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Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed, Proprietary Networks

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OPEN ACCESS TO THE BROADBAND INTERNET: TECHNICAL AND ECONOMIC DISCRIMINATION IN CLOSED, PROPRIETARY NETWORKS

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I. INTRODUCTION

A. *Closing Down the Internet*

A recent book entitled *Code and Other Laws of Cyberspace*[1] has attracted a great deal of attention. It appears to have driven home the point that a fundamental change in the nature of the internet and communications networks is taking place.[2] The dynamic, open nature of the internet is threatened by technological and legal developments.[3] The book argues that

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1. LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999) [hereinafter LESSIG].

2. *See id.* at 166–67.

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

Id.

3. *See id.* at 207.

> We are just leaving a time when the code writers are a relatively independent body of experts and code is the product of a consensus formed in forums like the Internet Engineering Task Force (IETF). These were regulatory bodies whose standards set policy, but they were in one sense disinterested in the outcome; they wanted to produce nothing more than code that would work.

this change can be managed, if not prevented, to minimize the damage to the qualities of the internet we wish to preserve.[4] The author, Lawrence Lessig, recognizes that values central to our way of life are at stake.

> We are enabling commerce in a way we did not before; we are contemplating the regulation of encryption; we are facilitating identity and content control. We are remaking the values of the Net, and the question is "Can we commit ourselves to neutrality in this reconstruction of the architecture of the Net?"
>
> I do not think we can. Or should. Or will. We can no more stand neutral on the question of whether the Net should enable centralized control of speech than Americans could stand neutral on the question of slavery in 1861. We should understand that we are part of a worldwide political battle; that we have views about what rights should be guaranteed to all humans, regardless of their nationality; and that we should be ready to press those views in this new political space opened up by the Net.[5]

Although Lessig is not optimistic about the ability of policymakers to accomplish this goal, he clearly identifies the many ways in which powerful technological forces can be directed toward the goals we wish to achieve as a society. Not only has he made it more likely that policymakers will finally "get" what is happening, but he has also made it more likely

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> We are entering a very different world where code is written within companies where standards are the product of competition; where standards tied to a dominant standard have advantages. We are entering a world where code is corporate in a commercial sense, and leaving a world where code was corporate in a very different sense.
>
> To the extent that code is law, to the extent that it is a chosen structure of constraint, we should worry about how it is structured and whose interests may define its constraint, just as we worry when lawmaking power is assumed by a private body. If code is law, who are the lawmakers? What values are being embedded in the code?

Id.

4. *See id.* at 209.

> The decision then is not about choosing between efficiency and something else, but about which values should be efficiently pursued. My claim in each of these cases is that to preserve the values we want, we must act against what cyberspace otherwise will become. The invisible hand, in other words, will produce a different world. And we should choose whether this world is one we want.

Id.

5. *Id.* at 205.

that the policymakers will be required to do something about this problem.

B. Choke Points in Networks

The importance of Lessig's message and the usefulness of the analytic scheme go far beyond concerns about the openness of the internet. They point to a much broader question of control over networks in general. Networks are the essence of the e-world and the internet century into which we are embarking. Global scale, fluid movement of information, and commerce have created a new economy, a new mode of production.[6]

Because these are network industries, there are two points of interconnection that become crucial choke points that control access to the consumer or the citizen. Network interfaces to accomplish interconnection, where content providers put their information packets onto the network, and last mile facilities to deliver information, where consumers interconnect with the network, are the choke points of this new economy. Market power or leverage exists whenever there is the ability to stop or disadvantage traffic as it enters or exits the network. Historically, many of the facilities we find at the choke points were exclusive franchises. Many were or still may be natural monopolies, and many were or still may be economic monopolies. Some are evolving to duopolies or tight oligopolies.

This analysis makes the fundamental assumption that the existence of two roughly equal competitors is not enough for effective competition. Actually, five is not enough. As the market moves from six to ten roughly equal competitors, concern about ineffective competition declines. With more than ten competitors, competition presumably will be vigorous.

Those familiar with antitrust practice in the last two decades of the twentieth century will recognize that this is the market structure view adopted by the Antitrust Division of the Department of Justice ("DOJ") in the Reagan Administration.[7] It defined a market that has the equivalent of fewer than six equal-sized competitors as "highly concentrated." As a matter

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6. There is a massive and growing literature on the fundamental change in the economy and its impact on society. One of the most incisive and comprehensive reviews can be found in the three-volume work of Manual Castells, THE INFORMATION AGE: ECONOMY, SOCIETY AND CULTURE (1998).

7. *See* U.S. DEP'T OF JUSTICE, MERGER GUIDELINES (1982).

of public policy, the DOJ declared that such a market generally would not be allowed to become more concentrated through mergers. It defined a market with the equivalent of six to ten equal-sized competitors as moderately concentrated. In this six-to-ten category, there were also concerns about reductions in competition through mergers, which would trigger a higher level of scrutiny. Theoretical economics and empirical analyses show that these valid thresholds should inform public policy.[8]

Moreover, when we come to information industries and networks, public policy should be particularly procompetitive and err toward requiring more, not less, competition. Interconnection creates greater leverage than one finds in other markets. Information flows not only through the marketplace of goods and services, but also through the marketplace of ideas. Concerns about freedom of expression should augment concerns about economic power. If four or five competitors are not enough to ensure vigorous competition, they are certainly not enough to ensure freedom of expression.

The antitrust implications of this need for caution define markets narrowly and do not rely on potential competition as an excuse for excessive concentration. The implications of this observation of public policy under the Telecommunications Act of 1996 ("the Act") also should be clear in the context of the ongoing debate about open access. The offer of two or three competing facilities as an excuse to allow proprietary leverage over closed networks does not address the fundamental competition problem. Therefore, there should not be a debate about whether there should be an open access obligation. The only debate should concern the level of government at which the obligation should arise, the mix of public and private action in executing the obligation, and the details to be covered by the obligation.

C. Purpose and Outline

With that as background, this article focuses on the details of open access being debated across the country. The author of *Code* also identifies the different channels that need to be pur-

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8. *See* Consumer Federation of America, *Breaking the Rules: AT&T's Attempt to Buy a National Monopoly in Cable TV and Broadband Internet Services* (Aug. 17, 1999) <http://www.consumerfed.org/internetaccess.ATT180899.pdf>.

sued in order to achieve open access.[9] In other words, in order to construct the social reality we want, it is critical to understand the complex pillars of social order. Social order in real space, or cyberspace, is composed of four "modalities of regulation"—law, the market, architecture, and norms.[10] It is never enough to study or attempt to change just one of the layers. Therefore, it is always important to understand how each of the layers impacts and is affected by the others.

This article applies *Code*'s analytic paradigm to one specific issue that has taken on considerable importance in the ongoing transformation of the internet—the issue of open access to the broadband internet.[11] The article takes a practical view of the issue of discrimination in closed proprietary networks. In keeping with the central theme of *Code*, it also takes a political view of the issue. It demonstrates that the recent offer made by AT&T voluntarily to relax its legal right to operate its cable properties as closed, proprietary broadband internet networks—"one click access" to the internet—barely begins to address the complex layers of discrimination that the AT&T/Cable business model would impose on cable-based broadband networks.[12] As described in the following Table,

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9. *See* LESSIG, *supra* note 1, at 85–99.

10. *See id.*

11. An earlier version of this paper was presented as a response to comments by Larry Lessig in Mark Cooper, Briefing: Can We Preserve the Internet as We Know It? Challenges to Online Access, Innovation, Freedom and Diversity in the Broadband Era (Dec. 20, 1999) (unpublished manuscript, on file with author). The author of *Code* has recently commented on this issue. *See* Written Ex Parte of Professor Mark A. Lemley and Professor Lawrence Lessig, In the Matter of Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T Corp. (FCC Nov. 10, 1999) (CS No. C99-251) [hereinafter Lemley & Lessig].

12. We have, however, moved from the stage of complete denial of the problem to a point where the debate can now focus on matters of how and when open access is implemented. This acknowledgment is progress since the case for open access has been repeatedly made in numerous analyses over the past decade. *See, e.g.*, CONSUMER FEDERATION OF AMERICA, DEVELOPING THE INFORMATION AGE: A PRAGMATIC CONSUMER VIEW (1992); CONSUMER FEDERATION OF AMERICA, EXPANDING THE INFORMATION AGE IN THE 1990S: A PRAGMATIC CONSUMER ANALYSIS (1990); CONSUMER FEDERATION OF AMERICA, KEEPING THE INFORMATION SUPERHIGHWAY OPEN FOR THE 21ST CENTURY (1999); CONSUMER FEDERATION OF AMERICA, TRANSFORMING THE INFORMATION SUPERHIGHWAY INTO A PRIVATE TOLL ROAD: THE CASE AGAINST CLOSED ACCESS BROADBAND INTERNET SYSTEMS (1999). It is not a lot of progress, however, since AT&T insists that open access does not have the force of law behind it and will not take place

this article examines the details of architecture, norms and the market.

Table 1. Technical and Economic Sources of Discrimination in Closed, Proprietary Broadband Networks

ARCHITECTURE: TECHNOLOGY BIAS
INTERCONNECTION
Physical connection
Compatibility
FILTERING
Physical connection
Compatibility
Committed Access Rate
STRUCTURE
Restricted backbone choice
Precedence
Collocation
Replication

for two to five years. Therefore, AT&T gave an inch, called it a mile, and hoped the debate over open access would go away.

The debate, however, will not go away because the ability to discriminate on these networks is so great and the impact of discrimination is so profound. If nondiscriminatory access is to be provided, it is critical to identify the ways in which the owner of a transmission facility that is vertically integrated into content service can disadvantage competitors who are dependent on the use of those facilities to serve the public. The tools of discrimination must be controlled or taken out of the hands of the network monopolists to prevent them from using their market power over facilities to undermine competition or stifle creativity in programming and content. This classic problem of economic analysis has received an immense amount of attention in the communications area as part of the public policy debate about introducing competition into telecommunications markets. In addition, it is receiving increasing attention from academics and business analysts with reference to broadband networks. *See, e.g.*, CISCO SYSTEMS, CONTROLLING YOUR NETWORK—A MUST FOR CABLE OPERATORS (1999) [hereinafter CISCO CONTROLLING]; CISCO SYSTEMS, NEW REVENUE OPPORTUNITIES FOR CABLE OPERATORS FROM STREAMING-MEDIA TECHNOLOGY (1999) [hereinafter CISCO STREAMING MEDIA]; Scott C. Cleland, *Is the Internet Cable's Friend or Foe Long-Term?*, THE PRECURSOR GROUP: LEGG MASON PRECURSOR RESEARCH (1999) [hereinafter LEGG MASON]; *The Interactive Digital Network: More Than Just a Set-Top Decision* (visited Mar. 23, 2000) <http://www.scientificatlanta.com /DigitalNetwork/index.htm> [hereinafter *Interactive Digital Network*]; MORGAN STANLEY DEAN WITTER, THE DIGITAL DECADE (1999) [hereinafter MORGAN STANLEY].

NORMS: SERVICE RESTRICTIONS
PROVIDERS
Speed of service
Time of downstream video
CONSUMERS
Limits on upstream traffic
Prohibitions on server set-up
Prohibitions on local area networking
THE MARKET: BUSINESS LEVERAGE
INFORMATION GATHERING
PRICING
Price Squeeze
Cross-subsidy
Pricing Options
PRODUCT BUNDLING
CUSTOMER RELATIONSHIP
Marketing
Billing
Boot screen

More specifically, Part II of this article addresses the legal and political background to the discussion of open access. In Part III, the article examines the economic motivations to exploit the market power over access. Next, Part IV examines the architectural structure of the internet and how this structure, itself, disadvantages independent service providers ("ISPs"). Part V illustrates the barriers to open access created by the norms of the internet, service restrictions. Finally, Part VI discusses the market, or business leverage, barriers to open access.

II. LEGAL AND POLICY CONTEXT

Before discussing the specific discriminatory practices that have been identified in academic and business analyses, it is important to establish the legal and public policy context in which policymakers must deal with these issues if they are to

ensure open access. For the purpose of this analysis, we adopt the four "modalities of regulation."[13]

The central focus of this paper, however, is not on the law, but on the other three "modalities of regulation." Nevertheless, it is important to understand the legal debate as background for addressing the other issues.

A. Law, the Internet, and Open Access

The battle over open access is about the rules of the road for cyberspace highways. The debate has focused on a specific and critical aspect of the law of transportation and communications networks—the terms of carriage. Will the owners of the road be required to provide access to their facilities on rates, terms, and conditions that do not discriminate against the ISPs, who are not partners or affiliates of the facility owners? Or will they be allowed to treat their affiliated ISPs preferentially?

Traditionally, communications networks have been open by law. Practically, however, we have fought a long battle to ensure open access to the internet. All of the roads that run through cyberspace should be open. Allowing the owners of these roads to operate them on a closed basis will severely undermine competition and creativity in the production and delivery of content. The driving force of dynamic internet development would be placed at risk.[14]

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13. *See* LESSIG, *supra* note 1, app. 235–39.

14. *See* Lemley & Lessig, *supra* note 11, ¶ 21.

> The effect of these Internet design principles—including, but not exclusively, End-to-End—has been profound. By its design, the Internet has enabled an extraordinary creativity precisely because it has pushed creativity to the ends of the network. Rather than relying upon the creativity of a small group of innovators who work for the companies that control the network, the End-to-End design enables anyone with an Internet connection to design and implement a better way to use the Internet. By architecting the network to be neutral among uses, the Internet has created a competitive environment where innovators know that their inventions will be used if useful. By keeping the cost of innovation low, it has encouraged an extraordinary amount of innovation.

Id. Other authors describe the issues as follows:

> 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

The four modalities of regulation make it easy to explain the preference for a prohibition on the vertical integration of distribution facilities and programming on the ownership of conduit and content. Once the law allows vertical integration between ownership of facilities and production of content, the problem of discrimination becomes highly complex because every layer of social order comes into play. The weak competition in facilities should not be allowed to undermine the vigorous competition in content.

The primary means, however, for preventing discrimination in access to communications networks is a regime of common carriage. In such an approach, all content providers must be allowed to reach customers on the same terms offered to all other providers. Open internet access via the telephone network is grounded in common carriage principles that have governed the phone network for almost a century.[15]

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monopoly owners, would have favored. Absent policy-mandated openness, the Regional Bell Operating Companies (RBOCs) and monopoly franchise CATV 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.

Francois Bar et al., *Defending the Internet Revolution in the Broadband Era: When Doing Nothing is Doing Harm* (Aug. 1999) <http://brie.berkeley.edu/~briewww/pubs/wp/wp137.html>.

15. *See* Henry Geller, former General Counsel at the FCC and Administrator of the National Telecommunications and Information Administration, describes access to today's internet as follows:

> Today the guiding principle of telecommunications/information policy is *entry*. As to access to the Internet, there is now such open entry. Any entity, using the facilities of the local telephone company, can become an Internet service provider.
>
> The local telco itself is usually an ISP, but because it is a telecom common carrier, it must afford access to all its rivals and permit resale of its transmission services.
>
> Access today for residential customers is "narrowband." The full potential of the Internet for commerce, information and entertainment cannot be achieved without broadband access. The telcos propose to provide such access through a technique called digital subscriber line.
>
> In doing so, they remain subject to considerable regulation.
>
> But there is no controversy that the telco must continue to make its transmission facilities available to all comers, and thus as to telcos, there will continue to be wide-open competition among ISPs.

Henry Geller, *The FCC and Internet Access*, ELEC. MEDIA, Apr. 19, 1999, at 12.

Morgan Stanley Dean Witter, in a recent analysis of the emerging communications/broadcast industry, describes common carriers as follows:

> Generally, they are involved in the sale of infrastructure services in transportation and communications. The legal principle of common carriage is used to ensure that no customer seeking service upon reasonable

1. A Better Flow of Ideas

Policymakers recognize the uniquely important role that broadcast media, radio, and television play in the marketplace of political ideas and in forming cultural values. Because of this recognition, explicit standards have been placed on the industry.[16] In determining the standards, policymakers have rejected the notion that economics alone should decide the nature, availability, and content of political and cultural programming.[17] Instead, policy has sought to prevent concentration of economic power from controlling the flow of ideas in the broadcast media by placing limits on the ownership of media outlets and imposing obligations to expand programming beyond what is simply profitable.[18] What is good enough in the economic marketplace is not good enough in the political and cultural marketplace.

At its root, the argument is that ownership is important in determining the nature of programming. This gives rise to a series of more specific and more policy-relevant conclusions. Relying on economic forces alone will not produce diversified programming adequate to create the rich political and cultural

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> demand, willing and able to pay the established prices, however set, would be denied lawful use of the service or would otherwise be discriminated against.
>
> . . . Significantly, a carrier does not have to claim to be a common carrier to be treated as such under the law: a designation of common carriage depends upon a carriers actual business practices, not its charter. . . .
>
> Common carriage is also thought to be an economically efficient response to reduce the market power of carriers through government regulation, preventing discrimination and/or censorship and promoting competition. It is also said to promote the basic infrastructure, reduce transaction costs from carrier to carrier, and extend some protections for First Amendment rights from the public to the private sector.

MORGAN STANLEY, *supra* note 12, at 177–78. It is interesting to note that even Wall Street analysts recognize the special treatment of communications networks and the media. Simple arguments about the market have never been the sole determinant of public policy.

16. *See* CHARLES M. FIRESTONE & JORGE REINA SCHEMENT, TOWARD AN INFORMATION BILL OF RIGHTS AND RESPONSIBILITIES 45 (1995).

17. *See* Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354 (1999); Duncan H. Brown, *The Academy's Response to the Call for a Marketplace Approach to Broadcast Regulation*, 11 CRITICAL STUD. IN MASS COMM. 257 (1994).

18. *See* Further Notice of Proposed Rulemaking in the Matter of Review of the Commission's Regulations Governing Television Broadcasting at 54–55 (FCC Jan. 17, 1995) (MM No. 91-221).

arena demanded by political discourse. The empirical evidence from the past two decades suggests that concerns about economic control over the media argue strongly for a cautious approach to concentration of media ownership.[19] Greater concentration results in less competition.[20] There is evidence of the anticompetitive behaviors expected to be associated with reductions in competition, such as price increases and excess profits.[21]

Concern about diversity rests on a series of straightforward, empirically observable relationships between economic interests and the political and cultural content of programming.[22] The dictates of mass audiences create a lowest common denominator ethic that undercuts that ability to deliver politi-

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19. The shift toward greater reliance on economic forces has not resulted in greater competition and has resulted in greater concentration in the many markets. *See* BEN H. BAGDIKIAN, THE MEDIA MONOPOLY ix–x (5th ed. 1997). *See generally* HARRY C. BOYTE & SARA M. EVANS, FREE SPACES: THE SOURCE OF DEMOCRATIC CHANGE IN AMERICA (1986); ROBERT M. ENTMAN, DEMOCRACY WITHOUT CITIZENS: MEDIA AND THE DECAY OF AMERICAN POLITICS (1989); DORIS A. GRABER, MASS MEDIA AND AMERICAN POLITICS (4th ed. 1993); ROBERT W. MCCHESNEY, RICH MEDIA POOR DEMOCRACY: COMMUNICATION POLITICS IN DUBIOUS TIMES (1999); William H. Melody, *Communication Policy in the Global Information Economy: Wither the Public Interest?, in* PUBLIC COMMUNICATION: THE NEW IMPERATIVES: FUTURE DIRECTIONS FOR MEDIA RESEARCH (Marjorie Ferguson ed., 1990); Jay G. Blumler & Carolyn M. Spicer, *Prospects for Creativity in the New Television Marketplace: Evidence from Program Makers,* 40 J. COMM. 78 (1990); Herbert H. Howard, *TV Station Group and Cross-Media Ownership: A 1995 Update,* 72 JOURNALISM & MASS COMM. Q. 390 (1995); William H. Melody, *The Information in I. T.: Where Lies the Public Interest?,* 18 INTERMEDIA 10 (1990).

20. *See* Stephen Lacy et al., *Competition and the Allocation of Resources to Local News,* 2 J. MEDIA ECON. 3 (1989); Stephen Lacy et al., *Cost and Competition in the Adoption of Satellite News Gathering Technology,* 1 J. MEDIA ECON. 51 (1988); Stephen Lacy, *The Effects of IntraCity Competition on Daily Newspaper Content,* 64 JOURNALISM Q. 281 (1987); Stephen Lacy & James M. Bernstein, *The Impact of Market Size on the Assembly Cost of Local Television News,* 19 MASS COMM. REV. 41 (1992); Stephen Lacy et al., *The Relationship Among Economic, Newsroom and Content Variables: A Path Analysis,* 2 J. MEDIA ECON. 51 (1989); Dominic L. Lasorsa, *Effects of Newspaper Competition on Public Opinion Diversity,* 68 JOURNALISM Q. 38 (1991); Jan P. Vermeer, *Multiple Newspapers and Electoral Competition: A County-Level Analysis,* 72 JOURNALISM & MASS COMM. Q. 98, 104 (1995).

21. *See* Benjamin J. Bates, *Station Trafficking in Radio: The Impact of Deregulation,* 37 J. BROAD. & ELEC. MEDIA 21 (1993); Julian L. Simon et al., *The Price Effects of Monopolistic Ownership in Newspapers,* 31 ANTITRUST BULL. 113 (1986); Michael O. Wirth & James A. Wollert, *The Effects of Market Structure on Television News Pricing,* 28 J. BROAD. 215 (1984).

22. *See* Benkler, *supra* note 17; Brown, *supra* note 17.

cally and culturally relevant diversity in programming,[23] reduces public interest in culturally diverse programming,[24] news and public affairs programming,[25] and compromises the quality of the programming.[26] Technological answers do not alter the underlying economic relationships[27] and the mass-market audience orientation of the business takes precedence.[28]

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23. *See* BAGDIKIAN, *supra* note 19, at 182–88; Raymond L. Carroll & C.A. Tuggle, *The World Outside: Local TV News Treatment of Imported News,* 74 JOURNALISM AND MASS COMM. Q 123 (1997); P. Clarke & E. Fredin, *Newspapers, Television, and Political Reasoning,* 42 PUB. OPINION Q. 143 (1978); D.T. Cundy, *Political Commercials and Candidate Image, in* NEW PERSPECTIVES ON POLITICAL ADVERTISING (Lynda Lee Kaid et al. eds., 1986); Garrett J. O'Keefe, *Political Malaise and Reliance on the Media,* 57 JOURNALISM Q. 122 (1980); Michael Pfau, *A Channel Approach to Television Influence,* 34 J. BROAD. & ELEC. MEDIA 195 (1990); John P. Robinson & Dennis K. Davis, *Television News and the Informed Public: An Information Processing Approach,* 40 J. COMM. 106 (1990); Karen L. Slattery et al., *The Expression of Localism: Local TV News Coverage in the New Video Marketplace,* 40 J. BROAD. & ELEC. MEDIA 403 (1996); Paul S. Voakes et al., *Diversity in the News: A Conceptual and Methodological Framework,* 73 JOURNALISM & MASS COMM. Q. 582 (1996).

24. *See* Patricia Aufderheide, *After the Fairness Doctrine: Controversial Broadcast Programming and the Public Interest,* 40 J. COMM. 47, 50–51 (1990); James M. Bernstein & Stephen Lacy, *Contextual Coverage of Government by Local Television News,* 69 JOURNALISM Q. 329 (1992); Raymond L. Carroll, *Market Size and TV News Values,* 66 JOURNALISM Q. 49 (1989); Michael L. McKean & Vernon A. Stone, *Why Stations Don't Do News,* 45 COMMUNICATOR 23, 24 (1991); David K. Scott & Robert H. Gobetz, *Hard News/Soft News Content of the National Broadcast Networks: 1972–1987,* 69 JOURNALISM Q. 406 (1992); Karen L. Slattery & Ernest A. Hakanen, *Sensationalism Versus Public Affairs Content of Local TV News: Pennsylvania Revisited,* 38 J. BROAD. & ELEC. MEDIA 205 (1994); Vernon A. Stone, *Deregulation Felt Mainly in Large-Market Radio and Independent TV,* 41 COMMUNICATOR 9, 12 (1987); Vernon A. Stone, *New Staffs Change Little in Radio, Take Cuts in Major Markets TV,* 42 COMMUNICATOR 30 (1988).

25. *See* BAGDIKIAN, *supra* note 19, at 220–21; DAVID L. PALETZ & ROBERT M. ENTMAN, MEDIA, POWER, POLITICS (1981); NEIL POSTMAN, AMUSING OURSELVES TO DEATH: PUBLIC DISCOURSE IN THE AGE OF SHOW BUSINESS (1985); Stephen Lacy, *The Financial Commitment Approaches to News Media Competition,* 5 J. MEDIA ECON. 5 (1992).

26. *See* John C. Busterna, *Television Station Ownership Effects on Programming and Idea Diversity: Baseline Data,* 26 J. MEDIA ECON. 63 (1988); David C. Coulson & Stephen Lacy, *Journalists' Perceptions of How Newspaper and Broadcast News Competition Affects Newspaper Content,* 73 JOURNALISM & MASS COMM. Q. 354 (1996); Jonathan Kwitny, *The High Cost of High Profits,* 12 WASH. JOURNALISM REV. 19 (1990); Barry R. Litman & Janet Bridges, *An Economic Analysis of Daily Newspaper Performance,* 7 NEWSPAPER RES. J. 9 (1986); Barry R. Litman, *The Television Networks, Competition and Program Diversity,* 23 J. BROAD. 393 (1979); Angela Powers, *Competition, Conduct, and Ratings in Local Television News: Applying the Industrial Organization Model,* 6 J. MEDIA ECON. 37 (1993).

27. *See* DON R. LE DUC, BEYOND BROADCASTING (1987); Allard S. De Jong & Benjamin J. Bates, *Channel Diversity in Cable Television,* 35 J. BROAD. & ELEC.

2. Application to Broadband Internet

Almost three-quarters of a century of public policy concerning the mass media has been predicated on the recognition of the uniquely powerful impact of that media. Broadband internet services take the role of the broadcast media to a higher level, adding interactivity to immense reach,[29] real time immediacy,[30] and visual impact.[31] Because it is such a potent method of information dissemination, economic control over mass media can result in excessive political power.[32]

Some cities, like Portland, have not sought to impose full common carriage obligations on broadband internet services. Rather, they are seeking a policy of non-discriminatory access. Cable companies would be able to set reasonable terms and conditions in private negotiations, as long as the same terms and conditions they grant to their affiliates are available to non-affiliated internet service providers. The argument has

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MEDIA 159 (1991); August E. Grant, *The Promise Fulfilled? An Empirical Analysis of Program Diversity on Television*, 7 J. MEDIA ECON. 51 (1994); Richard Lubunski, *The First Amendment at the Crossroads: Free Expression and New Media Technology*, 2 COMM. L. & POL'Y 165 (1997); Norman M. Sinel et al., *Current Issues in Cable Television: A Re-Balancing to Protect the Consumer*, 8 CARDOZO ARTS & ENT. L.J. 387 (1990); Thomas Streeter, *The Cable Fable Revisited: Discourse, Policy, and the Making of Cable Television*, 4 CRITICAL STUD. IN MASS COMM. 174 (1987); Robert H. Wicks & Montague Kern, *Factors Influencing Decisions by Local Television News Directors to Develop New Reporting Strategies During the 1992 Political Campaign*, 22 COMM. RES. 237 (1995); Brian Winston, *Rejecting the Jehovah's Witness Gambit*, 18 INTERMEDIA 21 (1990).

28. *See* Kenneth C. Loudon, *Promise Versus Performance of Cable*, *in* WIRED CITIES: SHAPING THE FUTURE OF COMMUNICATIONS 27 (William H. Dutton et al. eds., 1987).

29. *See* BAGDIKIAN, *supra* note 19, at 182.

30. *See* Gigi Sohn & Andrew J. Schwartzman, *Broadcast Licensees and Localism: At Home in the "Communications Revolution"*, 47 FED. COMM. L.J. 383 (1994).

31. *See* Kathryn Olson, *Exploiting the Tension Between the New Media's "Objective" and Adversarial Roles: The Role Imbalance Attack and Its Use of the Implied Audience*, 42 COMM. Q. 36 (1994); Alan G. Stavitsky, *The Changing Conception of Localism in U.S. Public Radio*, 38 J. BROAD. & ELEC. MEDIA 19 (1994).

32. In a 1995 article, Philo Washburn illustrated the relationship between economics and politics as follows: "Widespread belief in economic competition as the foundation for a genuine 'marketplace of ideas' was exploited effectively by the Reagan administration and by powerful corporations such as AT&T, ITT, General Electric, CBS, Capital Cities, and IBM to eliminate much of the regulatory structure of America's communications industry." Philo C. Washburn, *Top of the Hour Radio Newscasts and the Public Interest*, 39 J. BROAD. & ELEC. MEDIA 73, 75 (1995).

turned on an essential facilities discussion of cable-based broadband service.[33]

The essential facilities doctrine is well grounded in antitrust analysis.[34] The antitrust principle is simple. AT&T gains an unfair advantage in the ISP market for its affiliate Excite@Home ("@Home") by denying competing ISPs access to a resource—cable transmission—that is necessary to compete in the market and which cannot be reasonably reproduced by the competitor. The purpose is to ensure that consumers have a choice of suppliers of programming by ensuring that competitors have an opportunity to access the transmission network.

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33. *See* AT&T v. City of Portland, No. CV99-65-PA (D. Or. June 7, 1999). The Judge in the Portland case summarized this approach as follows:

> The Commission found that @Home had no viable competitor in the local retail market for residential Internet services. The Commission recommended that the City and County regulate AT&T's cable modem platform as an "essential facility" to protect competition. "Essential facility" is a term of art in antitrust law, meaning a facility that competitors cannot practically duplicate and that is otherwise unavailable. A business that controls an essential facility may not exclude competitors without a "legitimate business reason for refusal."
>
> The Commission intended that the open access requirement allow customers of unaffiliated ISPs to "obtain direct access to their [ISP] of choice without having to pay the full @Home retail rate." Unaffiliated ISPs would not get a free ride on the cable modem platform. They would pay AT&T for access.

Id. at 4–5 (internal citations omitted).

34. As the citations in the Portland ruling indicate, the essential facilities cases are quite recent. In fact, the idea of essential facilities in communications networks and high technology industries has received a great deal of attention, in part as a result of the Microsoft antitrust case, although a long line of cases affecting electronic networks exists. *See* Thomas A. Piraino, Jr., *An Antitrust Remedy for Monopoly Leveraging by Electronic Networks*, 93 NW. U. L. REV. 1 (1998). Piraino explained:

> The essential facilities doctrine, which was first adopted by the Supreme Court in 1912, recognizes that a monopolist can gain an unfair competitive advantage in a related market by denying its competitors the right to access a resource required to engage in effective competition in that market. Indeed, one of Congress's principle goals when it enacted the Sherman Act in 1890 was to prevent the Standard Oil Trust from denying other oil refiners the right to use the pipelines and rail transportation facilities necessary to bring their products to market. . . .
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> . . . .
>
> . . . By requiring open access to other networks that constitute the only means of entering a particular market, the courts and antitrust enforcement agencies can insure that consumers retain the benefits of competition in those industries as well.

Id.

Programs win or lose in the marketplace based on their merits as programs, not based on their preferential access to an essential input.

While there certainly is merit to these arguments under the antitrust laws, there are other bases for requiring open access—these exist under the communications laws and may even be more compelling. Lemley and Lessig argue that open access is "short hand for a set of objectives."[35] The digital subscriber line ("DSL") objective could serve as a model for cable-based broadband objectives, and therefore, the FCC only needs to concentrate on providing customers with choices in order to preserve competition. For example, the FCC could impose restrictions on the AT&T/MediaOne merger without even addressing the regulatory scheme set forth in sections 251 and 252 of the Telecommunications Act of 1996.[36]

For well over a decade, the FCC played an active role in keeping the information superhighway open under the Act, not under the antitrust laws.[37] It has reversed course with respect

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35. Lemley & Lessig, *supra* note 11, ¶¶ 84, 85.

36. Pub. L. 104-104, §§ 251, 252, 110 Stat. 56, 71 (codified as amended at 47 U.S.C. §§ 251, 252 (Supp. IV 1998)). Further, Lemley and Lessig describe the conditions that the FCC could place on AT&T/MediaOne:

> Interconnection to a cable modem, even by multiple ISPs, involves nothing more than a standard Internet connection between an ISP and a router. It does not require collocation of equipment, nor would open access conditions require AT&T/MediaOne to honor requests for interconnection at special locations within its network. So long as unaffiliated ISPs are allowed to interconnect at the same place, and at the same price, as unaffiliated ISPs, the End-to-End principle will not be compromised.

Lemley & Lessig, *supra* note 11, ¶¶ 84, 85.

37. *See* Bar et al., *supra* note 14. The authors further explained:

> 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

to cable-based broadband internet,[38] and it has declared a policy of inaction with respect to cable-based internet service. Doing nothing, however, allows cable-based broadband service to be deployed and operated on a closed, proprietary basis.[39]

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.

Id. at 1–2.

38. *See id.* The article further illustrates:

As cable moves from "broadcast" to "broadband," cable infrastructure becomes a key element in digital video, data, and voice communications and all the issues about network openness return to the forefront. Unfortunately, in a misreading of its own history the FCC may abandon its successful policy just as a new generation of services, spurred by mass-deployment of broadband Internet services, are defining the future of networking and the electronic economy. After a series of courageous decisions in the 1990s to hold its course on data networking, even after the economic stakes grew bigger, the FCC is now starting to confuse the instruments of its successful policy with the logic of its strategy. That strategy, again, was to maintain network openness by making key network components available to all, on cost-effective terms, so as to allow competition and innovation.

. . . .

. . . The question is obvious. The successful policy trend of the past thirty years has been to force competition and assure open access to the incumbent infrastructure. Why, now, reverse that successful policy?

Id. at 2, 6.

39. *See* Geller, *supra* note 15. The cable TV model, which is based on private carriage, is quite different than the telecommunications model. Closed system operators may choose who has access to the "pipe." Unaffiliated content providers have no way to market directly to the public. In order to be seen, they must negotiate with the owner of the transmission system who sets the terms and conditions of interconnection without open access obligations. *See id.*

Geller describes the cable approach as follows:

Cable is also initiating a program for broadband access to the Internet through cable modems (called @Home or Road Runner). But unlike the telco situation, cable ties its broadband transmission service together with taking cable as an ISP—that is, it bundles the transmission service with the information service.

Although the FCC has not decided how the service should be treated legally, it has aggressively taken the position that local cable franchise authorities should not require it to be operated on an open basis. The consequences of this decision are huge. Doing nothing does a great deal of harm.[40]

Further, it will not permit any unbundling so that the transmission service is not available to rival ISPs. It asserts that the bundle is not a telecom service but simply another cable service.

Cable, which has a monopoly today in multichannel video distribution, is seeking to gain control over cable subscribers' use of the Internet.

Through its bundling requirement and refusal to allow rivals access to its broadband transmission facilities, it becomes the Internet gatekeeper for all those who sign up to obtain cable broadband access.

If this is just another cable service, the cable operator can decide what information should come to the subscriber. It can refuse to allow other information services on its own cable channels.

Id. at 12.

Morgan Stanley Dean Witter draws a sharp distinction between the treatment of cable and that of common carriage:

In the 1984 Cable Act, cable services were able to avoid common carrier regulation for two reasons: first, cable service would involve only one-way transmission; and second, its content would be similar to that provided by broadcast television stations in over-the-air transmission. This preserves cable's status as a contract carrier. Contract carriers are not constrained by the requirements of common carriage and have no regulatory mandate to serve everyone on the same terms. Therefore, they have more flexibility to price discriminate than a common carrier, be selective about their customers, and benefit from the management of competition among their customers.

MORGAN STANLEY, *supra* note 12, at 177. "However, due to the variety of new services that the cable industry is rolling out (including high-speed data services and telephony), cable systems potentially could be viewed as common carriers." *Id.*

40. *See* Bar et al., *supra* note 14, demonstrating the harm of inaction:

FCC Chairman William Kennard later explained that his agency's refusal to intervene was inspired by a "high-tech Hippocratic Oath" to "do no harm." While the FCC may believe such inaction simply continues its "unregulation" of the Internet, we should be clear that non-intervention constitutes instead a fundamental policy reversal. For thirty years the consistent FCC policy has been to foster competition, in particular cost-oriented access to essential local network facilities, and to promote an open network architecture. Far from non-intervention, this has required sustained policy intervention to keep the US communication infrastructure open. Having misread its own history, the FCC now risks misinterpreting Hippocrates: "First, do no harm" is not quite the same as "First, do nothing" and in this particular case, doing nothing is doing harm. The FCC's decision not to open a formal proceeding on access to high speed Internet service constitutes in effect a decision to permit access foreclosure. As such, it does not continue, but reverses 30 years of consistent policy direction.

III. ECONOMIC INTERESTS AND THE BEHAVIOR OF MONOPOLISTS

One of the central issues in the debate over open access is whether vertically integrated companies will use their leverage over facilities to give the affiliated ISP an advantage in selling to the public. Although most cable system owners have signed exclusive contracts with broadband ISPs, some have said they would not renew those contracts. Some analysts argue that it would not be in their economic interests to keep their systems

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> The decision to permit closed access is a decision to limit competition, to curtail experimentation and innovation in the Internet. It comes precisely at the wrong time, just as broadband services are beginning to emerge and this new segment of the economy is starting to grow. Unless care is taken to assure that competition in Internet service continues, the current conditions of competition and openness will be undermined as we enter the broadband phase of Internet evolution. And, collaterally, this will erode the ability of the United States to lead global policy on the next generation of broadband Internet. Any reversal of a successful and established policy should at least require justification.
>
> The policy stakes are much larger than the competitive fates of particular groups of ISPs. What is threatened, if open competition is not maintained, is the continuing evolution of the Internet, the innovation in and the evolution of electronic network-based business, and therefore the competitive development of the network economy as a whole. Closed access would undercut the current dynamic of expansion and innovation driven by Internet users and network providers. Since damage to the dynamic of the Internet evolution could cause great economic harm, policy should start from a presumption that competition in access and throughout the Internet system must be maintained. We are not talking here about regulation of the Internet nor of dealings among the ISPs. Rather, we are talking about assuring competition for access to the Internet over local networks, broadband as well as narrowband. Open access should be guaranteed unless it can be definitely demonstrated that competition in access, and consequently throughout the Internet system, can be maintained.
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> The relevant form of open access is access to the "last mile", the connection between the home and the closest network node, so that network users have a choice and so that Internet Service Providers can offer high-speed services to their customers, regardless of who owns that "last mile". Open access must be provided for each additional component of the communications and data network system, as it has been required of the communications system to date. The government should clearly establish the principle that if market power exists, whatever becomes the natural channel of Internet access will have to be configured to allow competition. Openness should depend on clear policy principle, not on corporate discretion.

Id. at 203.

closed to unaffiliated ISPs, but the vertically integrated firms have hesitated to commit to or define nondiscriminatory access.

A. Theory versus Reality

The FCC has claimed that even though cable systems have the legal right to operate broadband internet services on a closed, proprietary basis, it does not expect them actually to be operated on this basis.[41] It says that the market in high-speed internet facilities will be sufficiently competitive to force them to open up their networks—even though they are not open today. Owners of facilities will be driven by their economic self-interest to let people speak and be heard and to allow content providers to move freely across their proprietary roads.

As a general proposition, the author of *Code* suggests this theory is incorrect and describes AT&T as not likely to make the concession necessary to open its network. The book argues that, in real space and cyberspace, law and architecture are ex-

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41. *See* Lemley & Lessig, *supra* note 11, ¶ 78. The FCC has not conducted a proceeding on the matter, which is a source of frustration for many of the local government entities involved in seeking to ensure open access. Instead, the FCC has relied on a series of statements and staff analyses by the Chairman and the staff of the Commission. The only context in which a policy has been considered in the broad sense, section 706 proceeding *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans* (1998), leads to a striking contradiction.

Lemley and Lessig point out that the justification for not requiring open access to cable cannot simultaneously be the justification for requiring open access to DSL services. *See* Lemley & Lessig, *supra* note 11, ¶ 83.

> This is especially true for the FCC, because the FCC mandates that DSL offer broadband under what is described as an "open access" model. How it is possible that there is no concept of "open access" in the context of cable, but a concept of open access in the context of DSL, frankly baffles us. Certainly if the providers of DSL refused customers the choice of ISPs, and then cited the Bureau's findings as a defense to its actions, no court would recognize the lack of a definition as any excuse.
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> Indeed, AT&T has argued vigorously in favor of imposing open access requirements on local telephone providers. See Reply Comments of AT&T Corp. (CC Docket No. 98-147), filed October 16, 1998, at 37: "the most important action the Commission can take to speed deployment of advanced telecommunications services is to vigorously implement and enforce the market-opening obligations that Section 251 imposes on incumbent LECs." Why deployment is encouraged by open access in one context, but closed access in another, is unclear to us.

Id. at 83 & n.11.

tremely potent forces.[42] If these both function to limit competition, restrict freedom of expression, and retard creativity and innovation, then the chances that the market will do otherwise are severely reduced. In comments to the FCC, Lemley and Lessig have made the obvious, but more mundane, point that there is no real reason to believe that the market will force network owners to open up.[43] Given the immense effort that AT&T has expended to defend the right to keep its network closed, such an outcome is hard to envision.

In response to this charge, comments were filed at the FCC arguing Lemley and Lessig did not prove the empirical case that AT&T has or will have market power.[44] In addition, James Speta, author of one such comment, argued that even if AT&T had the market power, it was not demonstrated that it would use the power to harm competition, Speta proceeded to present a *theoretical* argument about why a facilities monopolist would not abuse its market power in the vertically related content market.

The argument that "AT&T has not been shown to be a monopolist"[45] is inconsistent with the empirical facts. It has been demonstrated that AT&T has market power, in both the broadband facilities market and the broadband content market,

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42. *See generally* LESSIG, *supra* note 1, at 85–99.

43. *See* Lemley & Lessig, *supra* note 11, ¶ 87. The authors further explain:

> The naïve assumption that AT&T will voluntarily open the market to competition flies in the face of AT&T's established policy, compounded by the consolidation that is occurring in the broadband market. The Bureau does not explain exactly what "market forces" will compel AT&T to open this market. How exactly will customers of a certified natural monopoly exercise the power to "vote with their wallets?" The only plausible disciplining effect the market might have on AT&T's closed access policy is to slow the rate of subscription to cable modem service, because the bundled service AT&T provides is less attractive than an open alternative. But there is no reason to believe that AT&T, lacking effective competitors in the broadband business in any given city, will recognize or respond to this market threat. Further, if the Bureau's hope is that AT&T will be forced into open access because consumers will delay their switch to broadband in boycott of its closed access policy, it is a supreme piece of irony to suggest that it is the threat of *regulation* that will delay the deployment of broadband technology.

Id. (emphasis in original).

44. *See* Written Ex Parte of Assistant Professor James B. Speta, Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T 8–12 (FCC Dec. 14, 1999) (CS No. 99-251) [hereinafter Speta].

45. *Id.* at 6.

by every conventional measure of structure and conduct.[46] This power has not simply been assumed. It is only by misdefining the market to include narrowband that you can argue that AT&T has no market power.

The claims that "[m]onopolists generally have no incentive to retard innovation in adjacent markets"[47] and that "AT&T's acquisition of cable systems does not create incentives for anti-competitive behavior"[48] are inconsistent with empirically observable behavior. It is factually incorrect to say that ISPs and content services are no threat to AT&T's monopoly over cable, when the first thing the cable monopolists do is disable streaming video to prevent it from competing with cable services. The cable guys know this and say it all the time. AT&T owns a great deal of programming, which it protects by this exclusion. Moreover, AT&T's market power is exercised to keep independent ISPs from delivering other high-speed services to consumers and to prevent consumers from using the cable-based internet in ways that @Home does not like. Those companies impacted by these exclusionary practices believe there are business reasons for these decisions.

Thus, we have direct empirical evidence that market power exists and is being exercised in the broadband cable market. Despite this evidence, we are given a series of theories of contestability[49] and claims that the "network nature of broadband internet access will provide incentives for openness, not for anticompetitive behavior."[50] We are told that the presumption should favor the monopolist, that the "general presumption ought to be that that monopolists will not be assumed to act anticompetitively in adjacent markets."[51] This presumption should be rejected.

The presumption in media and communications networks should go the other way. Congress has repeatedly affirmed a heightened concern about excessive economic power in these industries. As recently as two years ago, the Federal Trade Commission ("FTC") acted to prevent a merger that looked exactly like the AT&T/MediaOne merger—it forced TCI out of ac-

46. *See Breaking the Rules*, *supra* note 8, at 6.
47. *Id.* at 8.
48. *Id.* at 14.
49. *See* Speta, *supra* note 44, at 7.
50. *Id.* at 17.
51. *Id.* at 11.

tive ownership of Time Warner as part of the Time Warner/Turner merger—on the grounds that the vertical tie between distributions and programming was a threat to the public interest.

Finally, the claim that AT&T's willingness to negotiate with multiple ISPs proves that its economic interest will lead it to openness is incorrect. AT&T did not make this offer until forced to do so by politics, not economics. AT&T was resolute in defending its market power until it began to realize that it might not get the unregulated monopoly it wanted. It was asked by the FCC to negotiate. It is now seeking to make the minimum political concessions that will enable it to preserve as much of its market power as it can. Further, as shown in this paper, what AT&T has offered will not achieve open access in a meaningful economic sense.

B. The Microsoft Analogy

The fact that Lemley, Lessig, and Speta refer to the Microsoft case to inform the discussion of broadband access policy is interesting and useful for several reasons. The claim that the Microsoft case "points in the opposite direction"[52] ignores the facts in the case. It certainly does not show that a monopolist in one market has no interest in leveraging into another market.

Contestability and network externality theories repeatedly have been used to justify monopolies, which in the case of AT&T and Microsoft have resulted in massive consumer harm and decade-long antitrust actions. The Microsoft case proves that, despite the nature of its industry, which had what economists incorrectly thought was the strongest claim that positive network externalities create a need for beneficent natural monopolies, its practices were more like those of a plain old abusive monopoly.

The Microsoft monopoly over the Windows operating system is being leveraged, just as the monopoly over cable facilities is being leveraged, into related markets.[53] Microsoft en-

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52. *Id.* at 15.

53. *See* CONSUMER FEDERATION OF AMERICA, THE CONSUMER CASE AGAINST MICROSOFT (1998); CONSUMER FEDERATION OF AMERICA, THE CONSUMER HARM CAUSED BY THE MICROSOFT MONOPOLY: THE FACTS SPEAK FOR THEMSELVES AND THEY CALL FOR A STERN REMEDY (1999); CONSUMER

gages in both protecting and leveraging its monopoly. The value of the desktop and other applications markets into which Microsoft has leveraged its Windows monopoly is now as large as the operating systems market. The states wanted to litigate this issue as well. As shown by Judge Thomas Penfield Jackson in his discussion of Microsoft's attack on office suites (SmartSuite) and video applications (QuickTime).[54] The Department of Justice did not want to litigate practices in that market, because it felt the operating system market case could be won resoundingly. It made sense to attack the heart of the monopoly, the operating system, because an effective remedy would end the ability to leverage other markets.

The contracts AT&T wants to impose on independent ISPs look like the contracts Microsoft imposed on original equipment manufacturers ("OEMs") before the trial, as described in Table 2. AT&T demands the right to set the terms and conditions of "pricing, billing, customer relationship, design of start page, degree of customization, speed, system usage, caching services, co-branding, ancillary services, advertising and e-commerce revenues, and infrastructure costs."[55]

This is as clear an indication of leverage as one could hope for. If AT&T did not have market power over facilities, it would not be able to dictate the fundamental business practices in a separate market. Table 2 identifies four broad categories of anticompetitive behavior identified in the Microsoft and AT&T broadband business practices. The discrimination practices will be discussed in detail in the remainder of the article.

FEDERATION OF AMERICA, MONOPOLY POWER, ANTICOMPETITIVE BUSINESS PRACTICES AND CONSUMER HARM IN THE MICROSOFT CASE (1999).

54. *See* United States v. Microsoft Corp., 65 F. Supp. 2d 1, 27, 30 (D.D.C. 1999).

55. Letter from David N. Baker, Vice President, Legal and Regulatory Affairs, Mindspring Enterprises, James W. Cicconi, General Counsel & Executive Vice President, AT&T Corp., Kenneth S. Fellman, Chairman, FCC Local & State Government Advisory Committee, to William E. Kennard, Chairman, FCC (Dec. 6, 1999) (on file with author) [hereinafter Mindspring Letter 1].

Table 2. Anticompetitive Practices

ANTICOMPETITIVE BEHAVIOR	MICROSOFT EXAMPLE	AT&T BROADBAND EXAMPLE
Stamp out competition for the core monopoly	Suppress Middleware; "Jolt" competitors by degrading quality of interoperability	Ban Video Streaming; Restrictions on backbone, caching, precedence, and committed access rate
Control the flow of innovation around the monopoly	Quicktime, Realnetworks; Intel NSP	Limit up stream, ban servers, and LANS
Maximize profits in adjacent markets	Capture the desktop bundling price squeeze	Bundle cable, leverage information price squeeze
Control the customer	Boot screen, foreclose distribution	Start page, restrict marketing

The references to the Microsoft case are instructive in another regard. The problem of addressing market power after it has become deeply entrenched in this industry is particularly difficult for the very reasons outlined in this paper. If the FCC fails to impose open access under the Telecommunications Act, we end up with the ten year antitrust saga of the *United States v. Microsoft Corp.*[56] Lemley and Lessig have made the point that the government can pursue open access through antitrust litigation, which they consider "extremely inefficient."[57] One of the costs of antitrust litigation is uncertainty: "To say there is no reason to use a seatbelt because there is always the care of an emergency room is to miss the extraordinary costs of any ex post remedy."[58] Further, Lemley and Lessig argue that the government is ill-positioned to undo established monopolies, and that the costs would be prohibitive.[59]

Of special concern is the potential harm to the vibrant ISP market, harm which cannot be easily repaired. Lemley and

56. 65 F. Supp. 2d 1 (D.D.C. 1999).
57. *See* Lemley & Lessig, *supra* note 11, ¶ 102.
58. *Id.*
59. *See id.*

Lessig caution that competition will not "magically" reappear: "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."[60]

Lemley and Lessig conclude that the prudent course is to adopt an open access policy at the outset.

> The way to reduce uncertainty, and promote broadband adoption, would be for the FCC to simply state a clear policy—that cable must be architected to facilitate open access to cable customers . . . . Just as the FTC has required online merchants to deal with privacy, or face regulation, so too could the FCC require access providers with significant market power to provide open access, or face regulation if they don't. The policy—open access—should be clear, even if cable companies control how it is implemented in the first instance.[61]

In this situation, a risk analysis is appropriate. Policymakers must choose either an open system or a closed one. To decide, they should make a risk assessment and ask: "What are the consequences of making a mistake?" From the point of view of the residential consumer, that risk assessment overwhelmingly leans in favor of open access.

Suppose policymakers require open access when it is not necessary because, as the argument goes, there will be many alternative broadband pipes into the home. The damage caused by requiring open access might slow down cable deployment a little, because AT&T says it will not deploy as quickly if it must hold its system open to unaffiliated ISPs on non-discriminatory terms. If we believe AT&T's arguments, DSL will go a little slower, because it will not be pushed as hard by cable. Satellite and wireless will not be much affected because they are far behind cable and DSL. In the end, we get a little less broadband and a little less competition in the near term, but all networks are open.

Now flip this around. Suppose policymakers allow closed access, the plethora of alternatives does not develop, and AT&T quickly acquires substantial market power. The consequences

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60. *Id.* ¶ 68.
61. *Id.* ¶ 90.

from the point of view of average residential consumers are much more severe. The system will be closed and remain closed for a significant period of time. Policymakers should not kid themselves into thinking that two years from now, if AT&T succeeds with its closed, proprietary business model, it will just roll over and say, "Okay, we have market power, now we will open our network." The struggle for open access will be much harder after AT&T has captured the lion's share of a ten- or fifteen-million customer market for broadband services based on business relationships that require exclusivity, and after it has spent two years deploying a network architecture that does not accommodate multiple ISPs. AT&T will claim that consumers are better off with everything in bundles that are impossible to take apart, because access and content will be integrated into one product.

A prospect of entrenched market power defending its advantage is one consumers know all too well from the cable industry—the old AT&T monopoly and the Microsoft case. Even if regulators take the unusual step of trying to act quickly when they see market power, the administrative, legal, political, and technical barriers to open access that AT&T will have built into the network would take years to clear away.

AT&T certainly will not expend any effort to make nondiscriminatory access work better unless it is ordered to do so. A few years from now, AT&T lawyers actually will be able to point to property whose value is being diminished by requiring open access. AT&T technicians will demonstrate that it is technologically difficult to provide open access because they will have spent years designing and deploying a closed system. AT&T economists will swear that an eighty or ninety percent market share does not convey market power in this industry.

C. Private Negations Haved Failed to Set Public Policy

In response to a growing number of local cable franchising authorities that have required AT&T to provide nondiscriminatory access to the cable-based broadband internet, AT&T declared it does not intend to use exclusionary access in the future. It has offered to provide access to its cable systems to independent ISPs on very restrictive conditions on a "voluntary" basis after the exclusive contracts that its own cable systems signed with @Home expire.

AT&T has made this offer in a number of venues with increasing publicity over time. The most recent instance attracted a great deal of attention because it was memorialized in a highly publicized "Joint Letter" to Chairman William Kennard of the FCC.[62] AT&T's spin on the Joint Letter was that because it had made some concessions and is willing to negotiate other issues, there was no longer any need for an open access requirement if ever there was a need.

By any reasonable standard, however, and notwithstanding a vigorous public relations campaign by AT&T and its allies, the Joint Letter represents very little progress toward real open access. Three of the six parties who entered the negotiations removed themselves. This included @Home (the ISP holding most of the exclusionary contracts and in which AT&T owns a majority interest), Andrew Jay Schwartzman (President of the Media Access Project, a public interest law firm), and representatives of the City of Atlanta.

The inadequacies of AT&T's "voluntary" plan to negotiate with multiple ISPs for the sale of access to its currently closed, proprietary broadband—"one click access" to the internet—were readily apparent. There are four different letters at the FCC concerning this episode. Schwartzman offered a thorough critique of open access as defined in the Joint Letter, and two of the signatories have now written separate letters clarifying what they think happened, or more appropriately did not happen, at these negotiations.

Although Mindspring—the independent ISP that signed the letter—was encouraged by AT&T's willingness to begin to discuss open access, Mindspring also stated that the deal offered by AT&T was bad public policy for several reasons: AT&T's offer was not sufficiently procompetitive;[63] independent ISPs should not be required to wait until the exclusionary con-

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62. *See* Mindspring Letter 1, *supra* note 55.

63. *See* Letter from Dave Baker, Vice President, Legal and Regulatory Affairs, Mindspring Enterprises, to William E. Kennard, Chairman, FCC (Dec. 6, 1999) (on file with author) [hereinafter Mindspring Letter 2].

> As an example, although Digital Subscriber Line (DSL) service over phone lines is already an open platform, the Commission just recently took further steps [to] help ensure that data CLEC's can deploy these lines on an equal footing with incumbents, for the benefit of consumers. We believe the Commission should apply this same pro-competitive mindset to policy making regarding a [sic] cable lines.
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> Id.

tracts expire to offer access to consumers;[64] AT&T still retains the power to discriminate;[65] and only public policy action, not private negotiations, can ensure nondiscriminatory access to cable-based broadband facilities.[66] Schwartzman echoed these concerns and added others: the potential for technical discrimination;[67] business leverage that AT&T held over non-affiliated ISPs;[68] and the impact of those limitation on the ability of ISPs to innovate and compete.[69]

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64. *See* Mindspring Letter 2, *supra* note 63.

> Open access should become a reality sooner rather than later. This benefit to consumers should not be delayed. We continue to challenge the validity of these exclusive contracts. They should not be allowed to delay the implementation of open access by even a single day.

Id.

65. *See id.*

> [AT&T] could still impose constraints such as limitations on video streaming or IP telephony on all users of their system. While there are no doubt certain engineering constraints inherent in cable systems, these should be approached as challenges to be overcome, not limitations to be imposed on high speed internet access over cable. ISP's should be able to offer, and consumers should be able to enjoy, the full functionality and promise of the Internet.

Id.

66. *See id.*

> We hope that the Commission and other federal policy makers will grasp the opportunity that this initial agreement creates because only clear and unambiguous federal policy can make the promise of this first step real, enforceable and timely. Otherwise, today's agreement may not benefit consumers for years to come. We again respectfully request that the FCC initiate a proceeding to address these issues on a comprehensive basis. In setting out public policy principles, the FCC would establish the "rules of the road" that would help ensure fair, workable and enforceable agreements between parties.

Id.

67. *See* Letter from Andrew J. Schwartzman, President & CEO, Media Access Project, to William E. Kennard, Chairman, FCC (Dec. 6, 1999) [hereinafter Schwartzman Letter].

> AT&T was unwilling to discuss, much less consider, several criteria which are essential to insuring that cable operators will not abuse their monopoly position to favor certain content and certain business partners. This inhibits the Internet's current role as a renewable source of constant innovation, economic growth and free expression.

Id.

68. *See id.* "AT&T has been unwilling to make a written commitment that customers can purchase Internet access at commercially reasonable rates without having to buy a bundled 'package.'" *Id.* at 4.

69. *See id.*

> Requiring ISP's to use AT&T transport facilities permits content-based discrimination in favor of preferred content providers and com-

AT&T intends not only to control the marketing opportunity, but it intends to offer it to a small number of the most popular ISPs. As AT&T CEO Michael Armstrong put it:

> We are motivated by self interest and greed just like they are. And so if I go down to, I don't know, Austin—and I'm making this up—there's a UnviersityofTexasnet.com I.S.P. that really has captured a good part of that market, and I really wish to sell as much of my data services over this infrastructure as I can, then having that very popular I.S.P. only infrastructure is the way that I can gain new subscribers.[70]

Far from ending the debate over open access, these private negotiations ensure that the debate will proceed in the public arena on a much more substantive level. Because months of private negotiations under the auspices of the FCC and the intense public scrutiny of the issue stimulated by cable franchise transfer fights across the country could produce only very meager results, the chances that private negotiations without an obligation to provide nondiscriminatory access will succeed are slim indeed.

In fact, the local government representative who signed the Joint Letter made it clear that his objective was to work out a definition of open access that could be used by local governments if they so desired. He did not see these negotiations as an effort to arrive at a commercial substitute for public policy.[71]

> mercial partners, and threatens to undermine the most valuable characteristics of the Internet: low entry barriers for nascent entrepreneurs, free expression and serendipitous innovation.

Id.

70. Seth Schiesel, *For AT&T's Chief, a Redefined Cable Landscape*, N.Y. TIMES, Jan. 16, 2000, § 3, at 1.

71. *See* Letter from Kenneth S. Fellman, Chairman, FCC Local & State Gov't Advisory Committee, to Members of NATOA (Dec. 7, 1999) (on file with author).

> We viewed our role as ensuring that the result of the discussions would not negatively impact the authority of local or state governments. For example, at one point in the discussions, there was a suggestion that the definition should be limited solely to "commercial" arrangements, and that the cable industry would not expect to see that definition used in a franchise renewal or transfer. This was unacceptable, and we expressed the position that we were not comfortable participating in the discussion if there was some limitation on how the definition could be used. In other words, whether we agree or disagree with the policy of a state or local government requiring open access, should that government choose

The AOL/Time Warner merger only makes the need for a clear public policy obligation more pressing. AOL had been a vigorous advocate of open access. Some were depending on AOL might have used its strong position in the narrowband internet market to propel DSL technology, which is behind cable technology and is considered less attractive for residential service, into a reasonably competitive position with cable. Unfortunately, with its acquisition of Time Warner, AOL changed sides. It dropped its support of an open access obligation and clearly shifted its focus to cable as the delivery medium for the next generation of internet service. The prospects for nondiscriminatory access are diminishing.

More importantly, perhaps, the prospects for facilities-based competition are diminishing. The *Motley Fool* was among the most optimistic market analysts opining about DSL.[72] Understanding the implications of AOL's purchase of Time Warner for that analysis gives the best understanding of how dramatically the field has tilted toward cable. The report noted the advantages of cable-based broadband: "[C]able's advantages are many, including easy (for the consumer) installation and use, always-on access, megabit-speeds on both incoming and outgoing content, a reasonable installation price, and a monthly subscriber cost that averages about $40."[73] With these advantages, and the skillful execution of providing broadband access, "cable has quickly risen to command 90 percent of the broadband market. Slow from the gate, DSL is a distant second."[74] The report, however, concluded that "[e]ach technology will have a niche. Most analysts expect cable to be the leading consumer technology over the next five years, with DSL second with consumers and a leader with small and medium-sized businesses, and satellite third, with a relatively small market for many years."[75]

The *Motley Fool* ties the success of DSL to a decision by AOL—having been cut off from access to cable—to focus its broadband strategy on that technology, thereby using its brand

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to do so, it should be able to utilize the definition without industry complaining that the definition is not acceptable.

Id.

72. *See* Nico Detourn, *Industry News: AT&T Reaches Out,* THE MOTLEY FOOL'S INTERNET REP., July 10, 1999, at 11.

73. *Id.*

74. *Id.*

75. *Id.* at 18.

name and marketing to drive residential subscription: "Superior technology can almost always be beaten by better branding, marketing, and distribution."[76] The fact that consumers use the brand they trust "puts AOL, and to the lesser extent, Excite@Home, in the sweet spot."[77] Because @Home offers the better performance, at the lowest cost, it should dominate the cable market, with AOL in the second-place spot.[78]

While the analysis indicates that an aggressive sales campaign by AOL would help balance the advantage of @Home, the *Motley Fool* leaves no doubt about the fact that open access would be better for all parties: "Excite@Home would be in a position to gain not only the customers that are already headed its way based on its brand, but also spill-over customers that it could lure from AOL. Meanwhile, AT&T would generate extra revenue from leasing lines."[79]

The *Motley Fool* recognizes that AOL has been forced to rely on DSL because it has been cut off from cable and is pressing for open access. Still, it believes that when AOL embraces DSL, it will be a "reasonable" competitor for cable. @Home still leads the cable-based market and it will be difficult for any other subscriber to take the lead:

> Excite@Home is now the best way to invest in cable Internet access—at least until a newcomer (and AOL is the only name that might be a threat) can challenge Excite@Home on its cable home front. This would require a competing company to not only get cable access, but to achieve rapid subscriber growth—more rapid than Excite@Home. Every passing day that this does not happen only improves Excite@Home's position.[80]

Removing AOL as a driver of DSL will force the less preferable technology to fight an uphill battle against the marketing clout of the dominant narrowband ISP. The concentration in the industry would be increased. AOL/Time Warner executives trumpeted the fact that the first call they made after announcing the merger was to AT&T CEO Michael Armstrong to

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76. *Id.*
77. *Id.*
78. *See id.*
79. *Id.* at 19.
80. *Id.* at 12.

offer to work together; in fact, AT&T owns a sizeable portion of the new company through its substantial stake in Time Warner.[81] These two companies would control over half of all cable lines in the country and half of the most popular cable programming. They would have over half of the narrowband internet subscribers and three-quarters of all broadband internet customers.

The prospects for competition are bleaker than ever. Cable companies have never competed at the level of facilities. Large companies have never overbuilt one another. These have joint ventures up to their eyeballs, including virtually all cable-based broadband service. The narrowband entrant is now a member of the club. If the future of an open internet was at risk when *Code* was published in late 1999, its future is even more in doubt in early 2000. The need to understand the elements of discrimination is even greater.

IV. ACHITECTURE: TECHNOLOGY BIAS

The first source of potential discrimination lies in the architecture of the network, involving the technical capabilities of the network that would disadvantage independent ISPs in the activities that they are allowed to conduct. Specifically, technological bias creates this problem. Architecture involves the "built environment," which constrains behavior to follow preset patterns. The architecture of the network, controlled by the proprietor, can be configured and operated to restrict the ability of the independent ISP, while not restricting the ability of an affiliated ISP. Technology bias can take several forms. For the purposes of this analysis, we identify three general areas of architecture within the internet: interconnection, structure, and flow control. Today, interconnection with independent ISPs and the ability to control the movement of data at a very detailed level is attributed to the operational aspects of delivering services in a nondiscriminatory fashion.

A. Interconnection

Interconnection allows ISPs to establish a connection between networks. These connections must be compatible if they

81. *See Breaking the Rules*, *supra* note 8, *passim*.

are to be meaningful. The existing exclusive contracts do not allow independent ISPs to connect directly to consumers. @Home describes itself as "the leading provider of broadband Internet services over cable television infrastructure to consumers."[82] It is frank about its intentions to link proprietary content to its control of the broadband pipes.[83] Its business model rests on exclusive arrangements with cable companies.[84] @Home will use its preferred position as an exclusive cable-based internet service provider to win the battle to get proprietary content into people's homes.[85]

The fact that @Home withdrew from the FCC open access negotiations demonstrates the relevance of the interconnection issue. Although AT&T appears to have agreed to allow interconnection, it is unclear that others in the industry will. It is also important to recognize that mere physical interconnection and protocol support are only minimum conditions in ensuring

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82. @Home Corporation Quarterly Report for the Quarter Ending March 31, 1999, Form 10-Q, May 17, 1999 [hereinafter @Home 10-Q].

83. *See* John M. Higgins, *No Worries on the @Home Front*, BROAD. & CABLE (July 5, 1999). As the company's president, George Bell, put it: "Bell said that one of the company's major tasks is to develop special content or ally with developers dreaming up products that take advantage of @Home's bandwidth to get into consumers' homes. 'The power has to be proprietary content,' Bell said. 'People don't watch distribution.'" *Id.*

84. *See* @Home 10-Q, *supra* note 82.

> By virtue of our relationship with 21 cable companies in North America and Europe, we have access to approximately 65.0 million homes, which includes *exclusive* access to over 50% of the households in the United States and Canada. . . .
>
> . . . .
>
> We have entered into distribution agreements . . . with 18 cable companies in North America whose cable systems pass approximately 58.5 million homes.

Id. (emphasis added).

85. *See* Brian McWilliams, *Prodigy Stumps for Access to Cable*, INTERNET NEWS.COM (July 23, 1999).

> Not so fast, said Milo Medin, *Excite@Home*'s chief technology officer. If ISPs want what he has—partnerships with 21 cable operators worldwide—it will take more than sharing a little subscriber revenue. . . .
>
> . . . .
>
> Medin said if Prodigy and other ISPs don't like the current situation, instead of running to regulators for help, they should get behind DSL, or wireless or satellite access. Or, if they're so keen on cable, said Medin, they should string their own wires, or "overbuild" as it's called in the cable industry.

Id.

access to customers. They are necessary, but not sufficient, conditions.[86]

B. Structure

Structure involves the deployment of physical facilities in the network. The proprietary network owner can seriously impair the ability of independent ISPs to deliver service, by restricting the ISPs' ability to deploy and utilize key technologies that dictate the quality of service. Structure determines how facilities are deployed and the effect that deployment has on the quality of service. It includes a number of potential practices like restricted backbone choice, restricted collocation, and restricted replication (or caching). These structural practices give companies a competitive advantage because they are "better positioned to develop products that maximize [their] capabilities" and better positioned to "discipline competing product vendors." In fact, "[i]n 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."[87]

Forcing independent ISPs to connect to the proprietary network in inefficient or ineffective ways, or giving affiliated ISPs preferential location and interconnection can result in substantial discrimination, for example, the degradation of in-

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86. As described by Lemley and Lessig:

> AT&T argues that this competition is not disabled by the cable broadband architecture, since a customer can always "click-through" to a non-cable ISP. But the ability to click through provides just a fraction of the services that a competitor ISP might potentially provide. It would be as if competitor browsers on the Windows platform performed just 30% of the functions that they performed on other platforms. Further, click-though may be economically irrational even if it is technically feasible, just as Microsoft's original "per processor" license made it nominally possible but extremely unlikely for an OEM to load two operating systems onto a computer. Thus the question in this matter is not whether a user will take the time to "download" another ISP connection; there's no such download possible. The architecture ties the user to AT&T/MediaOne's ISP; users cannot cut that knot.

Lemley & Lessig, *supra* note 11, ¶ 75.

87. *Id.* ¶ 40 (quoting Charles R. Morris & Charles H. Ferguson, *How Architecture Wins Technology Wars*, HARV. BUS. REV., Mar.–Apr. 1993, at 86, 88) (emphasis in original).

dependent ISPs' quality of service. As one commentator explains: "Access providers choose where they attach to a long distance carrier for the internet, known as a 'backbone provider.' The route to the backbone provider and the choice of the backbone provider are important decisions, bundled with the access service."[88]

The ability to deploy facilities to ensure and enhance the quality of service will be particularly important in the third generation of internet service development. The multimedia interactive applications that distinguish the next phase of the internet are particularly sensitive to these aspects of quality, much more so than previous applications. As an internet technology publication explains the problems relating to quality: "because @Home caches content locally, its own content will have better apparent bandwidth than that of third-party content providers. Because @Home makes money through advertising and commerce partnerships, the company has little incentive to provide higher-speed connectivity to outside content."[89]

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88. Jerome H. Saltzer, *"Open Access" is Just the Tip of the Iceberg* (Oct. 22, 1999) <http://web.mit.edu/Saltzer/www/publications/openaccess.html>. Saltzer also gives an example of the effects of forcing independent ISPs to connect to the proprietary network:

> If you reside in Massachusetts, and you connect to a computer in your office in the next town, unless your office uses the same access provider, your traffic may flow from Massachusetts down to Virginia and back. This detour introduces delays, which can significantly interfere with some kinds of service, such as video conferencing with your boss or interactive file editing. In addition to distance-related delays, you may encounter distant, response-slowing congestion, or even inability to communicate with your office when a hurricane hits Virginia.

Id. Saltzer further explains the problems with this structure:

> Your access provider again has a conflict of interest—attaching to the nearest, most effective backbone provider might divert revenue from a backbone company in which your access provider has a financial interest or other business dealings. More important for the future of innovative services, if a new backbone provider offers a specially-configured low-delay forwarding service which is just what is needed to carry telephone calls over the Internet, your access provider (which may also offer telephone service) may choose not to connect to that new backbone, effectively preventing you from using a better service.

Id.

89. Kevin Werbach, *The Architeciure of Internet 2.0*, RELEASE 1.0 (Feb. 1999) <http://www.edventure.com/release1/cable.html>. Economists at Berkeley describe the issue as follows:

The plans to leverage these capacities are explicitly embedded in the @Home business model: "Excite@Home offers speedier service to Internet content providers who agree to become 'content partners' and share their revenue stream. Under the sole control of a broadband access monopoly, the potential for serious abuse is evident."[90]

In its annual report, @Home is very clear on these strategic practices, and includes details of how @Home offers speedier service to Internet content providers who agree to become "content partners" and share their revenue stream. Under the sole control of a broadband access monopoly, the potential for serious abuse is evident. Consider in particular two practices that discriminate against competitors and favor partners: collocation and replication.[91] These practices only differ in their

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@Home is promoting itself as offering collocation service to bring better performance to @Home customers (merchants as well as end-users), but the term "collocation" is not meant in the nondiscriminatory sense that those familiar with telecommunications are wont to use. Rather, each partnership appears to be exclusive to a particular area of content. A collocated partner has faster access to @Home consumers because of a presence on the same network. @Home had, as of 1998, already collocated at least one partner (SegaSoft) and was planning to collocate others.

Replication is manipulation of the caching system to favor partners. It essentially speeds requests for certain content by pre-loading it at sites that are close and well-connected to subscribers. As of 1998, @Home replicated news feeds from CNN and Bloomberg. @Home then promotes replicated and collocated partners on its portal and with its "wizards", making competitors harder to get to. The result is the creation of a cyber-marketplace which systematically favors the providers of content, services or transactions who have a privileged financial relationship with the monopoly owner of the infrastructure that supports that cyber-marketplace. If customers had a real choice of broadband access infrastructure, this would matter less, but within the current situation, when they become customers of @Home's access infrastructure, they automatically and unknowingly receive access to a cyber-marketplace biased to favor @Home's financial partners.

Bar et al., *supra* note 14.

90. *Id.*

91. *See id.* @Home explains collocation:

The @Media group offers a series of technologies to assist advertisers and content providers in delivering compelling multimedia advertising and premium services, including replication and co-location. Replication enables our content partners to place copies of their content and applications locally on the @Home broadband network, thereby reducing the possibility of Internet bottlenecks at the interconnect points. Co-location allows content providers to co-locate their content servers directly on the

implementation.[92] It collects fees from its partnerships and it considers these to be programming practices, not discriminatory practices.[93] In fact, @Home's "own materials" recommend structuring "a cyber-marketplace that steers @Home customers, unknowingly, toward merchants who partner with @Home."[94] It creates this structure with "advantageous positioning and access of partners and through @Home's devices such as 'How-Do-I' wizards."[95] The choice for merchants is either to be a partnering merchant and reap the benefits of @Home's structure, or to lose customers because they cannot access the merchant's site.[96]

C. *Flow Control*

Flow control involves the filtering of the flow of information. Even though networks are interconnected, there is still the possibility of discriminating against some of the data that flows through the internet.

This issue of flow control received considerable attention when a series of marketing documents used by Cisco, a leading equipment supplier, were published. The technical capabilities offered by the equipment can be referred to as "policy-based routing." Cisco makes the point quite clearly, in touting the technology of cable-based broadband Internet, that proprietary network operators can control traffic in very different ways than occurs on the Internet today.[97] In addition, Cisco describes the technological capabilities of the "New World Internet Business Model" to discriminate in very dramatic terms.[98]

> @Home broadband network. Content providers can then serve their content to @Home subscribers without traversing the congested Internet.

Id. (quoting AT HOME CORPORATION, 1998 ANNUAL REPORT 8 (1999)). The report then describes replication: "we have established relationships with certain of our interactive shopping and gaming partners whereby we participate in the revenues or profits for certain transactions on the @Home portal. We also allow certain of our content partners to sponsor certain content channels for a fee." *Id.*

92. *See id.*

93. *See id.*

94. *Id.*

95. *Id.*

96. *See id.*

97. *See* CISCO CONTROLLING, *supra* note 12, at 2–3. "The ability to prioritize and control traffic levels is a distinguishing factor and critical difference between New World networks employing Internet technologies and "the Internet." *Id.* at 3.

98. *See id.* at 5–6.

Simply put, the technology allows pervasive discrimination against external, unaffiliated service providers. Moreover, this idea of a "New World Network" is not limited to marketing documents targeted to MSOs[99] or to manufacturers of network equipment.[100]

> For example, if a "push" information service that delivers frequent broadcasts to its subscribers is seen as causing a high amount of undesirable network traffic, you can direct CAR [Committed Access Rate] to limit subscriber-access speed to this service. You could restrict the incoming push broadcast as well as subscriber's outgoing access to the push information site to discourage its use. At the same time, you could promote and offer your own or partner's services with full-speed features to encourage adoption of your service, while increasing network efficiency.
>
> CAR also lets you discourage the subscriber practice of bypassing Web caches. It gives you the ability to increase the efficiency of your network by allocating high bandwidth to video and rich media coming from a Web-cached source and low bandwidth to the same content coming from an uncached source.
>
> Further, you could specify that video coming from internal servers receives precedence and broader bandwidth over video sources from external servers.
>
> . . . .
>
> Another backbone-based control capability offered by Cisco QoS is the combination of preferential queuing (PQ) and weighted fair queuing (WFQ).
>
> PQ ensures that important traffic gets the fastest handling at each point where it is used. Because it is designed to give strict priority to important traffic, PQ can flexibly prioritize according to network protocol, incoming interface, packet size, source or destination address.

Id. at 5–6.

99. *See* Jeffrey Young, *The Next Net*, WIRED, Apr. 1999, at 150; *Cisco Systems and Excite@Home Take the Cable Internet Revolution Expo to 20 Cities Throughout North America*, Press Release, June 14, 1999.

100. Manufacturers of network infrastructure are not the only ones who sell control as a critical function of the new interactive, cable-based broadband network. Set-top box manufacturers stress similar points. As Scientific Atlanta put it:

> Conditional Access (CA) systems provide for selective access and denial of specific services. They also employ signal security techniques, such as encryption, to prevent a signal from being received by unauthorized users.
>
> In addition to protecting traditional broadcast content, a contemporary CA system also must support interactive applications, such as electronic commerce, video-on-demand, and high-speed data access. And it must protect against tampering with authorized applications, downloading viruses, or downloading unauthorized applications to the set-top.

Fred Dawson, *The Interactive Digital Network: More Than Just a Set-Top Decision* (visited July 15, 1999) <http://www.scientificatlanta.com/DigitalNetwork/index5.htm>.

A recent academic analysis notes that the technical ability to control the flow of information conveys substantial power on network operators. When this technical capability combines with economic motives to disadvantage competitors, the result is anticompetitive bias. The academic analysis explains this discrimination in a process called filtering:

> Data is carried on the Internet in batches called packets, and every internet packet contains an identifier that gives a rough indication of what this packet is for: e-mail, a web page, a name lookup, a remote login, or file sharing. Several access providers have begun to examine every packet that they carry, and discard those with certain purposes, particularly those used for file sharing. The technical excuse for this filtering is that many users don't realize that their computer allows sharing of files, and filtering prevents other customers from misusing that feature. But some access providers have imposed filtering on every customer, including those who want to share files. There is a similar risk that pressures to restrict access by children to undesirable content such as pornography may lead an access provider to impose content filters on all of its customers, including those who disagree with the particular content restrictions. And again, there can be a conflict of interest—the access provider has an incentive to find a technical or political excuse to filter out services that compete with the entertainment or Internet services it also offers.[101]

The fundamental difference between an open access model and a closed proprietary system that regulates traffic to accomplish corporate goals is discrimination against unaffiliated content providers. In a nondiscriminatory, open access system, the transportation provider profits from the maximum movement of traffic. In a closed system, the integrated transportation/content provider maximizes profits by ensuring that the content it owns moves first and fastest and the traffic of its competitors moves last and slowest, if at all.

D. Conclusion

The architectural issues pose a fundamental challenge to any simple notion of "one click access" to the internet. As ex-

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101. Saltzer, *supra* note 88.

plained by economists at the University of California at Berkeley: "These capacities to structure the cyber-marketplace are of startling significance, especially when customers are unaware of the marketplace's structured biases."[102] The ability to choose another ISP "would not correct the competitive problems created by broadband access architecture that rewarded @Home with performance advantages over all rivals."[103]

Although there are certainly network management problems that must be handled by cable-based internet systems, the line between network management and anticompetitive discrimination is faint indeed. The importance of quality of service and network management to operating an efficient network is apparent to all.[104] Access to interfaces and local caching is essential to the delivery of high quality services.[105] Technology itself is not the culprit, but the more important the functions and the more powerful the technology, the greater the impact discrimination will have on market outcomes and the greater the temptation for abuse. Cisco could manipulate of Quality of

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102. Bar et al., *supra* note 14. Further, the authors explain that the ability to structure is "particularly important if a single ISP has a local monopoly and of broad significance if a single ISP holds states in enough monopolies or dominant positions locally to influence the very structure of the cyber-marketplace." *Id.*

103. *Id.*

104. *See, e.g.*, KIM MAXWELL, RESIDENTIAL BROADBAND 84–85 (Carol A. Long ed., 1999).

> It would be uneconomical to overbuild a network so that all users could have the best class of service all the time; this would amount to circuit switching, defeating the purpose of statistical networks to begin with. Therefore, networks of the future will offer various classes of service, depending upon application, tariff structures, and willingness to pay. Each class will have to be defined by, or at least relate to, a differentiated set of Quality of Service (QoS) metrics which a network can monitor and manage.

Id.

105. *See id.*

> First, transmitting a 6-Mbps video stream from Geneva to a single user in San Francisco will cost considerably more than transmitting it two miles within Kansas City itself, so much more that it will profit information providers to replicate services rather than pay transmission charges. Second, at broadband speeds the actual delay incurred by propagating information long distances, even at the speed of light, can severely reduce throughput under many data communications protocols. Indeed, it is network delay, caused largely by routers now, that has prompted recent interest in local caching of frequently visited Web pages.

Id. at 25.

Service ("QoS") to gain an advantage for affiliated service providers.[106] The fact that system vendors choose to highlight

106. *See* CISCO CONTROLLING, *supra* note 12, at 3, 5.

> Multiple service delivery over IP networks brings with it an inherent problem: How do these multiple services—packetized voice, streaming media, Web browsing, database access, and e-mail—coexist without competing with each other for bandwidth?
>
> Cisco QoS has solved the problem by putting absolute control, down to the packet, in your hands.
>
> . . . .
>
> The ability to prioritize and control traffic levels is a distinguishing factor and critical difference between New World networks employing Internet technologies and "the Internet."
>
> But beyond that, new advanced QoS techniques give you the means to maximize revenue generated through bandwidth capacity providing highest quality for your most valuable services.
>
> . . . .
>
> Admission control and policing is the way you develop and enforce traffic policies. These controls allow you to limit the amount of traffic coming into the network with policy-based decisions on whether the network can support the requirements of an incoming application. Additionally, you are able to police or monitor each admitted application to ensure that it honors its allocated bandwidth reservation.
>
> Preferential queuing gives you the ability to specify packet types—Web, e-mail, voice, video—and create policies for the way they are prioritized and handled.

Id. at 3. The paper further explains the role of caching:

> Caching is the cost-effective and widely popular method of storing frequently accessed Web content regionally, near the users, to off-load the backbone of duplicated, same-page traffic. Whether it's Web-page caching or the newer streaming-media caching, the idea is the same. Both are effective ways to optimize the bandwidth of the backbone by moving some of the content to the edge of the network in stored caching servers.
>
> As a leader in the caching market, Cisco created the Web Cache Communications Protocol (WCCP) to allow Cisco Cache Engines and other cache products to communicate with Cisco routers. WCCP, built into a wide variety of Cisco IOS-based networking products, enables the transparent, scalable, and secure introduction of caching technology into networks.
>
> Committed access rate (CAR) is an edge-focused QoS mechanism provided by selected Cisco IOS-based network devices. The controlled-access rate capabilities of CAR allow you to specify the user access speed of any given packet by allocating the bandwidth it receives, depending on its IP address, application, precedence, port of even Media Access Control (MAC) address.
>
> . . . .
>
> With CAR, the choice is yours, and it's easy to make constant revisions and adjustment as traffic patterns shift.

Id. at 5.

preferential treatment of affiliated services only illustrates the obvious. These technologies are being developed by a number of different providers, including Cisco, 3Com, and Nortel, and have already been deployed in numerous locations by multiple cable providers.[107]

The closed, proprietary version of cable-based broadband internet service may be a "New World Internet Business Model," as Cisco calls it, but it is simply not the internet as we know it. It strikes at the essential nature of the internet:

> By bundling ISP service with access, and by not permitting users to select another ISP, the architecture removes ISP competition within the residential broadband cable market. By removing this competition, the architecture removes an important threat to any strategic behavior that AT&T might engage in once a merger is complete . . . [representing] a significant change from the existing End-to-End . . . .[108]

In addition to creating discriminatory architecture, AT&T could also bundle many other things within its control of the network, positioning itself "to foreclose all competition in an increasing range of services provided over broadband lines."[109] Because of the pressure that these practices place on the principle of End-to-End, the "cable-owned ISPs would thereby influence the development and use of cable broadband technology. They would be exercising that influence not at the 'ends' of the network, but at the center."[110] Therefore, the control is shifting from "users and programmers to a single network owner. . . [defeating] the principle that the network remains neutral, and empowers the users."[111] AT&T is positioning itself to regain its monopoly power.[112]

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107. Cisco's equipment, in particular, has seen wide deployment. To the author's knowledge, until recently, Cisco was the only CMTS provider certified as DOCSIS compliant—giving their products (which include these QoS controls) immense market power *vis-à-vis* their competitors.

108. Lemley & Lessig, *supra* note 11, ¶ 51.

109. *Id.*

110. *Id.* ¶ 53.

111. *Id.*

112. *See id.*

V. NORMS: SERVICE RESTRICTIONS

The second source of potential discrimination involves behavioral norms. AT&T's efforts to label service providers or customers who use the network in ways it does not approve of as "bandwidth hogs" suggests the appropriate social standard. Generally, being a "hog" is not illegal or uneconomic, but it is frowned up in our society.

The network owner can place restrictions on how nonaffiliated service providers may use the network. As long as the network owner is also a direct competitor of the independent ISP, concerns about restrictions being imposed to gain competitive advantage will persist. ISPs may view restrictions that are explained as necessary for network management as driven by business motives, rather than by technical considerations.

These limitations can be applied to either service providers or consumers. The network owner may prevent independent ISPs from delivering services to consumers by restricting speed, duration of transmission, or other operational characteristics. In addition, the network owner may place limits on how customers use these networks.

These practices are not merely a theoretical possibility. The exclusionary control of the network is already having an impact.[113]

A. Restrictions on High Speed Services

Use of the high-speed network by service providers is currently limited by a general prohibition restricting the speed of services independent service providers can deliver. One commentator describes an example of this practice:

> As things now stand, contractual agreements with high-speed service providers, such as At Home, make it difficult to operate digital TV data access service at full rate, even though, technically, it can deliver data at 27 megabits per second to 38 Mbps to any given cluster of users on a shared-access basis.[114]

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113. *See generally* Saltzer, *supra* note 88.
114. Dawson, *supra* note 100.

Predictably, one of the first restrictions AT&T/@Home placed on internet activity was the amount of time customers could spend downloading streaming video.[115] In response to the charges of discrimination and exclusion, AT&T invoked the need to manage its network. The underlying motivation, however, may well have been economic—a desire to prevent services from competing against incumbent businesses.[116] Cisco's marketing papers clearly suggest that the cable operators should gain control over the streaming video so that it does not undermine their control of the network and open the door to competing video services.[117]

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115. *See generally* Saltzer, *supra* note 88.

> Some access providers limit the number of minutes that a customer may use a "streaming video" connection. Today, streaming video is not widely used, because it provides movies that are small and erratic, but one day streaming video is likely to become an effective way to watch television programs from many source--chosen by the customer, not the cable company--or to purchase pay-per-view movies. The technical excuse for this restriction is that the provider doesn't have enough capacity for all customers to use streaming video at the same time. But cable companies have a conflict of interest--they are restricting a service that will someday directly compete with Cable TV.

Id.

116. *See* Deborah Solomon, *AtHome Speed Cap Angers Subscribers*, S.F. CHRON., June 30, 1999, at B1. "To help keep the network running smoothly, the company previously placed a 10-minute limit on the TV-quality video customers can download off the Internet." *Id.* For this reason, concerns that have been raised about legitimate restrictions imposed on the @Home and RoadRunner services to limit video streaming applications are entirely misplaced. Cable Internet service actually *expands* the number of Internet applications available to consumers. Ancillary restrictions on the use of these services, which help manage bandwidth utilization, are entirely reasonable

117. *See* CISCO STREAMING MEDIA, *supra* note 12, at 9, 12.

> Cable operators need to design intelligent networks that can distinguish flows and treat them differently. They can design high-speed data networks that permit control of streaming-media content flow—the flow of incoming content from other networks (the Internet, for example) and flows within the network (to differentiate services). Committed access rate (CAR) is an example of the technologies that are used to control the flow of content into and out of networks. Using CAR, a cable operator can define specific types of traffic and control how much bandwidth they consume.

Id. at 9.

> The cable industry is in a state of rapid transition from the old-world, closed-system that offers broadcast television to a new world driven by competition and choice. Good planning and network design will ensure that streaming-media is not a threat to cable operators, but a new plat-

The irony of this restriction could not be more striking. While the cable industry itself is not competitive, broadband internet video services could create competition with cable TV content. If cable TV companies dominate access to broadband, that possibility will be undermined. "For example, a broadband cable provider that has control over the ISPs its customers use might be expected to restrict customers' access to streaming video from competitive content sources, in order to preserve its market of traditional cable video."[118] When cable TV operators restrict the amount or duration of streaming video that consumers may receive over the broadband internet, they are restraining potential competition. Unlike the relatively poor-quality streaming video over a narrowband connection, broadband streaming video potentially could compete against cable TV by streaming full video programming to consumers. The private regulation of broadband access imposes restrictions to ensure that broadband internet services will not undermine the cable TV monopoly: "They are also concerned that a truly open high-speed Internet system will threaten their core video-programming revenues; @Home is required under its contracts with cable operators to limit streaming video clips over its system to 10 minutes in length."[119] The motivation for the restriction, while publicly pointing to congestion management, appears to have been centered on preventing competition.[120]

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form for the easy deployment of highly customized and valued on-demand content and services.

Id. at 12.

118. Lemley & Lessig, *supra* note 11, ¶ 58.

119. Werbach, *supra* note 89.

120. *See* Richard Tedesco, *Who'll Control the Video Streams?*, BROAD. & CABLE, Mar. 8, 1999, at 22–24.

> Last mile bandwidth constraints can still impede the speed of streamed video to cable households sharing links to cable system nodes. "It's a huge capacity hog," says Wolzien [video media analyst for Sanford Bernstein & Co.].
>
> That's part of the reason that the @Home high-speed cable Internet access service generally restricts video downloads to 10 minutes.
>
> But the cable operators that own @Home established the 10-minute stricture on video streams to prohibit "backdoor" delivery of video signals from networks. "That's obviously designed so that a programmer can't circumvent our channels to put programming on @Home," says Gaurav Suri, director of business development for Comcast Online Communications.
>
> So @Home or third-party content providers can't stream long-form content, although Comcast is streaming Webcasts of concert events it-

Scott Cleland, a prominent telecommunications industry analyst with Legg Mason, has succinctly summarized the importance of the strategy to prevent the broadband Internet from posing a competitive threat to the cable monopoly video business. In his view, the leveraging of market power is at least half the story.[121]

The strategy to prevent cable-based broadband internet from providing a vehicle for competition with cable's core business rests on exclusive deals and limitations on video streaming. Cleland notes:

> Cable's opposition to ISPs gaining equal access to the cable-plant means that no Internet player can become a competing video programmer or packager on cable's extremely scarce facility . . . . Cable's contracts with @Home/Road Runner expressly prohibit the broadcast of no more than 10 minutes of streaming video which means that no Internet video programming that could directly compete with cable programming can use the cable pipe.[122]

B. Restrictions on Consumer Use of the Network

The restrictions imposed by the proprietary AT&T/Cable business model go well beyond limitations on ISPs moving data downstream to consumers. @Home also has restricted the

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self. Jeff Huber, @Home director of set-top products, calls the clause a "vestige" to insure against digital competition with HBO or Showtime. "They really didn't understand what the evolution of this business was going to be like or what this business was about," says Huber.

Id.

121. *See* LEGG MASON, *supra* note 12.

To date, most of the investment discussion of cable and the Internet has focused on how cable, "the best broadband pipe," can harness the Internet for extraordinary data services growth, and can leverage a ubiquitous residential proprietary facility for a powerful advantage in emerging e-commerce in content, services, and transactions. There has been much less focus on *the other half of the investment story*. Few have extrapolated what the rapid proliferation of Internet-video alliances could mean for competition to cable . . . .

. . . The Internet fundamentally undermines "middleman" roles by allowing consumers to bypass gatekeepers and deal directly with producers. Thus the Internet could enable consumers more control over what they watch, when they watch it, and what they pay for it.

Id.

122. *Id.*

ability of consumers to move data upstream. Recently, @Home changed its service to include a new feature, "ONAdvantage Upstream Enhancement."[123] This change, in effect, prohibits customers from uploading information at a speed faster than 128 kbps.[124] As a result of this "enhancement," customers will no longer be able to set web pages.[125]

Although this restriction is necessary for network management, some question its commercial motivation. Customers have said that although they enjoy @Home's service, they are frustrated by its continual attempts to "impose limits and hide it from subscribers."[126] Other customers are concerned by the "timing" of the change, because @Home recently announced a new program, "@Home Professional," which would allow subscribers to "transmit data at faster speeds."[127]

Proprietary network operators have imposed a series of other restrictions on consumer uses of the network. These include restrictions on setting up servers: "While advertising the benefits of being 'always on' the Internet, some providers impose an 'acceptable use' contract that forbids customers from operating an Internet service, such as a web site."[128] Operators have explained that these restrictions have been put in place because web sites attract a great deal of traffic and the network does not have the capacity to meet these demands.[129] The access provider, however, is offering a web site hosting service—creating a conflict of interest.[130] This dichotomy does not present problems for the average customer. It does, however, present problems for "a customer with only a mildly ambitious web site."[131] This customer "will exceed the parameters of the bundled service and fees for extra storage space and high traffic volumes add up rapidly."[132]

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123. A copy of the internal @Home memo detailing this service was posted to the comp.dcom.modems.cable newsgroup on June 8, 1999 (on file with author).

124. *See* Solomon, *supra* note 116.

125. *See id.*

126. *Id.*

127. *See id.*

128. Saltzer, *supra* note 88.

129. *See id.*

130. *See id.*

131. *Id.*

132. *Id.*

Some providers have adopted a more subtle approach: they refuse to assign a stable Internet address to home computers, thereby making it

A second restriction precludes the establishment of local area networks. The number of households with "two or more computers interconnected by a home network" is increasing.[133] Soon, we will see home networks connecting "television sets, household appliances, and many other things."[134] Access providers, however, claim that they do not have the technical capability for this type of network.[135] Yet the technology for a home network of this kind was developed in the 1970s.[136] One commentator suggests that "[i]n refusing to attach home networks, providers are actually protecting their ability to assign the network address of the customer. By refusing to carry traffic to internet addresses they didn't assign, the access provider can prevent the customer from contracting for simultaneous service with any other Internet access provider."[137]

This practice not only hurts the consumer, but it also creates problems for future innovation. For example, "this cost to innovation is the uncertainty that is created for future applications of broadband technology."[138] One application hampered by this practice depends "on the Internet being 'always on.'"[139] These new applications "would allow the net to monitor home security, or the health of an at-risk resident"—dependent on constant access to the internet.[140]

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hard for the customer to offer an Internet service that others can reliably find. And some access providers have placed an artificial bottleneck on outbound data rate, to discourage people from running Internet services. *Id.*

133. *Id.*
134. *Id.*
135. *See id.*
136. *See id.*
137. *Id.*
138. Lemley & Lessig, *supra* note 11, ¶ 60.
139. *Id.*
140. *Id.*

Whether, as a software designer, it makes sense to develop such applications depends in part upon the likelihood that they could be deployed in broadband cable contexts. Under the End-to-End design of the Internet, this would not be a question. The network would carry everything; the choice about use would be made by the user. But under the design proposed by the merged company, AT&T affiliates would have the power to decide whether these particular services would be "permitted" on the cable broadband network. Cable has already exercised this power to discriminate against some services. They have given no guarantee of non-discrimination in the future. Thus if cable decided that such services would not be permitted, the return to an innovator would be reduced

There are two consequences to cable control of broadband access to the internet.[141] The first, and most damaging, consequence to cable control is the restraint of "innovation and experimentation that has been central to the Internet explosion."[142] Second, cable companies will control "network services; voice, data, and video distribution and a material part of the video content as well as much of the services and Internet content delivered through the cables."[143] These problems are caused by a monopoly of access and ISP service.[144]

C. *Conclusion*

In short, cable operators have encountered the creative power of the internet and found it troubling. If customers try to use the broadband internet in creative ways, AT&T/@Home can and does shut them off. The very essence of what has been so attractive about the internet—the empowerment of consumers as users and speakers—is a nuisance to @Home and contradicts the business rules it wants to put on the broadband internet.[145] These examples underscore a fundamentally important point in the debate over open access. Activity in the content market is already being retarded by the AT&T/Cable policy of exclusion. High-speed services are not delivered by independent ISPs. Streaming video is not delivered to consumers to compete with cable's core monopoly service. Consumers have been stopped from sending data upstream. Costs are already being imposed on the public.[146]

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by the proportion of the residential broadband market controlled by cable.

Id. ¶ 61.

141. *See* Bar et al., *supra* note 14.

142. *Id.*

143. *Id.*

144. *See id.*

145. *See id.*

146. *See* Lemley & Lessig, *supra* note 11, ¶ 59.

AT&T and MediaOne would achieve this change by bundling technologically. The consequence of this bundling will be that there will be no effective competition among ISPs serving residential broadband cable. The range of services available to broadband cable users will be determined by one of two ISPs—@Home and RoadRunner, both of whom would be allied with the same company. These ISPs will control the kind of use that customers might make of their broadband access. They will determine whether, for example, full length streaming video is permitted (it is presently not); they will determine whether customers might resell

VI. BUSINESS LEVERAGE

Open access cannot ignore business reality. If the network owner inserts himself in the relationship between the customer and the independent ISP so as to ensure that its affiliated ISP has a price, product, or customer care advantage, then competition between ISPs will be undermined. This gives rise to the third category of discrimination issues, which involves the market layer of social order and is referred to as "business leverage." The market involves primarily the price and quality of service.

Even if independent ISPs are allowed to provide services on technologically fair grounds, the network owner can impose business relationships that make competition difficult, if not

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broadband services (as they presently may not); it will determine whether broadband customers might become providers of web content (as they presently may not). These ISPs will have the power to discriminate in the choice of Internet services they allow, and customers who want broadband access will have to accept their choice. Giving this power to discriminate to the owner of the actual network wires is fundamentally inconsistent with End-to-End design.

Id. ¶ 52.

The first is the cost of losing ISP competition. As we have argued, one should not think of ISPs as providing a fixed and immutable set of services. Right now ISPs typically provide customer support, as well as an IP address that channels the customer's data. Competition among ISPs focuses on access speed, as well as some competition for content.

Id. ¶ 55.

The second cost is the risk that legacy business models will improperly affect the architecture of the net. Broadband is a potential competitor to traditional cable video services. Traditional cable providers might well view this competition as a long term threat to their business model, and they may not want to change to face that competitive threat. By gaining control over the network architecture, however, cable providers are in a position to affect the development of the architecture so as to minimize the threat of broadband to their own video market. For example, a broadband cable provider that has control over the ISPs its customers use might be expected to restrict customers' access to streaming video from competitive content sources, in order to preserve its market of traditional cable video.

Id. ¶ 58.

The third cost of such control by a strategic actor is the threat to innovation. Innovators are less likely to invest in a market where a powerful actor has the power to behave strategically against it. Innovation in streaming technologies, for example, is less likely when a strategic actor can affect the selection of streaming technologies, against new, and competitive systems.

Id. ¶ 59.

impossible. Four major issues have been identified in the context of the ongoing debate over open access: information, pricing, product bundling, and the customer relationships. Some questions to consider when discussing these issues are: (1) How will network owners use information about the flow of data?; (2) Do prices squeeze competitors, or force them to subsidize the proprietary content or facilities of the network owner?; (3) Are customers given effective choices in pricing options or products?; and (4) Are independent ISPs given an opportunity to establish customer relationships on an unfettered basis?

A. Information

In order to effectuate the service prohibitions discussed in the previous section, the network owner must engage in intensive monitoring of individual activity and gathering of information. The proprietary network owner must identify flows of data that may violate its business rules and contractual conditions. It must identify which ISP or customer is doing so, and cut them off. Needless to say, this raises privacy concerns, which are outside the scope of this analysis. It also raises business and competitive concerns—our primary focus. The gathering of so much information places the network owner in a powerful position *vis-à-vis* competitors and consumers.

The detailed control of the network confers an immense information advantage on the system operator. Because of the conflict of interest created by the vertical integration of facilities and content, the potential for competitive abuse of information is substantial. This advantage is evident to those in the industry. For example, a Cisco document suggests the following: "As new applications emerge, cable operators can capitalize on innovation by monitoring network usage and developing service around these applications. The Cisco Systems NetFlow technology is an example of the products that exist today that can monitor traffic patterns and technology in detail."[147]

As with other aspects of the technology, Cisco's enthusiasm as a vendor of equipment is echoed by other participants in the industry:

147. CISCO STREAMING MEDIA, *supra* note 12, at 9.

> If you have in one place all of the information about the particular customer and the usage of that customer, or how often that customer uses all of the particular services he or she is buying from you, you can be a lot more sophisticated in identifying clients that are most likely to churn. A truly convergent billing process allows you to communicate with your customers more effectively.[148]

B. Pricing

Independent programmers and service providers by the closed business model are suffering from this apparent squeeze. By controlling a bottleneck, network owners can place price conditions on independent content providers, undermining their ability to compete. Consumers will have to pay twice the price for internet access—half of the price to AT&T's affiliate and half the price to the independent ISP the consumer chooses. Therefore, the cable companies are continually trying to retain control of the cable lines, while refusing to share access with other internet providers. Here is an example of the tone of cable companies: "We'll send you the Internet services—e-mail, home banking, etc.—that we designate, and you'll send us a bigger check. If you want a different Internet service provider, fine—just send them a check, too."[149]

Leveraging control over the bottleneck infrastructure is the key to exercising market power and capturing the available economic. A *New York Times* article explains that this practice allows the companies that control the assets to reap most of the profits, making it very difficult to generate long-term success in the communications business by leasing communications capacity from others.[150]

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148. M.J. Richter, *Everything's Coming Up Convergence*, TELEPHONY, June 28, 1999, at 30 (quoting Rich Aroian, Vice President of Marketing and Strategic Alliances, Saville Systems).

149. Dan Gillmor, *AT&T Deal No Help to Consumers*, SAN JOSE MERCURY NEWS, May 6, 1999, *available in* 1999 WL 17336282.

150. *See* Seth Schiesel, *Start-Up Leads Phone Cause in Battle for Internet Access*, N.Y. TIMES, May 17, 1999, at C4. Schiesel also provided an example of this practice:

> AT&T is pursuing much the same strategy, but using cable television systems rather than traditional phone lines. When America Online and other Internet service providers complain that AT&T will not have to offer use of its cable systems to other Internet service providers, what they

Offering "one click access" to the internet without a price difference forces independent service providers to subsidize the content of the affiliated ISP. AT&T now has offered to make transport services available at a price that is, presumably, less than it charges its customers for transport and content. That price remains to be negotiated, however, and their principles for arriving at a reasonable price are stated. Moreover, AT&T's offer of transport service to the internet appears to require independent ISPs to pay for all of the facilities between the customer and the internet, whether or not they want to use those facilities. The potential for cross-subsidy and discrimination is shifted, not eliminated, by this concession.

Beyond the issues of price squeeze and cross-subsidization, the technology and business model may seek to impose a new form of pricing on consumers. The current cable broadband architecture is accompanied by a strategy to end "flat-rate pricing" to the internet. For example, in advertising its NetFlow software tool, Cisco promised that "cable operators can break through the flat rate pricing model and bill for the true value of services used."[151]

Industry analysts view the "New World Internet Business Model" as changing the way services are billed.[152] By collecting detailed statistics on the quantity and type of data being sent by each customer, cable operators can break through the flat pricing model and bill for the true value of services used.[153]

The intersection of technology and the business model, evident in the area of discriminatory access for preferred providers, is also evident in the area of pricing. New technology will also come at a higher price: "'Enhanced services aren't worth doing unless there is a way to bill for them,'"[154] says John Coons, an analyst at Dataquest. In the future, it will be difficult to get unlimited access for forty dollars per month.[155] It would be impossible to charge one rate, therefore, consumers will likely be billed for the services they use.[156] This method of

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really fear is the prospect that AT&T will sell access to those systems at prices that keep the bulk of the profits for itself.

Id.

151. CISCO SYSTEMS, CABLE FOR A NEW WORLD: A CABLE PROVIDER'S GUIDE TO DIGITAL BROADBAND DEVELOPMENT (1999) [hereinafter NEW WORLD].

152. *See id.*

153. *See id.*

154. Young, *supra* note 99, at 186.

155. *See id.*

156. *See id.*

billing has not yet been developed, but it is in the works: "Cisco has created an IP billing initiative with Hewlett-Packard that aims to solve the problem more elegantly. . . [by letting] voice-over-IP and other broadband services be billed the way traditional telcos prefer."[157]

Because AT&T reserves the right to negotiate the pricing relationship between independent ISPs and the customer, it could use that leverage to ensure that this new form of pricing is imposed on the public. In addition, it could preclude independent ISPs from using forms of pricing that threaten its preferred approach.

C. Product Bundling

For an incumbent monopolist selling video "broadcast" services and planning to sell bundles of "broadband services," a fundamental issue arises concerning what independent ISPs will be allowed to sell services and how consumers will be allowed to buy services. The cable TV's bundling of programming has long been a source of concern. If cable owners leverage bundles with internet and cable service, independent ISPs will be at a severe disadvantage.

The Cisco Systems *White Paper,* describing its cable-oriented network equipment affirms this point: "By offering both on-demand services and broadcast services, cable operators can effectively differentiate themselves from competing providers who can offer only on-demand delivery . . . or who can offer only broadcast services over a large footprint . . . ."[158]

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157. *Id.*

158. CISCO STREAMING MEDIA, *supra* note 12, at 1.

> Although Cisco is trying to sell systems to cable operators, this sharp difference between telephone company wideband and cable broadband has been noted by disinterested parties as well. For example, a much more "academic" document published by Cisco a couple of years earlier offered . . . observation[s] on the advantages of cable systems for residential broadband service.

GEORGE ABE, RESIDENTIAL BROADBAND 155, 283 (Cisco Press, Macmillan Publishing 1997)

> Cable Networks have the early lead over telephone companies and other service providers in offering broadband services in the home. Cable TV networks have speed, ubiquity, and experience in offering residential services, especially television. These advantages make it possible to offer digital and high-speed Internet access to millions of consumers quickly over the existing network. . .

What Cisco touts as a marketing opportunity becomes a point of contention in the relationship between independent ISPs and vertically integrated owners of facilities. Cisco sees competitive advantages in "the package of services created, advantages in pricing those services, and advantages in a single bill," advantages that may discourage customers from switching.[159] Cisco also doubts that competitors can come up with equivalent alternative bundles: "This of course further increases resistance to switching one component of the bundle—broadband access—to an alternate supplier."[160]

In addition, there are no limits placed on companies such as AT&T—it could bundle everything under its control.[161] Because of AT&T's limitless expansion, it may also be able to control the expansion of independent ISPs and "foreclose all competition in an increasing range of services provided over broadband lines."[162] This control would have a considerable effect on consumers' choices: "These ISPs will have the power to discriminate in the choice of Internet services they allow, and customers who want broadband access will have to accept their choice."[163]

D. Customer Relationship

AT&T's approach to proprietary control of the network also allows the facility owner to determine the relationship between the customer and the independent ISP. AT&T demands the right to negotiate the most important business relationships between customers and service providers—marketing, billing, and product presentation.

While AT&T will allow independent ISPs to market to cable customers who have not designated an ISP, AT&T requires the ISP to negotiate with AT&T how that will take place, stating that the opportunity to market must be "through means

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> Unlike HFC, xDSL, and even VDSL, are not competitive with broadcast digital TV. ASDL does not have the bandwidth nor the coverage to compete for cable for video. The main use of video over DSL is for video on demand or near video on demand, neither of which has proven sufficient to justify massive infrastructure capital costs.

Id. at 283–84.

159. Bar et al., *supra* note 14.

160. *Id.*

161. *See* Lemley & Lessig, *supra* note 11, ¶ 51.

162. *Id.*

163. *Id.* ¶ 52.

mutually agreed upon." It is not clear that independent ISPs would be allowed to compete for AT&T's internet customers.

In other words, AT&T has not offered to negotiate the terms and conditions of a commercial relationship with independent ISPs in which AT&T provides for the transport of data from customers to that ISP. It wants to control the fundamental relationship between the independent ISP and the customer. AT&T retains the primary relationship with every customer. Before any consumer can become a customer of an unaffiliated ISP for broadband internet, he or she must first become a customer of AT&T, preserving the ability to package internet service with cable service and leveraging the fact that consumers are the captives of the cable company. Under these circumstances, AT&T maintains a huge advantage in marketing to customers. For example, AT&T seeks to control the initial boot screen, which "is like prime real estate and advertising space."[164] Control of the boot screen ensures that the direct relationship is with the transmission service provider.[165] AT&T insists that the customization of the boot screen be negotiated,

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164. Gillmor, *supra* note 149. The AT&T model provides an example of this practice:

> AT&T also controls @Home Network Inc., the Internet service provider to which AT&T cable customers are forced to subscribe if they want high-speed data access via the cable lines. MediaOne is co-owner of a weaker cable-Internet provider, RoadRunner, and it's safe to assume that @Home will eventually be the cable-Internet service provider for the MediaOne customers, too. Most likely, RoadRunner itself will become part of @Home before long.
>
> AT&T and other cable companies understand the power of owning the first screen of digital information. It's the front page to the digital world—an enormous asset in selling customers' attention to advertisers and other companies.

Id.

165. *See* Werbach, *supra* note 89.

> @Home controls the cable modem in the user's home and functions as the service provider. Users cannot pay a reduced fee for the high-speed pipe alone; they must purchase the @Home ISP and content offerings. Even if a user pays for another ISP's services on top of the @Home subscription fee, the primary customer relationship is still with @Home. Independent ISPs such as MindSpring and Earthlink have no control over the user's connection setup and thus cannot compete on customer service or reliability. . . . @Home has been the focus of the most attention because of the AT&T/TCI merger, its extensive use of local caching and its larger user base.

Id.

so that AT&T may retain control over the independent ISP. @Home has not made even that concession.

E. Conclusion

In its approach to business relationships, AT&T, as the facility owner, intends to retain an immense amount of leverage over independent ISPs. AT&T will give independent ISPs the opportunity to offer service to consumers over AT&T's facilities, but it retains immense control over the nature, quality, and cost of the services it will allow to be sold.

In fact, Mindspring and many local governments have recognized that allowing the network owner to dictate the conduct of independent service providers in this way will undermine competition. This is not nondiscriminatory access. It leaves the facility owner in control of the customer and undermines the open, decentralized nature of the internet.

More importantly, in a world where corporate interests, rather than the public interest, dictate policy, it is only the largest entities that will gain access to the network. In other words, "[t]he principle of open access, and the design of End-to-End, is that *anyone* with a better mousetrap gets access to the market."[166]

VII. CONCLUSION: PROPRIETARY ACCESS IS NOT OPEN ACCESS

In the context of this analysis, AT&T's concessions on open access constitute very small changes. These concessions will ensure compatibility with basic internet protocols. The remainder of the potential sources of discrimination, however, are unresolved in the Joint Letter.

In the Joint Letter and in promises made at the local level, AT&T has committed to answering only the first question on interconnection and only at a rudimentary level—what it calls "one click access" to the internet. AT&T hardly addresses questions about architecture and does not address the flow of data and the operation of the proprietary network. AT&T's offer appears to envision only interconnection to the internet. Therefore, all questions about the deployment of facilities between the internet point of connection and the customers re-

166. Lemley & Lessig, *supra* note 11, ¶ 91.

main entirely at its discretion. AT&T will negotiate prices for different levels of speed, but makes no concessions about the quality of service. In addition, AT&T makes no concession in the area of service restrictions.

AT&T continues to reserve the right to impose blanket restrictions on service. It offers functionality similar to ISPs on high-speed systems restrained by technical constraints imposed by AT&T. In other words, AT&T will rule out applications, at its discretion, that it considers to be "unreasonable bandwidth hogs." It is also not clear whether independent ISPs can offer services not offered by affiliated ISPs. Further, AT&T insists that the customer become a customer of AT&T, and therefore, AT&T requires that every customer of an ISP also be a customer of AT&T.[167] The wording of the Joint Letter is unclear as to whether independent ISPs will be allowed to market internet services to non-cable subscribers passed by AT&T's network or to internet service customers of AT&T.[168] AT&T would not agree to a binding commitment not to bundle cable TV and internet services—it wants a say in how every ISP conducts its business.

The objective of setting public policy, as articulated by local franchise authorities in half a dozen states, should be to require cable network owners to negotiate these issues under an obligation to provide open access. Independent ISPs need the law on their side. The obligation to provide open access will force these issues to be resolved in a reasonable manner. Without that affirmative obligation, broadband internet access over the cable network will remain fundamentally discriminatory, resulting in the consumer harms identified by Mindspring and others.

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167. The wording of the billing arrangement is critical. AT&T offers "the opportunity to bill cable subscribers directly for services provided by the ISP that are additional to the services provided by AT&T . . . ." Mindspring Letter 1, *supra* note 55. AT&T appears to reserve the right to bill the customer for the internet transport services that the independent ISP is using. *See id.*

168. The only activity that is clearly permitted is marketing to cable TV customers who are not internet service customers of AT&T.

As evidenced by the past, private negotiations will not produce meaningful open access. Only strong public policy can achieve this objective. We must "preserve the values we want, we must act against what cyberspace otherwise will become."[169] Attention to public policy concerns will address these issues.

169. LESSIG, *supra* note 1, at 209.