

# Background

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## Broadband Regulation: Will Congress Neuter the Net?

*James L. Gattuso*

Should broadband network owners, such as telephone and cable TV companies, be required by law to treat everything sent on the Internet “neutrally”? Until recently, this question was of interest only to a few technology geeks, but in recent weeks it has been the subject of intense debate from Capitol Hill to Silicon Valley.

The key issue is how the bits of information that make up Internet transmissions are handled. Traditionally, these bits have been transported on a first-come, first-served basis. However, many broadband network owners would like to manage this traffic more actively—for instance by offering priority delivery, for a fee, to Web content providers who want it.

Now Congress is considering legislation to limit network owners’ ability to offer such differentiated service. Such “net neutrality” regulation would be both unnecessary and harmful:

- By actively managing traffic flow, network owners could use scarce Internet capacity more efficiently. At the same time, traffic fees could spur some much-needed investment in broadband networks.
- Fears that network owners would abuse their discretion by impeding or even blocking services and Web sites that they disfavor are unfounded. In today’s competitive broadband market, network abuse would quickly send consumers to another provider. Moreover, if a network owner

### Talking Points

- Some broadband network owners plan to offer priority or “hot lane” service for a fee to Internet content providers. Such service could help to distribute scarce Internet capacity more efficiently while spurring much-needed investment for investment.
- Fears that network owners will impede or even block services and Web sites that they disfavor are unfounded. In today’s competitive broadband market, network abuse would simply send consumers to another provider. Moreover, if a network owner does abuse its power, existing competition law is more than sufficient to address the problem.
- Forcing all providers to act alike would reduce network owners’ ability to distinguish their services from one another and smaller networks’ ability to challenge established rivals.
- Imposing a separate set of rules on the Internet would invite uncertainty and litigation that would be a bonanza for lobbyists and lawyers but would hurt innovation, investment, and Internet users.

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(202) 546-4400 • [heritage.org](http://heritage.org)

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somehow does abuse its power, existing competition law—with its decades of precedent—is more than sufficient to address the problem.

- Neutrality regulation would hurt competition. If all providers were forced to act alike, network owners' ability to distinguish their services from one another—and smaller networks' ability to challenge established rivals—would be reduced.
- Imposing a new, separate set of rules on the Internet would invite endless uncertainty and litigation. Inevitably, regulators would be drawn into years-long, lobbyist-driven policy quagmires as to whether this or that action is allowed or banned and what prices can be charged. This would be a bonanza for lobbyists and lawyers but would hurt innovation, investment, and Internet users.

### The End-to-End Principle

The basic idea of net neutrality was formulated in the early days of the Internet as an engineering concept often called the “end-to-end” principle. This principle holds that the intelligence (i.e., functionality) of the Internet should be at the ends of the network, where transmissions originate and are received. In between should be only “dumb pipes” that transmit data without any modification or prioritizing. This reduces the intermediate processing that information undergoes, reducing complexity and increasing speed.<sup>1</sup>

Some tout this concept as the “First Amendment of the Internet.”<sup>2</sup> Aside from the engineering involved, they argue that end-to-end has allowed content providers almost complete flexibility in what services they provide, with no need to be concerned about compatibility with the networks that carry the data.

The principle is a useful tool in many ways. However, it was never meant to be inviolable. As explained in a seminal 1981 article, the end-to-end argument was “not an absolute rule, but rather a guideline that helps in application and protocol design analysis.”<sup>3</sup> Similarly, David Reed, Jerome Saltzer, and David Clarke, the most frequently cited early proponents of the end-to-end argument, wrote in 1998 that “There are some situations where applying an end-to-end argument is counterproductive” and that it should be applied on a case-by-case basis.<sup>4</sup> In other words, net neutrality is a useful guideline, but not without exception.

Importantly, the concept was never enshrined into law. Long-haul Internet “backbone” networks have never been regulated and in fact often negotiate access on an individualized basis through private contract.<sup>5</sup> The shorter-haul networks of cable television companies, whose cable modem services provide broadband connections to the majority of residential users in the United States, also have never been subject to legal restrictions on how they manage traffic (although they have generally managed traffic without differentiation).

1. See Christopher S. Yoo, “Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate,” *Journal of Telecommunications and High Technology Law*, Vol. 3, Issue 1 (2004).
2. See SavetheInternet.com, “Fa.q.,” at [www.savetheinternet.com/=faq](http://www.savetheinternet.com/=faq) (May 23, 2006). For further discussion of the principle, see testimony of Lawrence Lessig, C. Wendell and Edith M. Carlsmith Professor of Law, Stanford University, in “Hearing on ‘Network Neutrality,’” Committee on Commerce, Science and Transportation, U.S. Senate, February 7, 2006, at [www.commerce.senate.gov/pdf/lessig-020706.pdf](http://www.commerce.senate.gov/pdf/lessig-020706.pdf) (May 23, 2006).
3. J. H. Salzer, D. P. Reed, and D. D. Clark, “End-to-End Arguments in System Design,” *ACM Transactions on Computer Systems*, Vol. 2, Issue 4 (November 1984), p. 277, as quoted in Yoo, “Would Mandating Broadband Network Neutrality Help or Hurt Competition?” p. 44.
4. David Reed, Jerome H. Saltzer, and David D. Clark, “Commentaries on ‘Active Networking and End-to-End Arguments,’” *IEEE Network*, May/June 1998, p. 69, footnote 1, at [www.ir.bbn.com/~bschwart/publications/commentaries.pdf](http://www.ir.bbn.com/~bschwart/publications/commentaries.pdf) (May 23, 2006), as quoted in Yoo, “Would Mandating Broadband Network Neutrality Help or Hurt Competition?” p. 44.
5. For a survey of how the unregulated backbone market works, see Richard O. Levine and Randolph J. May, “Interconnection Without Regulation: Lessons for Telecommunications Reform from Four Network Industries,” Progress and Freedom Foundation *Special Report*, September 2005, at [www.pff.org/issues-pubs/communications/books/051018Interconnection.pdf](http://www.pff.org/issues-pubs/communications/books/051018Interconnection.pdf).

Until recently, the exception was telephone company broadband services (digital subscriber line or DSL service). As regulated common carriers, telephone companies for a long time were banned from differentiating traffic in any way not specifically approved by regulators. In August 2005, however, the Federal Communications Commission (FCC) reclassified telephone companies' broadband service from a "telecommunications service" to an "information service." This change frees telephone companies' broadband networks from common carrier and many other requirements, giving them the same flexibility as cable firms and other broadband providers.

The current debate over neutrality regulation began in earnest several years ago. Restrictions imposed on subscribers by several cable companies, such as Cox Communications and AT&T, drove this early interest. The restrictions ranged from bans on reselling bandwidth to others to limits on how much a customer could download per day. Because cable broadband service operates on a shared basis—that is, the more bandwidth each subscriber uses, the less is available for others—cable firms argued that these restrictions were necessary to protect their customers.<sup>6</sup>

Responding to concerns raised by these restrictions, then-FCC chairman Michael Powell articulated four principles of neutrality, calling them the "four freedoms" of the Internet. These were not binding rules; rather, he "challenged" broadband

providers to live up to them.<sup>7</sup> In August 2005, the FCC, by then under Chairman Kevin Martin, adopted as policy a slightly revised version of this statement. Specifically, it declared that consumers are entitled:

1. "to access the lawful Internet content of their choice";
2. "to run applications and use services of their choice, subject to the needs of law enforcement";
3. "to connect their choice of legal devices that do not harm the network"; and
4. "to competition among network providers, application and content providers, and content providers."<sup>8</sup>

This FCC statement, like Powell's, did not impose binding rules on network owners. Instead, the FCC declared that it would incorporate the principles into its "ongoing policymaking activities."

In recent months, the net neutrality controversy<sup>9</sup> shifted focus after several major telephone companies announced their intentions to offer priority service to content providers for a fee that would enable these providers—such as Internet phone service operators, broadband video providers, and others—to purchase express service.

Although these priority services are not yet available, the telephone companies' statements triggered significant opposition and a renewed push for neutrality mandates. Supporters of these mandates include many of the largest Internet content

6. See James L. Gattuso, "Discriminating Taste: The Latest Battle to Regulate the Internet," *Competitive Enterprise Institute C:/Spin*, May 12, 2003, at [www.cei.org/gencon/016,03473.cfm](http://www.cei.org/gencon/016,03473.cfm) (May 23, 2006). See also Adam D. Thierer, "Net Neutrality: Digital Discrimination or Regulatory Gamesmanship in Cyberspace?" *Cato Institute Policy Analysis* No. 507, January 12, 2004, at [www.cdt.org/speech/net-neutrality/20040112thierer.pdf](http://www.cdt.org/speech/net-neutrality/20040112thierer.pdf) (May 23, 2006).
7. Michael K. Powell, Chairman, Federal Communications Commission, "Preserving Internet Freedom: Guiding Principles for the Industry," prepared text for speech at Silicon Flatirons Symposium on "The Digital Broadband Migration: Toward a Regulatory Regime for the Internet Age," University of Colorado School of Law, Boulder, Colorado, February 8, 2004, at [www.cdt.org/speech/net-neutrality/20040208powell.pdf](http://www.cdt.org/speech/net-neutrality/20040208powell.pdf) (May 23, 2006).
8. Federal Communications Commission, "In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities" *et al.*, CC Docket Nos. 02–33 *et al.*, "Policy Statement," adopted August 5, 2005, released September 23, 2005, p. 3, at [www.cdt.org/speech/net-neutrality/20050923fcc-appropriate-framework-nprm.pdf](http://www.cdt.org/speech/net-neutrality/20050923fcc-appropriate-framework-nprm.pdf) (May 23, 2006).
9. The term "net neutrality" itself is not without controversy. It literally refers to any policy of managing content without differentiation, although in the current debate it more often refers to regulation to achieve that end. The concept is therefore more accurately termed "neutrality regulation." The term "net neutering," used in the title of this paper, was suggested originally by Randy May of the Progress and Freedom Foundation.

providers, from Google and Microsoft to Yahoo! and Amazon.com. In addition, a number of advocacy groups have organized an intensive grassroots campaign in support of regulation.<sup>10</sup>

### Pending Legislation

Several bills pending in Congress would address net neutrality. Foremost among them is H.R. 5252, the Communications Opportunity, Promotion, and Enhancement Act of 2006, introduced by Representative Joe Barton (R-TX), which was approved on April 26 by the House Committee on Energy and Commerce. The bill's main thrust is to streamline cable television franchising to speed competition in that market. However, it includes a net neutrality provision that would require the FCC to enforce its currently non-binding statement of principles on net neutrality. Furthermore, the legislation specifies that it must be enforced via individual adjudications, prohibiting the FCC from writing extensive new rules on the subject.<sup>11</sup>

H.R. 5273, sponsored by Representative Edward Markey (D-MA), would regulate broadband networks far more heavily. Based on amendments to H.R. 5252 that were proposed and rejected in committee, the bill would, among other things:

- Ban broadband network owners from blocking, impairing, degrading, discriminating against, or interfering with (1) subscribers' access to lawful content, applications, and services or (2) subscribers' ability to use any equipment that they choose to connect to the Internet, provided that it does not damage the network or harm other users;
- Ban broadband network owners from favoring their own traffic and services over broadband links or in interconnection;

- Require network owners to offer service to unaffiliated content providers that is equal in quality to the service that it provides for its own content; and
- Ban surcharges for priority or enhanced service.

These requirements would be subject to a number of exceptions, including services that would enhance computer security, parental controls, and cable TV service.

A third House bill, S. 5417, sponsored by House Judiciary Committee Chairman James Sensenbrenner (R-WI) and Ranking Member John Conyers (D-MI), was approved by that committee on May 25. This bill would:

- Require broadband network owners to provide other content providers with network access equal to what they provide for their own services;
- Require them to interconnect to other networks on "reasonable and non-discriminatory terms";
- Ban blocking, impairing, discriminating against, or interfering with lawful content;
- Require broadband network owners to allow customers to use any device to connect to the Internet as long as it does not damage or degrade others' ability to use the network; and
- Ban surcharges for priority or enhanced service.

In the Senate, Ron Wyden (D-OR) has introduced a similar bill, S. 2360. This legislation would completely ban charges to application and service providers so that all fees for broadband would be paid directly by consumers. It would also impose price controls on broadband owners, requiring them to charge "just, reasonable and non-discriminatory" rates.<sup>12</sup>

10. The Internet itself has been used effectively by these groups to organize support for regulation. One e-mail authored by MoveOn.org was briefly rated the fifth most widely circulated e-mail on the Web. See James Gattuso, "Network Neutrality: Urban Legend #5," Technology Liberation Front, May 5, 2006, at [www.techliberation.com/archives/038647.php](http://www.techliberation.com/archives/038647.php) (May 23, 2006).

11. See James Gattuso, "Good News, Bad News: Telecom Reform in the House," Heritage Foundation *WebMemo* No. 1026, April 3, 2006, at [www.heritage.org/Research/Regulation/wm1026.cfm](http://www.heritage.org/Research/Regulation/wm1026.cfm).

12. See James Gattuso, "Wyden on Network Neutrality: If You Build It, We Will Regulate," Technology Liberation Front, March 3, 2006, at [www.techliberation.com/archives/037089.php](http://www.techliberation.com/archives/037089.php) (May 23, 2006).

Finally, in late May, Senators Olympia Snowe (R-ME), Daniel Inouye (D-HI), and Byron Dorgan (D-ND) introduced their own proposal, with provisions largely similar to those of the Markey bill. However, their bill would also require that Internet service be offered on a “reasonable” as well as “non-discriminatory” basis, raising the prospect of price regulation.

## Analysis

On first consideration, net neutrality regulation sounds reasonable and unobjectionable. After all, what could be wrong with requiring neutrality? The answer is a lot, as it turns out. Not only is this mandate unnecessary, but it also would be counter-productive by harming consumers, discouraging investment, and even reducing competition.

**Internet Growth.** Supporters of net neutrality regulation often say that their goal is to “save the Internet as we know it.”<sup>13</sup> The reality, however, is that the Internet is constantly changing, and for the better. More and more people are using the Internet for more and more uses, straining the ability of the system to handle the traffic. As Craig Moffett of Bernstein Research testified to Congress last year:

[I]nvestment is critical, because despite a great deal of arm waving from “visionaries,” our telecommunications infrastructure is woefully unprepared for widespread delivery of advanced services, especially video, over the Internet. Downloading a single half hour TV show on the web consumes more

bandwidth than does receiving 200 emails a day for a full year. Downloading a single high definition movie consumes more bandwidth than does the downloading of 35,000 web pages; it’s the equivalent of downloading 2,300 songs over Apple’s iTunes web site. Today’s networks simply aren’t scaled for that.<sup>14</sup>

How much will Internet usage grow in coming years? Henry Kafka, BellSouth’s chief architect, estimates that the average residential broadband subscriber today uses about two gigabytes of data per month. But Internet-based television systems would consume 100 times as much—some 224 gigabytes. Put the video into high-definition format, and the average user would consume over one terabyte a month.<sup>15</sup> Overall, John Chambers, chief executive officer of Cisco Systems, projects a four-fold to sixfold increase in Internet traffic over the next decade.<sup>16</sup>

**Allocating Capacity.** Given this expected growth, the first challenge for network owners is to allocate capacity efficiently. As any economist knows, first-come, first-served is a poor way to do this. Treating all providers the same does not make sense when their needs are different.

Thus, while someone sending personal e-mail may be perfectly fine with an occasional delay of a few seconds, that same delay would be unacceptable in an Internet phone call. Such a delay could be deadly if a hospital or health care provider was sending vital medical information.<sup>17</sup> “Fast-lane”

13. See Catherine Yang, “At Stake: The Net as We Know It,” *Business Week*, December 15, 2005, at [www.businessweek.com/technology/content/dec2005/tc20051215\\_141991.htm](http://www.businessweek.com/technology/content/dec2005/tc20051215_141991.htm) (May 23, 2006).

14. Craig Moffett, “Weekend Media Blast #11: Net Neutrality...Beware the Law of Unintended Consequences,” Bernstein Research, March 17, 2006, p. 1.

15. *Ibid.*, p. 2.

16. Walter B. McCormick, Jr., President and Chief Executive Officer, United States Telecom Association, testimony before the Committee on Commerce, Science and Transportation, U.S. Senate, February 7, 2006, p. 5, at [www.commerce.senate.gov/pdf/mccormick-020706.pdf](http://www.commerce.senate.gov/pdf/mccormick-020706.pdf) (May 23, 2006).

17. Robert Hahn and Scott Wallstein of the AEI-Brookings Joint Center for Regulatory Studies argue that the slow development of telemedicine may be due to the lack of such service guarantees. “After all, who wants to risk remote surgery or emergency medical advice if the video stream is sluggish and jerky because of congestion caused by an online game of Doom?” Robert Hahn and Scott Wallstein, “The Economics of Net Neutrality,” American Enterprise Institute-Brookings Joint Center for Regulatory Studies *Related Publication* No. 06-13, April 2006, p. 6, at [www.aei-brookings.org/admin/authorpdfs/page.php?id=1269](http://www.aei-brookings.org/admin/authorpdfs/page.php?id=1269) (May 23, 2006).

service of the sort being discussed by network owners addresses this problem by permitting users to choose from among different service levels, at different rates, based on their needs.<sup>18</sup>

A concrete example involves BellSouth, which earlier this year was reported to have been in talks with MovieLink, which allows customers to download movies from the Web.<sup>19</sup> One of the biggest challenges facing MovieLink is the time that it takes potential customers to download movies at home. (This explains why Netflix, which provides movies through the distinctly non-high-tech U.S. mail, has been so successful.) Priority service would allow MovieLink to compete more effectively with companies like Netflix and high-speed piracy networks by ensuring shorter download times.

This is not a new idea. In the non-Internet world, priority service is offered for everything from package delivery to passenger trains to HOT (High Occupancy Toll) lanes on freeways.<sup>20</sup>

In fact, priority fees are even being used by other Internet firms. Earlier this year, AOL and Yahoo! announced that it would charge businesses a fee to route their e-mails directly to user's mailboxes, without passing through junk mail filters.<sup>21</sup> (Ironically, Yahoo! is a member of a coalition advocating

net neutrality regulation.) Yahoo! plans to offer a similar "certified e-mail" service for a fee. In April, Yahoo! announced a deal with Research in Motion to provide preferred access to Yahoo! services on BlackBerry wireless devices.<sup>22</sup>

**Investment Incentives.** The second challenge for network owners is to expand the overall capacity of the Internet. The costs involved are huge. Verizon alone plans to spend \$20 billion over the next decade on its FiOS project to provide fiber-optic connections to homes.<sup>23</sup> As discussed above, this expansion and more are needed to handle expected growth in Internet usage.

Strict neutrality rules could put roadblocks in the way of raising the capital for this new investment. The Wyden bill, for instance, would impose price controls on the broadband industry, limiting revenue. It would also explicitly ban charging any fees to application or service providers. By banning fees for priority or enhanced services, the Markey and Sensenbrenner-Conyers bills would also impose significant barriers to investment.<sup>24</sup>

Of course, the prospect of such charges is a major reason that firms such as Yahoo! and Google support regulation. Yet, because they are users and beneficiaries of the investment, having them bear

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18. The Sensenbrenner-Conyers bill does specifically allow network owners to "prioritize or offer enhanced quality of service to data of a particular type." They would be banned, however, from charging for such service. Thus, while this would allow certain transmissions to receive priority, it would have to be done based on blanket classifications by network owners (and regulators). Content providers could not, under this provision, decide for themselves whether they want, or whether their business needs, priority treatment.
19. See Frank Barnako, "BellSouth Wants New Fees," *MarketWatch*, January 16, 2006, at [www.marketwatch.com/News/Story/Story.aspx?guid=%7B02432D2D-1EE0-4037-A15F-54B748D6CF26%7D](http://www.marketwatch.com/News/Story/Story.aspx?guid=%7B02432D2D-1EE0-4037-A15F-54B748D6CF26%7D) (May 23, 2006).
20. See Robert W. Poole and Kenneth Orski, "21st Century Toll Roads," in Wendell Cox, Alan Pisarki, and Ronald D. Utt, eds., *21st Century Highways: Innovative Solutions to America's Transportation Needs* (Washington, D.C.: The Heritage Foundation, 2005).
21. Associated Press, "Bulk E-Mail Fee Draws Fire," *Wired News*, February 28, 2006, at [www.wired.com/news/technology/0,70305-0.html?tw=rss.index](http://www.wired.com/news/technology/0,70305-0.html?tw=rss.index) (May 23, 2006).
22. See "Yahoo, RIM Expand Deal: Companies Add Ability to Access Email, Search, and Content via the BlackBerry," *Red Herring*, April 5, 2006, at [www.redherring.com/Article.aspx?a=16399&hed=Yahoo%2C+RIM+Expand+Deal](http://www.redherring.com/Article.aspx?a=16399&hed=Yahoo%2C+RIM+Expand+Deal) (May 23, 2006). See also Hahn and Wallstein, "The Economics of Net Neutrality," p. 6.
23. Robert J. Terry, "Standing Toe to Toe: Comcast and Verizon Are Battling to Be the First to Offer Baltimore-Area Customers Phone, Internet and TV Service in One Bundled Package," *Baltimore Business Journal*, October 7, 2005, at [www.bizjournals.com/baltimore/stories/2005/10/10/focus1.html?page=3](http://www.bizjournals.com/baltimore/stories/2005/10/10/focus1.html?page=3) (May 23, 2006).
24. Moreover, by requiring network owners to offer all content providers the same access that they provide to their own content services, the Sensenbrenner-Conyers bill could put at risk ongoing efforts by some telephone companies to build dedicated facilities with which to offer video services in competition with cable television firms.

some of the cost is hardly unreasonable. This is certainly no worse than asking individual subscribers to pay.

Of course, priority service fees are not the only—or even the most important—way that Internet content firms could help to provide capital for Internet infrastructure investment. They could also partner with network owners and invest directly in capacity expansion. For instance, a content provider could finance a certain network upgrade in return for priority treatment or first rights to the added capacity.

However, neutrality rules could prohibit such arrangements even if the content provider agrees to them. The Wyden bill would specifically ban discrimination by the network owner in favor of “itself or any other person.” The Markey and Sensenbrenner–Conyers bills, while not as clear, could also be read to bar certain types of partnerships.

**Effect on Innovation.** Supporters of regulation argue that fees and other investment arrangements would drive small Internet entrepreneurs out of business, hurting competition and innovation, but this is highly unlikely. Network owners themselves have every incentive to encourage innovation on the Internet because they profit only if the Internet prospers. Moreover, the availability of priority services could be an opportunity for start-ups. New firms typically need to differentiate themselves from their established rivals, as well as to establish a good reputation with consumers. The availability of priority service would provide a chance to do both. That opportunity would not exist in a one-size-fits-all world.

But would start-ups have the cash to purchase priority service? Certainly, many are cash-poor, but many are not, thanks to the strong market for venture capital. Either way, why should entrepreneurs be exempted from paying for this particular resource? No one would argue that start-ups should be exempted from paying for other resources, such

as rent and equipment. In fact, many of the firms arguing for regulation charge start-ups for services. For example, it is unlikely that Google would post free ads, or that Amazon.com would provide free books, for entrepreneurs.

### Blocking, Bias, and Competition

Many have expressed fears that broadband network owners could abuse the right to manage traffic on their systems by slowing or even blocking services, such as Internet telephone service providers and broadband video services, that compete with them. Other firms could even pay them to slow down services offered by their rivals.

Some have argued that the lack of regulation threatens First Amendment freedoms, saying that network owners could shut down Internet content with which they disagree politically. Common Cause President Chellie Pingree has even suggested that networks would shut down Web sites of candidates with whom they disagree prior to an election.<sup>25</sup>

Such concerns, however, are largely hypothetical. To date, the only instance of Web site blocking in the U.S. occurred in 2005, when a small telephone carrier in North Carolina briefly blocked Vonage, an Internet phone carrier.<sup>26</sup> In fact, all major network owners have pledged not to engage in such practices.

Certainly, network carriers have the technical capacity to block or impede particular services or Web sites, but they are hardly unique in that regard. Many of the firms that advocate neutrality regulation have similar abilities. For instance, Google could easily block or bias certain search results to disadvantage rivals or to favor political causes.

Google, however, does not engage in systematic bias<sup>27</sup> for the same reason that network owners such as Verizon or Comcast do not: competition. Blocking Web sites or impeding disfavored services

25. Chellie Pingree, “Keep the Internet Free, Fast,” *The Miami Herald*, May 9, 2006, at [www.miami.com/mld/miamiherald/news/opinion/14532935.htm?template=contentModules/printstory.jsp](http://www.miami.com/mld/miamiherald/news/opinion/14532935.htm?template=contentModules/printstory.jsp) (May 23, 2006).

26. Madison River Communications, the carrier, eventually reached a consent agreement with the FCC agreeing to stop the practice.

would quickly send customers packing to another provider.

**Competition in Broadband Markets.** Advocates of neutrality regulation often dismiss the role of competition in broadband markets. In fact, a perceived paucity of consumer choice is often cited as a justification for regulation.<sup>28</sup> However, competition among broadband networks is quite strong and growing stronger.

Unlike the telephone system of years past, there is no dominant provider of broadband services. Nationally, cable television firms provide the majority of broadband lines, followed closely by telecom firms such as AT&T and Verizon. According to the most recent FCC figures, cable firms provide 58.8 percent of high-speed lines, with traditional telephone companies providing 38.8 percent. The remainder is provided by firms using wireless technology, satellites, and even power lines.<sup>29</sup>

The same basic structure is mirrored in local markets. According to the FCC, over 88 percent of ZIP codes in the United States have two or more providers of high-speed service, almost 75 percent have three or more, and 60 percent have four or more.<sup>30</sup>

Despite these numbers, some have dismissed the broadband market as a “cozy duopoly” because of the high market shares of the two leading providers. However, this market structure—two major

competitors with a number of much smaller rivals—is similar to that of many other industries in which competition is anything but cozy. Coca-Cola and Pepsi-Cola, for instance, dominate the soft drink market but compete intensively against one another, with several smaller providers at their heels. Similarly, the supermarket industry, one of the most competitive in the economy, features two major supermarket chains in many cities, along with a number of smaller players that often occupy specialized niches—such as club purchases, organic and natural foods, and gourmet fare.

Similarly, in broadband, telephone and cable companies compete intensely against each other for broadband customers on price and quality.<sup>31</sup> Importantly, this competition is not just in the broadband market itself, but also in other related markets where the two industries are rivals. For instance, using Internet-based telephony technology, cable firms increasingly are challenging the traditional telephone companies’ share of that market. At the same time, Verizon and AT&T are using their broadband networks to enter video markets, challenging traditional cable firms.

A bevy of smaller providers also keep this market in check. Three firms provide broadband service nationwide. Wireless broadband is available both on mobile phones and via fixed systems. Access via Wi-Fi is growing rapidly, as is WiMAX service, which covers larger ranges.<sup>32</sup> “Broadband over power line” service, which allows consumers to

27. There are many well-known instances in which Google’s search engine provides politically skewed results. For instance, a search of the word “failure” produces the White House Web site. This skewing, however, is apparently not the result of any design by Google, but is caused by gaming of Google’s search algorithm by outside parties. See Wikipedia, s.v. “Google bomb,” at [www.en.wikipedia.org/wiki/Google\\_bomb](http://www.en.wikipedia.org/wiki/Google_bomb) (May 23, 2006).

28. See Eric Bangeman, “Amazon Exec: Net Neutrality Necessary Because of ‘Little Choice’ for Consumers,” *Ars Technica*, at [www.arstechnica.com/news.ars/post/20060512-6817.html](http://www.arstechnica.com/news.ars/post/20060512-6817.html) (May 23, 2006).

29. Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, “High-Speed Services for Internet Access: Status as of June 30, 2005,” April 2006, Table 6, at [www.ftthcouncil.org/documents/448881.pdf](http://www.ftthcouncil.org/documents/448881.pdf) (May 23, 2006).

30. *Ibid.*, Table 16.

31. See Ray Gifford, “Signs of a Not So Cozy Duopoly,” *Progress and Freedom Foundation Blog*, June 30 2005, at [www.blog.pff.org/archives/2005/06/signs\\_of\\_a\\_not.html#more](http://www.blog.pff.org/archives/2005/06/signs_of_a_not.html#more) (May 23, 2006).

32. See U.S. Government Accountability Office, *Telecommunications: Broadband Deployment Is Extensive Throughout the United States, But It Is Difficult to Assess the Extent of Deployment Gaps in Rural Areas*, GAO–06–426, May 2006, at [www.gao.gov/new.items/d06426.pdf](http://www.gao.gov/new.items/d06426.pdf) (May 23, 2006).



plug into the Internet through home electrical outlets, is beginning to be deployed.<sup>33</sup> Not all of these technologies, because of slower speeds or other limitations, are perfect substitutes for the major services, but they do provide competitively significant alternatives by providing niche or specialized services.

Of course, such competition does not exist everywhere. Many areas are still served by only one provider or no providers at all.<sup>34</sup> As the FCC pointed out in its 2005 decision deregulating telephone company broadband services, an industry like this must be seen in dynamic rather than static terms.<sup>35</sup> The number of underserved areas is shrinking each year, and the number with two or more providers is growing.<sup>36</sup> The technologies for delivering broadband are changing rapidly as well. Many technologies that have only minor market shares are expected to grow quickly. Given this dynamism, it is too soon to write off any areas as not potentially subject to competition.

**Competition Threatened by Regulation.** Ironically, neutrality regulation could hinder the growth of competition. The reason is simple: By requiring all broadband networks to treat traffic in the same way, regulation would make it more difficult for network operators to differentiate themselves from the others. As a result, broadband service would become much like a commodity market, with all providers offering the same basic product. That would favor the largest firms (i.e., those with the largest economies of

scale) and make it difficult for new challengers to gain a foothold.

As Christopher Yoo, an associate professor of law at Vanderbilt University, points out, “it is not unusual for small-volume producers to survive against their larger rivals even in the face of unexhausted economies of scale by targeting those customers who place the highest value on the particular types of products or services they offer.”<sup>37</sup> For instance, specialty stores survive and prosper despite the existence of one-stop-shopping stores with high economies of scale.

Yoo suggests several ways that network operators could differentiate their networks in this way. A network might be optimized for conventional e-mail or Web site browsing. One might focus on security features to appeal to business users. Yet another could employ prioritization techniques benefiting time-sensitive applications such as Internet-based telephone service.

Such differentiation would mean that “[t]he network with the largest number of customers need not enjoy a decisive price advantage. Instead, each could survive by targeting and satisfying those consumers who place the highest value on the types of service they offer.”<sup>38</sup> Neutrality regulation would foreclose such strategies.

## Regulatory Quagmire

Neutrality regulation would lead to other problems as well. While the various proposals differ in their specific standards, definitions, and exceptions, all would invite protracted uncertainty and

33. See Darrell Dunn, “Power Line Broadband Expands,” *InformationWeek*, May 22, 2006, at [www.informationweek.com/industries/showArticle.jhtml?articleID=188100717](http://www.informationweek.com/industries/showArticle.jhtml?articleID=188100717) (May 23, 2006).

34. According to the FCC, 2 percent of U.S. ZIP codes have no broadband provider, and 9.3 percent have only one. However, since not everyone in a particular ZIP code is covered by each provider, the actual areas with only one provider or no providers are likely much larger.

35. Federal Communications Commission, “In the Matters of Appropriate Framework” *et al.*, paragraphs 50–62.

36. From June 2004 to June 2005 alone, the number of ZIP codes with no provider shrank by nearly two-thirds, from 5.7 percent to 2 percent. The number with only one provider shrank by about a third, from 13.8 percent to 9.2 percent.

37. Yoo, “Would Mandating Broadband Network Neutrality Help or Hurt Competition?” p. 62.

38. Christopher S. Yoo, “The Economics of Net Neutrality: Why the Physical Layer of the Internet Should Not Be Regulated,” Progress and Freedom Foundation *Progress on Point* Release 11.11, July 2004, p. 25, at [www.pff.org/issues-pubs/pops/pop11.11yoonetneutrality.pdf](http://www.pff.org/issues-pubs/pops/pop11.11yoonetneutrality.pdf) (May 23, 2006).

litigation. Inevitably, regulators<sup>39</sup> would be drawn into years-long, lobbyist-driven policy quagmires as to whether this or that action is allowed or banned and even what prices can be charged.

Regulators would inevitably judge what technologies are employed (Is it neutral? How are the bits handled? Have they been modified?) and how much is charged (Are variations justified? Is it reasonable?). And the exceptions built into several bills for such things as network security and parental control features would involve regulators even more deeply in the details of managing a network: Is a claimed security threat real? Is it substantial enough to justify action? Is it irreparable? Is the action intended to protect minors from inappropriate content, or is the intent economic gain? The resulting litigation would be a bonanza for lobbyists and lawyers at the expense of consumers and the Internet itself.

Even the relatively limited provisions in the Barton bill could raise problems. For example, what does it mean to say that consumers are “entitled to competition?” Does that give the FCC authority to review business practices that injure competitors, to shield competitors who are simply losing out in the marketplace, or to limit low prices that competitors cannot match? In effect, this provision would give the FCC a vaguely defined mandate to regulate broadband networks. How that mandate would be used is unclear.

### The Antitrust Alternative

Special rules for broadband are unnecessary. Competition serves to protect consumers from

potential abuses of discretion by network owners. Even if it did not, new laws are not needed.

While broadband technology may be new, the competition policy questions surrounding it are certainly not, and there is already a substantial body of law in place to deal with just such issues: The nation’s antitrust laws define the basic ground rules for competition for the vast majority of industries in the U.S. economy. Antitrust laws are certainly not perfect;<sup>40</sup> but as interpreted and reinterpreted in thousands of cases over the past 100 years, competition laws provide a comprehensive and well-established framework for evaluating business practices. Net neutrality rules, by contrast, would impose a special set of rules on broadband firms, based on rigid, pre-conceived assumptions about how this market should work.<sup>41</sup>

Under a 2004 Supreme Court decision, the antitrust laws do not currently apply to regulated telecommunications services.<sup>42</sup> However, since the FCC now classifies broadband as an unregulated information service rather than as a telecommunications service, broadband is likely again subject to those laws (although the issue has not yet been presented to the courts).<sup>43</sup>

More broadly, the FCC could also apply antitrust standards—if not the laws themselves—to broadband and telecommunications services in lieu of current regulations. Under a proposal developed by a working group sponsored by the Progress and Freedom Foundation, FCC regulation would be limited largely to enforcement of “unfair competition” rules (e.g., the antitrust stan-

39. With the exception of the Sensenbrenner–Conyers bill, each pending proposal would give enforcement authority to the Federal Communications Commission.

40. See Clyde Wayne Crews, Jr., “The Antitrust Terrible Ten: Why the Most Reviled ‘Anti-Competitive’ Business Practices Can Benefit Consumers in the New Economy,” Cato Institute *Policy Analysis* No. 405, June 28, 2001, at [www.cato.org/pubs/pas/pa-405es.html](http://www.cato.org/pubs/pas/pa-405es.html) (May 23, 2006).

41. The Sensenbrenner–Conyers bill would formally be an amendment to the Clayton Act, and thus formally part of the “antitrust laws.” This formality, however, does not change the fact that it would create new, specific rules applicable to the broadband market rather than apply established competition law. See James Gattuso, “Sensenbrenner and Antitrust: Bootstrapping Antitrust Regulation,” *Technology Liberation Front*, May 25, 2006, at [www.techliberation.com/archives/039143.php](http://www.techliberation.com/archives/039143.php).

42. *Verizon Communications v. Trinko*, 540 U.S. 398 (2004).

43. The chairman of the Federal Trade Commission, Deborah Majoras, in a recent letter to Representative James Sensenbrenner, concluded that the FTC already has full authority to apply the FTC Act to broadband providers. See Ray Gifford, “Let the FTC Do It!: Maybe It Already Can,” *Progress Snapshot*, release 2.12, April 2006, at [www.pff.org/issues-pubs/ps/2006/ps2.12ftc.html](http://www.pff.org/issues-pubs/ps/2006/ps2.12ftc.html).

dard under which the Federal Trade Commission now largely operates).<sup>44</sup> This proposal has been incorporated into S. 2113, sponsored by Senator Jim DeMint (R-SC).<sup>45</sup>

## Conclusion

Proposed network neutrality rules would impose comprehensive, unnecessary, and harmful mandates on broadband networks. Such unnecessary mandates—the most extensive regulation of the Internet ever considered by Congress—would stymie the efficient use of scarce Internet capacity, discourage investment, and even threaten the growth of competition among broadband networks.

Despite the grim scenarios painted by the supporters of regulation, there is little or no evidence of market abuse by network owners. This is for good reason: Today's broadband market is competitive, and any network abusing its position would quickly lose customers. Moreover, if any abuse does occur, existing competition law is more than sufficient to address the problem.

Advocates of neutrality regulation argue that the future of the Internet is at issue in this debate. They are correct. This is why such regulation of the Internet should be rejected.

—James L. Gattuso is Senior Research Fellow in Regulatory Policy in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation.

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44. See Progress and Freedom Foundation, "A Digital Age Communications Act: Proposal of the Regulatory Framework Working Group," Release 1.0, June 2005, at [www.pff.org/issues-pubs/other/050617regframework.pdf](http://www.pff.org/issues-pubs/other/050617regframework.pdf) (May 23, 2006), and "The Digital Age Communication Act's Regulatory Framework and Network Neutrality: A Statement of the DACA Regulatory Framework Working Group," at [www.pff.org/issues-pubs/communications/other/031707dacastmt.pdf](http://www.pff.org/issues-pubs/communications/other/031707dacastmt.pdf) (May 23, 2006).

45. See James Gattuso, "Telecom Reform: DeMint Does DACA," Technology Liberation Front, December 16, 2005, at [www.techliberation.com/archives/027619.php](http://www.techliberation.com/archives/027619.php) (May 23, 2006).