Getting a Fix on Network Neutrality

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On June 8, the House of Representatives squashed an amendment that would prevent telecommunications companies from charging Internet content companies more to deliver enhanced services, such as high quality audio and video content. Experts at Wharton say the failure of the amendment could be considered a positive development since legislation may have led to a number of unintended consequences.

The amendment would have required "network neutrality," an often-debated term that is not easy to define. To network neutrality's supporters, like Google, Yahoo and eBay, the term means that telecommunications companies should be required to treat all Internet traffic -- whether bandwidth-hogging video or a brief email message -- the same. To companies like Verizon and AT&T, imposing network neutrality would mean that they could not charge for enhanced services on networks that cost them billions of dollars to build. Ultimately, the telecommunications companies argue, network neutrality would take away incentives to construct next-generation broadband networks.

Network neutrality became a hot issue last fall when top executives at AT&T and BellSouth noted that companies like Google, Yahoo and Vonage were essentially distributing their services for free on the backs of telecommunications companies. "For a Google or a Yahoo or a Vonage, or anybody, to expect to use these pipes for free is nuts," said Ed Whitacre, chairman of AT&T, in November.

That comment set off a heated argument on the issue that became "even more crazy than most debates in Congress," says Gerald Faulhaber, a Wharton professor of business and public policy. Indeed, on the eve of the June 8 vote, Internet giants were lobbying intensely for the amendment, with Google CEO Eric Schmidt urging users in an undated open letter to "take action to protect Internet freedom."

Faulhaber convened a meeting of scholars -- including David Farber, a computer science professor at Carnegie Mellon, Christopher Yoo, a Vanderbilt law professor, and Michael Katz, an economics professor at the University of California Berkeley's Haas School of Business -- to consider the issue. The group concluded that mandating network neutrality could have adverse effects on Internet development and result in unforeseen consequences. Any legislation "is a problem when the Internet is in a state of flux," says Faulhaber.

In fact, the only common ground on network neutrality among experts seems to be that congressional legislation would have botched the issue. Wharton legal studies and business ethics professors Dan Hunter and Kevin Werbach, for example, support the concept of network neutrality and worry that telecommunications giants like Verizon or AT&T could discriminate against smaller Internet content providers. But the two professors have little confidence in Congress's ability to sort out the issue.

According to Werbach: "There are really two issues in the network neutrality debate: Should government step in when broadband network owners discriminate against unaffiliated content and services, and should there be a prospective rule mandating non-discrimination? I'm very troubled by the possibility that network operators will act in anticompetitive ways against application and content providers, but I find it

hard to craft a workable legal rule prohibiting such actions."

That situation leaves a big question unanswered: How can the principles of network neutrality be mandated without causing unintended consequences?

The good news is that there is time to analyze the debate, especially because the network neutrality amendment, which was going to be attached to the now-passed Communications Opportunity, Promotion, and Enhancement (COPE) Act of 2006, was defeated. In addition, experts expect the network neutrality debate to be ongoing, and indeed, the issue is expected to resurface in a Senate panel discussion this week (no vote is scheduled). "I wouldn't be surprised if we are dealing with network neutrality 10 years from now," says Katz. "It may go away for a little bit, but I would expect it to come up again."

Why will the issue return? Experts contend that the Internet has to change as new demands tax its architecture, which can't distinguish between different types of data -- such as a video clip or a text file -- to better route traffic. On the Internet, all information is treated equally as it flows through the pipes from the content site to the user's desktop.

While that architecture was fine for exchanging email and displaying simple web pages, it now risks being overloaded by companies using it for such services as carrying phone calls, music and video. Telecommunications companies have indicated that they want to create pay-for-performance business models that will address potential network congestion problems by having high bandwidth customers pay a premium. The issue: As telecommunications firms build what they consider to be more intelligent networks that can handle new services, critics are concerned they will discriminate against certain forms of content -- particularly those that complete with their own offerings, such as voice over IP telephony services. "The issue isn't bringing intelligence to the network; it's who controls the intelligence," says Farber.

Yoo considers building tiered services as the Internet's next iteration. "An end to network neutrality wouldn't be that bad," he suggests. "It is the natural evolution of the Internet. One-size-fits-all pricing confines all of us to the slow lane."

Hunter, however, adds that tiered services could shut out smaller businesses on the Internet, resulting in less innovation. "My take is that there has to be a compelling reason to change and I haven't heard one yet. We don't know how sensitive the Internet and innovation will be to even one small change. Where is the system broken?" Werbach also worries about innovation. "The problem is that what network operators see as in their competitive interests may stunt innovation and investment so significantly that everyone loses," he says.

Fixing a Problem that Doesn't Exist?

What makes the network neutrality debate more difficult is that there are few examples of discriminatory practices of Internet services today. The primary network neutrality argument is that companies such as Verizon, AT&T and Comcast should not be allowed to block certain Internet content just because they control Internet access to the home. However, these discriminatory practices haven't happened, meaning Congress would be fixing a problem that doesn't exist, says Faulhaber.

Some network neutrality supporters have decried the telecommunications companies' control of network bandwidth as tantamount to censorship. In Google's official corporate blog, Andrew McLaughlin, senior policy counsel, wrote that the company believes "that forcing people and companies to get permission from, and pay special fees to, the phone and cable companies to connect with one another online is fundamentally counter to the freedom and innovation that have defined the Internet." Hunter, however, says Google's argument is overblown. "The free speech argument is a bit of a red herring. Unless the state is censoring, there's no issue."

University of Pennsylvania law professor Polk Wagner suggests that ultimately every company involved in the network neutrality debate has to please the consumer. And that means an Internet backbone provider like AT&T couldn't sell its services if it blocked sites like Google. There would be no business reason to do so. "The fundamental issue is what the consumer wants," says Wagner. Nevertheless, Werbach adds, network neutrality has to be closely monitored. "Just because a phone company owns a network doesn't mean that it should be able to block applications and content for anticompetitive reasons."

Faulhaber points out that the Internet has various levels of service now. Internet giants such as Yahoo and Google can use technology from Akamai, a company that stores web content on a distributed network of servers to deliver it more quickly. A person in Philadelphia visiting Amazon.com, for example, may hit a server in the mid-Atlantic region instead of sending data all the way to Seattle and back to get the price of a book. "Akamai today is essentially the fast lane," says Faulhaber.

If network neutrality were mandated, it's unclear whether Akamai would be able to function. "Some proposals are essentially saying there are no fast lanes, undermining today's two-speed Internet," says Faulhaber. "It's like telling the postal service that it can't offer express mail."

Instead of mandating network neutrality, Faulhaber's group concluded that current laws should regulate any anticompetitive behavior. Farber points to the Federal Communications Commission's (FCC) network neutrality guidelines issued in August 2005, which state:

Consumers are entitled to access the lawful Internet content of their choice;
- Consumers are entitled to run applications and services of their choice;
- Consumers are entitled to connect their choice of legal devices that do not harm the network;
- Consumers are entitled to competition among network providers, application and service providers, and content providers.

"These principles are the line in the sand. If you step over it, the FCC will look," says Farber.

One example where the FCC protected those principles was in the case of Madison River Communications, a North Carolina telecommunications company that the FCC fined $15,000 and required to refrain from blocking Internet phone calls. The COPE Act gives the FCC the power to enforce its network neutrality principles.

Faulhaber, however, says companies are better off filing antitrust suits to handle concerns over net favoritism. For instance, if Comcast cuts a special deal allocating bandwidth to Barnes and Noble, Amazon could bring an antitrust suit and show damages. "It takes much less time than the FCC," he said.

Unintended Consequences

Whatever direction the network neutrality debate takes, new business models could emerge, say experts at Wharton.

As telecommunications companies begin offering tiered services and greater network performance to handle video and other high-bandwidth services, content providers could also begin charging the likes of Verizon and AT&T, says Yoo. The end of network neutrality, he adds, means that the Internet becomes a two-sided market. For instance, if AT&T makes heavy bandwidth users pay more, Google, eBay or Yahoo could charge AT&T to include their services on the network.

Faulhaber notes that the model already exists in the cable industry. Just as no cable provider can forgo having ESPN on its network, no Internet provider could offer services without access to Google or Yahoo. "We have no idea how this will play out," says Wagner. "I could see Google and Amazon gaining from the fact that they could provide new services they can charge for."

It's unclear what business models might emerge for telecom operators. Like wireless companies, they could offer various service plans for different levels bandwidth or types of content, says Yoo. "These networks may compete on something other than price. There are different ways to reach different consumers."

Although the June 8 House vote was a blow to network neutrality supporters, a timeout could bring more common sense approaches to the issue, says Faulhaber, noting that more attention can now be given to how network neutrality affects technology innovation, the future architecture of the Internet and social goals.

A little more time will also reveal the intentions of telecommunications companies, notes Werbach. "If the broadband network owners don't intend to ever block or degrade unaffiliated services and content, why are they so opposed to enshrining that in a legal rule? It's a bit disingenuous to claim network neutrality regulation addresses a non-existent situation, and then claim it would create huge disincentives to broadband investment," he says.

Indeed, the best course, according to Wagner, is to collect more information. "There are basic business principles to watch. Five years from now maybe we will have more of a mandate to do something on network neutrality."