

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

In the Matter of	)	
	)	
Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities	)	CC Dockets Nos. 02-33
	)	
Universal Service Obligations of Broadband Providers	)	
	)	
Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards And Requirements	)	CC Dockets Nos. 95-20, 98-10
	)	

**COMMENTS OF  
ARIZONA CONSUMER COUNCIL, CENTER FOR DIGITAL  
DEMOCRACY, CITIZEN ACTION OF ILLINOIS, CITIZENS UTILITY  
BOARD OF OREGON, CONSUMER ACTION, THE CONSUMER  
FEDERATION OF AMERICA, CONSUMERS UNION, DEMOCRATIC  
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## EXECUTIVE SUMMARY

### BACKDOOR DEREGULATION OF ADVANCED TELECOMMUNICATIONS IS BAD LAW

These comments show that the Commission's proposal in the Broadband Wireline Proceeding is one of a broader set in which the Federal Communications Commission is attempting to illegally deregulate advanced telecommunications and repeal the procompetitive and consumer protection provisions of the Telecommunications Act of 1996.

Currently, incumbent local telephone companies who still have a monopoly on local exchange service are required to make their networks available to new entrant phone companies and unaffiliated Internet Service Providers (ISPs) on rates, terms and conditions that are just, reasonable and nondiscriminatory. The FCC's proposal would eliminate that obligation by declaring that advanced telecommunications facilities and functionalities used to provide high-speed Internet access are not telecommunications services.

By misdefining advanced telecommunications functionalities in this way, the Commission repeals all of the competitive conditions and consumer protections of the Act. It would:

- permit owners of networks to discriminate against rivals or among content providers by withholding or manipulating access to advanced telecommunications functionalities of their networks (repealing §251 and §252),
- allow providers of advanced telecommunications services to avoid payments to the universal service fund undermining its long terms viability (repealing §234)
- negate the obligation to make services available to individuals with disabilities (repealing §255)
- ignore the statutory goals Congress directed the Commission to employ namely, "favoring diversity of media voices, vigorous economic competition, technological advancement and promotion of the public interest" (§257), and
- eliminate the obligation to share infrastructure (§259).

Congress clearly defined advanced telecommunications separately from information services and intended that these services be regulated. It required the FCC to conduct a regulatory forbearance proceeding (under §10 of the Act) if it desired to eliminate regulation. The FCC has steadfastly refuses to do so because it could not pass the test Congress established for deregulation.

To deregulate Congress required that the FCC demonstrate for specific products and specific markets that:

- markets are sufficiently competitive to prevent the abuse of market power (unjust or unreasonably discriminatory charges, practices, classifications)
- regulation was not necessary for consumer protection, and
- forbearance from regulation is in the public interest.

The Commission could not find this to be the case because advanced telecommunications markets and high-speed Internet service markets are highly concentrated and dominated by a few facility owners who have engaged in anticompetitive and anti-consumer practices.

Unable to use the front door to deregulation that Congress provided, the Commission arbitrarily and illegally constructs a back door by invoking other sections of the Act (§706 and §230), but these do not provide it authority to deregulate.

§706 is misapplied and mischaracterized: §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 telecommunications markets. Forbearance is mentioned, but a §10 proceeding is necessary.

§230 has no relevance. It dealt with privacy and does not even mention the word telecommunications.

### **BACKDOOR DEREGULATION OF ADVANCED TELECOMMUNICATIONS IS BAD POLICY**

The Commission bases this and related backdoor deregulation proposals in concurrent proceedings on the mistaken theory that ‘intermodal’ competition will stimulate facility deployment and create adequate competition. However, the empirical evidence suggests that intermodal competition will not produce a robust marketplace for information products or a vigorous marketplace of ideas for civic discourse.

For three decades the FCC policies that kept the telecommunications network open and required non-discriminatory interconnection and carriage for enhanced, computer and information services (the Computer Inquiries) were a cornerstone of the Internet. Open communications networks

- prevent centralized facility owners from engaging in strategic actions that could undermine competition and frustrate innovation;
- stimulate decentralized experimentation that gave rise to the Internet and a host of innovations that drove consumer demand, include the World Wide Web, web browsers, e-mail, instant messaging, file sharing, streaming, etc.; and
- promote civic discourse by making electronic mass communications available to ordinary citizens.

The FCC’s failure to extend this principle to the advanced telecommunications service provided by cable companies and its current efforts to abandon this principle for telephone companies threatens to undermine these accomplishments and will stifle innovation and slow economic growth. Deregulating facility owners as the Commission’s proposal inevitably does, would:

- strangle the primary suppliers of services to the public—ISPs. Under this proposal an extremely small number of facility owners will be able to refuse to interconnect with and discriminate against all unaffiliated ISPs,
- allow facility owners to determine the nature of information that flows over their networks.

Proprietary facilities based owners in the cable and local telephone markets have engaged in unjust and unreasonable practices. Cable owners have refused to provide non-discriminatory access and insist on:

- choosing a small number of ISPs who can sell a restrictive set of services;
- telling the ISPs what they can and (more importantly) cannot sell, particularly streaming video and end-user generated content and applications;
- controlling the customer relationship and the ability of non-affiliated ISPs to differentiate themselves; and
- placing independent ISPs in a price squeeze that stifles innovation on the Internet by charging a toll for access (the charge unaffiliated ISPs must pay for carriage) that is so high that there are few resources and little market left for new applications or content.

In the telephone industry, in spite of the legal obligation to provide open access, regulators and competitors have struggled with anticompetitive practices of the incumbent monopolists including:

- foreclosure of the market for ISPs,
- technology conditions and terms that prevent competition for their core monopoly services,
- price squeeze and price discrimination against independent content providers which undermines their economic viability,
- cross-subsidization of affiliated service providers, and
- abusive marketing.

Facility owners are able to implement anticompetitive and anti-consumer practices because ownership of communications facilities provides immense leverage to control the flow of data over the network and there is little competition at the level of facilities.

- Approximately 40 percent of the nation is served by at most one type of facility.
- Almost no markets, particularly for residential customers, are competitive by standard economic definitions.
- Advanced services markets are segmented, with cable companies having a 75 percent residential market share, while telephone companies have approximately 90 percent of the business market.

The economics of communications networks indicates there will never be enough facilities-based competition to ensure truly competitive markets. The policy pushed by the FCC in all of these proceedings – emphasizing intermodal, facility-based competition at the expense intramodal content and service competition – undermines the fundamental economic force that drove the Internet and dooms consumers to persistent problems of abusive pricing, limitation of choice, and denial of access in broadband Internet services.

## **I. INTRODUCTION**

### **A. INTEREST AND EXPERTISE OF JOINT COMMENTERS**

Arizona Consumers Council,<sup>1</sup> the Center for Digital Democracy (CDD),<sup>2</sup> Citizen Action of Illinois,<sup>3</sup> Citizens Utility Board of Oregon,<sup>4</sup> Consumer Action,<sup>5</sup> The Consumer Federation of America (CFA),<sup>6</sup> Consumers Union (CU),<sup>7</sup> Democratic Processes Center,<sup>8</sup> Florida Consumer Action Network,<sup>9</sup> Illinois PIRG (IL PIRG),<sup>10</sup> Massachusetts Consumer

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<sup>1</sup> The Arizona Consumers Council was founded in 1966 for the purpose of educating and advocating on the behalf of citizens of the state of Arizona and is the longest, continuously operated state consumer group in the nation.

<sup>2</sup>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.

<sup>3</sup> Citizen Action/Illinois is the state's largest public interest organization. Building on two decades of experience, Citizen Action/Illinois is a key player in consumer battles at the state and national levels.

<sup>4</sup> The Citizens' Utility Board of Oregon is a statewide, non-profit organization designated in state law as the representative of residential ratepayers of regulated utilities. CUB was founded by Oregon voters in 1984 and is supported by voluntary contributions from individual ratepayers.

<sup>5</sup> Consumer Action is a non-profit, membership-based organization that was founded in San Francisco in 1971. Since then, Consumer Action has continued to serve consumers nationwide by advancing consumer rights, referring consumers to complaint-handling agencies through our free hotline, publishing educational materials in Chinese, English, Korean, Spanish, Vietnamese and other languages, advocating for consumers in the media and before lawmakers, and comparing prices on credit cards, bank accounts, and long distance services.

<sup>6</sup>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.

<sup>7</sup>CU, publisher of Consumer Reports, is an independent, nonprofit testing and information organization serving only consumers.

<sup>8</sup> The Democratic Processes Center is a Tucson, Arizona-based consumer and reform organization and a member of the Arizona Consumer Council.

<sup>9</sup> The Florida Consumer Action Network is a grassroots organization that empowers citizens to influence public policy by organizing and educating in areas where consumer voices are underrepresented.

<sup>10</sup> IL PIRG is a non-profit, non-partisan public interest advocacy group with members around the state.

Coalition,<sup>11</sup> Media Access Project (MAP),<sup>12</sup> New Jersey Citizen Action,<sup>13</sup> Texas Consumer Association,<sup>14</sup> Texas Office of Public Utility Counsel (TXOPC),<sup>15</sup> USAction<sup>16</sup> (hereafter Joint Commenters) respectfully submit these comments in response to the Notice of Proposed Rulemaking. Joint Commenters have been active on the issues raised in the Notice since the passage of the Telecommunications Act of 1996 (hereafter the Telecom Act). Indeed, several of the Consumer Commenters have been focused on the fundamental issues of promoting vigorous competition in telecommunications and information services, ensuring nondiscriminatory access to telecommunications, promoting universal service, protecting First Amendments right through the promotion of vigorous civic discourse for decades.

Joint Commenters share several common interests in this proceeding as consumers and citizens. Commenters and their members rely upon ISPs and the networks that service them to communicate, publish content, gather information, and conduct business. All have enjoyed

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<sup>11</sup> The Massachusetts Consumers' Coalition (MCC) was established in 1976 by representatives of local, state and federal consumer agencies, consumer advocacy organizations and others who were concerned with protecting consumers and ensuring fairness in the marketplace.

<sup>12</sup> 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.

<sup>13</sup> As the state's largest citizen watchdog coalition, New Jersey Citizen Action works to protect and expand the rights of individuals and families and to ensure that government officials respond to the needs of people rather than the interests of those with money and power.

<sup>14</sup> The Texas Consumers Association is a nonprofit organization that has been representing small business and residential consumers in the state for over 30 years.

<sup>15</sup> 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.

<sup>16</sup> USAction is a new, national, progressive, grassroots organization dedicated to winning social, racial, economic and environmental justice for all. USAction is making a difference, coast to coast.



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.

If the Commission deregulates the ILECs by allowing them to withhold access to advanced telecommunications functionalities of their networks, Joint Commenters will find themselves in a world of higher prices and fewer services, a world of reduced innovation and fewer information sources. Indeed, Joint Commenters 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.

If the Commission deregulates DSL through the contrivance of ignoring the existence of advanced telecommunications services underlying information services, DSL will follow the path to closed communications platforms that afflicts cable modem service. Unregulated cable broadband prohibits subscribers from operating servers and receiving streaming media.<sup>17</sup> If the Commission permits DSL to follow the closed cable model, where the network provider rather than technology dictates the limits of innovation, Joint Commenters will literally lose the ability to create new, interactive art, thereby their ability to exercise their First Amendment right "to receive suitable access to social, political, esthetic, moral, and other ideas and experiences."<sup>18</sup>

Commenters engage in controversial speech often disfavored by large corporate interests, particularly telecommunications interests. As such, these commenters would face the specter of seeing reception of their information degraded. For example, if CU published

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<sup>17</sup> *Whose Line*, 8 CommLaw Conspectus at 38 & n.153.

<sup>18</sup> *Red Lion*, 395 U.S. at 391.

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 Commenters 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 affects not only Commenters, but also the public at large. Thousands of small businesses and home-based businesses use DSL. 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.

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.<sup>19</sup> 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.<sup>20</sup> It takes little predictive judgment to foresee that, if permitted, the ILECs will likewise discriminate against rival content and rival access providers.

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<sup>19</sup> *AOL Rethinks Its Game Plan*, Wall St. Journal A3 (April 19, 2002).

<sup>20</sup> *See Whose Line*, 8 CommLaw Conspectus at 34 n. 115 (citing limits on streaming media).

This course of events would prove disastrous for Commenters and for the general public. Broadband platforms offer not merely a new medium, but a new mechanism for reaching willing listeners. Especially in light of the continued consolidation permitted by the Commission and the courts, broadband Internet remains a prime conduit through which these members can hope to reach a broader audience than that found in their local neighborhood.

There is nothing in the historical experience of closed communications networks or the ongoing experience with duopolistic rivalry to suggest that the deregulated high-speed communications market would produce anything resembling non-discriminatory access to telecommunications. The open communications environment that applications developers and content suppliers need to drive innovation and citizens need to enjoy vibrant civic discourse will be undermined. The seedbed for two decades of audacious competition and innovation on the Internet will be destroyed.

## **B. OUTLINE OF THE COMMENTS**

These comments are divided into two main sections, responding to the two sets of issues raised by the Commission, which asks commenters to evaluate its statutory construction and its policy rationale.<sup>21</sup> We conclude that the proposal is bad law and bad public policy.

In Part I we present a critique of the definitional scheme and tentative conclusions offered by the Commission in the Notice, demonstrating that it thoroughly violates the spirit and the letter of the Telecommunications Act of 1996. While we agree with the Commission

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<sup>21</sup> NPRM, in para 26 the Commission states we “seek comment on these tentative conclusion sand the statutory analysis underlying them. In para 27 it states that “Commenters should discuss both statutory and policy rationales in support of their suggested classification.”

that wireline broadband Internet access service has two components – information service and telecommunications – we believe that the tentative conclusions reached by the Commission about how to define and distinguish them are inconsistent with the statutory scheme and policy goals of the Act.

Part II of the comments focuses on the public policy concerns. While we do not believe that the Commission has the legal flexibility to redefine services and capabilities as it has, we also believe that it would not be in the public interest to do so, even if it did. This section demonstrates that premature deregulation of telecommunications will undermine “the vibrant competitive free market that presently exists for the Internet and other interactive computer services.”

While we are sympathetic to the objective of finding a flexible regulatory framework for promoting the deployment of advanced telecommunications capabilities, we are convinced that the Commission’s definitions are so fatally flawed that they do not provide a workable framework for doing so. Therefore, we recommend that it issue a further Notice of Proposed Rulemaking that cures the infirmities as a more appropriate basis for establishing a new regulatory framework for high-speed Internet access.

## **PART I: BACKDOOR DEREGULATION IS BAD LAW**

### **II. TELECOMMUNICATIONS MUST BE REGULATED UNTIL COMPETITION IS ADEQUATE TO PROVIDE CONSUMER PROTECTION**

#### **A. THE RIGHT QUESTIONS, THE WRONG ANSWERS**

The basic premise of the Notice is that high speed Internet access service is a combination of information service and telecommunications. This view is fundamentally correct. There are two things going on when this service is delivered. The critical policy questions are

How to distinguish between them?

What form of regulation will protect the public interest in each?

Unfortunately, the Notice gives the wrong answer to both questions.

The notice is seriously mistaken in how it draws the line between information service and telecommunications. It is also fatally flawed in the way it proposes to treat the telecommunications component. We begin with the fatal flaw in the Notice.

The Commission misunderstands the history of the Internet and its dynamic competitive environment, which the Congress sought to preserve and extend. It has turned the explicit intent of Congress on its head. These errors in the Commission's proposal will combine to allow widespread abuse of market power in advanced telecommunications markets and undermine the dynamic environment of the Internet that has produced a vast array of innovations to drive service adoption. Deregulating facility owners, as the Commission's proposal inevitably does, would strangle the primary suppliers of services to

the public – Internet Service Providers (ISPs). Under the Commission’s proposal an extremely small number of facility owners will be able to refuse to interconnect with and discriminate against all unaffiliated ISPs.

The Commission leaves the door open to being convinced that it should not go down this path in the myriad of questions it poses, and we will take up the challenge at great length in the next section, but the fundamental framing of the issue causes us concern. The Commission has launched this proceeding under the wrong section of the Telecommunications Act of 1996, for the wrong reasons. Consequently, it biased the outcome by establishing far too weak a standard by which the Commission’s decision should be judged. Consumers will lose their protections under the Communications Act because the Commission will deregulate an important area of telecommunications through a back door that Congress did not allow, when it could never sustain that deregulation if it came through the front door that Congress clearly provided.

The Congress recognized, as do we, that **real** competition is the best form of regulation for consumer protection. Moreover, and most critically, 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 several of the Joint Consumer Commenters in the Notice of Inquiry in the Cable Modem proceedings,<sup>22</sup> 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,

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<sup>22</sup> “Comments and Reply Comments of Texas Office of Peoples Counsel, Consumer Federation of America, Consumers Union,” *In the Matter of Inquiry Concerning High Speed Access to the Internet over Cable and Other Facilities*, Federal Communications Commission, GN Docket No. 96-262, December 12, 1999, January 12, 2000.

therefore, exposes consumers to the worst of both worlds, a market that is disciplined neither by competition nor by regulation.

There are two primary sections of the Telecommunications Act of 1996 that the Commission cites as the basis for the proceeding – section 706 and section 230. Neither of these is the proper grounds for taking the action the Commission proposes

## **B. SECTION 706 IS MISAPPLIED AND MISCHARACTERIZED**

The Commission cites 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.

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

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.

The Commission has made repeated inquiries into the deployment of advanced telecommunications capabilities and never invoked the negative answer that would support action under Section 706 to head down the path the Commission is taking. It has not laid the

groundwork for taking action under section 706. Even if it had, the actions proposed are misguided.

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. 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.* If regulatory forbearance is the tool to be used, Congress clearly identified the conditions for implementing such an approach.



**C. SECTION 10 WOULD BE THE APPROPRIATE AUTHORITY, BUT THE COMMISSION’S PROPOSAL WOULD NEVER PASS THE STANDARD**

It is interesting to note that 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 (one of the options identified in Section 706) stating that the

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 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 protection of consumers; and
- (3) forbearance from applying such provision or regulation is consistent with the public interest.

It is obvious that Congress intended regulatory forbearance to be very carefully applied. The conditions for forbearance are stringent, not merely having to do with the speed of deployment, but addressing all of the broad purposes of the Act. The findings are specific to products and geographic markets, not broad policy goals. Section 10 is not an invitation to the exercise of market power – the imposition on the public of unjust or unreasonably discriminatory rates and practices. It requires the Commission to find that market conditions (competition) are such that abuse will not occur.

Reading sections 706 and 10 together, which the Commission must if it intends to forbear from regulation, provide 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 tear up 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 and of the vibrant free market that presently exists for the Internet and other interactive computer services).

If there is a problem in the spread of high-speed Internet adoption, it is not a supply-side or facility problem, but that is what the Commission is invoking to deregulate telecommunications. The problem is on the demand-side. Because the Commission has failed to regulate the telecommunications component of cable modem service and the incumbent local telephone companies have been dragging their feet on opening their local networks, especially as it applies to high-speed Internet access, we do not have sufficient competition in high-speed Internet services (not facilities). The dominant firms have failed to develop applications and content that uniquely exploits the capabilities of high-speed networks. Since these markets are highly concentrated, monopolies or duopolies in many cases, there is insufficient competitive pressure and prices have been rising far faster than inflation. The Commission proposal, which strengthens the hand of facility owners at the expense of unaffiliated Internet service providers, can only make matters worse, not better.

#### **D. SECTION 230 HAS NO RELEVANCE TO THE PROPOSED POLICY**

Having failed to walk through the door to regulatory forbearance that Congress fashioned, the Commission seeks a back door to deregulation through section 230. The second justification that the Commission notes is the policy contained in Section 230 (b) of the Act. In this section Congress declared:

It is the policy of the United States –

- (1) to promote the continued development of the Internet and other interactive computer services;
- (2) to preserve the vibrant competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation...

This section does not address telecommunications in any way. Indeed, the word telecommunications does not appear in the section and it is entitled “protection for private blocking and screening of offensive materials.” Yet the Commission is attempting to use it as a cover to deregulate telecommunications. Reliance on this section fundamentally misinterprets what Congress was intending. At the time Congress declared this policy, the telecommunications network on which the Internet rode was thoroughly regulated and the Internet and interactive computer services were not. What Congress clearly intended to do was to prevent the regulation of telecommunications from extending to the Internet, rather than having visa versa.

Consumer Commenters and many others have argued that deregulating telecommunications will be the single greatest threat to “the vibrant free market that presently exists for the Internet and other interactive computer services” since its inception, because it unleashes the market power of an extremely small number of telecommunications providers

to favor their affiliated Internet Service Providers (ISPs) at the expense of the thousands of unaffiliated providers.

In this and a related proceeding, 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.<sup>23</sup> 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.<sup>24</sup> 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.<sup>25</sup> The Commission cannot fairly read Section 230 to provide

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<sup>23</sup> . *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, CS Docket No. 02-52 (released March 15) ¶4.

<sup>24</sup> 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).

<sup>25</sup> See 47 USC §251(g).

separate instruction to repeal these regulations, since it merely requires the Commission to preserve the status quo. 47 USC §230(b)(2).

### **III. CONGRESS DEFINED THE RELATIONSHIP BETWEEN TELECOMMUNICATION AND INFORMATION SERVICE CLEARLY, THE COMMISSION HAS TURNED CONGRESSIONAL INTENT ON ITS HEAD**

The Commission's misreading of the Act becomes readily apparent when it tries to distinguish between information services and telecommunications. Congress did not want the presence of telecommunications to be a lever to allow the Commission to extend regulation to information services, so it made a sharp distinction between the information service and the telecommunications that such a service would inevitably use. The Commission turns this logic on its head, going well beyond the definitions in the Act, to use the presence of information services to deregulate telecommunications.

The Notice points out that the Congress has been criticized for a lack of clarity in Telecom Act of 1996, but in this case the problem lies not in the law, but in the way the Commission is reading it. It is pressing a deregulatory program by twisting Congress' words.

#### **A. DISTINGUISHING INFORMATION SERVICE FROM TELECOMMUNICATIONS**

The series of interrelated definitions adopted by Congress is well known and, in our opinion, quite clear. Information services are defined as follows.

Information service – The term 'information service' means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available via telecommunications, and includes electronic publishing, but does not include any use of any such capability for

the management control, or operation of a telecommunications system of the management of a telecommunications service.<sup>26</sup>

Congress recognized that information services would require some form of transmission. Congress recognized that information services would ride on telecommunications networks. Information services are defined by user controlled two-way activities over telecommunications networks. Information services are clearly distinguishable from telecommunications in the sense that telecommunications is the movement of the information the user generates and directs.

Moreover, Congress added that capabilities used for management of the telecommunications communications system would not be considered part of the information service.

Telecommunications – The term telecommunications” means the transmission between or among points specified by the end user, of information of the user’s choosing, without change in the form or content of the information as sent and received.

Congress recognized that telecommunications networks would be used for many purposes, and it specified how each use would be treated under the Act. One of the uses of the information capability of the network was the management of the flow of information services. The use by network owners of an information capability to manage the network was not to be considered an information service. The fact that network operators would use these capabilities to manage the flow of information services does not change the definition of those services.

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<sup>26</sup> Section 3, Definitions.

The Commission has been vague about these definitions,<sup>27</sup> consistently failing to understand or accept this clear distinction and, in the Notice it finally and explicitly has gotten it wrong.

For example, in the case where a wireline broadband Internet access service allows end-users to retrieve files from the World Wide Web, an end-user must have the capability to interact with information stored on the facilities of the provider of the wireline broadband Internet access service. Furthermore, to the extent to which a provider offers end-users the capability to store files on service provider computers to establish “home pages” on the World Wide Web, the consumer is utilizing a “capability for ... storing ... or making available information” to others. It seems, from these factual situations, and others, that providers of wireline broadband Internet access services provide end-users with more than pure transmission, “between or among points selected by the user, of information of the user’s choosing, without change in the form or content of the information service.” Therefore, we tentatively conclude that Congress intended the definition of information service to include the capabilities provided by wireline broadband Internet access services. As mentioned above, we have interpreted the categories of information service and telecommunications service to be mutually exclusive. In defining “information service,” Congress recognized that a transmission component is embedded within, and not separate and distinct from, the information service. As such, we view wireline broadband Internet access service as not consisting of two separate services, but as a single integrated offering to the end-user.<sup>28</sup>

In the World Wide Web/home page example, the telecommunications system transmits commands from the users computer to the computer owned by the broadband Internet access service provider. Those commands pass, unaltered through the network. All of the “generating, acquiring, storing, transforming, processing, retrieving, utilizing,” takes place in one of the two computers that are communicating via telecommunications.

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<sup>27</sup> The Commission recognizes that the previous analyses of these issues (para. 14) “left open significant questions regarding the treatment of Internet (and information) service providers that own their own transmission facilities and that engage in data transport over those facilities to provide an information service.”

<sup>28</sup> Para. 21.

The Commission's claim that "Congress recognized that a transmission component is embedded within and not separate and distinct from, the information service" is simply wrong. Congress distinguished them quite clearly and went so far as to point out that capabilities might be used "for the management control or operation of the telecommunications system," which would not turn the telecommunications into information services. The Commission's decision to "view wireline broadband Internet access service as not consisting of two separate services, but a single integrated offering to the end-user," directly contradicts the clear distinction that Congress made between the information service component and the telecommunications component.

The Commission's efforts to invoke the nature of broadband as somehow creating a loophole in the Congressional definitions that will allow the information service to swallow the telecommunications also does not fly. The Commission asserts at several points that "broadband offerings may differ in form and scope from previous information services,"<sup>29</sup> and that

wireline broadband Internet access service fuse communications power with powerful communications capabilities and content, these services appear to fall within the class of services that the Commission has traditionally identified as "information services."

The (con)fusion is only in the mind of the Commission because it will not accept the clear language of the statute. It mistakenly looks past the point of interconnection with telecommunications to see what is happening to data in the customer premise to try to decide whether the service is information and argues that if it is telecommunications, it is fused.

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<sup>29</sup> Para. 13



Telecommunications is the capability to transmit data and “advanced telecommunications capability” is just one flavor of telecommunications. It is defined in the Act

without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high quality voice, data graphics, and telecommunications using any technology.<sup>30</sup>

Congress clearly did not let broadband slip out of the web of definitions of information services and telecommunications.

## **B. PROVIDING TELECOMMUNICATIONS VS. USING TELECOMMUNICATIONS VS. TELECOMMUNICATIONS SERVICE**

As a legal matter, the Commission cannot make telecommunications disappear from wireline broadband Internet access service. Consequently, the Commission is forced to struggle with the distinction between telecommunications and telecommunications service. Citing the muddleheaded thinking that the Commission admits has “not fully resolved” the issue the Commission goes back to a position that telecommunications can be used, without being provided

“[w]hen an entity offers subscribers the ‘capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making available information *via telecommunications*,’ it does not provide telecommunications, it is *using* telecommunications.<sup>31</sup>

Since telecommunications system do not occur freely in nature (indeed the Commission claims that high-speed telecommunications requires substantial effort to create) someone must be providing the telecommunications capability. The Commission has taken a step toward avoiding the suggestion that high-speed telecommunications occur *sui generis*,

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<sup>30</sup> 706 (c)(1)

<sup>31</sup> para. 19.

when it states that “the transmission component of retail wireline broadband Internet access service *provided* over an entity’s own facilities is “telecommunications.”<sup>32</sup>

The real issue is whether the provision of telecommunications is a telecommunications service, which the Act defines thusly:

Telecommunications service – The term ‘telecommunications service’ means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.

The Commission claims that

as a logical extension of our determination that the provision of wireline broadband Internet access service over a provider’s own facilities is an information service, the transmission component of the end-user wireline Internet access service provided over those facilities is “telecommunications” and not a telecommunications service.<sup>33</sup>

In other words, by selling a bundle of services to the public, any component of which is not telecommunications, the telecommunications component would not be considered a service. We have already shown that this is not a logical extension of the definitions provided in the Act. The Commission is relying on perverse reasoning at best: If a bundle of services and inputs is offered to the public for a fee, the component elements of that bundle are not offered to the public for a fee.

The Commission’s reading of the Act is inconsistent with the logic that Congress clearly articulated. Congress clearly intended that the presence of the telecommunications input in the bundle not provide a basis for the Commission to try to regulate information services. The Commission twists this into the proposition that the presence of information services in the bundled compels the deregulation of the telecommunications input. In our

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<sup>32</sup> Para 17.

<sup>33</sup> Para 25.

earlier comments to the Commission on cable modem service we called this “legal gymnastics to escape Title II nondiscrimination obligations.”<sup>34</sup> This exercise makes no more sense applied to either wireline broadband Internet access that it did for cable modem service.

### **C. THE DEFINITIONAL SHELL GAME DESTROYS THE LOGIC OF THE ACT**

By taking this line of reasoning, the Commission invites a shell game in which bundles of services are created to strategically position telecommunications. Earthlink summarized the devastating impact that this shell game would have on the fabric of telecommunications in its comments in response to the Cable Modem NOI.

If the Commission were to accept the argument that an information service provided through an affiliate of the transport facility owner can be made available to the public without having the transmission service used to carry that information service to the public being considered a telecommunications service, it would provide a blanket waiver for all facilities-based telecommunications carriers to escape Title II regulation under the Act. Essentially, if it were to accept such an argument, the Commission would be sanctioning a shell game in which the transmission facility owner, by refusing to provide transmission services to any information service provider other than its own affiliate, would be able to provide information services indiscriminately to the public for a fee without becoming a common carrier subject to Title II of the Act. As discussed further below, the Commission and the courts have refused to accept such an argument in the past.<sup>35</sup>

#### **1. SECTIONS 251 AND 252, NON-DISCRIMINATORY INTERCONNECTION WOULD BE REPEALED BY THE COMMISSION’S DEFINITIONAL GYMNASTICS**

The Commission recognizes that this shell game would do severe violence to the logic of the Act. For example, in spite of the fact that the Commission refers to broadband Internet access service as a “combined,” “fused,” or “integrated package of transmission and information processing capabilities,” there is no doubt that high-speed transmission

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<sup>34</sup>

<sup>35</sup> Earthlink, pp. 28, 29... 34.

capabilities can be sold on a stand-alone basis. The package simply bolts together two clearly separate inputs. The Commission immediately must confront the problem of how to treat an entity that sells both integrated packages of transmission and information services and stand-alone transmission. We have no doubt that those entities would quickly solve the Commission's problem and withdraw their stand-alone offerings.<sup>36</sup>

If it were to allow that to happen, however, the Commission discovers that its definitional exercise would repeal Sections 251 and 252 of the Act for high-speed telecommunications capabilities. Incumbent local exchange carriers would no longer be required to provide access to network elements "because network element is defined as a 'facility or equipment used in the provision of a telecommunications service.'"<sup>37</sup> As discussed above, this would destroy the "vibrant and competitive free market for that presently exists for the Internet and other interactive computer services."

## **2. UNIVERSAL SERVICE UNDER SECTIONS 254 AND 255 WOULD BE UNDERMINED**

In addition, this interpretation would place the Universal Service Fund in immediate jeopardy, since contributions have been based on the assumption that telecommunications services are being provided. The threat is so palpable that the Commission makes a finding that the telecommunications providers should keep paying their universal service bills since "the public interest is served by maintaining the status quo."<sup>38</sup> Similarly, the obligation to make telecommunications services available to individuals with disabilities (under Section 255) is undermined by this definitional switch.

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<sup>36</sup> The Commission recognizes that they would quickly convert them to private carriage agreements, most likely on very different terms and conditions.

<sup>37</sup> Para. 61.

<sup>38</sup> Para 73.

## **D. THE MISDEFINITION OF ADVANCED TELECOMMUNICATIONS SERVICES UNNECESSARILY UNDERMINES OTHER GOALS OF THE ACT**

While the Commission recognizes that its definitional scheme does severe violence to the critical provisions of the Act, it ignores other important sections of the Act.

### **1. THE SECTION 257 DIVERSITY GOAL WOULD BE NEUTERED**

This proceeding purports to address a simple competition question subject to a straightforward economic analysis. 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. Indeed, in the NPRM the Commission invokes broader policy concerns on deployment and deregulation. Sadly, however, the item chooses to ignore the statutory goals Congress actually directed the Commission to employ in §257(b) "favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest."

As representatives of the general public, whose First Amendment rights to receive information are "paramount."<sup>39</sup> Commenters maintain that the Commission cannot ignore its responsibility to ensure that the Internet remains a medium of communication "as diverse as human thought."<sup>40</sup> 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 in §257(a)-(c).

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<sup>39</sup> *Red Lion Broadcasting Co., Inc. v. FCC*, 395 U.S. 367, 390 (1969),

<sup>40</sup> *ACLU v. Reno*, 521 U.S. 844, 870 (1997).

As the economic analysis in section II shows, “intermodal” competition as envisioned by the Commission will not produce a free marketplace of goods or for 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.

The Commission’s threat to deregulate the wireline broadband network threatens the very foundation of this openness that drives deployment and development. Joint Commenters depend on broadband for a number of purposes. For Joint Commenters whose members produce independent content or receive independently produced content, access to competitive broadband providers is essential...

As Commenters 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.<sup>41</sup> Although Commenters have filed these comments in proceedings pertaining to

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<sup>41</sup> 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*

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.<sup>42</sup>

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. Without maintaining open access to DSL lines, however, such services will quickly wither and vanish.

## **2. FACILITY SHARING UNDER SECTION 259**

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*America, Gene Kimmelman, Consumers Union, Andrew Jay Schwartzman, Media Access Project, Patrice McDermott, OMB Watch, to FCC Chairman William Kennard, (July 29, 1999).*

<sup>42</sup> 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*").

Section 259 requires the Commission to maintain regulations that require ILECs to share their network facilities. This reflects Congress' recognition that competitive providers of information services must have access to the telecommunications network. Even if the Commission disagrees with this judgment, it has no authority to substitute its own judgment for that of Congress.

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* . . . (emphasis added).

This statutory requirement makes perfect sense. The ILEC controls the necessary infrastructure 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 possess in the retail market.<sup>43</sup>

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.<sup>44</sup> The courts have made it clear that the Commission has no authority to relieve itself of statutory requirements to regulate,

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<sup>43</sup> 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).

<sup>44</sup>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.



even where the Commission would prefer to do otherwise and finds that regulation interferes with the broader purposes of the Act.<sup>45</sup>

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.

#### **E. ADVANCED TELECOMMUNICATIONS SERVICE UNDERLIES INFORMATION SERVICES**

Thus, the plain language of the statute strongly indicates that the entity providing telecommunications must be deemed to be offering it to the public for a fee if it offers a bundle including the telecommunications to the public or the component to any class of customers who offer it to the public. These definitions are woven tightly into the fabric of the Act, that are critical to the essence of the policy that Congress intended. The proposed statutory construction turns the Act on its head, arbitrarily reversing Congressional intent and creating unnecessary conflicts with a host of clearly articulated policies adopted by the Congress.

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<sup>45</sup> 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).

We believe that the 9<sup>th</sup> Circuit Court of Appeals read the statute in its plain and clear language.

Under the statute, Internet access for most users consists of two separate services. A conventional dial-up ISP provides its subscriber access to the Internet at a “point of presence” assigned a unique Internet address, to which the subscribers connect through telephone lines. The telephone service linking the user and the ISP is classic “telecommunications,” which the Communications Act defines as “the transmission, between or among points specified by the user of information of the user’s choosing, without change in the form or the content of the information as sent and received.” A provider of telecommunications services is a “telecommunications carrier,” which the Act treats as a common carrier to the extent that it provides telecommunications to the public, “regardless of the facilities used...”

ISPs are themselves users of telecommunications when they lease lines to transport data on their own networks and beyond on the Internet backbone. However, in relation to their subscribers, who are the “public” in terms of the statutory definition of telecommunications service, they provide “information services,” and therefore are not subject to regulation as telecommunications carriers...

Like other ISPs, @Home consists of two elements: a pipeline (cable broadband instead of telephone lines), and the Internet service transmitted through that pipeline. However, unlike other ISPs, @Home controls all of the transmission facilities between its subscribers and the Internet. To the extent @Home is a conventional ISP, its activities are one of an information service. However, to the extent that @Home provides its subscribers Internet transmission over its cable broadband facility, it is providing a telecommunications service as defined in the Communications Act.<sup>46</sup>

By taking this approach, the Commission would preserve its authority to regulate only the transmission capability (and remains prevented from regulating the information service) and does not undermine the interconnection logic of sections 251 and 252 or the universal service goals of section 254 and 255, the diversity goals of section 257, and the infrastructure sharing goals of section 259.

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<sup>46</sup> *AT&T v. City of Portland*, 216 F. 3d (9<sup>th</sup> Cir. 2000).

The Commission should reverse its tentative conclusion and declare that the telecommunications component of high-speed Internet Access service is subject to the section 201 and 202 obligations of interconnection and non-discrimination. It should then issue a Further Notice of Proposed Rulemaking to develop a flexible mechanism for implementing these obligations.

Telecommunication should be defined as the technical capability of the network to transmit data between two points unaltered. Properly addressed packets that arrive at the point of interconnection should be carried on a non-discriminatory basis to the end-user.

The Commission should declare that all telecommunications, including the telecommunications component of the high-speed Internet service, should contribute to universal service. Since the information service component would not be required to contribute to universal service, the Commission should issue a second Further Notice of Proposed Rulemaking to establish the mechanism for determining the extent of telecommunications and the method of contribution.

We recognize that developing a flexible approach to preserving the obligations of interconnection and non-discrimination as well calculating universal service contributions from mixed services are difficult tasks. However, protection of the public interest has always been a difficult task and throwing consumers to the wolves of unfettered market power has never been an acceptable response to the challenge. Allowing the telecommunications component of high speed Internet service to cannibalize the universal service fund would also undermine the clear Congressional intent to ensure that for all Americans quality services are available at just reasonable and affordable rates.

## **PART II: BACKDOOR DEREGULATION IS BAD POLICY**

### **IV. OPEN COMMUNICATIONS NETWORKS ARE CRITICAL TO DYNAMIC INNOVATIONS AND VIBRANT CIVIC DISCOURSE**

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. There is a very cruel irony in the Commission's apparent desire to give more power and incentives to facility owners, primarily in the form of intermodal competition, largely 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.

## **A. CREATING THE DYNAMICALLY COMPETITIVE INTERNET**

### **1. COMMUNICATIONS PLATFORMS**

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). Three layers – the physical layer, the logic or code layer, and the content layer – define the communications platform.<sup>47</sup> It is a platform because there are strong complementarities between the layers.<sup>48</sup> They must fit together closely and smoothly in order to deliver service.

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<sup>47</sup> 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," 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.

<sup>48</sup> 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.),

The physical layer is composed of two parts: a transmission medium (e. g. wires) and the appliances or devices that receive signals.

The logic (or code) layer involves the codes and standards with which appliances interconnect, interoperate, and communicate. Protocols interpret the signals. Operating systems allocate and coordinate the resources of the system. The operating systems and communications protocols can be resident in either the appliances and devices or network equipments (e.g. routers and switches in the information space, the head end or CMTS in the video space).

The content layer is composed of applications and information products, such as television programs, music, e-mail, instant messaging or Web sites.

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 in communications and high first-copy costs in information production 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

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*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.

ability of others to derive value from consuming it. Information frequently has positive direct 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.

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.<sup>49</sup> Cost savings apply not only to initial production costs, but also to service and maintenance costs.<sup>50</sup> As the installed base of hardware and software deployed grows, learning and training in the dominant technology is more valuable since it can be applied to more users and uses.<sup>51</sup> Success breeds success.<sup>52</sup>

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

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<sup>49</sup> Arthur, Brian W., "Positive Feedback in the Economy," *Scientific American* 1990, p. 92...93.

<sup>50</sup> Katz Michael and Carl Shapiro, "Network Externalities, Competition and Compatibility," *American Economic Review*, 1985.

<sup>51</sup> 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.

<sup>52</sup> 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...

Internet), where each individual derives greater benefit through the ability to contact numerous other individuals directly.<sup>53</sup> 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,<sup>54</sup> 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. 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.

## **2. THE INFORMATION REVOLUTION**

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

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<sup>53</sup> Church Jeffrey and Neil Gandal, “Complementary Network Externalities and Technological Adoption,” *International Journal of Industrial Organization*, 1993, p. 241.

<sup>54</sup> Church and Gandal, p. 241 (see also Chien-fu Chou and Oz Shy, “Network Effects without Network Externalities,” *International Journal of Industrial Organization*, 1990).



decline, human capital became the salient economic good involved in information production.”<sup>55</sup>

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<sup>56</sup> and in the organizational process.<sup>57</sup>

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.<sup>58</sup> 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.<sup>59</sup> Standardized and pre-installed bundles of software appear to have allowed the rapidly expanding capabilities of computer hardware to become accessible and useful to consumers with little expertise in computing.<sup>60</sup> As computers got cheaper and cheaper and applications became more abundant and user-

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<sup>55</sup> Coase’s Penguin, p. 1.

<sup>56</sup> Brian R. Gaines, “The Learning Curves Underlying Convergence,” *Technological Forecasting and Social Change*, January/February 1998, at 20-21.

<sup>57</sup> Brian Arthur, “Positive Feedbacks in the Economy,” *Scientific American*, February 1990, pp. 95, 98.

<sup>58</sup> Gaines, Brian, R., “The Learning Curve Underlying Convergence,” pp. 30-31.

<sup>59</sup> Arthur, 1990, p. 95.

<sup>60</sup> 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/Shapiro Antitrust).

friendly, computers ceased being merely a workplace or laboratory tool and became a consumer electronic device.

At the physical layer, cheap, powerful computers are the rapidly proliferating muscle of the digital economy.<sup>61</sup> Its vertebrae are the sprawling fiber-optic networks that allow these machines to communicate at rising speeds with falling costs.<sup>62</sup> In the code layer, a software revolution is the nervous system that enables the messages to be routed, translated, and coordinated.<sup>63</sup> At the content and logic layers every sound, symbol, and image can now be digitized.<sup>64</sup> The more complex the sound or image, the more data has to be encoded and decoded to accomplish the digital representation.<sup>65</sup> But, when computing speeds, storage capacity and transmission rates become big enough, fast enough, and cheap enough, it becomes feasible to move huge quantities of voice, data, and video over vast 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.

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

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<sup>61</sup> Sara Baasen, *A Gift of Fire: Social, Legal and Ethical Issues in Computing* (1996).

<sup>62</sup> George F. Gilder, *Telecosm: How Infinite Bandwidth Will Revolutionize Our World* (2000).

<sup>63</sup> Gaines, p. 23.

<sup>64</sup> Bruce M. Owen, *The Internet Challenge to Television*, 29 (Harvard University Press 1999)

<sup>65</sup> *See id.* at 151.

in a process of learning by producing, in a virtuous feedback between the diffusion of technology and its enhancements.<sup>66</sup>

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.<sup>67</sup> This makes it possible for a wholly new form of information production to exist on a sustainable basis.<sup>68</sup>

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.<sup>69</sup> Hierarchy is out, horizontal is in.<sup>70</sup> The ability to coordinate at a distance dramatically alters the nature of centralized control, transferring much decision-making to dispersed management. A Harvard Business School Press publication, graphically titled *Blown to Bits*, summarized the dramatic change compelling corporate adjustment as follows:

Digital networks make it possible to blow up the link between rich information and its physical carrier. The Internet stands in the same relation to television, as did television to books, and books to stained glass windows. The traditional link between the economics of information and the economics of things – is broken.<sup>71</sup>

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<sup>66</sup> 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.

<sup>67</sup> Langlois, p. 206.

<sup>68</sup> Coase's Penguin, p. 23.

<sup>69</sup> Marina v. N. Whitman, *New World, New Rules* (Boston: Harvard Business School Press, 1999), Chapter 2.

<sup>70</sup> Manuel Castells, *The Rise of Networked Society* (Oxford: Blackwell, 1996); Richard C. Longworth, *Global Squeeze* Chicago: contemporary Books, 1998).

<sup>71</sup> Philip Evans and Thomas S. Wurster, *Blown to Bits: How the New Economics of Information Transforms Strategy* (Harvard Business School Press, 2000), p. 17.

This development in information space is extremely procompetitive. The Internet unleashed competitive processes and innovation exhibiting the fundamental characteristics of audacious or atomistic competition.<sup>72</sup>

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.<sup>73</sup>

## **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

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<sup>72</sup> 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.

<sup>73</sup> Bar, Francois, et. al., *Defending the Internet Revolution in the Broadband Era: When Doing Nothing is Doing Harm*, August 1999 (hereafter, Bar, et. al.).

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).<sup>74</sup> Rather, they tend, at best to be tight, differentiated oligopolies or monopolistically competitive,<sup>75</sup> 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 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

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<sup>74</sup> 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 goods have significant implications for competitive pricing strategy.

The first and most important point is that markets for information will not, and *cannot*, look like textbook perfect competitive markets in which there are many suppliers offering similar products, each lacking the ability to influence prices.

<sup>75</sup> 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 Benefits Whom in Daily Newspaper Markets?*, (2000); as well as the statement *Comments on Consolidation and Localism* (2001).

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.<sup>76</sup>

Just as we have learned that embedding openness deeply in the communications platform can play a powerful role in freeing innovation, we should recognize that allowing market power to be exercised can have particularly chilling effects on competition in communications markets (see Exhibit 2).

Capturing network effects is a primary objective of network owners. Firms seek to capture these positive externalities and accomplish technological “lock-in.”<sup>77</sup> These processes create what has been called an ‘applications barrier to entry.’ After capturing the first generation of customers and building a customer and programming base tied to dominant

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<sup>76</sup> 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).

<sup>77</sup> Shapiro, Carl and Hal R. Varian, *Information Rules*

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. 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.

A second source of market power flows from the vertical nature of communications platforms. In traditional industries, vertical leverage is exploited by business practices. Companies vertically integrate to internalize transactions. They may do so for efficiency reasons, but in the process they withdraw business from the open market. When they constitute a large share of the market or refuse to buy or sell intermediate inputs (or raise the costs of rivals) the impact can be (intentionally or unintentionally) anticompetitive. In a platform industry, vertical leverage can take another (perhaps more insidious form), technological integration or manipulation. Introduction of incompatibilities can impair or undermine the function of disfavored complements. Communications or information industries are platforms because of the close technical complementarity between the between the layers of the platform. Three layers – the physical layer, the logic or code layer, and the content layer – must interoperate seamlessly for the communications network to function. The ability to undermine interoperability is an extremely powerful tool for excluding or undermining rivals and thereby short circuiting competition.

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 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.<sup>78</sup>

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.<sup>79</sup>

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<sup>78</sup> Bar, et. al.

<sup>79</sup> 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



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."<sup>80</sup>

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.<sup>81</sup>

### **C. STRENGTHENING CIVIC DISCOURSE**

In the discussion of statutory issues we noted that the Congress had recognized the importance of telecommunications network in civic discourse by bringing the goal of "favoring diversity of media voices" into Title II of the Act in Section 257. Open communications platforms play an important role in this regard.

The Supreme Court has long held that public policy should have an aggressive aspiration for civic discourse. In 1945, Justice Black rendered the Supreme Court's opinion in *Associated Press v. United States*, which set the tone for the past half century, declaring that

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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), 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.

<sup>80</sup> Lessig, *The Future of Ideas* (New York: Random House, 2001, p. 148.

<sup>81</sup> Lemley and Lessig, "End of End-to-End, p. 7.

“[the First] Amendment rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public.”<sup>82</sup>

Liberal economists have long recognized that there are political reasons to prefer atomistically competitive markets as well. The most prominent among them recognizes that the analysis should begin with the political implications of economic institutions.

We proceed now to the principal question on our agenda. Why is a competitive market system held in such high esteem by statesmen and economists alike? Why is competition the ideal in a market economy, and what is wrong with monopoly?

We begin with the political arguments, not merely because they are sufficiently transparent to be treated briefly, but also because when all is said and done, they, and not the economists’ abstruse models, have tipped the balance of social consensus toward competition. One of the most important arguments is that the atomistic structure of buyers and sellers required for competition decentralizes and disperses power. The resource allocation and income distribution problem is solved through the almost mechanical interaction of supply and demand forces on the market, and not through the conscious exercise of power held in private hands (for example, under monopoly) or government hands (that is, under state enterprise or government regulation). Limiting the power of both government bodies and private individuals to make decisions that shape people’s lives and fortunes was a fundamental goal of the men who wrote the U.S. Constitution.<sup>83</sup>

In dealing with the print media, the Court adopted the view that private market power should not be allowed to infringe on civic discourse.

Surely a command that the government itself shall not impede the free flow of ideas does not afford non-governmental combinations a refuge if they impose restraints upon that constitutionally guaranteed freedom. Freedom to publish means freedom for all and not for some. Freedom to publish is guaranteed by the Constitution, but freedom to combine to keep others from publishing is not. Freedom of the press from governmental interference under the First Amendment does not sanction repression of that freedom by private interests.<sup>84</sup>

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<sup>82</sup> Associated Press, 326 U.S. at 17

<sup>83</sup> Scherer and Ross, p. 18.

<sup>84</sup> Associated Press v. United States, 326 U.S. 1, 20 (1945)

Other economic characteristics of atomistically competitive markets that converge with the democratic principle are the autonomy and freedom of entry that such markets imply.

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

A third political merit of a competitive market is its freedom of opportunity. When the no-barriers-to-entry condition of perfect competition is satisfied, individuals are free to choose whatever trade or profession they prefer, limited only by their own talent and skill and by their ability to raise the (presumably modest) amount of capital required<sup>85</sup>

The *Associated Press* decision certainly expressed a concern about the sheer size of news organizations and the undue influence that could result.<sup>86</sup> In the industrial age the size of media organizations presents a growing mismatch between those who control media organizations and average citizens.<sup>87</sup> Horizontal market power detracts from civic discourse.

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<sup>85</sup> Scherer and Ross, p. 18.

<sup>86</sup> Maurice E. Stucke and Allen P. Grunes, "Antitrust and the Marketplace of Ideas," *Antitrust Law Journal*, 69 (2001).

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

<sup>87</sup> Sullivan, Lawrence, "Economics and More Humanistic Disciplines: What are the Sources of Wisdom for Antitrust, 125,

Americans continue to value institutions the scale and workings of which they can comprehend. Many continue to value the decentralization of decision-making power and responsibility. Many favor structures in which power in own locus may be checked by power in another.

As discussed below, vertical market power, which is an increasing concern in the economy, is also a concern in the polity.<sup>88</sup>

Thus, atomistic competition is seen to promote individualistic, impersonal decisions with freedom of opportunity and relatively low resource requirements for entry. There is close symmetry with the end-to-end principle and the institutional principles of our democracy.<sup>89</sup> These are ideal for populist forms of democracy.

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

The architecture of the Internet, as it is right now, is perhaps the most important model of free speech since the founding. This model has implications far beyond e-mail and web pages.<sup>90</sup>

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<sup>88</sup> The political concerns of horizontal and vertical are mingled in the discussions of civic discourse, with localism a central concern. see Shepherd, 304,

Local firms are normally knit into their communities, with the companies’ officials contributing and participating in local affairs... When taken over by large firms, the local companies typically stop their local involvement.

<sup>89</sup> Lemley and Lessig, MediaOne, point out aspects of the convergence, at least by analogy.

The principle of End-to-End is not unique to computer networks. It has important analogs in American constitutional law and in other legal contexts. Vis-à-vis the states, for example, the dormant commerce clause imposes an End-to-End design on the flow of commerce: No state is to exercise a control over the flow of commerce between states; and the kind of control that a state may exercise over commerce flowing into that state is severely limited. The “network” of interstate commerce is to be influenced at its ends — by the consumer and producer — and not by intermediary actors (states) who might interfere with this flow for their own political purposes. Vis-à-vis transportation generally, End-to-End is also how the principle of common carriage works. The carrier is not to exercise power to discriminate in the carriage. So long as the toll is paid, it must accept the carriage that it is offered. In both contexts, the aim is to keep the transportation layer of intercourse simple, so as to enable the multiplication of applications at the end. (20)

<sup>90</sup> Lessig, p. 166-167.

The observation extends to communications platforms with particular force. Lessig points out that at the time of the framing of the Constitution the press had a very atomistic trait.

The “press” in 1791 was not the *New York Times* or the *Wall Street Journal*. It did not comprise large organization of private interests, with millions of readers associated with each organization. Rather, the press then was much like the Internet (within reason) could become a publisher – and in fact an extraordinary number did. When the Constitution speaks of the rights of the “press,” the architecture it has in mind is the architecture of the Internet.<sup>91</sup>

## **V. COMPETITION WITHOUT COMPETITORS**

The FCC’s decision to contemplate a fundamental shift in communications policy by allowing owners of communications platforms to discriminate or 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 and should be a hard sell.

### **A. DEFENDING MONOPOLY**

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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<sup>91</sup> Lessig, Code, p. 183.

to innovation than competition, since monopolists can more readily capture the benefits of innovation.”<sup>92</sup>

Thus, some argue that facility owners, exercising their property rights to exclude and dictate uses of the network, will produce a more dynamic environment than an open communications platform. 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.<sup>93</sup> Notwithstanding the clear

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<sup>92</sup> “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.

<sup>93</sup> 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.

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.”<sup>94</sup> Lately this argument is extended to claims that, in the new economy, “winner take all” industries exhibit competition for the entire market, not competition within the market. As long as monopolists are booted out on a regular basis, or believe they can be, monopoly is in the public interest.<sup>95</sup>

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

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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.

<sup>94</sup> Scherer and Ross, p. 31

<sup>95</sup> 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.

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.<sup>96</sup>

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 incited through the promise of monopoly protection. The competitive market has provided a sufficient incentive, and the market has responded.<sup>97</sup>

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<sup>96</sup> Phil Weiser, *Networks Unplugged: Toward a Model of Compatibility Regulation between Communications platforms*, Telecommunications Policy Research Conference, October 27, 2001), p. 30.

<sup>97</sup> Lemley and Lessig, *MediaOne*,



## B. EXERCISE OF MARKET POWER UNDERMINES THE DYNAMIC INTERNET

The “winner take all” argument faces considerable dispute, and was firmly rejected in the Microsoft case.<sup>98</sup> 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 when advances in the relevant knowledge base occur slowly. But very high concentration has a positive effect only in rare cases, and more often it is apt to retard progress by restricting the number of independent courses of initiative and by dampening firms’ incentive to gain market position through accelerated R&D. Likewise, given the important role that technically audacious newcomers play in making radical innovations, it seems important that barriers to new entry be kept at modest 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.<sup>99</sup>

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.<sup>100</sup> The monopoly rent argument appears to be least applicable to industries in

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<sup>98</sup> 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).

<sup>99</sup> Scherer and Ross, p. 660.

<sup>100</sup> Langlois, p. 215,

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.<sup>101</sup>

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.<sup>102</sup>

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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.

<sup>101</sup> Daniel Rubinfeld and John Hoven, “Innovation and Antitrust,” pp. 75-76.

<sup>102</sup> 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.

The dominant players in the physical layer can readily distort the architecture of the platform to protect their market power.<sup>103</sup> They have a variety of tools to create economic and entry barriers<sup>104</sup> such as exclusive deals,<sup>105</sup> retaliation,<sup>106</sup> manipulation of standards,<sup>107</sup> and strategies that freeze customers.<sup>108</sup> Firms can leverage their access to customers to reinforce their market dominance<sup>109</sup> by creating ever-larger bundles of complementary assets.<sup>110</sup> As the elasticity of demand declines over the course of the product life cycle, market power lodged

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<sup>103</sup>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).

104. Joseph Farrell & Garth Saloner, Installed Base and Compatibility: Innovation, Product Preannouncements and Predation, 76 *American Economic Review*, 940, 948-51 (1986)

Michael Katz & Carl Shapiro, Product Innovation with Network Externalities, 40 *J. INDUS. ECON.* 55, 73 (1992).

Richard Makadok, Can First-Mover and Early Mover Advantages Be Sustained in an Industry with Low Barriers to Entry/Imitation? 19 *Strategic Management Journal*, 683, 685 (1996); Ulrich Witt, “Lock-in” vs. “Critical Masses”—Industrial Change Under Network Externalities, 15 *International Journal of Industrial Organization*, 753, 768-69 (1997). Robin Mansell, Strategies for Maintaining Market Power in the Face of Rapidly Changing Technologies, 31 *Journal of Economic Issues* 969, 970 (1997).

105. Melissa A. Schilling, Technological Lockout: An Integrative Model of the Economic and Strategic Factors Driving Technology Success and Failure, 23 *Academic Management Review*, 267, 270 (1998), at 276.

106. Willow A. Sheremata, New Issues in Competition Policy Raised by Information Technology Industries, 43 *Antitrust Bulletin* 547, 573-74 (1998) Robert A. Woroch et al., Exclusionary Behavior in the Market for Operating System Software: The Case of Microsoft, in *Open Networks to Competition: The Regulation of Price and Access* (David Gabel & David Weiman eds., 1997).

107. See Sheremata, *New Issues in Competition*, , at 560; see also Charles H. Ferguson, *High Sta@KES No Prisoners* 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 Bulletin* 715 (1998), p. 732.

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

109. Makadok, at 693.

110. 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).

in the physical layer results in excessive bundling<sup>111</sup> and overpricing of products under a variety of market conditions.<sup>112</sup> Control over the product cycle can impose immense costs by creating incompatibilities,<sup>113</sup> forcing upgrades,<sup>114</sup> and by spreading the cost increases across layers of the platform<sup>115</sup> to extract consumer surplus.<sup>116</sup> In information markets, creating incompatibilities or blocking the flow of information undermines consumer value.<sup>117</sup>

There is ample evidence that these anti-competitive behaviors may be attractive to a new economy monopolist for static and dynamic reasons.<sup>118</sup> Conquering neighboring

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111. Carmen Matutes and Pierre Regibeau, *Compatibility and Bundling of Complementary Goods in a Duopoly*, 50 *Journal of Industrial Economics* 46 (1992);

112 Joseph P. Guiltan, *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 *Journal of Industrial Economics* 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.

113. Jay Pil Choi, *Network Externalities, Compatibility Choice and Planned Obsolescence*, 42 *Journal of Industrial Economics* 167 (1994), pp 171-73.

114. 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 Journal Economics* 235, 236 (1998).

115. See FERGUSON, 309-10.

116. *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 *International Journal of Industrial Economics* 280, 285-86 (1997).

<sup>117</sup> 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.

<sup>118</sup> 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*

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

### **C. TRANSMISSION REMAINS A CHOKE POINT IN COMMUNICATIONS PLATFORMS**

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

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*Monopoly: Antitrust And The Digital Marketplace* (Jeffrey A. Eisenbach & Thomas M. Lenard eds., 1999)..

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.<sup>119</sup> The physical facilities do not invite vibrant competition. The existence of too few competitors can slow the innovation process.<sup>120</sup> Controlling access to the

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<sup>119</sup> 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. Phone companies provide DSL service, 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.

<sup>120</sup> Langlois, pp. 217-218 notes that it is possible for system competition to have beneficial effects, but there must be many competing systems.

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.<sup>121</sup> Denial of 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.<sup>122</sup>

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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.

<sup>121</sup> 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 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.

<sup>122</sup> 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 viability of e2e systems by keeping intelligence out of the hardware design and instead building it into some software layers on an as- needed basis.

## **D. FACILITY-BASED COMPETITION IS FEEBLE FOR TELECOMMUNICATIONS SERVICES THAT SUPPORT INTERNET ACCESS**

### **1. THE CURRENT LACK OF COMPETITION IN BROADBAND**

The recent report by the National Research Council 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 provider 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.<sup>123</sup>

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 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 (see Exhibit 3).

“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

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<sup>123</sup> Bits, p. 21.



Unconcentrated – 10 or more firms

Atomistic Competition – 50 firms

The FCC publishes data on the availability of high-speed Internet services from ISPs<sup>124</sup> 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.<sup>125</sup> 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 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.

Business and residential markets are segmented and concentration is higher within each segment (see Exhibit 5). Cable dominates the residential high-speed Internet market, with a 65 percent market share for all “broadband” services. However, it has a 75 percent market share for the advanced services residential market. Digital Subscriber Line service (DSL), the telephone industry's high-speed offering, dominates the non-residential market with an 89 percent market share.

## **2. CURRENT LACK OF FACILITIES-BASED COMPETITION IN TELEPHONY**

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<sup>124</sup> 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),

<sup>125</sup> Jason Bazinet, *The Cable Industry* (J.P. Morgan Equity Research, November 2, 2001), Figure 36 (hereafter, Cable).

Competition for local telephone service is more widespread than broadband, but these markets are far from unconcentrated. (See Exhibit 6). 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.

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.<sup>126</sup> 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.

## **VI. INDUSTRY MODELS FOR IMPLEMENTING CLOSED COMMUNICATIONS PLATFORMS**

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 providers.”<sup>127</sup> 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

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<sup>126</sup> The role of intermodal competition in local telephony raised in the NPRM, paras. 24-28, is small.

<sup>127</sup> 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.

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<sup>128</sup> 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,<sup>129</sup>
- recommendations made by AOL<sup>130</sup> to local and federal governments before it decided to become the nation's second largest cable company,
- analyses prepared by experts for local<sup>131</sup> and long distance<sup>132</sup> telephone companies complaining about various forms of closure of networks to which they need interconnection,

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<sup>128</sup> 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).

<sup>129</sup> 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).

<sup>130</sup> 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 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).

- Wall Street analyses of the business models of dominant, vertically integrated cable firms,<sup>133</sup> and
- observations offered by independent ISPs<sup>134</sup> and small cable operators<sup>135</sup> struggling with the dominant wire companies.

The observable behavior of the incumbent wire owners contradicts the theoretical claims made in defense of closed platforms.<sup>136</sup> The track record of competition in the physical facilities certainly cannot be a source of encouragement for those looking for dynamic Schumpeterian monopolists.

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<sup>131</sup> 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).

<sup>132</sup> 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).

<sup>133</sup> 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).

<sup>134</sup> 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.

<sup>135</sup> “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.

<sup>136</sup> 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.”

## A. ESSENTIAL COMMUNICATIONS FUNCTIONS

Whether we call them essential facilities,<sup>137</sup> choke points<sup>138</sup> or anchor points,<sup>139</sup> the key leverage point is controlling access facilities.<sup>140</sup> 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 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.<sup>141</sup>

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<sup>137</sup> Langlois.

<sup>138</sup> Mark Cooper, “Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed Proprietary Networks,” *University of Colorado Law Review*, Fall 2000).

<sup>139</sup> 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.

<sup>140</sup> 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.

<sup>141</sup> AOL, FCC, p. 13

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”<sup>142</sup> and that “a dominant market share is not a necessary condition for discrimination to be effective.”<sup>143</sup> .

[A] hypothetical monopoly supplier of broadband Internet access in a given geographic market could exercise market power without controlling the provision of broadband access in neighboring geographic markets.<sup>144</sup>

The essential communications function was the paramount concern for AT&T in determining interconnection policy for cable networks in Canada.<sup>145</sup> 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 power because of the essential function of the access input to the production of service.<sup>146</sup>

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<sup>142</sup> Hausman, Sidak, and Singer, p.135.

<sup>143</sup> Hausman , Sidak and Singer, p. 156.

<sup>144</sup> Hausman, Sidak and Singer, p. 135.

<sup>145</sup> 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

<sup>146</sup> 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.

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.”<sup>147</sup>

AT&T maintained that the presence of a number of vertically integrated facilities owners does not solve the fundamental problem of access that nonintegrated content providers face, and that 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.<sup>148</sup>

In early 2002, notwithstanding the fact that AT&T owned 2 million lines in Texas that it refused to pen, it was still insisting that keeping communications networks open is critical to promoting competition.

In addition to allowing a variety of technologies to develop and be deployed across Texas, the state also should continue to encourage the development of competition among providers. The current provisions... authorize the Commission to ensure that such competition develops by assuring that competitors have access to essential facilities controlled by

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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.

<sup>147</sup> AT&T, p. 24

<sup>148</sup> AT&T, p. 12..



incumbent local companies, and that the competition that such access allows to develop has and will continue to inure to the benefits of Texas consumers. For example, competing providers of DSL help ensure that consumers have the option of choosing the provider with the best customer service – an issue that has been identified as one of the potential impediments to demand for broadband service today. In the absence of such competitive pressure, a single service provider does not have as much incentive to continue improving their customer service.<sup>149</sup>

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.<sup>150</sup>

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.<sup>151</sup>

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<sup>149</sup> *Responses of AT&T to Ten Questions to Begin the Committee's Inquiry into State Broadband Policy*, House Committee on State Affairs, Austin, Texas, April 3, 2002, p. 7.

<sup>150</sup> Letter to Robert Pitofsky and William Kennard, June 7, 2000.

<sup>151</sup> 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

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<sup>152</sup> and have an increasingly pessimistic view of DSL for the applications that will drive the residential video markets.<sup>153</sup> Cable's advantages are substantial and DSL is not likely to be able to close the gap.<sup>154</sup>

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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).

<sup>152</sup> Bernstein, pp. 30... 33... 50 – 51.

<sup>153</sup> Paul Allen, owner of Charter Communications, the nation's 4<sup>th</sup> 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

<sup>154</sup> 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

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.

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

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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 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.

new network or operational interface that is implemented by a broadband access provider should be made available on a non-discriminatory basis.<sup>155</sup>

As concern over this leverage has grown, analysts have identified two distinct types of discrimination. Vertically integrated broadband providers may practice content discrimination or conduit discrimination.<sup>156</sup>

## **B. CONTENT DISCRIMINATION**

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<sup>155</sup> AT&T, p. 23

<sup>156</sup>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 its 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

Content discrimination has been the focal point of concern in relation to high-speed Internet services. Content discrimination involves an integrated provider “insulating its own affiliated content from competition by blocking or degrading the quality of outside content.”<sup>157</sup>

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.<sup>158</sup>

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 providing quicker or more complete disclosure of their network interface specifications and protocols to favored vendors. That is so because bundling potentially ‘covers up’ discrimination.<sup>159</sup>

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

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<sup>157</sup> Hausman, Sidak and Singer, p. 159.

<sup>158</sup> Hausman, Sidak and Singer, p. 159.

<sup>159</sup> AT&T NOI

complained about bottleneck facilities, vertical integration, anticompetitive bundling of 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.<sup>160</sup> AOL expressed related concerns about the manipulation of technology and interfaces:

... allowing a single entity to abuse its control over the development of technical solutions – particularly when it may have interests inconsistent with the successful implementation of open access – could indeed undermine the City’s policy. It is therefore vital to ensure that unaffiliated ISPs can gain access comparable to that the cable operators choose to afford to its cable-affiliated ISP.<sup>161</sup>

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:

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<sup>160</sup> AT&T, p. 15,

The dominant and vertically integrated position of cable broadcast carriers requires a number of safeguards to protect against anticompetitive behavior. 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 behavior. 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 (

<sup>161</sup> AOL, p. 8

These mergers will have competition in local exchange, interexchange, and combined-service markets due to footprint effects. The economic logic of competitive spillovers implies that the increase in [the incumbent local exchange carrier (ILEC)] footprints resulting from these proposed mergers would increase the ILECs' incentive to disadvantage rivals by degrading access services they need to compete, thereby harming competition and consumers.<sup>162</sup>

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

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.<sup>163</sup>

Wall Street analysts point out that the key to controlling the supply side is controlling essential functions through proprietary standards.<sup>164</sup>

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<sup>162</sup> 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).

<sup>163</sup> Hausman, Sidak and Singer, pp. 160-161.

<sup>164</sup> 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

## C. CONDUIT DISCRIMINATION

Conduit discrimination has received less attention in the high speed Internet area.

Nevertheless, there are examples in the high speed Internet market.

In implementing conduit discrimination, the vertically integrated company would refuse to distribute its affiliated content over competing transmission media.<sup>165</sup> 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.<sup>166</sup> Although some argue that “the traditional models of discrimination do not depend on the vertically integrated

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based advantage to a competitor. Therefore, in emerging sectors such as broadband, creating a standards-based edge will likely require an ongoing structural advantage, whether via regulatory discontinuities, incumbent status, or the ability to influence customer behavior.

<sup>165</sup> 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.

<sup>166</sup> 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 be the primary beneficiaries of harm done to non-cable competitors.



firm obtaining some critical level of downstream market share,”<sup>167</sup> in reality, the size of the vertically integrated firm does matter since “a larger downstream market share enhances the vertically integrated firm’s incentive to engage in discrimination.”<sup>168</sup>

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.<sup>169</sup>

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<sup>167</sup> 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 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.

<sup>168</sup> Hausman, Sidak and Singer, p. 156.

<sup>169</sup> “Comments of the Competitive Broadband Coalition,” In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Development of

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 damage that it does to the hoped-for competition between cable modems and DSL.<sup>170</sup> Although the telephone companies are reluctant to admit that their technology will have trouble competing, their experts have identified the advantages that cable enjoys.<sup>171</sup> 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.

#### **D. 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.

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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.

<sup>171</sup> 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.

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, however, cannot survive if only a single carrier is capable of providing consumers with a full package of local, long distance, and xDSL services.<sup>172</sup>

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.<sup>173</sup>

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

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<sup>172</sup> AT&T SBC Comments, pp. 9... 10... 11... 12.

<sup>173</sup> AOL, FCC, p. 11.

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,

... AT&T would take an enormous next step toward its ability to deny consumers a choice among competing providers of integrated voice/video/data offerings – a communications marketplace that integrates, and transcends, an array of communications services and markets previously viewed as distinct.<sup>174</sup>

Wall Street sees the first mover advantage both in the general terms of the processes that affect network industries and in the specific advantage that cable broadband services have in capturing the most attractive early adopting consumers.<sup>175</sup> 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.<sup>176</sup>

First; high-speed access is a unique product. The Department of Justice determined that the

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<sup>174</sup> AOL, FCC, pp. 9-10.

<sup>175</sup> 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.

<sup>176</sup> 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

broadband Internet market is a separate and distinct market from the narrowband Internet market.<sup>177</sup> 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.<sup>178</sup>

The local telephone company experts devote a great deal of attention to demonstrating that the broadband market is a distinct market.<sup>179</sup> There is no doubt that “high-speed seems to be a distinctive product, making it a credible wedge for cable to sell a broader bundle.”<sup>180</sup> For the Wall Street analysts, bundling is the central marketing strategy for broadband.<sup>181</sup>

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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

<sup>177</sup> U.S. Department of Justice v. AT&T Corp. and MediaOne Group, Inc., Amended Complaint, May 26, 2000.

<sup>178</sup> AT&T, p. 12.

<sup>179</sup> Hausman, Sidak and Singer, pp. 135-148.

<sup>180</sup> Bernstein, p. 8

<sup>181</sup> 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.

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

[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 from one service provider to another in the near-term.<sup>182</sup>

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

## **VII. CABLE'S CLOSED COMMUNICATIONS PLATFORM**

The central role of cable in the debate over broadband is well deserved. Cable companies are managing the transition from analog to digital in multichannel video

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<sup>182</sup> AT&T 12.

programming and high speed Internet by upgrading facilities and migrating customers. It is the dominant technology by far in the residential customer class. The technology is superior for delivering video into the residential market and it was rolled out first.<sup>183</sup> The controversy surrounding its entry into telecommunications is also well deserved. It has entered into telecommunications with a very checkered past in its video core market, which has been unregulated for two decades. It has brought its business model from the video world into the telecommunications world.

Using its market power in the high-speed Internet access market, cable has priced its service strategically, charging a low price for digital video tiers of service and a high price for cable modem service. Although the digital tier and cable modem service are provisioned from the same technology upgrade and have similar incremental costs, cable operators have priced cable modem service at three to four times the level of the digital video tier. Cable also forces virtually all consumers to give up their current Internet Service Provider to get cable modem service, or to pay an additional fee to keep that provider.

#### **A. STRATEGIC PRICING OF HIGH-SPEED INTERNET ACCESS**

Cable companies have achieved a much higher take rate of digital TV than high speed Internet. The cable companies have migrated three times as many customers from analog to digital in the video market than in the Internet market.

Exhibit 7 presents the whole digital market (all satellite and cable) and the entire Internet market (narrowband and high-speed). When we look at the Internet market, we find a rather different pattern than digital. What we observe is rapid penetration but much slower

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<sup>183</sup> Bazinet, p. 35, Bits, pp. 127, 137.

migration to high-speed service. The residential Internet market has reached about over 50 million, but high speed Internet is around 10 million. As a result, the Internet and the MVPD markets have been converging in total size, but the digital services within these markets have begun to diverge.

Putting the penetration of these four products on one graph underscores the complexity of the analysis, but also the basic policy concern. The product we are inquiring about – high-speed Internet – is clearly doing the worst. We might say that penetration is only 10 percent. However, since only half of all households have taken the Internet, and only 80 percent of all households could take high-speed, the base of the calculation could be adjusted. To be fair, perhaps we should say that the penetration is about 20 percent. Cable accounts for about two thirds of the total, or penetration of 6.5 to 13 percent of all households.

The performance of multichannel video program distribution (MVPD) is strikingly better. This market is over 85 million, or 70 percent larger than the residential Internet markets. With over 30 million households taking digital TV (including non-competitive satellite), the market penetration is between 30 and 40 percent (depending on which numerator and denominator are chosen). No matter how we make the comparison, digital TV is penetrating much more quickly. If we restrict ourselves to digital over cable, however, we find that the take rate is about 20 percent.

Why is the digital tier doing so much better than high-speed Internet access? Any good economic analysis should start with the master variable – price.

Cable has priced digital TV services much more aggressively to stimulate penetration. Cable imposes an incremental price to migrate from narrowband to broadband that is



substantially higher than it charges to migrate from analog cable to digital cable in both monetary and qualitative terms.

This becomes quite apparent to any consumer who tries to buy the service in the marketplace (see Exhibit 8). If a consumer adds a digital tier, the charge would be an additional \$10-\$12 (on average). If a consumer requests cable modem service, but not cable TV service, the charge will be \$10 for the use of the basic cable facilities, an additional \$40 for the cable company's chosen ISP to provide an Internet connection, and \$15 for my current ISP. The total would be \$65. If the consumer takes cable, the incremental cost would be \$55. This service is not being priced to penetrate.

The difference is striking and there appears to be no cost justification. Indeed, a Morgan Stanley Dean Witter analysis entitled *Digital Decade* found that the incremental capital costs for digital cable were higher than high-speed Internet added to a cable upgrade. In their report entitled *Broadband!* Bernstein/Mckinsey reached the same conclusion. The example given in the NRC report, which appears to be for a new overbuild, fiber system, suggests that the capital costs would be equal.

This pricing scheme implicitly suggests that the basic network costs \$10 (the incremental charge for stand alone high-speed service). It implicitly suggests that the digital upgrade costs are about \$10 (the charge for the digital tier). Pure transmission should be about \$20.

Other evidence suggests that that the customer care, billing and incremental facility costs for Internet service providers is in the range of \$10-\$15 dollars. These costs include real services, like customer service (billing and customer care), customer acquisition, and deployment of their own facilities, like points of presence, local caching, and centralized

computing. AOL charges \$15 (recently up from \$10) to get their service as a buy through on the cable systems from which they have been excluded. Limited use narrowband Internet plans are available at \$10 per month, which suggests this is the basic cost per customer. Indeed, AOL was a profitable, narrowband company at \$20 per month for full service customers. This is exactly what Bernstein/Mckinsey concluded in *Broadband!* Cable operators report this cost is less than \$10.<sup>184</sup>

The \$50 price tag that the cable operators have put on cable modem service and the \$65 it costs to choose the most popular Internet service provider as a stand alone service on the technologically preferred delivery systems for broadband is driven by the raw exercise of market power. Bill Gates' suggestion that this service should be priced at \$30 may be too generous, if only facility costs are included. In any event, this service is being dramatically overpriced.

The implication is that cable operators are extracting massive monopoly rents. Tom Hazlett has characterized the situation as follows.<sup>185</sup>

**Cable operators possess substantial market power in subscription video markets.** Moreover, they use this leverage to restrict output in broadband access. This is not profitable in a narrow financial calculus, but is rational due to strategic considerations...

The price increases of 2001 confirm the willingness of cable operators to forego sales to increase profits. The financial analysis provided by Bernstein/McKinsey showed a three

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<sup>184</sup> Karen Brown, "Excite Deal is Derailed, AT&T Takes Hardest Hit, *Multichannel News*, December 10, 2001,

"Excite@Home's 35 percent cut of subscriber fees to operate the service equaled roughly \$13 to \$14 monthly per subscriber. In contrast, Burke said Comcast could run the service for \$7 to \$8 per month.

<sup>185</sup> Thomas W. Hazlett and George Bittlingmayer, *The Political Economy of Cable "Open Access"* (Joint Center, Working Paper 01-06, May 2001, pp. 3... 4).

year break-even and an after tax rate of profit of 23% before last year's price increase. The price increase would push that figure up to 36 percent and shorten the payback.

The cable operators have carried the lessons of market power in the MVPD market into the high-speed Internet market. They pick-up the high value early adopters by being first and bundling. Keeping prices high creates a high rate of profit. They get the benefit of having the best customers locked-in to their technology.

## **B. STRATEGIC MANIPULATION OF ACCESS BY CABLE COMPANIES**

The exercise of cable market power does not take only the form of pricing abuse. Incumbent cable operators also raise barriers to entry. Between 1984 and 1992, cable operators leveraged their control over programming to prevent satellite from gaining a foothold. It took an Act of congress to free up this critical strategic input, although they have been allowed to reinvent that strategy through the loophole of terrestrial transmission. Now the strategic input is access to the telecommunications functionality of the cable systems.

The commercial access that cable operators are offering is nowhere near what is needed to preserve the competitive, consumer-friendly, innovation rich environment we have come to know and love on the Internet. The cable owner

- chooses a small number of ISPs who can sell a restrictive set of services;
- tells the ISPs what they can and (more importantly) cannot sell, particularly streaming video and end-user generated content and applications;
- controls the customer relationship and the ability of non-affiliated ISPs to differentiate themselves; and
- places independent ISPs in a price squeeze that stifles innovation on the Internet by charging a toll for access (the charge unaffiliated ISPs must pay for carriage) that is so high that there are few resources and little market left for new applications or content.

Cable operators have a strong incentive to retard innovation that might compete directly with their core video services, or even indirectly for consumer video entertainment attention. Restricting the number of service providers and the services they can provide ensures cable companies control the flow of innovations and takes away the incentive to develop new applications.<sup>186</sup> This is the antithesis of how the Internet was created. In the narrowband Internet, intramodal competition at the level of content – ensuring that content providers and applications developers were given non-discriminatory access to facilities – was highly successful in stimulating entry and innovation.

Restricting interconnecting companies to specific types of services, such as Internet access sales only, precludes a range of other intermediary services and functions provided by ISPs to the public (e.g. no ITV functionality).<sup>187</sup> Restriction of service to specified appliances retards competition for video services. Control of quality and functionalities and restriction of end-user applications by the network owner precludes potentially competing video services and other Internet oriented services from developing.

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<sup>186</sup> 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.

<sup>187</sup> 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.

Network owners seek to impose uniformity in pursuit of their commercial interests and foreclose the ability of competitors to differentiate themselves by restricting privacy policy and billing and payment practices.<sup>188</sup> Network owners prevent real competition by demanding control over valuable first screen real estate. They retain the right to approve the ISP home page and demand to have a prominent “above the fold” spot on the home page over which they retain complete control. They demand preferential bundling of services and control of cross marketing of services. Network owners stake a claim to all customer information generated by the ISP.

Network owners establish a revenue “ceiling” on independent ISPs. They demand a huge share of both subscription (65-75%) and ancillary revenues (25% or more) the ISP generates, but keep all of the ancillary revenues they generate in connection with the ISP service. At the same time, they establish a high price floor under sales of Internet service to

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<sup>188</sup> 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.

“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...

cable TV customers. This squeezes the margin on such customers and renders potential video stream competitors vulnerable to price squeeze.

Short three-year contracts come with severe conditions, such as imposing a very short-term perspective on independent ISPs by denying the ISP a contract with terms longer than three years and denying the ISPs an inextinguishable right to provide service. The ISP does not have a right to continue selling the service if the system is sold and the right to sell service is not extended to systems that are acquired. In other words, the ISP can simply be shut down by the new cable owner or be prevented from extending its business to a neighboring system. A large nonrefundable deposit and minimum size requirement would keep small and niche market ISPs off the network.

Under these conditions, the commercial space left for the unaffiliated and smaller ISPs (where much innovation takes place) is sparse and ever shrinking. 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.<sup>189</sup>

The fate of [Excite@Home](#) speaks volumes about the nature of the commercial deals for access that are being voluntarily offered.

Placing these severe restrictions on independent ISPs is a strategy that protects the cable company's paramount interest in preserving its market power over video entertainment.

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<sup>189</sup> Hazlett and Bittlingmayer, p. 17.

These policies make it impossible for ISPs to directly compete for video service, but the strategic manipulation of access to the customer goes farther. The companies appear to be backsliding on their promise that there will be unfettered, click through access to the Internet. Restrictions on the flow of rich media and video content are being imposed, unless the gatekeeper collects the full monopoly rents it expects from video. Anything that competes for that market will be squeezed at the tollgate.

The cable operators' closed networks are apparent in the statistics of high-speed Internet access providers (see Exhibit 9).<sup>190</sup> There are only 47 high-speed Internet service providers using cable modem service nationwide – essentially the monopoly cable companies offering service on an exclusive basis in their franchise areas. This number has been virtually constant for past two years. There are almost three times as many high-speed Internet access service providers using other technologies, and this number has almost doubled in the past two years.

## **VIII. THE TELCO MODEL OF CLOSED PLATFORMS**

As noted, open communications platforms played a major role in creating the Internet, because telephone company behavior was constrained. As content neutral common carriers, they have not played much of a role in any of the media markets. They are explicitly, legally prevented from doing what the cable companies are doing by the Telecommunications Act of 1996. They have resisted these obligations vigorously and they are pushing to eliminate

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<sup>190</sup> Industry Analysis Division, *High-Speed Services for Internet Access: Subscriberhip as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Table 9 (hereafter High-Speed Access), Table 6.

them altogether. They have certainly managed to frustrate local telephone competition.<sup>191</sup>

The refusal to open markets has extended to the provision of advanced services with special force.<sup>192</sup> The track record presented to the Commission in the earlier is no more encouraging, from the point of view of open communications platforms, than the cable industry's.

They accuse Verizon of blocking required access to equipment, illegally stealing customers and stalling hook-ups. They say the company has sent multiple and unnecessarily erroneous bills to alienate or confuse their customers. They accuse Verizon of engaging in false advertising, price gouging, randomly cutting off service and other bullying tactics.<sup>193</sup> Motivation for the telephone companies is similar to that of the cable companies.

They have a franchise monopoly that they are defending.

The history of technology proves that the rapid adoption of technology occurs when a "killer application" is created. Examples of "killer applications" are e-mail, web browsing and file sharing. Killer Applications are applications or services that bring immediate and obvious benefit to the user. The state can promote the development and deployment of broadband by insuring that it is easy to bring killer applications to the market. The first step is to insure that those who control the connection don't control what happens on the connection.

One of the prominent developing uses of the Internet is "Voice Over Internet Protocol" or VOIP. VOIP is simply a way to talk on the telephone while using the broadband connection to transmit the call rather than a traditional phone

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<sup>191</sup> Consumer Federation of America, *Stonewalling Local Competition: The Baby Sell Strategy to Subvert the Telecommunications Act of 1996* (January 1998), *Affidavit of Mark N. Cooper on Behalf of the Consumer Federation of America*, before the Public Utility Commission of California R.93-04003, I.93-04-002, R.95-04043, R.85-04044, June 1998; *The Consumer Stake in Vigorous Competition in the Illinois Local Telephone Market*, March 1999). Ohio Staff, p. 13; Graves, pp. 34-35.

<sup>192</sup> AT&T continues to complain that the Regional Bell Operating Companies are continuing to impede competitors from gaining nondiscriminatory access to advanced services unbundled network elements, see, for example, "Affidavit of Al Finnell on Behalf of AT&T Communications of California," before the Public Utilities Commission of the State of California, *Notice of Intent to File Section 271 Application of SBC Communications Inc., Pacific Bell, and Pacific Bell Communications Inc., for Provision of In-region, InterLATA Services in California, August 11, 1999*, pp. 42-53.

<sup>193</sup> Keith Epstein, "Cheating or Competing?", *Washington Techway*, February 4, 2002, p. 28.



line. Of course, VOIP is a threat to both local telephone providers and long distance providers. That's because, among other things, VOIP could be used to provide local or long distance telephone service over a broadband connection which would, of course, obviate the need for another telephone line.

Theoretically, a customer could actually get local telephone service and get additional services like Caller ID and pay only the pennies that it costs to provide Caller ID rather than the \$9.50 per month that SBC is currently charging. That would provide immediate and obvious benefit to the user of Broadband. However, the same companies who control over 90% of the DSL market would lose revenue if VOIP becomes popular. If you can replace five or six voice telephone lines with one DSL line, SBC will lose money. Monopolists tend not to deploy new technology which makes the technology they are already invested in obsolete.

That large server physically resides in my data center. When my customer purchase a DSL line, TI line or other type of data connection to me, I use that connection to connect them to our Microsoft Exchange server in addition to connecting them to the Internet, providing e-mail, advanced web services and other products. However, I cannot deploy this service to large areas of the state specifically because I cannot purchase a telephone line between my prospective customer and my data center at a reasonable rate. SBC's and the cable companies' monopolization of their respective transmission technologies has severely restricted the services available on those transmission technologies. If you increase the number and value of the services that people and businesses can use over broadband connections, more will buy broadband connections. The only way to insure that current and future technologies are brought to market as soon as possible, independent of their effect on incumbent services, is to insure that incumbents don't have exclusive control of the market. We need competition.<sup>194</sup>

Defense of the incumbent monopoly product slows innovation and prevents products from reaching the market.

It would be cost prohibitive for all ISPs to connect to all other ISPs. So, communities and business have set up "peering" points. Each ISP I to those peering points and trades traffic freely with the other ISPs connected to the points. The traffic is faster, more reliable and cheaper. However, for peering points to be effective, most ISPs in a community must connect to it and agree to treat each other as peers. Not everyone likes peering points, however, because peering points encourage the adoption and delivery of services to an ISPs end users from companies unrelated to the ISP.

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<sup>194</sup> "Response of Onramp Access," *Ten Questions to Begin the Committee's Inquiry Into State Broadband Policy*, Committee on State Affairs, April 3, 2002 (hereafter Onramp), pp. 4-5.

For instance, if SBC or Time Warner peered with my company, I could sell web hosting services to customers wanting to deliver applications and information to SBC's or Time Warner's customers. That company would be able to deliver those applications and services as if they were directly on SBC's or Time Warner's network without having to actually be on their network. As an example, my company is a Certified Microsoft Applications Service Provider. We sell Microsoft Exchange services for \$15 per month per seat (it costs over \$5,000 for a small company to install this service for just 5 people). Exchange services require a reliable and fast connection to be usable. If people have to go all the way to Dallas and back to connect to my server, they won't buy the service. However, if my network was directly connected to SBC's network at a peering point, end users on SBC's network would have a nearly direct connection to my servers. This would result in lower costs for SBC, lower costs for Onramp Access and lower costs and better service for the end user. However, SBC doesn't itself currently offer these services, but may want to in the future. So, rather than reduce their expenses through peering, they would rather force me to pay a national backbone provider, like Sprint, to connect me to an end-user in the same city that I am in. As a result, I don't sell Exchange services to SBC's DSL customers. Since SBC doesn't sell that service, none of the 90% of the DSL market in Texas that SBC has captured can receive that service.<sup>195</sup>

#### **A. DISCRIMINATION IN THE PROVISION OF ACCESS TO ADSL**

Ironcially, the LEC practices about which AT&T and the ISPs complain are exactly the same abuses that cable operators impose on unaffiliated content providers (see Exhibit 10).

The evidence presented to the FCC shows that the failure of LECs to open their markets extends directly to the case of advanced services.<sup>196</sup> A variety of anti-competitive practices were outlined including

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<sup>195</sup> Onramp, pp. 16-17.

<sup>196</sup> The framework for this section was developed in earlier comments in this docket filed by the Consumer Federation of America and Consumers Union, "Reply Comments," before the Federal Communications Commission, *In the Matter of In The Matter Of Deployment Of Wireline Services Offering Advanced Telecommunications Capability, Etc.*, CC Docket Nos. 98-147, 98-11, 98-26, 98-32, 98-78, 98-91, CCB/CPD Docket N. 98-15, RM 9244, October 18, 1998. Individual Comments in that proceeding on which this analysis relies include those

- Barriers to Entry
  - Discriminatory Interconnection
    - Cross Connect
    - Degradation Of Service
  - Denial/Delay Of Service
  - Denial Of Wholesale
  - Affiliate Preference
- Abusive Marketing
  - Steering
  - Slamming
  - Information Abuse
    - Network
    - Customer
  - Bundling/Tying
- Abuse of Affiliate Relations
  - Logo Exploited Unfairly
  - Asset Transfer May Be Anticompetitive
  - Price Squeeze
  - Joint Marketing Abuse
  - Cross Subsidy/Loop Cost Shifting

## 1. DENIAL OR DELAY OF SERVICE TO COMPETITORS

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filed by Federal Trade Commission, Staff Of The Bureau Of Economics (Hereafter FTC); Indiana Utility Regulatory Commission (Hereafter IURC); Technical Staff Of The Public Service Commission Of Wisconsin (Hereafter Wisconsin Staff); Public Utility Commission Of Texas (Hereafter TXPUC), New York State Department of Public Service (hereafter NYDPS); Minnesota Department Of Public Service (Hereafter MNDPS); New York, State Department Of Public Service (Hereafter NYDPS), Coalition Of Utah Independent Internet Service Providers (Hereafter UtahISP); Internet Service Providers' Consortium (Hereafter ISPC); Internet Access Coalition (Hereafter IAC); Rhythms; Netconnections, Inc.; America Online Inc. (AOL); Ad Hoc Telecommunications Users Committee (Hereafter Ad Hoc); Information Technology Association Of America (Hereafter ITAA); New Network Institute. Notwithstanding the grant of entry into long distance, many of these problems still afflict the provision of DSL service, as recent testimony in Texas (the second state in which an incumbent RBOC was granted entry) attest; see Onramp; "Response of Cbeyond, Inc.," *Ten Questions to Begin the Committee's Inquiry Into State Broadband Policy*, Committee on State Affairs, April 3, 2002 (hereafter, Cbeyond); "Response of IP Communications," *Ten Questions to Begin the Committee's Inquiry Into State Broadband Policy*, Committee on State Affairs, April 3, 2002 (hereafter IP Communications); "Response of Hometown Communications," *Ten Questions to Begin the Committee's Inquiry Into State Broadband Policy*, Committee on State Affairs, April 3, 2002 (hereafter Hometown); "Response of Texas CLEC Coalition," *Ten Questions to Begin the Committee's Inquiry Into State Broadband Policy*, Committee on State Affairs, April 3, 2002 (hereafter TxCLEC).

Several state Commissions have attested to the discriminatory practices of at least two LECs. Independent advanced service providers complain bitterly of discrimination and anticompetitive behavior. Gaining a timing advantage in the offer of services appears to be the goal of some LECs in the provisioning of advanced services.<sup>197</sup>

There are 50,000 ways of dragging one's feet when it comes time to really play the game to allow competition... if you can stall long enough and make it difficult enough, by the time the issue's resolved the companies have died and gone to CLEC heaven...

There is no question that facilities have not always been made available, or in a timely way. Whether legal or not, it happens too often.<sup>198</sup>

The strategy involves multiple elements. For example, the Minnesota Public Utility Commission points to a complaint in its jurisdiction.<sup>199</sup> To prevent competitors from getting a head start, the incumbent who controls the bottleneck refuses to make the underlying wholesale service available to competitors, until it has fully developed its own retail offering even though the wholesale components are clearly available. In some cases, it appears that incumbents began accepting orders from its affiliate for wholesale service before the service was available to competitors. Even after the service is "generally" available, it appears that the incumbent delivers wholesale services to its affiliate more quickly than it is made available to competitors.<sup>200</sup>

## **2. DISCRIMINATORY INTERCONNECTION AND PROVISIONING**

Regulators and competitors have expressed a concern that without strong oversight of interconnection and quality standards, the incumbents may have the ability to impair the

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<sup>197</sup> Utah ISP, p.6; MNDPS, p. 9; ISPC, p. 6; IAC, p. 9; Rythms, pp. 2,3; AOL, pp. 6, 8; ITAA, p. iv.

<sup>198</sup> Epstein, p. 30.

<sup>199</sup> Minnesota, p. 9.

<sup>200</sup> Epstein, pp. 29-30.

quality of service of competitors, while favoring affiliates. Several examples are given including precluding competitors from cross connecting to one another, degradation of service, repositioning of service, etc.<sup>201</sup>

There is no indication that these problem have abated since they came to light.

Many ISPs believe that their way into the DSL market is being blocked by the Baby Bells and other incumbent Local Exchange Carriers (ILECs), which want to keep DSL business to themselves and favored partners. Some ISPs, for example, are outraged by America Online's recent deal with Bell Atlantic. That deal will enable AOL to offer its customers 640Kbps ADSL connections for an additional surcharge of \$20 a month. Ordinary ISPs, on the other hand, will have to pay Bell Atlantic \$39.95 per DSL circuit line.

Pacific coast ISPs also are concerned about DSL. "Phone company DSL kills ISPs," asserts Dirk Harms-Merbitz, president of Power.net, a Los Angeles area ISP. "PacBel wants to sell DSL to ISPs at full retail prices with a \$30, one time commission. [That] obviously makes no sense for an ISP."

Other ISPs, which requested anonymity, paint an even gloomier picture. Some believe that their local ILECs are deliberately overloading their DSL connections by providing them with insufficient bandwidth from the phone company's central offices to the Internet.<sup>202</sup>

Internet service providers (ISPs) in Colorado, Minnesota, Utah and Washington complain that U.S. West has been slow to roll out its MegaCentral wholesale Digital Subscriber Line (xDSL) service to them while favoring its own U.S. West.net affiliate through underhanded provisioning, planning and marketing tactics.<sup>203</sup>

Control over the functionalities available and the quality of service occur for the DSL technology as they do for cable modem service.

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<sup>201</sup> IURC, p. 14; Utah ISP, pp. 8,9; ISPC, p. 7; IAC, p. 9; AOL, pp. 6,8; AdHoc, p. 26; ITAA< pp. 13, 15.

<sup>202</sup> Vaughn-Nichols, Steven J., "DSL Spells Trouble for Many ISPs," *Smart Reseller*, February 24, 1999.

<sup>203</sup> Barrett, Randy, "Is U S West Monopolizing XDSL?," *Inter@ctive Week Online*, February 17, 1999.

Without competition, the state will need a policy that prevents the monopolies from restricting the uses of the access. In other words, if you buy a DSL line that is advertised as capable of transmitting 1 Megabit per second, you should be able to do anything you want (bounded, of course, by laws covering Child Pornography, hacking, etc.) with that bandwidth. As a result, the entrepreneurial effect of allowing anyone to deliver services to those customers will create the next "Killer Application" and further encourage the adoption of Broadband access.

In addition, SBC does not offer complete Service Level Agreements for any of their DSL products. In effect, they guarantee that you will obtain the advertised speed only through the part of the telephone network that exists in your neighborhood. So, they advertise that you can connect to the Internet at a particular speed, but" then don't back that up with a guarantee to do so. As a result, many businesses or residences that could purchase a DSL line with a speed guarantee a few short years ago cannot now.

The absence of any effective competition for these services means that there are no market forces regulating these issues. In other words, we'll get DSL when SBC wants to deliver it, with the quality they decide to provide and the horrible service we've seen for decades. Also, if they decide that a new use for DSL technology is threatening to some of their other products, we let them exclude it from their networks. If they are allowed to extend their monopoly to new areas, such as voice over IP, video on demand, remote application delivery, etc., the legislature will again be faced with the choice of allowing a monopoly to run rampant, or regulating the price, quality and service conditions under which they are allowed to sell those services.<sup>204</sup>

Competitors are also forced to obtain services in inefficient ways.

Currently, SBC allows a DSL partner to use this one line to connect customers in one city. In other words, if an independent ISP wants to offer service in more than one city, they have to purchase a \$1500 per month line for each city, in each city. Technology does not require this to be the case. My company sold DSL access throughout the United States through Covad and only had to purchase one \$1500 per month line in one city (Austin) to do it. Just like the phone company can connect your local telephone line to a long distance call, the phone company can connect our DSL connection to a customer in another city. SBC is erecting artificial barriers to competition. Not having access to that one telephone line prevents me from offering enhanced Internet access, firewall configuration, network administration, remote application delivery, Voice over IP and a host of other services that SBC doesn't offer. The market suffers as a result. The last mile DSL or cable line is only one small part of the

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<sup>204</sup> Onramp, pp. 5-6.

entire service, yet the companies who control the line have been allowed to monopolize the rest of the service.<sup>205</sup>

### 3. PRICE SQUEEZE

The price squeeze on competitors takes two forms.<sup>206</sup> The first concern is with very high prices charged for access to the network. This leaves little margin for the competitors to operate their business. The price squeeze may appear to be non-discriminatory, if the network owners charges it sown affiliate the same high price. Since the network owner pockets the profit, it is does not care that it is “losing money” on the retail product. It is implicitly cross-subsidizing the affiliated ISP. Unaffiliated ISPs do not have the source of cross-subsidy and go out of business. Once they are gone, the incumbent can raise prices, exactly what happened in 2001.

The price squeeze on unaffiliated ISPs in the DSL world is similar to that in the cable modem world. The price for access to the network is far above costs and leaves little margin for the unaffiliated ISP.<sup>207</sup>

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<sup>205</sup> Onramp, p. 14.

<sup>206</sup> IURC, p. 8; ISPC, p. 11; AOL, pp. 6, 8; AdHoc, p. 21.

<sup>207</sup> Onramp, p. 3.

"SBC: DSL highly profitable

CFO Stephenson: 40% EBIDTA margins, low investment needed

The debate is over: DSL makes money. "Once we get to scale, DSL is very profitable, just like our other services. We've reached that volume in California and are approaching it in SWB territory as well. We cut our costs by 30% in 2001, and expect them to drop another 25-30% in 2002." CSFB calculates Deutsche gets payback in two years on DSL, while Korea Telecom is at 35% EBIDTA and rising. (I don't like EBIDTA numbers, but that's all I can get.) Stephenson also said capex has dramatically dropped since early in 200 1. (That was the Pronto halt, among other things) DSL Prime has reported equipment costs dropping fiercely, to between \$150 & \$250 per subscriber. I just got some backbone costs from Band-X; 45 meg of high quality transit is now \$8,000 per month, half the price of a year ago. That's enough for 1,000-

They charge \$49 retail for DSL including Internet access, and \$39 wholesale for just the DSL telephone line (without Internet access) when in Canada, anyone can buy the complete package for \$29. That means that our retail rate is 69% greater than Canada's retail rate and our wholesale rate (without the, Internet access or other services) is 25% higher than Canada's retail rate.

It is a bad situation when an ISP in Texas, who buys thousands of DSL lines, pays 25% more for the telephone line alone than a retail customer in Canada, who buys one DSL line, pays for the telephone line with Internet access and other services included.<sup>208</sup>

The squeeze on unaffiliated ISPs is created not only by the price, but also by other terms and conditions of carriage. Minimum terms and volume discounts, which are not imposed on the affiliated ISP or are cross-subsidized by the parent company place independent ISPs at a disadvantage.

Under the BellSouth DSL tariff, ISPs must commit to selling a certain number of DSL lines over a two-year period. The more the ISP commits to, the lower the cost of each DSL circuit. However, only a small handful of Internet service providers have the resources to commit to selling the 40,000 DSL circuits it takes to get a competitive rate from BellSouth. Those ISPs who do not meet their commitment level will be assessed large penalties. This tiered pricing structure benefits BellSouth.net over all other ISPs. Since BellSouth and BellSouth.net are owned by the same parent company, BellSouth.net has no reason not to commit to the highest committal level of the tiered DSL pricing structure. Even if they are subjected to the same penalties as any other ISP, those penalties would simply result in the transfer of funds from one side of BellSouth to the other. BellSouth is able to justify a loss on one side for the gain on the other. All other ISPs would have to write a check to BellSouth for these penalties. These penalties clearly effect BellSouth.net in a far less damaging way. If the end user were billed for the circuit, this would not be an issue.

BellSouth's DSL tariff subjects ISPs to a 6-month contract on each DSL circuit. As a result, IgLou, and ISPs will have to pass along this contractual obligation to its customers. BellSouth.net DSL customers are not subject to such a contract. How is BellSouth.net able to avoid passing along this

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2,500 DSL consumer circuits. SBC, like other volume buyers, is presumably paying much less, or \$2-4 per month per user."

<sup>208</sup> Onramp, p. 2.



obligation? Are they not subject to the same tariff as all other ISPs? If the end user were billed for the DSL circuit in the first place this would not be an issue.

Under the BellSouth DSL tariff, BellSouth also gets to exact early termination penalties on the ISPs. If a DSL customer leaves an ISP in the first 6 months, BellSouth will charge the ISP an early termination penalty. BellSouth assess this penalty even though the overall number of DSL circuits in its network has not changed. Then BellSouth will turn around and re-bill the new ISP for installation of the same circuit. Again avoidable if the end user was billed.<sup>209</sup>

Another troubling upshots of the discriminatory approach the local telephone companies have taken is that when they are not pushing their own ISPs, they enter into deals with the major ISPs that end up discriminating against small providers. By structuring volume discounts, smaller ISPs are placed at a substantial disadvantage. Although the rates are tariffed as required by law, the structure of the discounts is such that the largest suppliers have a substantial advantage.

#### **4. ABUSIVE MARKETING**

Competitors and regulators maintain that incumbents have been guilty of unfairly steering customers to affiliated ISPs at the expense of competitors.<sup>210</sup> The affiliated ISP gets the preferential first spot in the list of options, and this gives it a huge advantage.<sup>211</sup> Joint marketing is a concern,<sup>212</sup> with suggestions that incumbents may offer only one option. Slamming has also been a constant problem.

Not content with trying to compete fairly with their current and former customers, the RBOCs soon began providing special services and preferential treatment for their own ISP divisions. These services, which are unavailable to any other customer or ISP, range from recommendations for Internet access by telephone company operators to co-branded advertising of both Internet and

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<sup>209</sup> IgLou, "ADSL Tariff and Deployment.

<sup>210</sup> MNDPS, pp. 10, 11; Utah ISP, pp. 10, 11; ISPC, p. 9; IAC, p. 9; AOL, pp. 6,8.

<sup>211</sup> IgLou, Questionable Marketing Practices.

<sup>212</sup> FTC, p. 11; IURC, p. 10; MNDPS, pp. 8, 10; NYDPS, p. 7; Utah ISP, p. 10; ISPC, p. 7; IAC, p. 11; AOL, pp. 6, 8; ITAA, pp. 6, 15.

telephone services under a single name. Though all RBOCs are guilty of doing this to various degrees, BellSouth excels at these anti-competitive practices.<sup>213</sup>

Competitors and regulators have also identified severe problems in the use and abuse of information.<sup>214</sup> There are two issues. First, affiliates of incumbents have access to detailed information about the readiness of facilities for specific customers and/or the usage characteristics of those customers. This gives them an advantage in targeting markets. Second, incumbents have access to information about customers who have chosen competitors. These customers are then targeted by the ISP affiliate for “win back” programs.

A concern has been expressed that incumbents could tie their advanced service offering to their other monopoly services to gain an advantage for their advanced service affiliate.<sup>215</sup>

BellSouth maintains a local telephone line installation number in each of its cities. This is the number, normally found in the front of the phone book (557-6500 in Louisville), that a customer calls when they want to place an order for additional telephone lines or have any questions about their existing services. This is the same number that countless local ISP subscribers have called to order a second telephone line for use with their computer. When customers call that same number for information about ADSL they are passed to BellSouth's "ADSL department". Unfortunately, BellSouth's ADSL department is BellSouth.net, their own ISP. Most callers are completely unaware that they are no longer talking to the telephone company but to another Internet service provider. When the customer decides to subscribe to ADSL, they are often unaware that they have signed up for another ISP. In the long distance marketplace this practice is known as slamming. The passing of the call by BellSouth to BellSouth.net also demonstrates an area where the services of BellSouth employees are shared with BellSouth.net.<sup>216</sup>

Outright slamming remains a problem.

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<sup>213</sup> IgLou, How BellSouth is Using the Internet to Rebuild its Monopoly.

<sup>214</sup> TXPUC, p. 3, MNDPS, p. 3; Utah ISP, pp. 9,1 6; ISPC, p. 11; IAC, p. 9; AdHoc, p. 27, ITAA, p. 16.

<sup>215</sup> IURC, p. 5; TXPUC, p. 14; NYDPS, p. 7; Utah ISP, p. 13, 15; ISPC, p. 11; IAC, p. 9; AdHoc, p. 27; ITAA, p. 16.

<sup>216</sup> IgLou, Sharing of Employees.

CSD staff's investigative report and the accompanying victims' declarations demonstrate that Respondents' practices include the following: (1) billing consumers for DSL and/or Internet services that were neither ordered nor received; (2) billing consumers for DSL and/or Internet services that were ordered but not received; (3) billing consumers for DSL and/or Internet services after the consumer requested termination of the service(s); (4) billing by two Respondents for the same DSL and/or Internet service; and (5) billing consumers for services or products that Respondents promoted as free or as less expensive than the charges placed on the consumers' telephone bills.<sup>217</sup>

## 5. CROSS-SUBSIDY

The use of corporate resources including logos and joint advertising has been a constant source of cross-subsidy.<sup>218</sup> Assets have been transferred to the advantage of the affiliated ISP including customer accounts, CPNI, bottleneck facilities and collocation space.<sup>219</sup> Employees, senior management and boards of directors have been co-mingled facilitating the cross-subsidization and anti-competitive advantage given to affiliates.<sup>220</sup>

BellSouth.net is currently waiving 100% of the installation and equipment fees or DSL customers. Who is eating those costs? Is BellSouth.net not subject to the same requirements as all other ISPs?

As it now stands, the average ISP wanting to offer DSL from BellSouth to its own customers will have to require a 6 month contract, a prepayment of some \$400, and a monthly fee of at least \$60. BellSouth.net is offering the very same service with no contract, no installation fees, and a monthly fee of \$49. How is this possible?<sup>221</sup>

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<sup>217</sup> Investigation on the Commission's own motion into the operations, practices, and conduct of Pacific Bell Telephone Company (U 1001 C), Pacific Bell Internet Services, and SBC Advanced Solutions, Inc. (U 6346 C) to determine whether they have violated the laws, rules and regulations governing the inclusion of charges for products or services on telephone bills, California Public Utility Commission, January 23, 2002, p. 1

<sup>218</sup> FTC, pp. 5,7; IURC, p. 10, TXPUC, p. 2; MNDPS, p. 3; Utah ISP, p. 16, AdHoc, p. 24; ITAA, pp. 899.

<sup>219</sup> TXPUC, pp. 4,8; MNDPS, p. 16; IAC, p. 13; AdHoc, p. 22; ITAA, pp. 12,13.

<sup>220</sup> FTC, p. 6; IURC, p. 16; TXPUC, p. 5; IAC, p. 9; AdHoc, pp. 23; ITAA, p. 15.

<sup>221</sup> IgLou, "ADSL Tariff and Deployment.

## **B. CONCENTRATION IN TELECOMMUNICATIONS MARKET**

The domination of incumbent local exchange carriers of local markets and their strategies to foreclose competition has taken on another dimension. On a national scale, at the time of the passage of the Telecommunications Act of 1996, the industry was moderately concentrated with (an HHI of about 1100 or the equivalent of 9 equal sized companies). Mergers since the passage of the Act have moved the market to a highly concentrated level, the equivalent of four equal sized competitors (HHI of 2500). At this level of concentration, the industry structure would be a major source of concern.

The sheer size of the firm created by the mergers dwarfs virtually all competitors in the industry. Two companies dominate the national-local market with a combined share of over two-thirds of all local lines. The competitive local exchange companies (CLECs) are generally minuscule compared to the post-merger company. The major long distance companies, although similar in size, have few if any assets deployed to provide local service and little experience in local service.

The Regional Bell Operating Companies were formed during the break-up of the national monopoly because of the operational, geographic, and cultural similarities of sections of the country. With the expanded service territory and dramatically increased end-to-end business created by the mergers, the “new” regional giants would have greater ability to block entry of CLECs into its expanded market.

Not only do each of the merged companies control about one-third of the national market, but also the bulk of the assets they control are concentrated in a regionally dominant position. The mergers create end-to-end networks that give the incumbents a decided advantage if they are allowed to enter the long distance market or other lines of business. The

merged companies can capture traffic internally (originate and terminate calls within the same company), whereas competitors have much less ability to do so.

This regional domination is an added element of the economies of scale and scope the companies will enjoy. It is quite clear that the merging parties intend to capture economies of scale and scope with this combination of assets. Scale economies will result from sheer size. Scope economies result from the ability to provide end-to-end service. Competitors cannot match these advantages.

The increasingly large regional telephone monopolies have begun to show how they will leverage this market power. They have begun to try to control the success of entities in neighboring markets by leveraging their monopoly at the point of sale and favoring integrated firms. They have tried to do this in their joint marketing arrangement for long distance service in which they give an advantage to one supplier over others. Similarly, in seeking to have their high-speed networks declared not to be common carriage networks, they hope to gain an ability to choose the Internet service providers who will have access to their huge base of subscribers

## **IX. 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.<sup>222</sup> There are no insurmountable

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<sup>222</sup> Baker, *Media, Markets*, pp. 34-35; Benkler notes common carriage may be necessary under certain circumstances, but is not preferable.

technical obstacles to developing a similar set of rules for high-speed communications networks.

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

“damned if we are going to allow the creation of a competitor to ourselves,”<sup>223</sup>

“[W]e didn't spend \$56 billion on a cable network to have the blood sucked out of our veins.”<sup>224</sup>

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.<sup>225</sup> The platform will remain closed until policymakers open it.

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<sup>223</sup> Lessig, *The Future of Ideas*, p. 32.

<sup>224</sup> Lessig, *The Future of Ideas*, p. 158.

<sup>225</sup> 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

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

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disregard their words and deeds and believe that Microsoft executives did not understand their own market.

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.<sup>226</sup>

## **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.<sup>227</sup> Incumbents behave rationally by developing their core

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<sup>226</sup> 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.

<sup>227</sup> 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



competence and seeking structures that reward it.<sup>228</sup> The incentives for innovators are also dampened.<sup>229</sup>

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good business is focused on improving its lot, and disruptive technologists have no lot to improve

<sup>228</sup> 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.

<sup>229</sup> 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 those that control the network and have the power to behave strategically will capture the value of the innovation. 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

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.<sup>230</sup>

Potential sources of disruptive innovation would shrink.<sup>231</sup>

The implication here is that we cannot just wait for the platform to open. Doing nothing in the face of accelerating closure of the communications platform is doing harm.<sup>232</sup>

Some of the harm cannot be undone.<sup>233</sup> Rectifying what can be fixed after the fact is

immensely time consuming, costly and inevitably more intrusive.<sup>234</sup>

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design for the Internet. Innovators are likely to be cautious about how they spend their research efforts if they know that one company has the power to control whether that innovation will ever be deployed. The increasing risk is a cost to innovation, and this cost should be expected to reduce innovation.

<sup>230</sup> Intellectual Property, pp. 28-28.

<sup>231</sup> 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.

<sup>232</sup> Bar, et. al.

<sup>233</sup> 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.

<sup>234</sup> 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-

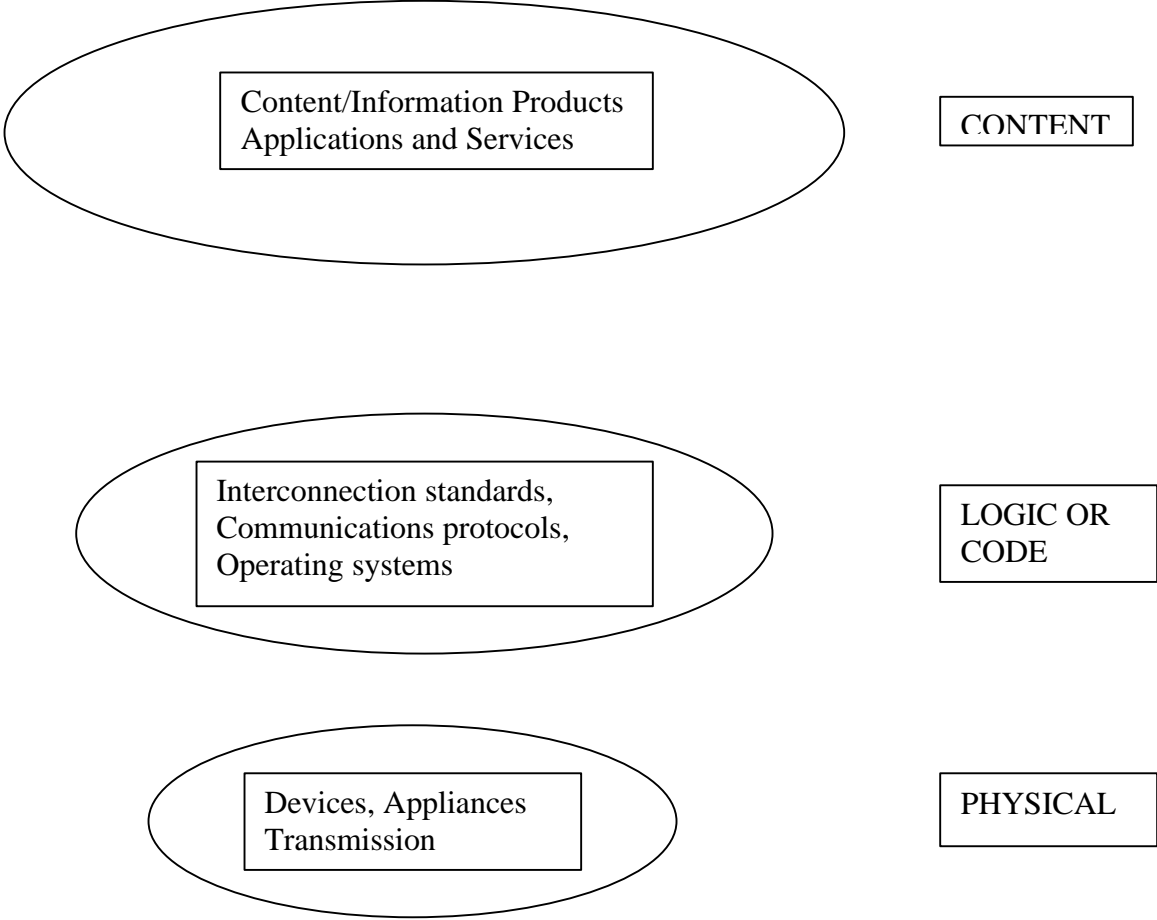
The irony is that Congress understood this well. It supported 3 modes of entry, required competition before deregulation, and set out specific, rigorous conditions under which regulation could be relaxed. The reliance on intermodal competition to undermine intramodal competition would contradict Congressional 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.

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discriminatory rates would be much higher than they would be under the existing structure. Rather than the complexity that DSL regulation involves, imposing a rule of open access now would be relatively less costly. The same is even truer 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.

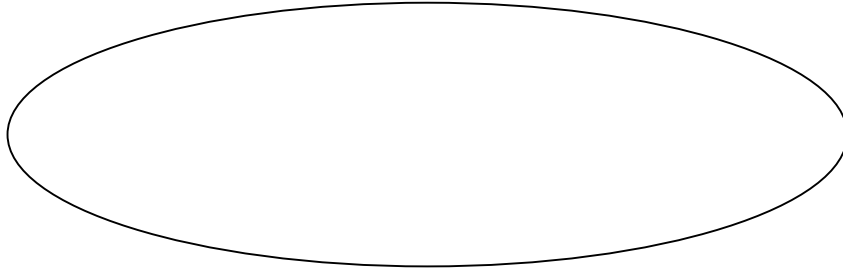
# **EXHIBIT**

**EXHIBIT 1:  
LAYERS IN THE COMMUNICATIONS PLATFORM**

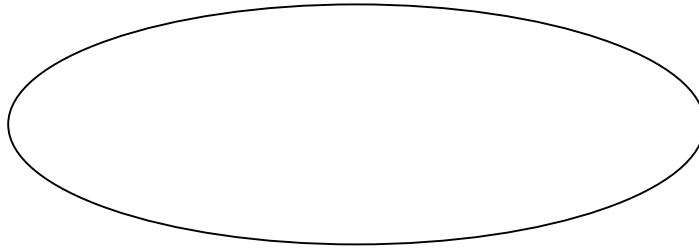


**EXHIBIT 2:  
UNIQUE CHARACTERISTICS OF COMMUNICATIONS PLATFORMS THAT  
RAISE SPECIAL MARKET POWER CONCERNS**

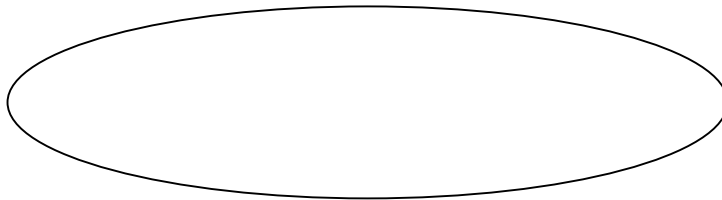
Network Effects  
Switching costs  
Lock -in



APPLICATIONS BARRIER TO  
ENTRY



Incompatibilities  
Impairment  
Desupporting



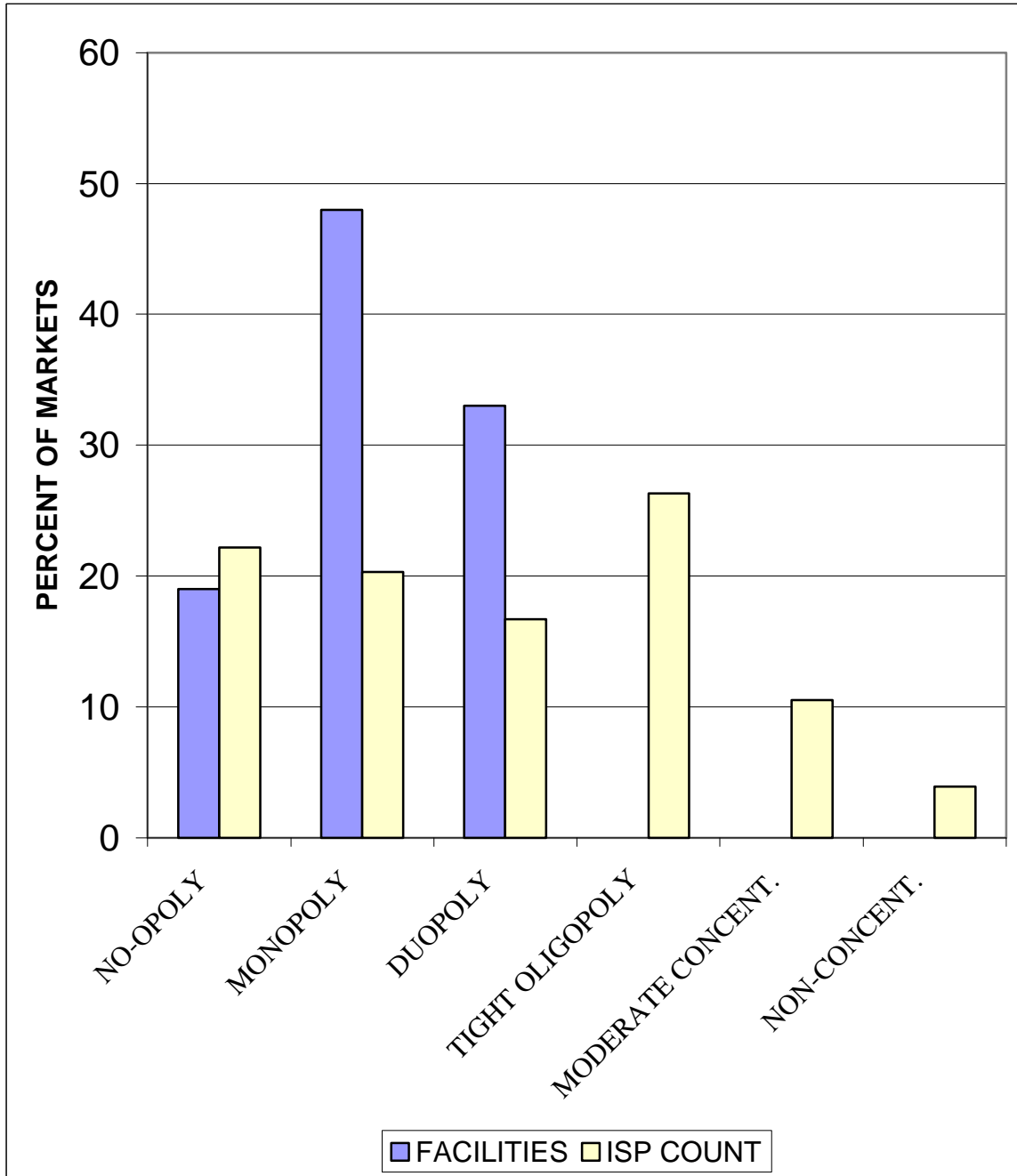
Extreme  
Economies of  
Scale  
Tipping

**EXHIBIT 3:  
DESCRIBING MARKET CONCENTRATION FOR PURPOSES OF PUBLIC POLICY**

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

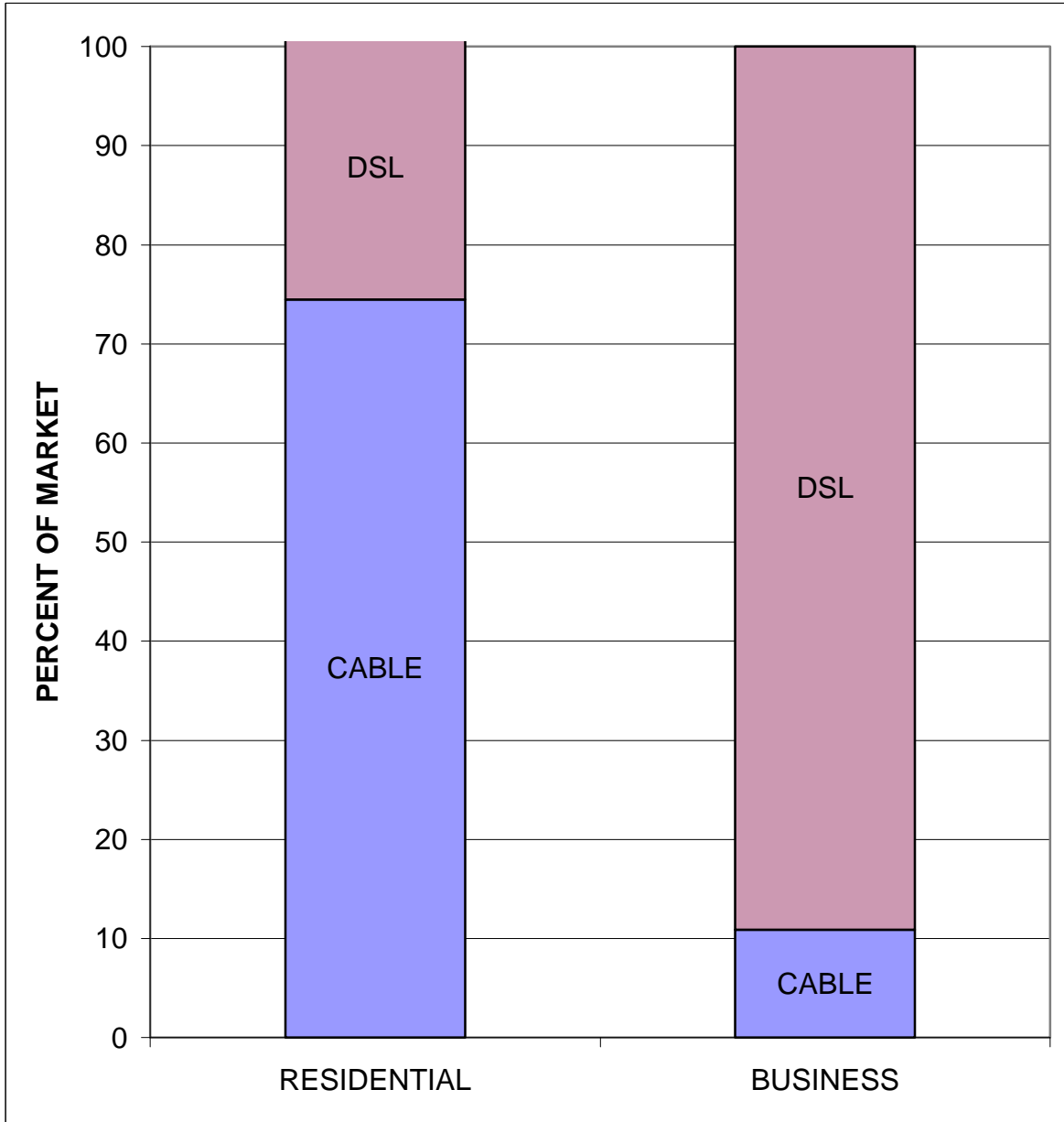
**EXHIBIT 4:  
MARKET STRUCTURE OF HIGH-SPEED INTERNET ACCESS SERVICE**



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.

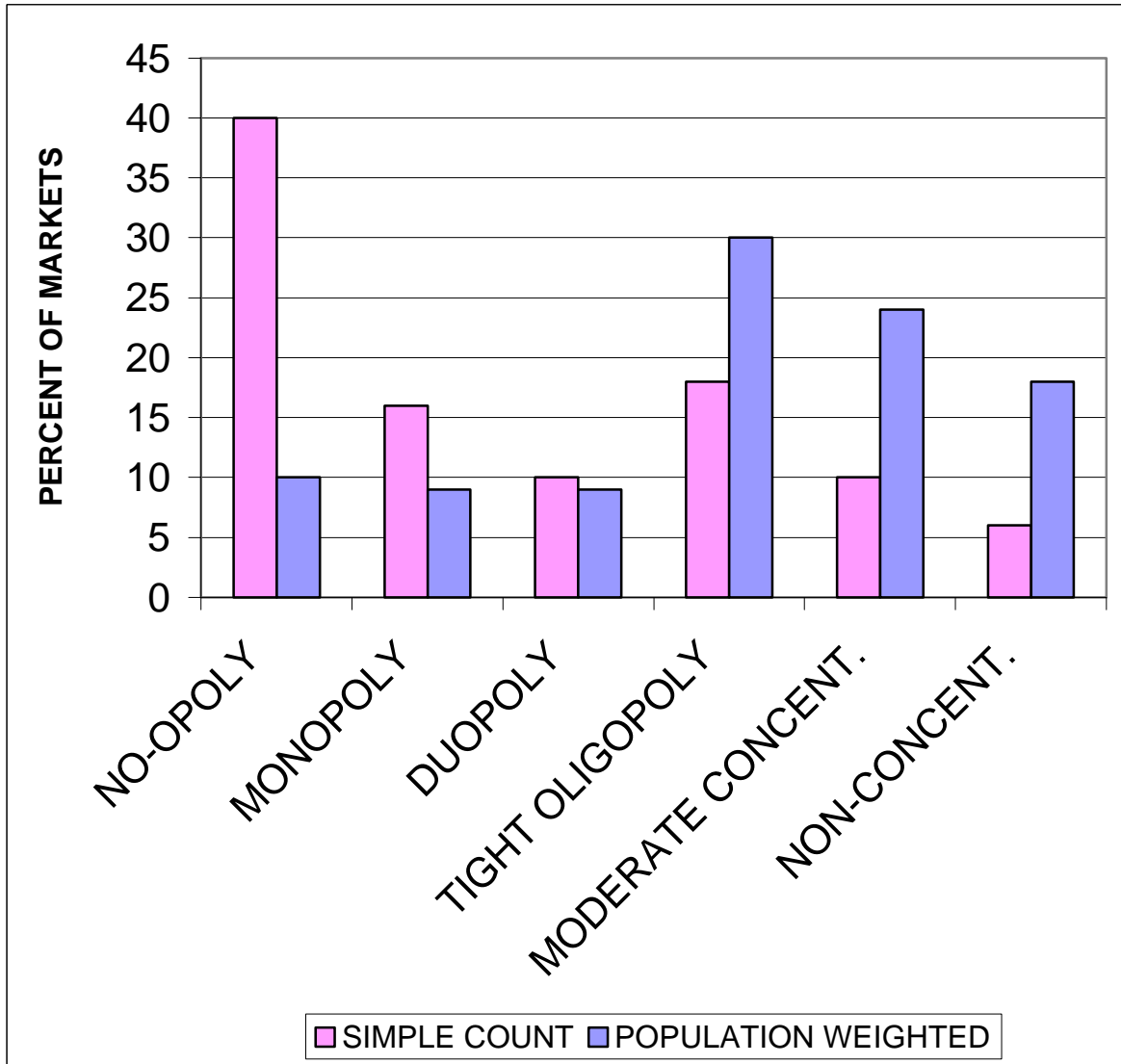


**EXHIBIT 5:  
MARKET SPECIALIZATION OF CABLE AND TELEPHONE ADVANCED  
SERVICES**



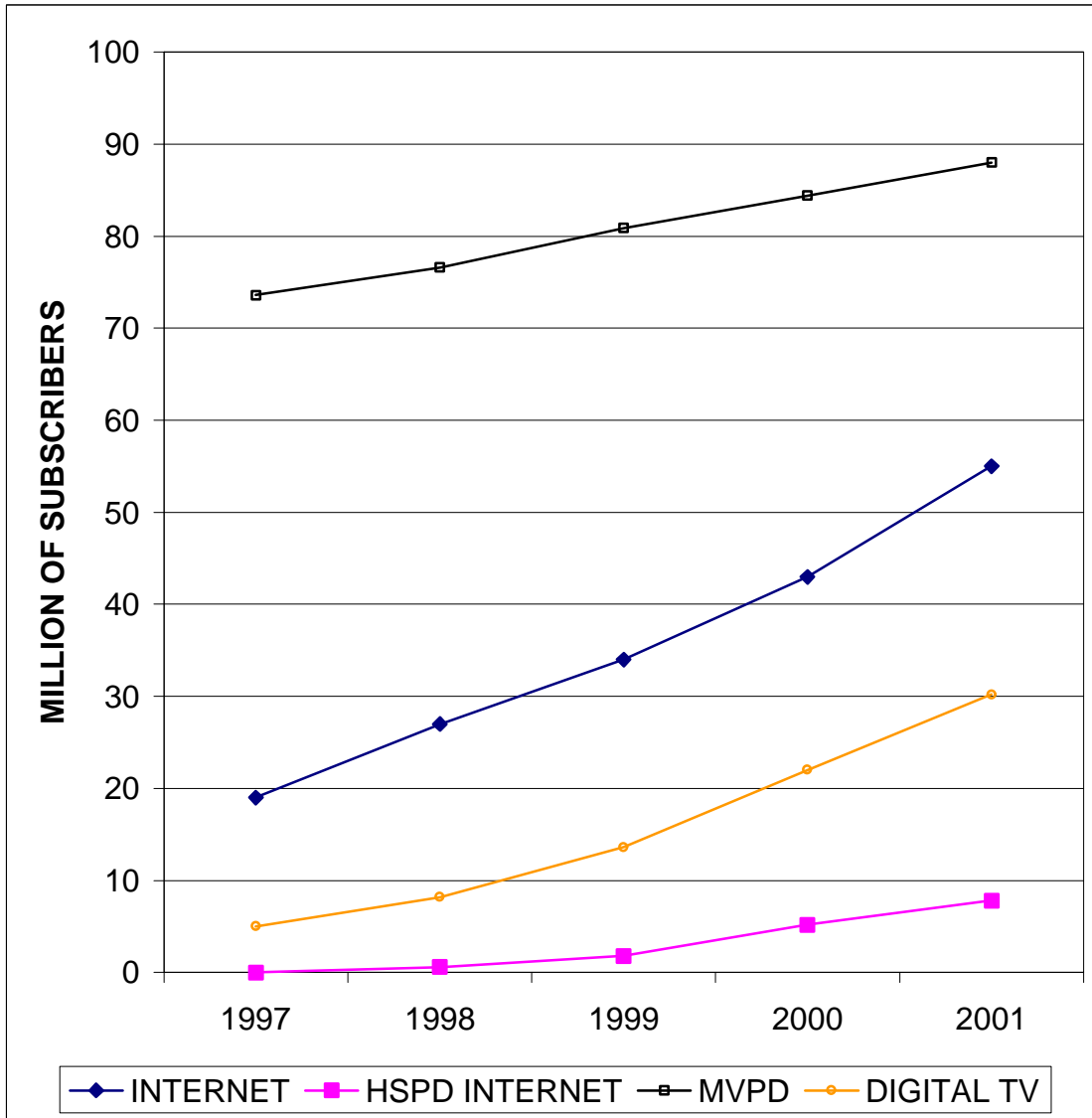
Source: Sources: Industry Analysis Division, *High-Speed Services for Internet Access: Subscriberhip as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Tables 1-4.

**EXHIBIT 6:  
MARKET STRUCTURE OF LOCAL TELEPHONE SERVICE:  
ZIP CODES WITH COMPETITION**



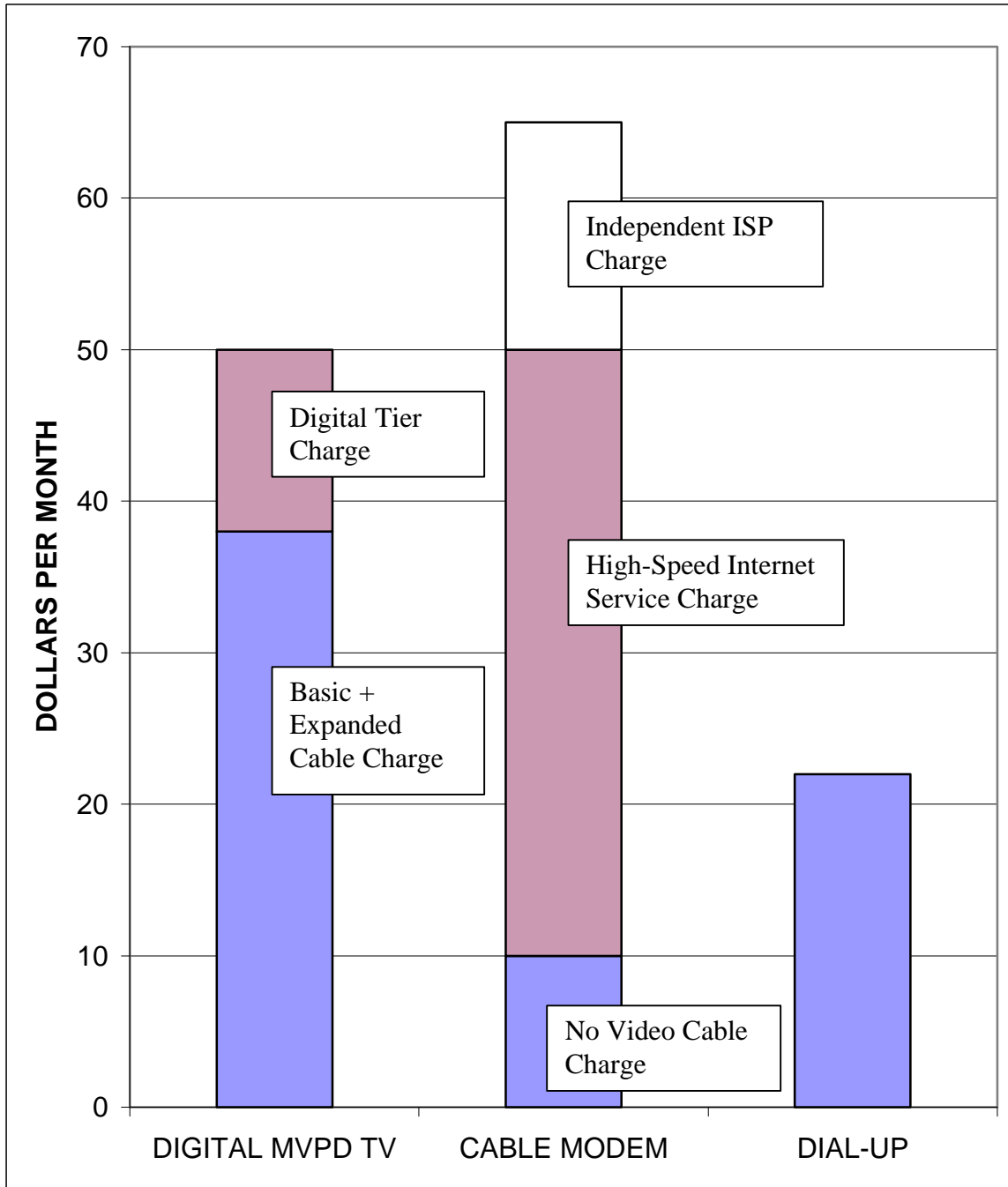
Source: Industry Analysis Division, *Local Telephone Competition: Status as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Tables 11, 12.

**EXHIBIT 7:  
MVPD, CABLE TV, INTERNET AND HIGH-SPEED INTERNET PENETRATION**



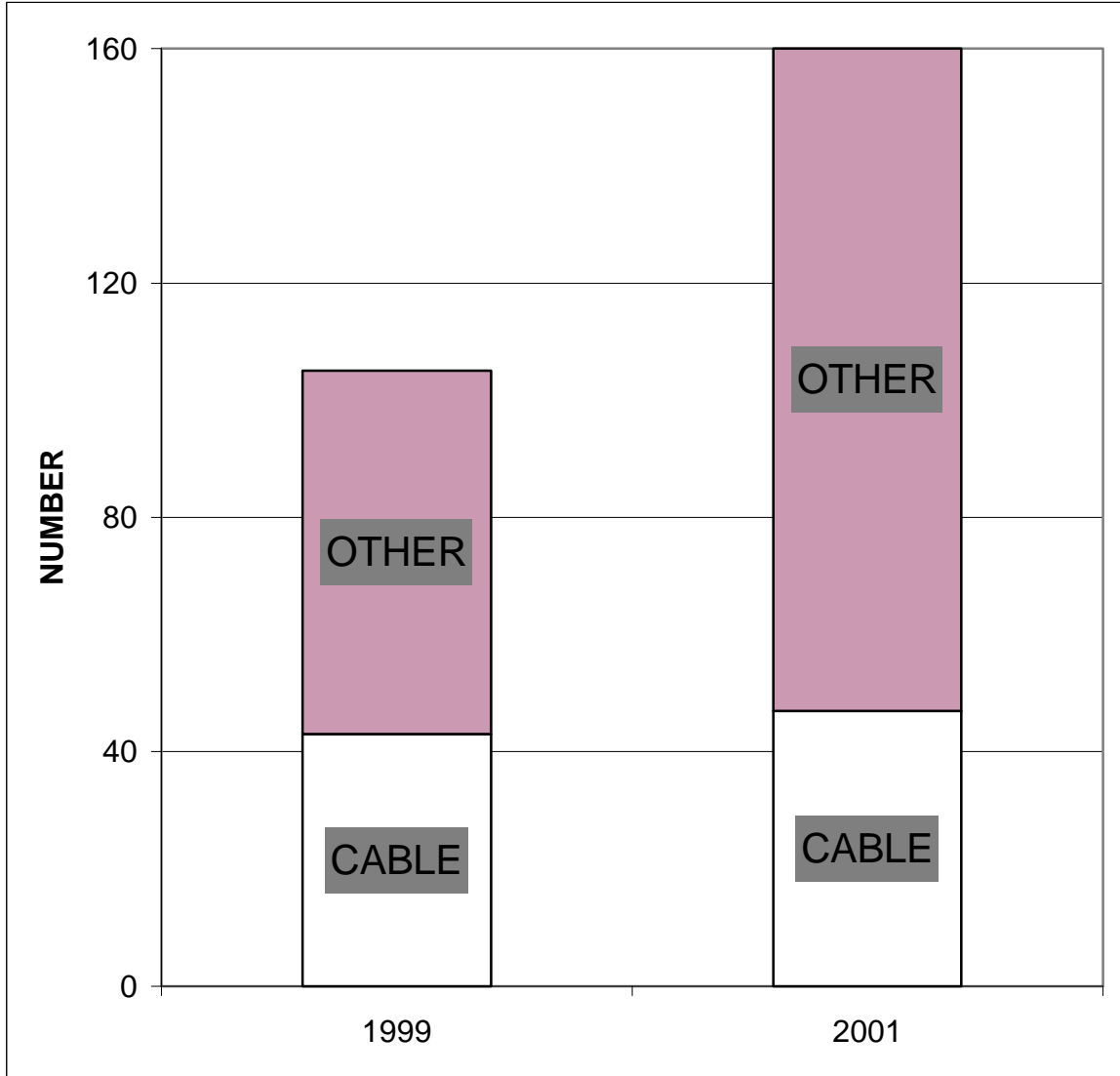
Source: Jason Bazinet, *The Cable Industry* (J.P. Morgan Equity Research, November 2, 2001), Figure 26; Federal Communications Commission Federal Communications Commission, *In the Matter of Annual Assessment of Competition in markets for the Delivery of Video Programming*, Fourth Annual Report, CS Docket No. 97-141, December 31, 1997, para 36; Seventh Annual Report, CS Docket No. 00-132, January 2, 2001, para 66; Eight Annual Report, CS Docket No. 01-129, January 14, 2002, paras 38, 58; Industry Analysis Division, *High-Speed Services for Internet Access: Subscriberhip as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February

**EXHIBIT 8:  
STRATEGIC PRICING OF CABLE MODEM SERVICE**



Sources: Visits to Cable company and Internet Service Provider Web sites; Consumers Union Survey of Satellite and Cable Subscribers, September 2001.

**EXHIBIT 9:  
HIGH-SPEED INTERNET SERVICE PROVIDERS USING VARIOUS  
TECHNOLOGIES**



Source: Industry Analysis Division, *High-Speed Services for Internet Access: Subscribership as of June 30, 2001* (Common Carrier Bureau, Federal Communications Commission, February 2002), Tables 1,2,3,4.

**EXHIBIT 10:  
ANTICOMPETITIVE PRACTICES DIRECTED AT UNAFFILIATED,  
HIGH SPEED INTERNET SERVICE PROVIDERS**

Practice ⇒ Service ↓	Denial of Service	Degradation of Quality	Price Discrimination	Steering	Abuse of information	Bundling
CABLE	@Home exclusive	Selective speed control; preferential local caching	Consumers pay twice	Boot screen bias	Detailed consumption data to target	Access and content; cable and Internet
TELCO	Withholding availability; delayed provisioning	Overloading switches; restricted cross- connect	Wholesale > retail	List bias; omission of alternatives	Advanced notice of availability; abuse of information for customer win- back	Access and content; cable and telephone