

“Open Access:” The Ideal and the Real

George Bittlingmayer

School of Business, University of Kansas, Lawrence, Kansas 66045 USA

Voice (785) 864-7541 Fax (785) 864-5328

E-mail: bittlingmayer@ku.edu

Thomas W. Hazlett

American Enterprise Institute, 1150 17th Street, Washington, D.C. 22036 USA

Voice: (202) 862-5882 Fax: (202) 862-7177

E-mail: thazlett@aei.org

Abstract

“Open access” would allow ISPs to use a cable operator’s broadband connection under regulated terms and conditions. Advocates stress the desirability of an “end-to-end” architecture for the Internet and the danger that cable operators will use their control over the last mile to limit consumer choice and stifle innovation. Opponents contend that wholesale price controls and other regulatory burdens under what they term “forced access” would in fact slow the deployment of broadband, stifle innovation and harm consumers. The fears of “open access” advocates seem largely speculative at this point. Evidence from related policies also favors the opponents. “Closed” cable systems are beating their “open” DSL competitors in the market place; analogous regulation of cable TV did not serve consumers well; and forced “unbundling” of local service has been controversial and largely ineffective. In addition, relevant technology stocks declined in price with political and legal victories for “open access” and increased when it suffered setbacks. “Open access” for ISPs is not an end in itself. As long as consumers want unrestricted access to content, competitive pressures will continue to keep the Internet open.

Keywords: Open access; Broadband; DSL; Internet; High-speed.

Acknowledgements: To be added

Abbreviated title: “Open Access”

1. “Open access:” Origins and prospects

Broadband may change our lives as much as the telephone or the automobile, but it remains a work in progress. We don’t know what the “killer apps” will be. Video-on-demand tops the list, but further prediction would be foolhardy, just as it was for earlier information technologies. Thomas Edison famously predicted that the phonograph would find its primary use in business dictation. He didn’t imagine Elvis and the Beatles.

We also don’t know how broadband content will reach the consumer. As of December 2000, cable and telephony-based DSL (digital subscriber line) accounted for 99 percent of high-speed residential connections in the U.S. The favorite now in actual deployment is cable, which connects three times as many residences as DSL. Though DSL seemed like a good bet in the late 1990’s, installations – especially successful installations - have lagged far behind original projections. Cable overbuilders have entered dense urban markets, but their long-term prospects are uncertain. Other technologies, notably satellite and fixed wireless, represent intriguing possibilities with much promise, but not much more at this point.

The calls for “open access” have focused on cable, the current market-share leader. Nobody talks about “open access” for fixed wireless, at least not yet. Acquisitions of cable companies by major players have stimulated political action, starting with the AT&T’s acquisition of TCI. For example, the local cable regulatory authority in Portland, Oregon stipulated in 1998 that TCI be allowed to transfer its cable properties to AT&T only if AT&T permitted non-affiliated ISPs (Internet service providers) to offer high-speed service. Similar efforts to force “open access” took place in San Francisco, Broward County (Florida), St. Louis and other localities, though only a handful of initiatives resulted in actual regulations.

Those regulations have since been overturned by judges who saw a conflict with federal telecommunications law or with U.S. free speech rights. A June 2000 appeals court ruling in the Portland case held that high-speed Internet access was not a “cable service” and hence not subject to local cable rules. In November 2000, a district court struck down the “open access” ordinance in Broward County on constitutional grounds – the ordinance infringed on cable operators’ First Amendment Rights according to the court.¹ A unanimous appeals court decision involving Henrico County, Virginia held that cable modem lines were telecommunications facilities and hence under federal jurisdiction.

In response to these rulings – in which at least some judges appeared to invite FCC action – local cable regulators have in fact asked the FCC to return oversight authority to them, though without success thus far.² An FCC “Notice of Intent” on open access,

¹ U.S. District Court Overturns Florida Cable Open Access Statute, *Communications Daily*, November 14, 2000.

² FCC Asked to Allow Cities to Regulate Cable Internet Service, *Communications Daily*, November 29, 2000. "At stake are millions of dollars in local franchise fees and

which solicited proposals and views on open access regulation, was pending for most of 2001.

The political pressure for “open access” regulation stems in part from telephone companies and telephony-based ISPs that fear they would be locked out of lucrative markets as consumers switch from dial-up narrow-band to cable-based broadband. As one Portland ISP put the matter: “We want a pipe to the cable modem platform.”³ Organizations lobbying for “open access” include the U.S. Internet Industry Association, representing over 400 companies, and the OpenNet Coalition, representing over 800 members.⁴ Individual corporate advocates have included MCI WorldCom, Mindspring and GTE (now part of Verizon).⁵ AOL also pushed for open access, though before it became a cable company itself through its acquisition of Time-Warner. In each case, consumer migration to cable-based high-speed Internet access threatened to separate existing telephony-based players from their customers.

For its part, the cable industry responds that “open access” is in fact “forced access.” The leading cable trade claims that cable customers in fact have access to all Internet content.⁶ Part of the industry’s opposition to “open access” is based on technical issues. These are arguably short-term concerns and could be fixed, given time, money and the right incentives. The local cable loop is a shared resource, and performance deteriorates when users in a neighborhood simultaneously put demands on the system.⁷ Additionally, the industry points to problems with back office integration.⁸ According to a Bear

the right of franchising authorities to adopt customer service standards to protect consumers using cable modem services," according to the Marin County Telecom Agency (MCTA).

³ Lisa Greim Everitt , TCI and AT&T Minimize Ruling: Oregon Commission Puts Conditions on Transferring Control of Cable Franchises, *Denver Rocky Mountain News*, November 18, 1998, p. 2B.

⁴ FCC Cable Access Recommendation Not a Shock, *Broadband Networking News*, October 26, 1999, Vol. 9, No. 22. For web sites of these two organizations, see: <http://www.usiia.org/> and <http://www.opennetcoalition.org/>

⁵ AT&T to Try Out Multiple ISP Access to Cable Systems, *Communications Daily*, June 8, 2000 (GTE a leader among open access advocates). For GTE’s views, see: <http://www.gte.com/AboutGTE/Publicpolicy/openaccess/>. Interestingly, though GTE advocated “open access,” when an ISP sought capacity on GTE’s own cable system, “a GTE spokeswoman said the company has no intention of providing a competitive ISP with access to its cable systems.” Vince Vittore, *IVI Takes Open Access to GTE*, *Falcon, Telephony*, February 15, 1999.

⁶ ‘Misnamed’ Open Access Hit Again by NCTA at East Coast Cable ’99, *Communications Daily*, October 13, 1999 (NCTA President Robert Sachs: “cable services give access to any Internet content”).

⁷ Open Access: What’s at Stake, August 2, 1999, *ZD Net* at <http://www.zdnet.com/intweek/stories/news/0,4164,2305563,00.html>.

⁸ Randall Cardinal, Open Access Customer Care, *Broadband Week*, May 21, 2001, p. 46.

Stearns study, “The cable industry has not yet found a standardized way of dealing with multiple ISP access.”⁹

Part of the industry’s opposition is also based on longer-term economic objections. According to Matt Polka, president of the American Cable Association, a group representing small U.S. cable system operators, “Our members are not opposed to working with unaffiliated ISPs, but they just do not want the government telling them they have to provide access at below-market rates.”¹⁰ The industry desperately wants to avoid mandated “open access,” which would imply rate regulation and devolution into common carrier status.

It bears emphasis that various cable operators, including AT&T, Comcast and Cox Communications, have been conducting voluntary trials with multiple ISPs, quite likely under the influence of political pressure, though perhaps for other reasons as well.¹¹ The multiple-ISP trials have been marked by technical difficulties on the operational side and complaints by ISPs about the slow pace of actual deployment.¹²

Existing contractual commitments also have an influence on the two types of open access – voluntary and mandatory – serving both as an impediment and a call for action. Indeed, TCI’s exclusive contract with Excite@Home provided the stimulus for the open access debate when AT&T acquired TCI in 1999.¹³ That contract expires in 2002. Comcast and Cox Communications terminated similar agreements with Excite@Home in June 2001.¹⁴

The “open access” debate took on new urgency and an ironic twist with AOL’s January 2000 bid for Time Warner. AOL had previously sought mandatory access to

⁹ Katz, Radeff and Goldberg (2001), p. 68. AT&T Spells Out Plans for Multiple-ISP Market Trials, *Communications Daily*, March 16, 2001.

¹⁰ Ted Hearn and Mike Farrell, FTC Builds a Model: AOL Access Terms Could Resonate, *Multichannel News*, December 18, 2000, p. 47.

¹¹ Robert Sachs, the president of the National Cable and Telecommunications Association (NCTA) is urging members to offer subscribers “a choice of ISPs” and “access to all Internet content.” He argued that “it is in our industry’s self-interest to provide cable consumers with a choice of ISPs ... for it’s not as if the skies are entirely free of regulatory clouds.” Western Cable Show Notebook, *Communications Daily*, December 4, 2000.

¹² Double-Edged Sword of Open Access, *ISP Business News*, Vol. 7 No. 26, July 9, 2001.

¹³ Peter S. Goodman, AT&T Puts Open Access to a Test; Competitors Take Issue with Firm’s Coveted First-Screen Presence, *Washington Post*, November 23, 2000, p. E01.

¹⁴ Todd Wallack, ExciteAtHome Loses Cable Contracts, *San Francisco Chronicle*, June 20, 2001, p. C1.

cable systems.¹⁵ As a combined ISP, cable operator and content provider, AOL/Time Warner operates a cable system that passes 20 million American homes.¹⁶ An intensive debate ensued in the twelve months that regulators took to ponder the deal. Would AOL grant access to other ISPs eager to deliver broadband service over Time-Warner cable? Would Time-Warner customers be allowed to choose only AOL as their ISP? What conditions should the government impose?

Ultimately, AOL agreed to allow selected ISPs to use Time-Warner's cable under FCC and FTC oversight. AOL-Time Warner had to open its high-speed lines to as many as three other ISPs and provide the same technical performance standards enjoyed by AOL. The regulatory deal gave new hope to open access advocates hitherto frustrated by the courts and FCC.¹⁷ In contrast, the cable industry was eager to spread the message that the terms were specific to the AOL-Time Warner deal and carried no precedent value for future regulation.

Currently, the prospects for mandated open access are uncertain. On the one hand, the appointment of Michael Powell to chair the FCC and recent court decisions represent setbacks.¹⁸ On the other hand, pressure has mounted on the FCC to address the open access issue in a pending "notice of inquiry," or NOI, and an influential House congressman promises to introduce open access legislation.¹⁹

¹⁵ Audrie Krause, Look Behind the Words to Find the Real Motivation for Trying to Control the Growth of Broadband Technology, *Los Angeles Times*, November 3, 1999, p. B11. It bears noting that AOL and other dial-up ISPs have been the beneficiaries of regulations governing local U.S. phone service. Callers pay a single flat fee for a local call, regardless of how long the line is open. "The ugly truth is that AOL's business was built by leeching off the infrastructure bought and paid for by phone customers." Holman W. Jenkins, Jr., Let's Have a 'Closed Access' Free-for-All, *Wall Street Journal*, January 26, 2000.

¹⁶ Heather Fleming Phillips, Earthlink Access Is Huge Leap for Hopes of America Online-Time Warner Merger, *San Jose Mercury News*, November 21, 2000.

¹⁷ FCC's AOL-TW Deal Approval Stokes Open Access, ITV Rules Debate, *Communications Daily*, January 6, 2001 (pointing to new battle fronts in FCC proceedings on cable open access and interactive TV, and proposed federal legislation). "Now that FCC finally has approved AOL's takeover of Time Warner (TW) with additional regulatory conditions, cable operators, consumer groups, phone companies, state and local regulators, ISPs, broadcasters, DBS providers, cable overbuilders and others already are girding for next big fights over extending those regulations to rest of cable industry."

¹⁸ Powell Skeptical on TV Ownership Cap, Opposes New Cable Rules, *Communications Daily*, February 7, 2001. Fourth Circuit Ruling Signals End of Local Open Access Moves, *Communications Daily*, July 13, 2001.

¹⁹ Boucher Drafting Revised Open Access Bill, *Communications Daily*, July 13, 2001.

2. “Open Access:” Effects

Policy analysts disagree about the effects of mandated “open access.” Some view open access requirements as essential for the preservation of the Internet and recommend that cable be placed on the same regulated footing as local telephone service. Others advocate open access regulation under specific circumstances, for example for mergers of cable firms with large content providers. Yet a third group views open access as eroding the financial incentives in a nascent industry fraught with technological and product uncertainty.

Mark Lemley and Lawrence Lessig represent the first group. With the aim of preserving the “end-to-end” principle of Internet architecture, Lemley and Lessig advocate the same restrictions for cable-based broadband as currently exist for local telephone companies. “We believe that there is no justification in law or policy for giving cable companies special treatment....Nothing less than the structure of the Internet itself is at stake in this debate.”²⁰ They argue that experience under AT&T shows how an integrated network controlled by a corporate entity works against openness, and they regard government action as central to the development of the Internet. They also point out that some cable operators currently restrict the choice of ISPs but ISPs provide a spectrum of functions such as caching and may conceivably specialize in the future as the broadband market matures. For example, some may provide interactive gaming, while others may specialize in streaming video. They largely discount the influence of competition from existing sources such as “open” DSL or fixed wireless.

Representative of the second group, Jerry Hausman, Gregory Sidak and Hal Singer propose less sweeping implementation of “open access.” They would apply it only to mergers that would form vertically integrated cable and content providers. They argue that cable-based services, which accounted for roughly 70 percent of U.S. broadband subscribers in 2000, will continue to dominate the broadband market. They further argue that vertically integrated firms producing both cable services and content (as does AOL Time Warner) will have an incentive to discriminate against unaffiliated content providers. As evidence, they point to attempts by TCI and Time-Warner to control cable programming on their systems. These considerations lead Hausman et al. to conclude that for new mergers regulators should “require vertically integrated cable firms to afford

²⁰ Lemley, Mark and Lessig, Lawrence (2001). Also available at <http://www.bepress.com/blewp/default/vol2000/iss2/art8>. Lemley and Lessig have repeated these arguments in a filing with the FCC. Written Ex Parte of Professor Mark A. Lemley and Lawrence Lessig, Application of Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T Corp., CS Docket No. 99-251. For a press story on Lessig’s views, see Mary Mosquera, Cyber Guru Favors Regulated Open Access, *TechWeb News*, February 28, 2000 (<http://content.techweb.com/wire/story/TWB20000228S0017>).

unaffiliated ISP's equal and nondiscriminatory access to the combined company's cable modem platform."²¹

In contrast to the previous authors, Owen and Rossiter (1998) view even the threat of open access as reducing the incentive to invest in broadband and regard implementation itself as injurious to efficient forms of integration. It is a view shared so far by the FCC. Similarly, Brookings telecom economist Robert Crandall responds to the asymmetry between phone and cable regulation by urging deregulation of the telephony-based DSL rather than regulation of cable.²² According to Crandall, "The best solution is for regulators to stand aside."²³

The debate has reached a stalemate. One side sees the Internet threatened by the power of cable and mergers of content and conduit, and the other side sees the Internet threatened by current and proposed regulation. We propose to move this debate forward by appealing to the political realities of telecom regulations and to some relevant evidence, both from broadband itself and from the closely related experience in cable TV. We arrive at several conclusions.

- Broadband cable has not reached its potential because cable operators are minimizing exposure to possible regulation. "Open access" represents an attempt to impose common carriage status on cable operators and thus explains the meager allocation of spectrum to broadband by cable networks.
- "Open access" requirements forcing cable systems to serve all or a large number of ISPs will not increase capacity and innovation. Multiple ISPs may or may not serve the interests of cable operators. If they do not, forced "open access" will lead cable operators to reduce their investment in Internet-specific capacity and innovation.
- Experience with cable TV provides cautionary lessons for retail and wholesale price regulation and service mandates. Various equivalents of "open access" – notably price regulation, leased access and video dial-tone – failed demonstrably.

²¹ Hausman, Sidak and Singer (2001) p. 307. Speta (2000) proposes mandated open access for some broadband carriers along different lines. He argues that carriers who provide transport only and no content should be held to the interconnection requirements of the 1996 Telecommunications Act, while carriers that provide linked information services should not be required to interconnect. Thus, AOL/Time-Warner could keep its customers in a "walled garden," while local cable companies offering no content would be required to connect to the web.

²² Robert W. Crandall, Competition Is the Key to 'Open Access', *Wall Street Journal*, December 13, 2000, p. A26.

²³ Simone Kaplan, FCC Urged to Act in Broadband Battle: Industries Resist Heavy Regulation But Want an Equal Footing in Rapidly Growing Broadband Market, Medill News Service, October 17, 2000
<http://www.pcworld.com/resource/printable/article/0,aid,32302,00.asp>.

- “Closed” cable broadband beats “open” DSL broadband in the marketplace. Cable’s lead is partly technological, but also reflects in part the lack of regulatory handicaps and comparative absence of disincentives.
- Stock prices of companies that depend merely on broadband and no particular delivery platform have increased with setbacks for “open access” and declined with victories.

3. Use and misuse of the bottleneck

Traditional telephone service and cable TV suffer from the “last mile” problem. So too does broadband. In each case, only one wire connects the typical consumer to the respective network. In each case, the owner of the last mile has a monopoly. Price is greater than marginal cost, quite likely even higher than average cost.

To be sure, the last mile of wire does face some less-than-perfect competition. Wireline telephone companies face competition from wireless. This is especially true for second and third phones, though some brave souls have decided to go completely wireless. Similarly, cable TV has to worry about direct broadcast satellite TV and, to a lesser extent, video rentals. Cable broadband faces cable overbuilders, DSL and fixed wireless. But competition in these classic “last mile” industries remains fundamentally muted in comparison to, say, long-distance service, where consumers may choose between several essentially identical services.

Financial reality in the cable industry reflects the last-mile bottleneck. The capital cost of adding a new subscriber remained decidedly below \$1,000 for the 1980s and 1990s.²⁴ By the late 1990s and 2000, in contrast, the value of cable systems per subscriber had reached \$6,000 dollars.²⁵ More recently, these prices may be in retreat, as suggested by Comcast’s July 2001 bid of about \$4,000 for AT&T’s cable properties.²⁶ A

²⁴ Federal Communications Commission, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming: First Annual Report, CS Docket No. 94-48 (rel. Sept. 28, 1994) (First Cable Report), Table 5.2 By 1999, the cost had risen to \$800 to \$1,000. FCC, Section 706 Report, Chart 2.

²⁵ Lee Conrad, Cable Comes Under Pressure to Roll Out Digital, Phone Services: Satellite Broadcasters Coming on Strong; Competing with Cable to Reach Consumers’ Homes, *High Yield Report*, February 07, 2000 (cable valuations per subscriber up to \$4,000 in 1999, up from \$3,000 in 1998). Convergence, Competition, Mergers Hamper Franchise Renewals, Say Experts, *Communications Daily*, December 4, 2000 (citing increase in value per subscriber to \$6,000; increase in cable franchise value responsible for municipalities asking for “concessions or cash;” disagreement over which new services are subject to franchise fees).

²⁶ David Lieberman, Investors like bid for AT&T cable Wall Street examines offer, sends AT&T shares rising, *USA Today*, July 10, 2001, p. 1B. Ben Pratt, Cablevision

May 2001 Bear Stearns study estimates average per subscriber values of four leading cable companies of \$4,432.²⁷

Even the new lower values still reveal a substantial gap – a gap that represents the scarcity value of the hard-to-reproduce last mile. To be sure, some of this scarcity value has its origins in local regulation and politics. Local politicians, though they may not be adverse to siphoning off some of the scarcity value, are reluctant to destroy it. New entrants may also face other obstacles, such as difficulty obtaining rights of way.

Since they have control of the bottleneck, cable companies may have the ability and incentive to take actions that harm consumers. Clearly, monopoly suppliers may charge prices higher than justified by legitimate costs. The best policy response to static industries with no technological progress but plagued by last-mile problems and little or no competition last-mile may be rate regulation, “open access” or other similar intervention. Water supply offers an example. For a rapidly changing industry with emerging substitutes, the case for price controls or other regulation is less clear.

The open access debate has, however, not centered on price. Rather it has focused on content. Advocates of open access have emphasized the incentives cable operators may have to undermine businesses with whom they share a vertical relationship. The concerns come in several forms. On close examination, in our view, these possible threats from cable companies seem largely speculative and premature.

Cable Operators See Broadband as Threat. Cable companies have the valuable franchise for the delivery of video content and may regard broadband as a threat. Lessig and Lemley (2000, p. 25) conclude that cable operators have an incentive to “minimize the threat of broadband to their own video market.” They thus claim that cable operators might restrict access to streaming video, a conceivable substitute for traditional programming. Indeed, cable operators and content providers have crossed swords over video streaming, as indeed they have over other issues.²⁸

But if consumers find that streaming video is a good substitute for video programming, they will pay the delivery monopolist for access to streaming just as they do for traditional cable fare. Cable operators are the toll collectors on the last mile – and

Tunes in Divestitures, *Mergers and Acquisitions Report*, October 11, 1999 (also placing current values a \$4,000 per subscriber).

²⁷ Katz, Radeff and Goldberg (2001), p. 109.

²⁸ At a cable convention, cable executives from Charter Communications and Comcast “sought assurances from Disney, Viacom and other programmers that they wouldn’t use streaming video to circumvent cable operators’ offerings and hurt their business model.” ESPN-Charter Dispute Shows Cable Fears of Video Streaming, *Communications Daily*, July 5, 2001. Cable and content providers have had other disputes. At one point during the year-long review of the AOL/Time-Warner merger, Time Warner dropped ABC from its cable offerings. Betsy Streisand, Pulling the Plug on ABC, *U.S. News & World Report*, May 15, 2000, Vol. 128 , No. 19; Pg. 43.

as such do not care whether the taxed traffic they deliver comes from cable companies or web sites.

Cable operators and media companies need each other and know it. Consider one source of conflict. Cable companies obtain secure revenues from subscription services. Media companies in contrast obtain revenues from multiple sources, including traditional cable channels, broadband subscriptions, and the promotion of other products such as videos and CDs. However, it is in the joint interests of cable operators and media companies to hammer out a deal. The cable companies own the pipe that leads to both consumers' TVs and consumers' PCs. Tellingly, when cable companies felt threatened by streaming video, ESPN executives responded that "they would consider sharing advertising and subscription revenues with cable affiliates, as well as other possible arrangements."²⁹ Similarly, cable operators in turn have signaled their willingness to compromise.³⁰

The doomsayers see conflict like this as the end of the Internet, while optimists see it as part of a discovery mechanism. Evidence so far indicates that cable operators understand the upside potential of broadband and the possible positive implications for their own profitability. Broadband merely adds a new complication to long-standing conflict between cable and media companies over the division of revenues.

Cable Operators Under-allocate Spectrum to Broadband. Another charge might be leveled against the cable companies – that they allocate too little spectrum to broadband. The typical cable system has a capacity of 744 MHz but only 6 MHz goes to broadband, with the rest going to subscription programming. Since a single video channel requires 6 MHz, cable operators have capacity for as many as 128 channels [=744 MHz ÷ (6 MHz/channel)].

Interestingly, cable companies derive about equal revenues from each type of subscriber. Cable TV subscribers pay \$45 per month for about 40 channels, thus paying about $\$45/40 = \1.13 per channel, while cable modem subscribers also pay about \$40 per month much less bandwidth. Against the background of congestion on neighborhood cable networks and the likely interest of some subscribers in paying for better service, this seems puzzling. Since few consumers demand 128 channels, an allocation of one or two additional channels to broadband would appear to offer greater profits.

²⁹ ESPN-Charter Dispute Shows Cable Fears of Video Streaming, *Communications Daily*, July 5, 2001. (According to the article: "ESPN executives ... said they would consider sharing advertising and subscription revenues with cable affiliates, as well as other possible arrangements.")

³⁰ Carl Lindemann, Old media may have survived Round One of its battle with new media, but the sequel promises to be more challenging, *Broadcasting and Cable*, June 18, 2001, p. 42. ("We're not against video streaming," according to Charter spokesman Andy Morgan. "But the network is going to provide substantial content free via the Internet while we're having to charge customers for it. There needs to be some limitations. Otherwise, it devalues the product we're providing via our system to customers.")

Ironically, “open access” would do nothing to change this apparent underallocation. Rather, the push for “open access” explains it. Cable operators’ video services have largely but not completely escaped common carrier status. Cable operators’ broadband services have so far also avoided that fate. With open access, which would subject broadband to the regime familiar from local telephone service, the value of their business would decline. Moreover, the greater the share of spectrum allocated to broadband, the greater the loss. The fear of expropriation by regulation explains why cable operators currently allocate only a small fraction of available bandwidth to high-speed cable modem service.

Cable Companies Suppress Unaffiliated ISPs. Critics charge that cable companies will exclude unaffiliated ISPs, to the detriment of consumers. At the outset, it bears emphasis that consumers do not benefit from a multiplicity of ISPs. Consumers do benefit from having a broad palette of Internet content and they benefit from fast, reliable service. Whether four ISPs are better than one is a question that the cable companies are currently trying to answer.

Broadband with multiple ISPs entails advantages and disadvantages. ISPs may offer better service by offering local caching of popular web sites. ISPs may also specialize at some future point, with some offering entertainment and others gaming. They may offer walled gardens – pleasant and easy to navigate. With several ISPs competing to provide broadband, cable companies may wind up signing up more customers. The strategy is familiar from other contexts. For example, Microsoft encouraged competition among computer manufacturers to promote use of its operating system and software.

On the other hand, broadband service made available by a cable company with an integrated or exclusive ISP also entails advantages. Consumers have to deal with only one entity – rather than two – when problems develop. Cable companies are protected against high mark ups if the ISP itself has market power, as might be the case if AOL were the ISP for Comcast, for example. Additionally, an integrated cable-ISP may find it easier to price discriminate by coordinating pricing for content and quality of service. Price discrimination of course has well-known ambiguous implications for consumer welfare.

Integrated Providers Suppress Conduit and Content Competitors. Hausman, Sidak and Singer (2001, pp. 305 - 306) focus on two types of actions by integrated “full-service broadband providers” such as AOL-Time Warner. “Conduit discrimination” would entail protection of a firm’s own pipe by limiting distribution of its content over rival pipes – such as DSL, satellite or overbuilders. “Content discrimination” would involve refusing to carry or degrading content from rival producers, presumably firms such as Disney or Viacom. Hausman et al. concede that this conduit and content discrimination are costly strategies, but argue indeterminately that “the benefits *could* outweigh the costs in certain situations”(emphasis added).

Current and foreseeable circumstances hardly warrant blanket mandated “open access,” and Hausman et al. concede as much when they limit their proposed remedy only to new mergers. Moreover, it is unclear whether integrated cable/content firms will dominate broadband access. In fact, recent industry speculation centers on a divestiture of AOL/Time Warner’s cable operations in conjunction with AT&T’s spin-off of its cable operations, operations for which Comcast made a bid in July 2001. “Most provocative among the range of options now under discussion is a potential plan for AOL Time Warner Inc. to spin off its own cable operation, the nation's second-biggest, into a new company that would also include AT&T's cable assets, according to people in the talks.”³¹ Speculation also turned to the possibility that Comcast might give AOL access to the combined Comcast/AT&T broadband network.³² Currently, the U.S. has one integrated conduit/company, but other players have a different vision, and it is unclear whether that model is the wave of the future.

Use and Misuse of the Bottleneck Summarized. Cable operators own the currently favored last-mile link to the home. They are arguably the monopolists in broadband access. However, it seems doubtful that their financial interest in cable TV will prove lethal to broadband. Rather, they’ll follow the money. Broadband offers intriguing possibilities. As was the case in the early days of radio and TV, conduit and content companies are still trying to come up with business structures and products that will make a return on investment.

4. Lessons from cable TV and telephone regulation

The ideal regulation we might imagine for broadband is one thing. Real broadband regulation is another. Both cable TV and telephony have been regulated in ways that are similar to what “open access” for cable broadband might look like. Regulation of cable TV is especially pertinent because it uses the same conduit. The industry’s experience with retail rate regulation, and “leased access” speak to the likely effects of “open access.” Various aspects of telephone regulation – notably “video dialtone” and local exchange unbundling – also provide relevant cautionary lessons.

Over the fifty-year history of cable TV, rates have been regulated locally, then deregulated in 1984, re-regulated in the 1992 Cable Act, and deregulated a second time through the joint influence of the FCC and the 1996 Telecom Act. The evidence supports the conclusion that rate regulation does indeed lower nominal rates, but at the cost of lowering service quality. Lower prices and lower quality suggests a tradeoff and possible gain, but consumers viewed the matter differently. In practice, cable TV rate caps

³¹ Seth Schiesel and Geraldine Fabrikant, AT&T Is Said to Be Open to Courtship of Its Cable Television Unit, *New York Times*, July 16, 2001, p. C1.

³² Nikhil Deogun, Deborah Solomon and Ken Brown, Comcast’s Bid for AT&T Unit May Call for Complex Plays, *Wall Street Journal*, July 18, 2001.

discouraged cable rate subscriptions.³³ Under rate caps, consumers were more likely to stick with broadcast TV, video rentals, books or a walk in the park. This is of course what Economics 101 predicts - lower prices imply lower returns, less investment and less aggressive marketing.

“Leased access” forces cable TV operators to make available some of their capacity to third parties with the aim of providing a broader spectrum of “ideas and experiences.” The FCC formulated the policy in 1969 and imposed a duty on cable operators to make available not only a “leased access” channel but also “PEG” channels for public, educational and governmental use. “Leased access” was reaffirmed in the 1984 Cable Act, which required operators to set aside 10 to 15 percent of capacity to third party programmers.³⁴ The chief use of leased access has been by home shopping networks and infomercials. Arguably, the policy was unable to promote programming when consumers are not interested. If they were, cable operators would provide it.³⁵

“Video dialtone” or VDT was an initiative that allowed local exchange carriers to serve as transporters of video signals. The FCC allowed the LECs to enter video signal distribution in the late 1980s, but video dialtone became mired in regulation and familiar beggar-thy-neighbor telecom controversy. In 1995, the FCC was wondering if the nascent service should be subject to price caps, with the urging of long-distance companies and cable competitors.³⁶ VDT generated only 1,250 subscribers after nearly a decade, and *Cablefax* dubbed VDT “the telephone industry's version of the 8-track.”³⁷ The “open video system” (OVS) rules instituted by the FCC in 1996 has greater promise, reflecting less reliance on the “open access” model. Under OVS, telcos are allowed to offer programming on one-third of the channels they own, while third-party programmers would have access to the rest. However, even the OVS systems have been converted to traditional cable service.³⁸

³³ Crandall and Furchtgott-Roth (199X), Hazlett and Spitzer (19xx), Havenner, Hazlett and Leng (2001).

³⁴ Ted Hearn, FCC Rejects Leased Access for ISPs, *Multichannel News*, February 14, 2000.

³⁵ More recently, one ISP tried to use leased access regulations to force its way onto cable systems, but was rebuffed by the FCC. FCC Rules ISPs Aren't Entitled to Leased Access to Cable, *Communications Daily* February 22, 2000 (FCC holding that Internet service would not be “video programming”).

³⁶ RHCs Disagree with Industry on Price Cap Regulation of VDT, *Communications Daily*, April 20, 1995, Vol. 15, No. 76, p. 1.

³⁷ In the States, *Cablefax*, March 15, 2001, Vol. 12, No. 51.

³⁸ Video Market Share for Cable Declines to 82%, FCC Says, *Communications Daily*, January 24, 2000 (FCC reports declining shares in multichannel video service for cable, MMDS, home satellite dishes and open video systems, but increasing shares for DBS). The report credited the decline in OVS to purchases and conversions to traditional cable by RCN Corp.

The 1996 Telecom Act provided a variant of “open access” in its provisions for forced sale of UNEs or unbundled network elements and for resale of local telephone service. The idea behind UNEs was to make available components of local ILEC telephone systems and offer them to CLECs at a regulated price. (ILECs are the incumbent local exchange carriers. For most customers, this means the Baby Bells created from the 1984 breakup of AT&T. CLECs, or competitive local exchange carriers, sprang up to take advantage of provisions of the 1996 Telecom Act.) Resale requirements permit entrants to buy ILEC services at a discount and resell them under their own brand names. Rather than separating conduit and Internet service provision – the aim with “open access” – the idea was to separate conduit and local telecom service provision. In practice, the effect has been to bog down the industry in uncertainty and litigation, particularly over the level of regulated wholesale prices, and to discourage investment in new technology by the ILECs.³⁹ Long-distance and wireless, which are not burdened by the same level of regulation, have experienced substantial price declines, while local service has remained largely stagnant.

5. The winner in the race between “open” and “closed” broadband is ...

Though predecessors and analogies to “open access” for broadband offer valuable insight into its likely effects, we have an actual example of broadband “open access” that emerged directly from the attempt to stimulate local competition in the 1996 Telecom Act. Local exchange carriers who offer DSL must also provide it to resellers, as well as offering UNE’s or unbundled network elements that allow CLECs to reconstitute a DSL service using the ILECs own investments.

DSL’s star once shone brightly. The arguments seemed compelling. DSL carries broadband over existing phone lines. In the U.S. and elsewhere, a larger fraction of homes have a phone line than a cable connection. The wires are in place. In addition, the U.S. regulatory regime seems to favor “openness” and competition. If the ILECs do not themselves rush out to provide DSL service, CLECs and ISPs would gladly fill the gap, using the ILECs own plant and equipment and the favorable regulatory climate.

To be sure, DSL suffered from some handicaps. DSL currently does not function at more than three miles from the ILEC’s central office. But the mood was optimistic as recently as the March 2000, when Cahners In-Stat predicted that “the battle for primacy in the high-speed Internet access market may be won by the telephone companies and not the cable firms.”⁴⁰

In actual practice, “open” DSL remains a distant second to “closed” cable modem service. “Contrary to the hype and regulatory hope that DSL would catch up to cable modem deployment, cable still is deploying cable modems at roughly two times the rate

³⁹ Crandall and Hausman (2000), Lehman and Weisman (2000) and Kahn (1998).

⁴⁰ Corey Grice, DSL Could Pull Ahead in High-Speed Race, *CNET News*, March 1, 2000 (reporting on a Cahners In-Stat Group study).

of DSL in the residential market.”⁴¹ In June 1999, analysts at Lehman Brothers had predicted that comparable DSL and cable deployments by the end of 2001, but in June 2001, the same analysts expected that it would take at least five more years.⁴²

What happened to DSL? First, DSL has run into unexpected technical problems.⁴³ To be sure, customers also complain about cableco service.⁴⁴ But when the problems with DSL became legendary, they turned to the cable companies for technology that worked. Second, the regulatory structure that promotes “open access” also hinders investment and marketing. When a DSL installation failed, ILECs, CLECs and ISPs pointed fingers at each other. In addition, ILECs were understandably not eager to help their competitors, the CLECs. Moreover, with exquisitely perverse but consistent results, regulations designed to foster vertical separation of ILEC and CLEC functions hindered the efficient resolution of problems even when customers skipped CLECs and unaffiliated ISPs and bought DSL directly from ILECs. “What consumers don't realize is that they still are dealing with several entities, even when they are part of the same phone company, that are required by law to deal with each other through written orders and not conversations.”⁴⁵

The regulatory obstacles are recognized on all sides of the debate. Hausman, Sidak and Singer (2001, p. 304), who favor regulation in the form of open-access provisions for large mergers, contend that “significant regulatory burdens prevent them [DSL providers] from competing effectively against the cable broadband providers.” Finally, the ILECs may have been reluctant to promote DSL because it competes with lucrative existing services such as T-1 lines. Ironically, some analysts argue that the success of “closed” cable broadband spurred DSL deployment by the ILECs.

Another comparison is also instructive. While DSL as a whole has lagged behind cable, bundled DSL offered by the ILECs has zoomed ahead of “open” DSL offered by CLECs and unaffiliated ISPs.⁴⁶

⁴¹ Scott C. Cleland, Expect Positive Cable Outlook to Continue, *Precursor Group Independent Research*, March 19, 2001.

⁴² Jo Shields, Cable to Lead DSL for Local Access, *Telecom Markets*, June 19, 2001.

⁴³ Jeff Smith, Tales of Slow Consumers in Search of Speedy DSL Service Tell of Frustrating Wait, *Denver Rocky Mountain News*, December 18, 2000, p. 1B. Todd Wallack, DSL Providers Dropping With Dot-Com Bust; NorthPoint Communications of S.F. is latest in trouble, *San Francisco Chronicle*, January 21, 2001, p. B1.

⁴⁴ Paul Coe Clark III, Cable Operators Give Used Car Salesmen a Good Name, *Broadband Networking News*, August 1, 2000, Vol. 10, No. 16.

⁴⁵ David Lieberman, Bumpy Road to Fast Net Access, *Chicago Sun-Times*, November 24, 2000, p. 85.

⁴⁶ Vanessa Hua, SBC Dominates DSL Market as Others Struggle, *San Francisco Chronicle*, June 13, 2001, p. C1.

6. The verdict from markets and analysts

Clearly, much hinges on the success of broadband. Content providers, semi-conductor manufacturers, backbone companies and undoubtedly others would prosper if every home in America had available a cheap, reliable, high-speed connection to the Internet. We thus have a ready gauge for the prospective effects of “open access.” If the mandated open access is likely to promote the use of broadband, investors should increase the stock market value of these players as the movement scores victories. Similarly, investors should mark down the values of the same companies when “open access” suffers setbacks.

We identified eight victories for open access and twenty-one setbacks. The victories include early events favorable to open access in Portland, Broward County and Pittsburgh; and news stories signaling opposition to the AOL/Time-Warner merger. The setbacks involve favorable developments in AT&T’s acquisition of TCI and MediaOne, FCC decisions unfavorable to the ISPs, and state and local governments and courts turning back or abandoning efforts to implement open access.

We examine the movement of three metrics over the period January 1998 through October 2000.

Inter@ctive Week Internet Index. This is capitalization-weighted index of major Internet companies, including Amazon.com, Cisco, E*Trade, Cnet, 3Com and Yahoo. This index provides an assessment of whether new developments in the “open access” debate benefit major Internet players.

Excite@Home’s stock price. Excite serves as a marker for the “open access” debate. It had exclusive contracts with major cable players, including AT&T, Cablevision, Comcast and Cox Communications. A victory for open access would undermine a business model built on this exclusive status. Indeed, the press routinely linked the company’s stock price with new developments in the open access debate.

America On-line stock price. AOL’s situation is more ambiguous. For most of this period, AOL favored “open access.” However, it was clear that it was seeking a broadband pipe of its own. In fact, the rumor that AOL would buy Excite@Home, which circulated twice – once on September 29, 1999 and again on November 8, 1999 – lifted both companies’ shares.

The movements of the three metrics are summarized in Table 1. We show the average net movement per event, net of movements in the overall stock market as

measured by the S&P 500 Index, over the three days centered on the event date reported in the news media.⁴⁷

The results show that all three measures – the Internet Index, Excite@Home and AOL – increased with setbacks for open access. Conversely, all three also declined with victories for open access. Note that the movements of Excite@Home, whose fortunes were so clearly linked to open access, suggest that we have chosen important event dates and assigned them correctly to the “setbacks” and “victories” categories.

⁴⁷ For more detail, see Hazlett and Bittlingmayer (2001).

Table 1. Three-day returns for 21 “open access” setbacks and 8 “open access” victories, January 1998 through October 2000. These returns are adjusted for movements in the S&P 500 index.

	Internet Index	Excite@Home	AOL
Setbacks	1.7%	8.1%	2.0%
Victories	-0.1%	-6.4%	-3.7%

Table 1 supports the view that investors regarded “open access” as a threat to the future of the Internet. Various mechanisms are possible. “Open access” would introduce politics at the crucial last mile, particularly with respect to wholesale transport pricing and quality of service. Aside from static regulatory effects, politicization of broadband would introduce uncertainty and delay above and beyond existing technological and market risks. Importantly, common carrier status for cable broadband would imply that the benefits of innovation would be shared if not bestowed completely on ISPs, while costs would be borne by the cable companies.

Recent analyst commentary has dissected the likely effect of open access on broadband. An analysis by Deutsche Bank noted that the valuations in entire sectors depend on the future development of high-speed connections to the home. The report concluded that “open access” would likely hurt lower stock values for a number of reasons. Open access rules would force unbundling of transport and closely related services, compromising service quality. “Open access” would also reduce incentives and slow investment. In the view of the report’s authors, discrimination is unlikely because consumers demand access to a broad variety of content. They also regarded the growth in DSL (the “open” system) as in part a response to the threat from “closed” cable modem service. Finally, the report noted that political support for “open access” comes in part from the telcos, whose only apparent interest is in subjecting the cable companies to costly and demand-reducing regulation.⁴⁸

Paul Glenchur, a cable analyst at Schwab Washington Research Group, also sees hazards to the industry in open access, hazards recognized by the FCC. “It’s still the issue of whether the benefits outweigh the cost of having regulators step in and begin that rulemaking process with all the subsequent litigation that would be involved in doing that.”⁴⁹

⁴⁸ Cable Open Access Rules: An Analysis of the Debate, Deutsche Bank Alex Brown, January 18, 2001.

⁴⁹ Ted Hearn, AOL-Time Warner Lesson: Don’t Ask for Regulation, *Multichannel News*, January 22, 2001, p. 1.

7. Access and Progress

Open access advocates claim that mandated openness will stimulate innovation. Without legal intervention, cable operators may quash broadband to protect their existing business. “The danger of closed access – where the platform owner has the power to control which innovations are permitted and which are not – is the potential for strategic action by owners of the network that could dampen the eagerness of innovators to develop for the Net.”⁵⁰ In other words, cable owners might not implement technology that benefits broadband. Aware of this possible reticence, this argument continues, equipment suppliers and others will offer fewer innovative products.

This is a line of analysis infused with the subjunctive mood. “Closed access” has the “potential” for strategic action that “could” dampen innovation. But such abstract arguments work as well one way as the other. It seems just as plausible to say that mandated “open access” has the potential for diminishing incentives and introducing political wrangling that would almost certainly dampen innovation.

Actual experience also offers some guidance on innovation. The contrast between “closed” cable and “open” DSL is again instructive. The cable industry has promoted standards through its research consortium, CableLabs, and it has launched a cable modem standard, OpenCable. In fact, CableLabs was responsible for DOCSIS, which provides a standard broadband delivery architecture for cable.⁵¹ DOCSIS is widely viewed as “a critical market driver.”⁵² The industry-developed standard fostered a competitive vendor market, it stimulated sales of modems at retail, and it forms the core of technology that will allow the integrated delivery of data, voice and video over a packet-based broadband network.

The telcos have responded to the cable standards with an “OpenDSL” initiative, though arguably as a defensive measure.⁵³ Nor is it clear that DSL will be as successful. “Without a central coordinating body such as CableLabs, hamstrung by much tighter regulatory requirements for open interfaces and nondiscriminatory access, it is highly unlikely that DSL will attain as favorable a standards position as cable anytime soon.”⁵⁴ Progress is no doubt hampered by current regulatory policy, which demands that one segment of the industry must provide the other, competing segment with facilities at favorable prices.

⁵⁰ Larry Lessig, *The Rules of Politics*, *The Standard*, January 12, 2001.

⁵¹ CableLabs Enters Teen Years: As Cable R&D Consortium Celebrates Thirteenth Birthday, DOCSIS is the Brightest Candle on Its Cake, *Cable Datacom News*, May 1, 2001. <http://www.cabledatcomnews.com/may01/may01-4.html>

⁵² CED Buyer's Guide Supplement, November 15, 2000, p. 16.

⁵³ Corey Grice, DSL Rivals Join Forces to Create Compatible Products, *CNET News.com*, August 7, 2000. DSL Strategy, *Cablefax*, August 8, 2000, Vol. 11, No. 154.

⁵⁴ Broadband! Sanford C. Bernstein & Co. and McKinsey & Co., January 2000, p. 61.

SBC's experience with "Project Pronto" illustrates the burden "open" systems place on the implementation of new technology. SBC was eager to develop neighborhood broadband gateways that would allow more customers to sign up for DSL service. SBC's initiative has been bogged down in extensive regulatory wrangling generated by CLEC objections.⁵⁵ One key issue was the extent of unbundling that regulators would require. The Illinois Public Utility Commission ruled unfavorably, and SBC declined to offer the service.⁵⁶

8. Concluding comments

"Open access" comes at a cost. On the benefit side, the policy would allow more than one entity to serve as the bridge between consumers' last-mile broadband cable connection and the Internet. This could spur variety in ISPs and ensure that cable broadband customers have access to the entire Internet. Open access may reduce nominal prices for broadband service if the regulated wholesale price is low enough. However, the policy is unlikely to generate higher quality service. Price controls would certainly not generate new innovative services such as Internet TV. In fact, the current pressure for open access by itself acts as a disincentive to capacity expansion. Furthermore, actual implementation wholesale price controls will distort the incentives of cable systems to invest in new technologies, especially for risky new technologies where wholesale regulation raises the possibility that wins are shared while losses are not.

The regulatory parallels to "open access" do not provide encouragement. Cable TV regulation was accompanied by slumping subscriber numbers. "Open" DSL has lagged behind "closed" cable modems. Across DSL providers, transport bundled with ISP service has moved ahead of service provided by unaffiliated ISPs. In telephony, forced unbundling and resale of local voice and data services has been mired in controversy and litigation without generating noticeable improvements. Capital markets and stock analysts have also not welcomed "open access" for the broad spectrum of companies that would seem to be the logical beneficiaries.

The best hope for broadband in the first instance is a business model that promises a competitive return on investment and risk-taking. Adequate returns will also generate competition from other platforms, including cable overbuilders, fixed wireless and satellite delivery, and solve the last-mile problem. By the intriguing dynamic that results in the pressure for "open access," the regulatory dangers to these and other possible platforms will increase should they ever become successful.

⁵⁵ CLECs Declare War over Project Pronto, *Communications Today*, March 7, 2000. Comptel Asks FCC to Alter Project Pronto, *Communications Today*, May 19, 2000, Vol. 6, No. 96. CLEC's Urge FCC to Investigate SBC's New Network Technology, *Washington Telecom Newswire*, June 5, 2001.

⁵⁶ Liane LaBarba, Pronto, part deux; SBC tries to fill in the business gap, but regulation still an issue, *Telephony*, May 14, 2001.

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