT&T Broadband, the nation's largest cable operators, despite repeated attempts to do so…. Based on its own experience and conversations with other companies who have experienced similar problems, CTCN believes that AT&T is refusing to sell HITS to any company using DSL technology to deliver video services over existing phone lines because such companies would directly compete with AT&T entry into the local telephone market using both its owns system and the cable plant of unaffiliated cable operators. AT&T simply does not want any terrestrial based competition by other broadband networks capable of providing bundled video, voice and data services.[166]

The AOL-Time Warner merger raised similar concerns about conduit discrimination. The significance of the AOL switch to cable-based broadband cannot be underestimated in the

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> subscribers with exclusive programming, resulting in increased subscriber revenues (a minimum of $40-$50 per subscriber) and increased system values (at least $3,500-$5,000 per subscriber).
> Where do ACA members fit into these transactions? Nowhere. ACA members operate locally, not regionally or nationally. In situations involving regional or national exclusive distribution rights, there is little incentive to carve out exceptions for smaller cable systems. For each small system subscriber lost under exclusivity, the vertically integrated program provider will likely lose revenue between $0.10 and $0.75 per month, depending on the service. In contrast, for each former DBS subscriber gained through regional or national exclusive program offerings, the MSO with exclusive distribution rights will gain all monthly revenue from that subscriber, plus increased system value. In economic terms, an external cost of this gain will be the cost to small cable companies and consumers of reduced program diversity.

[165] Hausman, Sidak and Singer, p. 156.

[166] "Comments of the Competitive Broadband Coalition," In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of Competition and Diversity in Video Programming Distribution: Section 628 (c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition, Federal Communications Commission, CS Dkt. No. 01-290, December 3, 2001, p. 11.

damage that it does to the hoped-for competition between cable modems and DSL.[167] Although the telephone companies are reluctant to admit that their technology will have trouble competing, their experts have identified the advantages that cable enjoys.[168] Fearing that once AOL became a cable owners it would abandon the DSL distribution channel, the FTC required AOL to continue to makes its service available over the DSL conduit.

C. BUNDLING AND CUSTOMER LOCK IN

Bundling early in the adoption cycle to lock in customers is the focal point of the leveraging strategy. AT&T described the problem with the bundling technique that local telephone companies (local exchange carriers or LECs) might use to gain an advantage.

> ..[I] f the incumbents were exempt from regulation merely because they are using their bottleneck facilities to provide advanced service, they could simply migrate captive local telephony customers to DSL before cable telephony or any other alternative to these monopoly services is available. Then the LECs could exploit their telephony monopoly over local customers without regulation, by means of pricing of local service to end-users as well as pricing of access to long distance providers, all under the rubric of "advanced services" offerings.
>
> As both the Commission and Congress have recognized, high-speed data offerings constitute a crucial element of the market for telecommunications services, and, because of their importance, the manner in which they are deployed will also affect the markets for traditional telecommunications. Many providers have recognized the growing consumer interest in obtaining "bundles" of services from a single provider. Certainly SBC, with its $6 billion commitment to "Project Pronto" has done so. AT&T is prepared to compete, on the merits, to offer "one-stop shopping" solutions. Competition,

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[168] Hausman, Sidak, Singer, p. 149.

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

> however, cannot survive if only a single carrier is capable of providing consumers with a full package of local, long distance, and xDSL services.[169]

AOL described the threat of vertically integrated cable companies in the U.S. in these terms:

> At every link in the broadband distribution chain for video/voice/data services, AT&T would possess the ability and the incentive to limit consumer choice. Whether through its exclusive control of the EPG or browser that serve as consumers' interface; its integration of favored Microsoft operating systems in set-top boxes; its control of the cable broadband pipe itself; its exclusive dealing with its own proprietary cable ISPs; or the required use of its "backbone" long distance facilities; AT&T could block or choke off consumers' ability to choose among the access, Internet services, and integrated services of their choice. Eliminating customer choice will diminish innovation, increase prices, and chill consumer demand; thereby slowing the rollout of integrates service.[170]

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

AOL argued that requiring open access early in the process of market development would establish a much stronger structure for a proconsumer, procompetitive market. Early intervention prevents the architecture of the market from blocking openness and avoids the difficult task of having to reconstruct an open market at a later time. AOL did not hesitate to point out the powerful anticompetitive effect that integrating video services in the communications bundle could have. AOL argued that, as a result of a vertical merger,

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[169] AT&T SBC Comments, pp. 9… 10… 11… 12.
[170] AOL, FCC, p. 11.

> … AT&T would take an enormous next step toward its ability to deny consumers a choice among competing providers of integrated voice/video/data offerings – a communications marketplace that integrates, and transcends, an array of communications services and markets previously viewed as distinct.[171]

Wall Street sees the first mover advantage both in the general terms of the processes that affect network industries and in the specific advantage that cable broadband services have in capturing the most attractive early adopting consumers.[172] First mover advantages have their greatest value where consumers have difficulty switching or substituting away from the dominated product. Several characteristics of Broadband Internet access are conducive to the first mover advantage, or "lock-in".

The local telephone company experts outlined a series of concerns about lock in.[173] First; high-speed access is a unique product. The Department of Justice determined that the broadband Internet market is a separate and distinct market from the narrowband Internet

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[171] AOL, FCC, pp. 9-10.

[172] Merrill Lynch, pp. 37-38,

> If the technology market has a communications aspect to it, moreover, in which information must be shared (spreadsheets, instant messaging, enterprise software applications), the network effect is even more powerful.

Bernstein, p. 26,

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

[173] Hausman, Sidak and Singer, p. 164.

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

market.[174] Once this obvious economic fact is accepted, the severe concentration in the broadband market – resulting in a high degree of market power – and the blatantly anti-competitive effect of the exclusionary tactics of the dominant broadband firms become apparent.

> AT&T Canada LDS notes that narrowband access facilities are not an adequate service substitute for broadband access facilities. The low bandwidth associated with these facilities can substantially degrade the quality of service that is provided to the end customer to the point where transmission reception of services is no longer possible.[175]

The local telephone company experts devote a great deal of attention to demonstrating that the broadband market is a distinct market.[176] There is no doubt that "high-speed seems to be a distinctive product, making it a credible wedge for cable to sell a broader bundle."[177] For the Wall Street analysts, bundling is the central marketing strategy for broadband.[178]

Second, there are significant switching costs that will hinder competition. The equipment (modems) and other front-end costs are still substantial and unique to each technology. There is very little competition between cable companies (i.e. overbuilding).

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[174] U.S. Department of Justice v. AT&T Corp. and MediaOne Group, Inc., Amended Complaint, May 26, 2000.
[175] AT&T, p. 12.
[176] Hausman, Sidak and Singer, pp. 135-148.
[177] Bernstein, p. 8
[178] Goldman Sachs, pp. 10…17

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

Thus, switching costs remain a substantial barrier to competition. Combining a head start with significant switching costs raises the fear among the independent ISPs that consumers will be locked in. In Canada, AT&T argued that the presence of switching costs could impede the ability of consumers to change technologies, thereby impeding competition.

> [T]he cost of switching suppliers is another important factor that is used to assess demand conditions in the relevant market. In the case of the broadband access market, the cost of switching suppliers could be significant, particularly if there is a need to adopt different technical interfaces or to purchase new equipment for the home or office. Given the fact that many of the technologies involved in the provision of broadband access services are still in the early stages of development, it is unlikely that we will see customer switching seamlessly form one service provider to another in the near-term.[179]

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

VI. CONCLUSION

A. CLOSED COMMUNICATIONS PLATFORMS

The enlightened form of common carrier regulation embodied in the Computer Inquiries took us a long way into the information age.[180] There are no insurmountable technical obstacles to developing a similar set of rules for high-speed communications networks.

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[179] AT&T 12.

There is an eerie parallel between AT&T's hostile reaction to innovation as a telephone company confronted with the concept of building an Internet–like network and AT&T's reaction as a cable company confronting the prospect of Internet-based video content; as demonstrated by AT&Ts statements:

> " damned if we are going to allow the creation of a competitor to ourselves,"[181]
>
> "[W]e didn't spend $56 billion on a cable network to have the blood sucked out of our veins."[182]

There is also an eerie parallel between what AT&T and AOL argued about open communications platforms before they decided to buy cable wires and what most non-owners of the wires continue to say. The key to understanding the situation is to watch what they do, not what their expert theoreticians say they could or should do.[183] The platform will remain closed until policymakers open it.

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[180] Baker, Media, Markets, pp. 34-35; Benkler notes common carriage may be necessary under certain circumstances, but is not preferable.
[181] Lessig, The Future of Ideas, p. 32.
[182] Lessig, The Future of Ideas, p. 158.
[183] The analogy to the Microsoft antitrust case is clear. I have argued that this was the central theme in the Microsoft case, Cooper, Antitrust as Consumer Protection, pp. 817…827.

> Microsoft did not lose this case "by defending too much too often." It did not lose because of a remarkably inept defense, or because of allegation that crucial pieces of evidence were rigged, or because of an irrational or biased Judge. It lost because its acts were simply indefensible. The intent and effect of its behavior was so blatantly anti-competitive and the economic assumption necessary to excuse it so narrow and unrealistic, that not even a conservative judge – Ronald Reagan's first judicial nominee – could do anything but find Microsoft guilty by a reasonable interpretation of the antitrust rules… Microsoft executives knew full well that each of the problems that Schmalensee/NERA [Microsoft experts] dismissed is actually a "huge" barrier. Through their words and deeds Microsoft's senior executives demonstrated that they believed the opposite of what the experts said and acted in exactly the opposite manner in the market. Microsoft's witnesses asked the court to disregard their words and deeds and believe that Microsoft executives did not understand their own market.

Decades of experience with a closed cable network and the actual behavior of high-speed owners (and would be owners) undermines the claim that competition between a limited number of facilities owners will result in open platforms. At the micro-level of business strategies and the macro-level of market structure, these closed communications platforms look and act a lot more like anticompetitive fortresses than dynamic combatants in a standards war.

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

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

The empirical record on closed communications platform owners is unequivocal. In the past they have not provided non-discriminatory access, in the present they are not doing so, and there is no credible reason to believe that they will do so in the future. If closed communications platforms are to be defended, they must be put forward the claim that

monopoly is better for consumers and the economy. That claim has been rightly and roundly rejected.[184]

B. NEGATIVE EXTERNALITIES OF CLOSING THE COMMUNICATIONS PLATFORM

Even without intentional anticompetitive behavior, closure of the platform imposes a cost in two ways, by distorting incentives for innovation and undermining institutional options. First, restricting the range of experimentation and shifting incentives reduces the quality and quantity of innovation and innovators because it shifts the balance between incumbents and disruptive entrants. The hand of incumbents, who shy away from disruptive innovation, would be strengthened.[185] Incumbents behave rationally by developing their core

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[184] The Microsoft case again comes to mind, Cooper, Antitrust as Consumer Protection, pp. 817-818,

> Microsoft… asked the to abandon its traditional view of competition and accept the proposition that markets will inevitably be dominated by very few, very large companies…
>
> Evidence at trial revealed that precisely the opposite was true. Because the nature of the industry was not sufficient to entrench its monopoly, Microsoft resorted to repeated, well-documented and protracted campaigns of anti-competitive behaviors to squash the competition. If network externalities would have been sufficient to entrench Microsoft, the immense amount of managerial time and effort and the hundreds of millions, if not billions, of dollars burned up foreclosing the market to competing products was wasted.

[185] Lessig (p. 91)

> But we can see in the Internet a strategy for dealing with the very same blindness… If the platform remains neutral, then the rational company may continue to eke out profit from the path it has chosen, but the competitor will always have the opportunity to use the platform to bet on a radically different business model.
>
> This again is the core insight about the importance of end-to-end. It is a reason why concentrating control will not produce disruptive technology. Not necessarily because of evil monopolies, or bad management, but rather because good business is focused on improving its lot, and disruptive technologists have no lot to improve

competence and seeking structures that reward it.[186] The incentives for innovators are also dampened.[187]

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[186] Lemley and Lessig, End of End-to-End, pp. 7..8.

> Companies develop core competencies, and most of them tend to stick to what they know how to do. Companies faced with a potential for radical change in the nature of their market might recoil, either because they do not know how to adapt to changing conditions or because they fear that they will lose dominance in the old market as it becomes a new playing field. Their business planning is, in short, governed by the legacy of their past success. These legacy business plans often affect a company's response to innovation. In a competitive environment, these plans will often disadvantage a company that fails to respond rapidly enough to changed circumstances.
>
> Companies that control proprietary architectural standards have an advantage over other vendors. Since they control the architecture, they are usually better positioned to develop products that maximize its capabilities; by modifying the architecture, they can discipline competing product vendors. In an open-systems era, the most consistently successful information technology companies will be the ones who manage to establish a proprietary architectural standard over a substantial competitive space and defend it against the assaults of both clones and rival architectural sponsors. A company in this position can and will resist change in order to keep doing what it knows best.

[187] Lemley and Lessig, End of End-to-End, pp. 5…12.

> Innovation is most likely when innovators can expect to reap rewards in a fair marketplace. Innovation will be chilled if a potential innovator believes the value of the innovation will be captured by those that control the network and have the power to behave strategically. To the extent an actor is structurally capable of acting strategically, the rational innovator will reckon that capacity as a cost to innovation.
>
> If that strategic actor owns the transmission lines itself, it has the power to decide what can and cannot be done on the Internet. The result is effectively to centralize Internet innovation within that company and its licensees. While there is a debate in the economic literature about the wisdom of centralizing control over improvements to any given innovation we think the history of the Internet compellingly demonstrates the wisdom of letting a myriad of possible improvers work free of the constraints of a central authority, public or private. Compromising e2e will tend to undermine innovation by putting one or a few companies in charge of deciding what new uses can be made of the network… The point is not that cable companies would necessarily discriminate against any particular technology. Rather, the point is that the possibility of discrimination increases the risk an innovator faces when deciding whether to design for the Internet. Innovators are likely to be cautious about how they spend their research efforts if they know that one company has the power to

> Second, the dominant commercial firms have incentives to expand by commercializing, concentrating, and homogenizing information space. As a result, [n]oncommercial producers will systematically shift to commercial strategies. Small-scale producers will systematically be bought up by large-scale organizations that integrate inventory management with new production. Inventory owners will systematically misallocate human creativity to reworking owned-inventory rather than to utilizing the best information inputs available to produce the best new information product.[188]
>
> Potential sources of disruptive innovation would shrink.[189]

The implication here is that we cannot just wait for the platform to open. Doing nothing in the face of accelerating closure of the communications platform is doing harm.[190] Some of the harm cannot be undone.[191] Rectifying what can be fixed after the fact is immensely time consuming, costly and inevitably more intrusive.[192]

> control whether that innovation will ever be deployed. The increasing risk is a cost to innovation, and this cost should be expected to reduce innovation.

[188] Intellectual Property, pp. 28-28.

[189] Benkler notes two feedback effects that "amplify the direction and speed of the shift in strategies, and lock them in institutionally." First, "organizations invest in creating demand for their products." This rebounds to the advantage of dominant commercial firms. Second, dynamic adjustment of organizations will accelerate changes in behaviors. Expectations about commercial mass media actions will result in adopting such "strategies sooner than might otherwise be warranted by a static assessment of market conditions immediately following an increase in property rights. Moreover, expectations regarding the dynamic effects on institutional development will create particularly intense incentives to adopt" the dominant commercial strategy.

[190] Bar, et. al.

[191] Lemley and Lessig, End of End-to-End, p. 16, reject this on two grounds, first because it causes much greater costs when one decides to open the market after it has been deployed as closed and second because it is difficult to know what the costs of closure are. They argue that the prudent course to start with open platforms, given their clear superiority and wait and see.

[192] Lemley and Lessig, MediaOne,

> The "wait and see" approach also discounts the cost of regulating ex post. In its present state, the ISPs that AT&T would rely upon are independent business units. If the merger were completed, they could easily be folded into the resulting entity. Once integrated, the regulatory costs of identifying non-discriminatory rates would be much higher than they would be under the existing structure. Rather than the complexity that DSL regulation involves,

The irony is that Congress understood this well. It supported 3 modes of entry, required competition before deregulation, and set out specific, rigorous conditions under which regulation could be relaxed. The reliance on intermodal competition to undermine intramodal competition would contradict Congressional intent and subject consumers to great risk of the abuse of market power, slowing innovation and strangling competition at the higher layers of the communications platform.

> imposing a rule of open access now would be relatively less costly. The same is even more true of independent ISPs. If the vibrant market for ISPs in narrowband access is weakened or destroyed because they cannot provide broadband service, those ISPs and their innovative contributions will disappear. If they do, we won't magically get competition back by deciding later to open the broadband market to competition.

EXHIBITS

EXHIBIT 1: LAYERS IN THE COMMUNICATIONS PLATFORM OF THE INTERNET

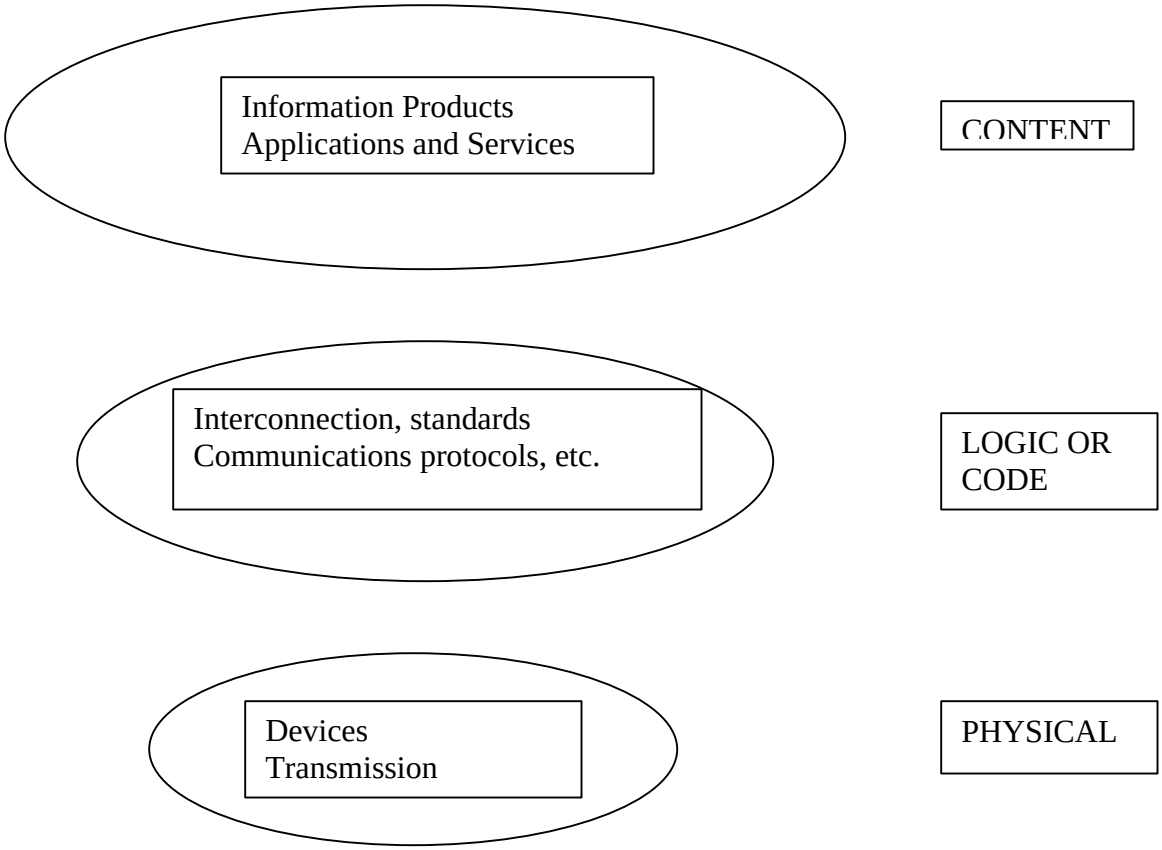
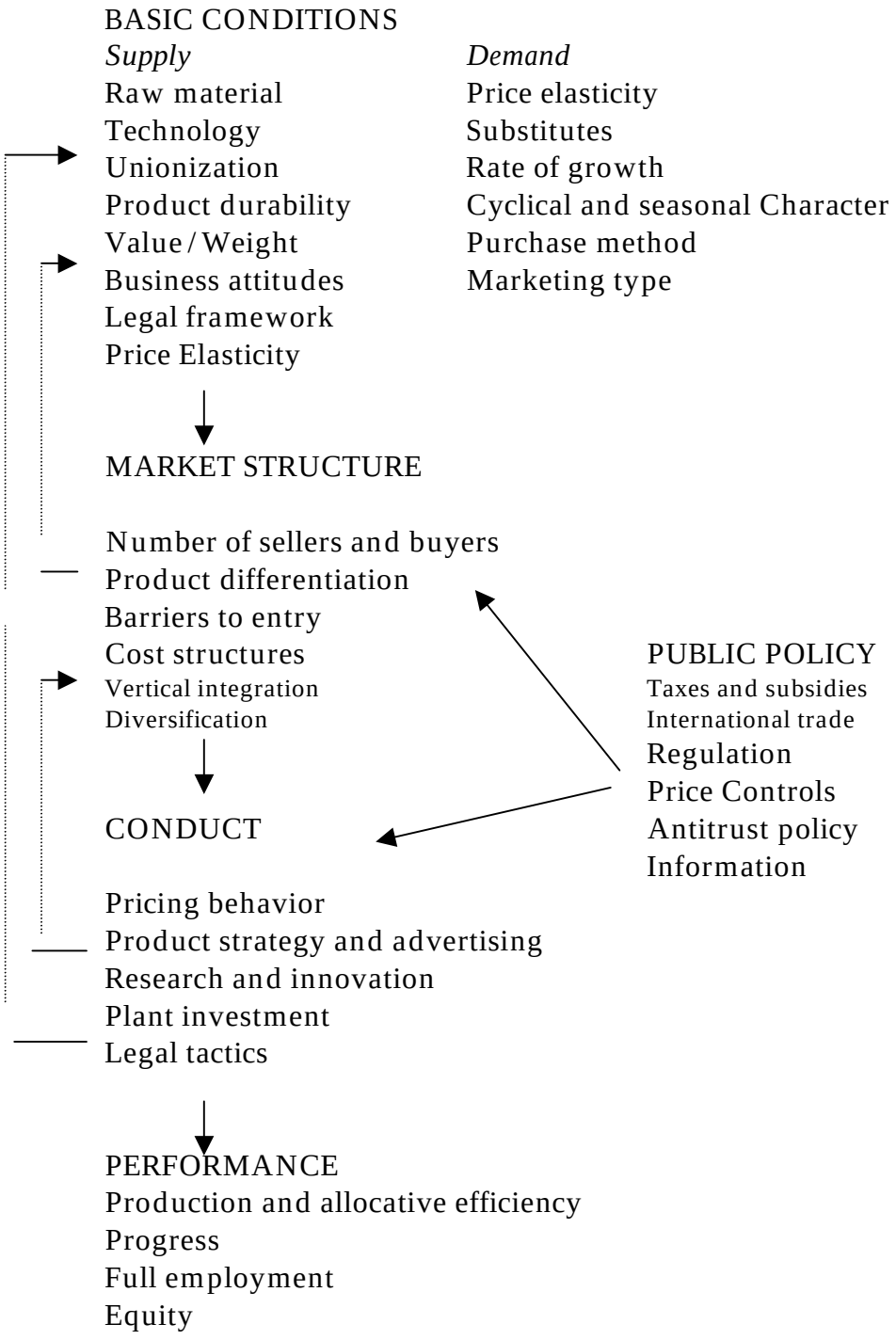


EXHIBIT 2: THE STRUCTURE-CONDUCT-PERFORMANCE PARADIGM



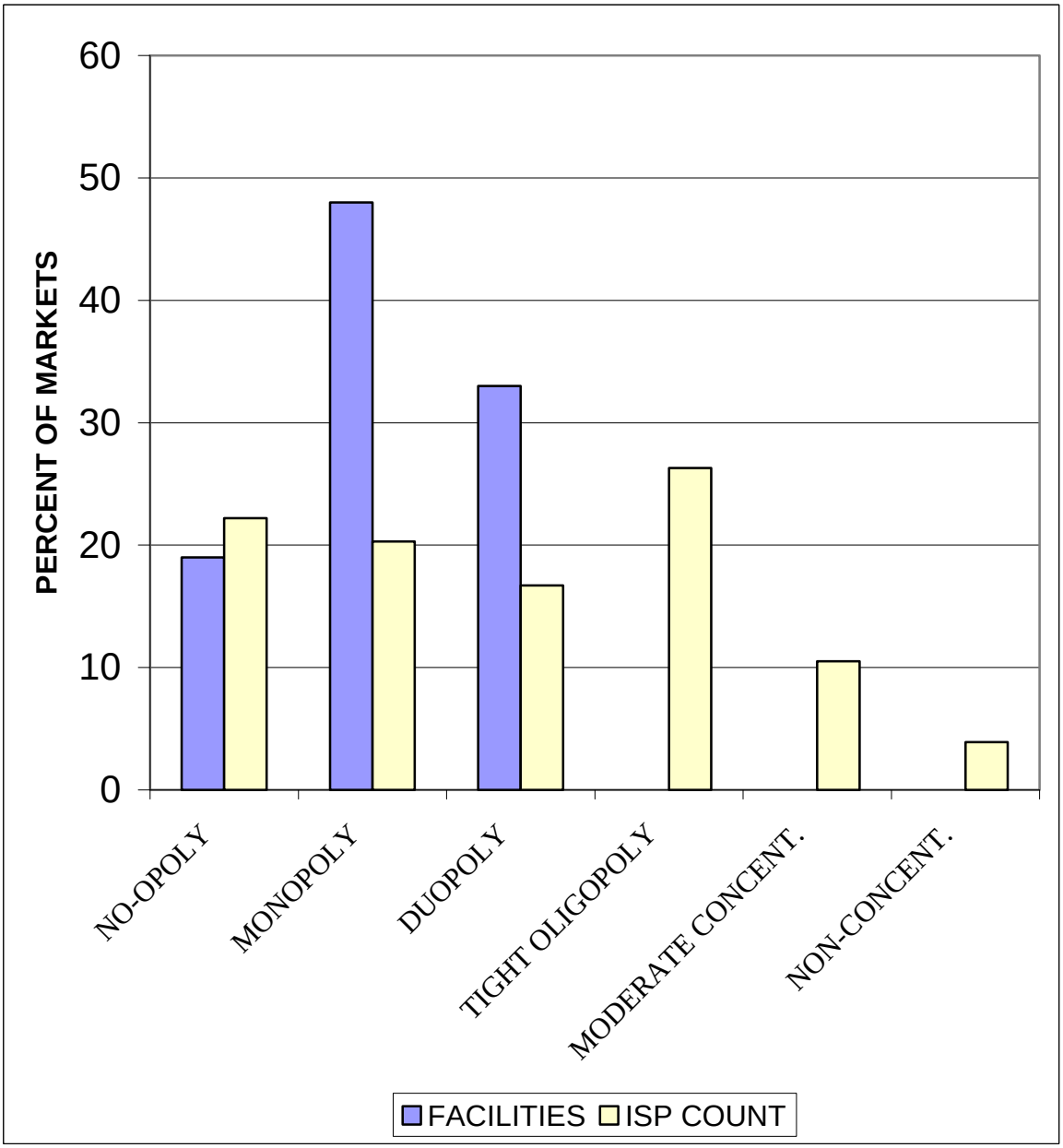
SOURCE: Scherer and Ross, F. M., and David Ross, *Industrial Market Structure and Economic Performance* (Houghton Mifflin Company: Boston, 1990), p. 5.

EXHIBIT 3: DESCRIBING MARKET CONCENTRATION OF PUBLIC POLICY PURPOSES

DEPARTMENT OF JUSTICE MERGER SHARE GUIDELINES	TYPE OF MARKET	EQUIVALENTS IN TERMS OF EQUAL SIZED FIRMS	HHI	4-FIRM
	Monopoly	1 (with 65% or more)	5300+	100
	Duopoly	2	3000+	100
Highly Concentrated			1800	67
	Tight Oligopoly	6	1667	60
Moderately Concentrated	Moderately Concentrated			
Unconcentrated		10	1000	40
	Atomistic Competition	50	200	8

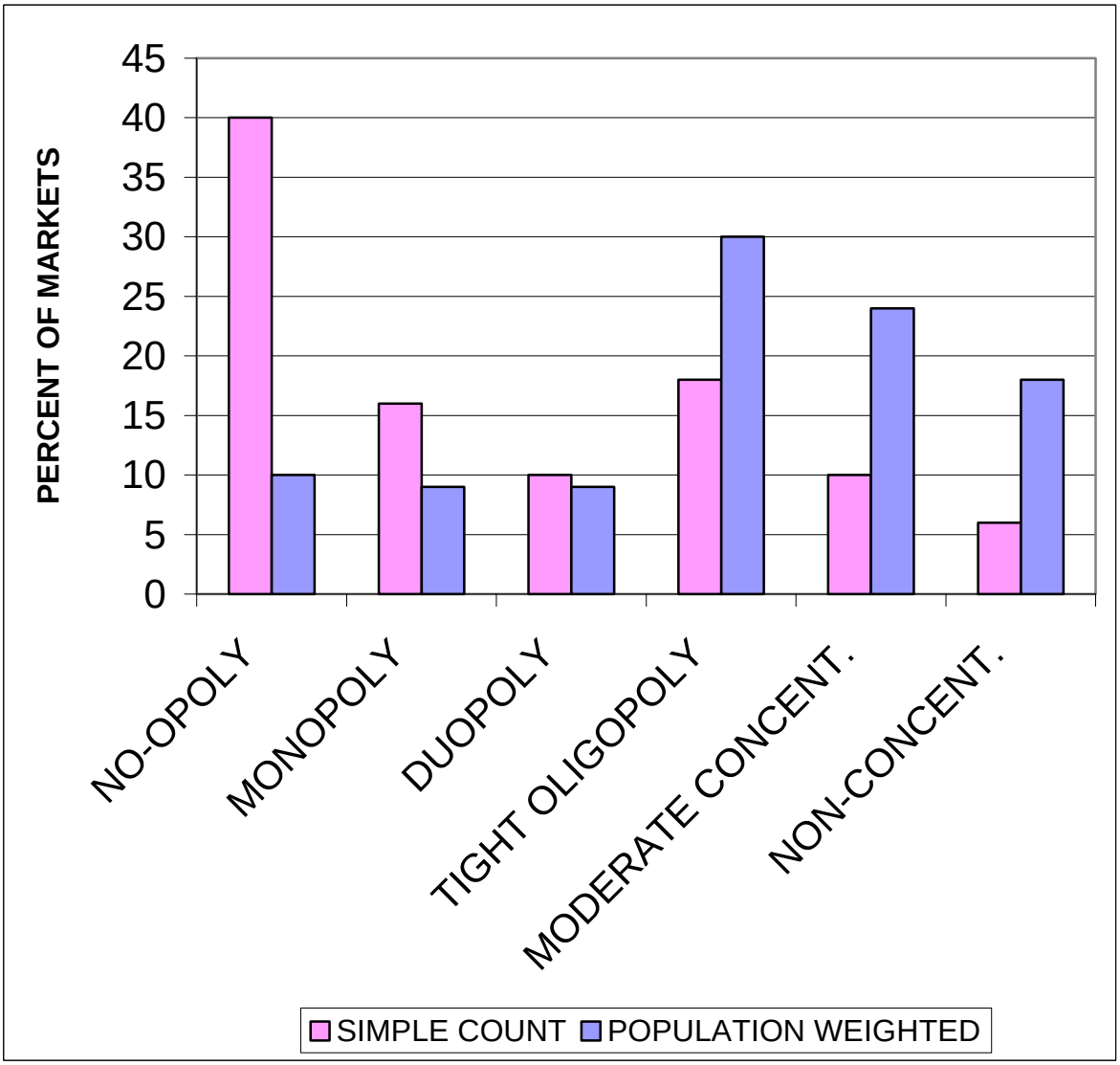
Sources: U.S. Department of Justice, *Horizontal Merger* Guidelines, revised April 8, 1997, for a discussion of the HHI thresholds; Shepherd, William, G., *The Economics of Industrial Organization* (Prentice Hall, Englewood Cliffs, N.J., 1985), for a discussion of 4 firm concentration ratios.

EXHIBIT 4: MARKET STRUCTURE OF HIGH-SPEED INTERNET ACCESS SERVICE



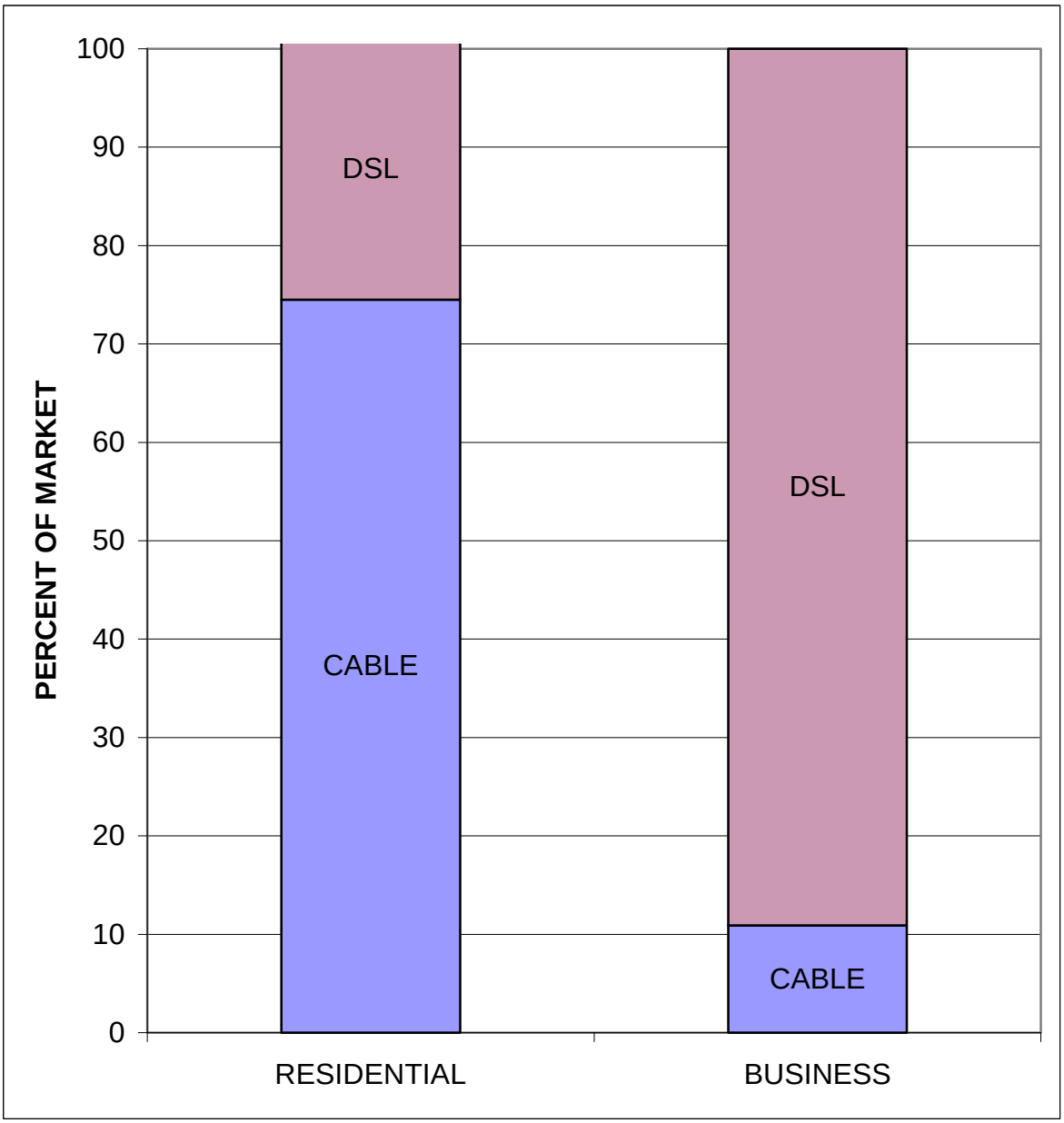
Sources: Industry Analysis Division, *High-Speed Services for Internet Access: Subscribership as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Table 9; Jason Bazinet, *The Cable Industry* (J.P. Morgan Equity Research, November 2, 2001), Figure 36

EXHIBIT 5: MARKET STRUCTURE OF LOCAL TELEPHONE SERVICE: ZIP CODES WITH COMPETITION



Source: Industry Analysis Division, *Local Telephone Competition: Status as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Tables 11, 12.

EXHIBIT 6: MARKET SPECIALIZATION OF CABLE AND TELEPHONE ADVANCED SERVICES



Source: Sources: Industry Analysis Division, *High-Speed Services for Internet Access: Subscribership as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Tables 1-4.