

The Case for Preserving Network Neutrality

Keep Innovation and Competition on the Internet

Overview

- ❖ NETWORK NEUTRALITY INCLUDES THE CONCEPT THAT TELECOM AND CABLE COMPANIES, WHICH PROVIDE OVER 92 PERCENT OF CONSUMER BROADBAND INTERNET ACCESS, SHOULD BE PROHIBITED FROM DISCRIMINATING IN THEIR TREATMENT OF INTERNET TRAFFIC.
- ❖ THERE IS THE MISPERCEPTION THAT CONTENT PROVIDERS DO NOT PAY NETWORK OPERATORS FOR ACCESS TO THE INTERNET. A CONSERVATIVE ESTIMATE SHOWS THAT NETWORK OPERATORS RECEIVE AT LEAST \$13.1 BILLION ANNUALLY FROM THE 7.3 MILLION BUSINESS INTERNET SUBSCRIBERS, WHICH INCLUDE CONTENT PROVIDERS OF ALL SIZES.
- ❖ NETWORK OPERATORS ARGUE THAT NET NEUTRALITY WOULD DESTROY COMPETITION AND INNOVATION ON THE INTERNET; THIS IS FALSE. IN FACT, THE U.S. ECONOMY HAS GROWN TREMENDOUSLY AS A RESULT OF NETWORK NEUTRALITY, THE GUIDING PRINCIPLE SINCE THE INCEPTION OF THE INTERNET.
- ❖ AeA SUPPORTS A CONTENT-NEUTRAL INTERNET THAT MAINTAINS LOW BARRIERS TO ENTRY, PROVIDES UNFETTERED ACCESS TO LAWFUL CONTENT, AND PROMOTES COMPETITION.
- ❖ CONGRESS NEEDS TO PROTECT CONSUMERS BY AUTHORIZING THE FCC TO ENFORCE THESE PRINCIPLES, PREVENTING DISCRIMINATION ON THE INTERNET.

Analysis

Network neutrality is a wide ranging concept with many facets and many different groups trying to define what it means. Unfortunately, much of the current debate is being driven by network operators, resulting in a one-sided view, full of misleading information.

This paper focuses on addressing these misperceptions and on the most contentious part of the debate, the discrimination of Internet traffic on the basis of source or ownership of content.

When the Internet was first built it was designed to be content neutral; its purpose was to move data from one place to another in a nondiscriminatory fashion regardless of who provided the original content.

Initially, the Federal Communications Commission (FCC) enforced this principle by requiring nondiscriminatory treatment by the telecom carriers, where content was delivered on a "best effort" basis, i.e., by treating all "packets" as relatively equal.

However, this changed in August 2005 when the FCC effectively removed the legal protection of content neutrality for all broadband Internet access providers.

This outcome clearly favored telecom carriers. Edward Whitacre Jr., the former CEO of SBC Communications, claimed in *BusinessWeek* that Internet content providers "use my lines for free – and that's bull." BellSouth's Chief Technology Officer, William Smith, told reporters that his firm should be able to charge content providers for the opportunity for prioritizing their content. And, Verizon Communications' Chief Executive Ivan Seidenberg said, "We have to make sure [content providers] don't sit on our network and chew up our capacity."

"I hope that Congress can protect net neutrality, so I can continue to innovate in the internet space. I want to see the explosion of innovations happening out there on the Web, so diverse and so exciting, continue unabated."

Tim Berners-Lee
"Creator of the World Wide Web"

Some broadband providers want to be able to offer priority service to those content providers who agree to pay an additional fee beyond what they already pay to access the Internet. Those who can afford to pay the fee would have their content moved to the front of the line.

These carriers claim that the next generation of Internet content (such as videos, voice over IP, real-time gaming, and distance learning) requires higher levels of speed and quality than other content, and as a result, must be prioritized ahead of other Internet traffic. To pay for this increased capacity, the network operators argue that they need additional revenue.

Countering this, Internet content providers and consumer groups state that they already pay billions of dollars to access the Internet. They are also concerned that telecom and cable operators, which dominate broadband Internet access with over 92 percent market share, will leverage their potential monopoly power to pick winners and losers in the highly competitive Internet content market. This environment has historically been quite egalitarian.

The original design of the Internet, with a content-neutral network, provided the smallest company or individual with the same access to consumers or content as the big guys. Consumers were not limited as to which legal content they could or could not receive. They were limited only by how efficiently they received this content based on the amount of bandwidth they chose to purchase. This design allowed for a tremendous amount of innovation and competition where the marketplace determined which content flourished and which did not.

The Myth that Content Providers Don't Pay for Internet Access

There seems to be the perception that Internet companies (also called Internet content providers) and, to a lesser extent, Internet consumers are not paying their fair share to access the Internet. This perception is just wrong. The typical residential consumer pays anywhere from \$10 to \$100/month for Internet service depending on how much bandwidth they desire.

If consumers only want dial-up access to the Internet, they can spend \$10/month for this. But if they want a broadband connection with higher bandwidth (providing greater speed)

the price increases. As the bandwidth increases, generally so does the price paid to Internet providers. Consumers traditionally use the Internet to access information and download content. If they wish to access data-rich files or audio/visual content, then they need more bandwidth to receive this content quickly, and as a result they will pay more.

Likewise, Internet content companies must also purchase bandwidth from Internet providers. These companies provide content to consumers and must make this content accessible. To do this, they purchase large amounts of bandwidth to handle the traffic. Companies such as Yahoo! and Google pay billions of dollars a year to network operators because they have millions of customers using their services every day.

Much like a telephone call where **both the person making the call and the person receiving the call must pay** to access the telephone system, both sides of an Internet transaction (the consumer and the content provider) must pay to access the network.

A conservative analysis of the 43 million residential broadband customers in the United States shows that these consumers spend over \$19 billion a year accessing the Internet. Additionally, an estimated 38 million residential subscribers still use dial-up connections. Based on a conservative \$10/month plan, they spend at least \$4.6 billion a year accessing the Internet.

In addition, there are 7.3 million business Internet subscribers whose cost for Internet access ranges widely, from small businesses whose costs are comparable to the residential user to large companies who pay billions of dollars a year to make content accessible to consumers. Using a very conservative estimate of \$150/month, businesses spend **at least** \$13.1 billion a year to make their content available on the Internet.

DEFINITIONS

BANDWIDTH – A term used to describe the size of the Internet “pipe” that transmits electronic information between consumers and content providers. Higher bandwidth allows more content (data, voice-over-IP, video, etc.) to be sent and received faster.

CONSUMERS – These are the people seeking and using the content made available by content providers. They are the target audience for content providers.

CONTENT PROVIDERS/INTERNET COMPANIES – Any company, organization, or individual that provides content or information on the Internet, such as a website or web portal.

INTERNET ACCESS PROVIDERS/NETWORK OPERATORS – Any company or organization that provides access to the Internet, whether by DSL, cable, satellite, fiber, or other method of delivery.

PACKETS – Information over the Internet is broken into small bundles, known as packets, and sent over the Internet by the most efficient path available.

Differential Pricing – Based on Content or Bandwidth?

The telecom companies claim they want to allow premium services to those that pay extra. There is nothing necessarily wrong with differential pricing. In fact, it already exists, but it is based on bandwidth, not the ownership or source of content. On the low end of the price scale is dial-up access at speeds of 56 kbps. Broadband access (such as DSL and cable) costs more because the bandwidth is greater. Faster still are T1 and fiber optic lines, and naturally the costs for these are greater.

Many network operators not only want to charge for the bandwidth of your Internet access, but also based on who the content comes from. If Company A receives an exclusive or preferential offer to pay a premium, the network operator will provide first class service to content from Company A, putting it at the front of the line when transmitting data. This pushes the content from Company B, which cannot pay the premium fee, further back in the line. Company B's traffic may or may not reach its final destination in a manner that allows the end user to experience the content as intended.

Cost Estimates to Access the Internet

Connection Technology	Number of Subscribers*	Average Monthly Cost	Total Annual Cost
Residential			
Dial-Up	38.1 m	\$10 †	\$4.6 b
Cable	24.7 m	\$41 ✦	\$12.1 b
DSL	17.5 m	\$32 ✦	\$6.8 b
Satellite, Fiber, and Wireless	0.7 m	\$50 †	\$446 m
Residential Total	81.0 m		\$23.9 b
Business			
DSL, Cable, T1, fiber, etc.	7.3 m	\$150 †	\$13.1 b

Sources:

* U.S. Federal Communications Commission, December 2005

✦ Pew Internet & American Life Project

† Based on a conservative average of select companies.

By tiering the Internet based on who pays the most to prioritize their content, the telecom industry is creating a system of haves and have-nots: those that can afford the premium for preferred treatment and those that cannot.

A tiered system for broadband services is already in place, but it is **based on the bandwidth purchased by the consumer and content provider**, who both are already paying for Internet access. This current system allows consumers equal access to any legal content they choose and gives even the smallest content provider the chance to compete in a robust marketplace. This system treats all packets equally.

International Broadband Practices

These types of tiered services already exist in other countries, without resorting to additional fees on content providers. Internet subscribers in Japan can receive 100-megabit service for \$25 a month. Sweden is planning for a 1-gigabit (1,000 megabit) service for about \$120 a month – this is over 150 times faster than the fastest typical DSL service available in the United States, which currently tops out at around 6 megabits.

Challenges Posed by a Non-Neutral Internet

A non-content-neutral Internet poses critical challenges for the system. It has the potential to:

- ❖ Promote anticompetitive behavior if network operators implement exclusive or preferential deals or if they use this tiered system to push their own content to the front of the line.
- ❖ Distort the market to favor larger and better funded content providers.
- ❖ Lead to cost increases to consumers, as content providers are forced to pass on surcharges to consumers.
- ❖ Increase consumer confusion when broadband users experience varying response times in a tiered system.

- ❖ Undermine the fundamental principles of open and free exchange of information across the network.
- ❖ Fracture the Internet into privately walled systems.
- ❖ Lead network operators to neglect the infrastructure of those non-premium areas of the Internet.
- ❖ Undermine the flexibility in the transmission of data, preventing packets from traveling in the most efficient way.
- ❖ Degrade service on the non-premium network by constantly pushing premium content to the front of the line.

Ultimately, It's About Fairness, Competition, and Innovation

Carriers already charge both consumers and content providers to access the Internet. The network operators who plan to tier the Internet could impose additional surcharges on the system, which has the potential to stifle innovation.

If a network discriminates against content based on who can afford to pay the premium, this ultimately hurts smaller firms with less funding. It takes away the egalitarian concept on which the Internet was founded – which rewards the best idea or website – and instead shifts power to companies that can outbid their competitors for preferential treatment.

This will certainly hurt the United States' ability to innovate. Two Stanford students building a search engine out of their dorm room would not have the resources to compete (and become Google). Nor could a Pez collector turn his girlfriend's hobby into an international corporation (and become eBay).

AeA's Principles on Network Neutrality

These principles argue that policymakers must ensure that American consumers retain unfettered access to lawful Internet content and services, and that a free and open market is best able to determine the success of Internet innovation. Consumers should have the final word as to which content and services succeed or fail on the Internet.

The low barriers to entry for such innovators must be preserved in the future for the overall Internet ecosystem to continue to expand successfully.

To encourage broadband deployment and preserve an open and interconnected public Internet, AeA's Board of Directors, which includes executives representing nearly all sectors of the technology industry, put forward the following principles.

- 1) Consumers should have unfettered access to their choice of legal Internet content.
- 2) Consumers are entitled to use their Internet connection to run applications and services of their choice as long as they do not harm the network. For example, many telecommuters use proprietary software to securely communicate with their office computer systems from home.
- 3) Consumers are entitled to connect their choice of legal devices that do not harm the network. Much like individual consumers can buy any phone and plug it into their phone outlet, consumers likewise can attach their own

modems, routers, voice-over-IP telephones, or other legal equipment to access the Internet.

- 4) Consumers are entitled to competition among network providers. This includes receiving meaningful information regarding their broadband Internet service plans.
- 5) Consumers, application service providers, and online service providers should be protected from anticompetitive and unreasonably discriminatory conduct by broadband network providers.
 - ❖ Examples of conduct that could have anticompetitive or unreasonably discriminatory effects would be charging additional fees for use of third-party voice-over-IP services or the unilateral imposition of charges on Internet users for accessing any content, service, or technology via the Internet on an equal basis.

“The Internet’s open, neutral architecture has proven to be an enormous engine for market innovation, economic growth, social discourse, and the free flow of ideas. . . As a result, we have seen an array of unpredictable new offerings – from Voice-over-IP to wireless home networks to blogging – that might never have evolved had central control of the network been required by design.”

Vinton G. Cerf
“Father of the Internet”

As Congress debates this contentious issue, its priority should be to protect consumers and innovators by preserving the principles of network neutrality – principles that have guided the Internet’s development since its inception. These would require that Congress give the FCC the authority to create and enforce regulations governed by the five principles stated above. By doing so Congress will:

- ❖ Safeguard the competitive nature of the Internet by allowing consumers and content providers to connect with each other in an open marketplace, providing consumers with equal access to all content;
- ❖ Prevent the abuse of market power where network operators have the incentive and ability to distort commerce by charging content providers for preferential access to consumers above and beyond the billions of dollars these companies already pay for Internet access; and
- ❖ Promote continual innovation on the Internet by allowing all legal content the chance to flourish or fail.

The principles of net neutrality have created the Internet as we know it – the most dynamic network for communication and commerce in human history. Don’t stifle competition and innovation by allowing network operators to change and distort what is currently a highly competitive system.

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