

Net Neutrality FAQs

What is “net neutrality”?

"Net neutrality" is the term used to describe the concept of keeping the Internet open to all lawful content, information, applications, and equipment. There is increasing concern that the owners of the local broadband connections (usually either the cable or telephone company) may block or discriminate against certain Internet users or applications in order to give an advantage to their own services. While the owners of the local network have a legitimate right to manage traffic on their network to prevent congestion, viruses, and so forth, network owners should not be able to block or degrade traffic based on the identity of the user or the type of application solely to favor their interests. In other words, telephone and cable companies should carry all 'Net traffic in a “neutral” manner.

Why now?

Three factors have come together to make this an important issue.

- **First, traditional protections have been removed from broadband service.** Following the Brand X vs. FCC Supreme Court decision in June of 2005 and the subsequent de-regulation of DSL by the FCC, there are no longer “net neutrality” requirements on broadband service providers. There were “net neutrality” requirements up until that time under “common carriage” rules that exist for telephone lines.
- **Second, telephone and cable companies have greater incentive than ever to block new Internet services.** Voice and video services traditionally provided only by the phone and cable companies, are now being, or will soon be, offered over the Internet. These new services compete directly with services offered, or planning to be offered, by the phone and cable companies. 98% of broadband in the United States is provided by the phone company or the cable company.
- **Third, the opportunity to include it in legislation is here.** Congress has decided that new telecommunications legislation is needed to resolve a number of issues such as video franchising, E911 and whether municipalities should be able to develop their own telecom networks. This telecom legislation is a perfect vehicle for net neutrality legislation.

Why should the higher education community care?

Universities are large consumers and producers of online content. The Internet is fundamentally important to allowing universities fulfill their educational mission. The Internet was designed by universities to operate over an open telecommunications platform. Without that guarantee of openness, the Internet could be altered in such a way that it will severely impact the way higher education conducts distance education and research. Costs will likely go up, quality of service will likely go down, and the ability to

reach off-campus and rural students will be diminished. In addition, most believe that the rapid innovation that occurs today on the Internet is largely an outcome of the low barrier to entry for new applications and services. Without a guarantee of fair and equal access, many fear that that innovation, much of which comes from college campuses, will disappear.

As educators and citizens concerned about the general health and welfare of our communities and our nation, the higher education community fears that without net neutrality, the ability to compete internationally will continue to diminish. Although several different methods are being used elsewhere to achieve the same goal, the United States is the only country that is considering **not** guaranteeing the openness of the networks to all competing services.

(For statements in response to “Why should the higher education community care?” see Appendix A)

What are the arguments against net neutrality? What are the rebuttals?

There are at least three popular arguments against net neutrality:

- 1) It is a solution without a problem...
- 2) Networks are private property....
- 3) Net neutrality would discourage investment...

There are several rebuttals to each as listed below:

- 1) **“It is a solution without a problem...”**
 - a. **Rebuttal #1:** The downloading or streaming of video content is not a mature industry on the Internet, yet. As more and more content producers arise to compete with the telecom and cable business plan, more blocking and/or degrading is expected.
 - b. **Rebuttal #2:** There are several documented cases of blocking or otherwise interfering with the transmission of a competitor’s content already. (See appendix B.)
2. **“Networks are private property.** The telephone and cable companies have spent billions on their networks, they should be able to run them however they wish, and decide who can use them and who can’t.”
 - a) **Rebuttal #1:** Much of both the telephone infrastructure and the cable infrastructure in the United States were built not in a competitive marketplace but under a government-protected monopoly. The incumbents now crying “we must be allowed to compete in an open market” never had to compete to establish themselves.
 - b) **Rebuttal #2:** Many economists agree that 2, at the most 3, physical connections into the home are economically viable. Wireless is a long way from being able to provide the bandwidth necessary for high-

quality video downloads and uploads. Therefore, there is unlikely to be sufficient competition in the “last mile” to provide lower prices and improved service without government regulation. Using the cell phone economic model, it was not until 3 or more competitors were allowed to enter a single market that prices dropped and quality improved.

Rebuttal #3: Countries who have mandated that the infrastructure must be open to all competitors at a reasonable, and non-discriminatory rate, have seen prices fall and speeds rise.

Rebuttal #4: Just as the telephone network and the highway system are considered vital to the public welfare, and therefore should have some “public obligations” to serve in a non-discriminatory fashion, the Internet is vital to public health, education, government services and small business development.

Rebuttal #5: The Internet Service Provider does not own the Internet any more than shipping port operators own the oceans. They are simply facilitators to “connect” to this public entity. They should be in the business of offering transport; not controlling who can and what gets shipped. If they want to compete in the “shipping business” then they should have to compete equally with all other shipping companies, whether those companies own ports or not.

3. **“Net neutrality would discourage investment in broadband deployment because it would jeopardize the network owner’s return on investment.”**

Rebuttal #1: Phone and cable companies already have substantial incentives to invest in their networks. Government does not control the rates for broadband services. They are competing with each other to provide higher bandwidth. Both the cable and phone companies have been investing billions of dollars each year in broadband services while the net neutrality rules were in effect. Net Neutrality will not discourage this investment.

Rebuttal #2: For phone companies, it has been shown that the cost of upgrading their copper lines to fiber can be absorbed in the reduced maintenance and improved performance of their phone lines, regardless of whether they even offer broadband. For cable companies, they have upgraded to provide digital video over their private cable services. With simple and relatively inexpensive upgrades in equipment they could provide higher speeds at lower costs.

Why aren’t the FCC’s Four Principles good enough?

Most proponents of net neutrality agree that the FCC’s Four Principles (See Appendix C) are generally helpful, but are vague and not enforceable. The principles need to be strengthened, with clear definitions and non-discrimination provisions, and must be made enforceable. (See Appendix D for suggested language)

What is “tiering” and what is wrong with it?

Tiering is the ability to offer different levels of service at different price points. This is nothing new to the Internet. Harold Feld in his article “An Explanation of the Economics of Whitacre Tiering” (<http://www.wetmachine.com/item/441>) explains it by distinguishing three types of tiering:

“Customer Tiering”- is when an end user pays more money for more bandwidth. The key point is the customer decides on the size of the pipe, and all bits within the pipe get treated equally (or, possibly, in a manner designated by the customer/end-user).

“Whitacre Tiering” - is when the ISP demands money from a third party for premium access. The ISP makes the decision on how to prioritize packets without regard to the end-user/subscriber preference. Indeed, the end-user may not even be aware that Whitacre Tiering is taking place. (“Whitacre tiering” is named for AT&T’s CEO Ed Whitacre.)

“Provider Provisioning” - is when a third party invests in getting their content or service out as quickly as possible to subscribers. This can be through buying more servers, using technology like Akami or bit-torrent, or whatever. The point is that it is the provider that makes a decision about how much to spend to push out its content.

Using Feld’s definitions, customer tiering and provider provisioning exist today and are very consistent with the end-to-end, open architecture of the current Internet. Economically they work well to push people to demand bigger, better connections and stimulate innovation on the Internet.

On the other hand, Whitacre tiering would change the basic architecture of the Internet by demanding that content be “sorted and routed” according to who has sent it and to whom it is intended for. It would “balkanize” the Internet with customers of one provider being treated differently than customers of another provider according to what type of contract they had worked out. In the case of colleges and universities it would mean making deals with all of the network providers between themselves and all of their current and potential students or customers in order to guarantee the delivery of their content. If that isn’t bad enough, it actually reverses the incentive for network owners to build bigger, faster connections and rewards the creation of scarcity of bandwidth. A good analogy, again from Feld’s article: “...Whitacre tiering is like charging a toll for access to HoV lanes. While it works great for those who chose to pay the toll, it reduces the number of lanes available to those who don’t pay, so the folks who do not pay the toll experience an increase in congestion.”

Appendix A:

“Why should the higher education community care about net neutrality?”

Gary Bachula, Vice President for External Relations, Internet2:

The phone/cable companies plans are to keep today's Internet bandwidth and speeds relatively flat, and add separate, proprietary "fast lanes" for the transmission of their video offerings. As a result, even though they will spend billions to lay high-capacity fiber to neighborhoods and homes, the "regular" Internet you get today will not be much improved. The "video" that they plan to put on their fast lanes is basically television shows and movies, perhaps some games -- NOT the two-way , interactive video inherent in the three university-based applications described below. Those applications would be relegated to the old, slower, congested "slow lane" Internet. **Since those applications require higher bandwidth to work properly, they are unlikely to succeed.** To succeed, they need to have open, two-way (symmetrical) high bandwidth pipes -- and since these kinds of interactions can originate from any two users of the Internet, it would be impossible from either a business or technology basis to put them on the proprietary "fast lanes." The only way to avoid this is for EVERYTHING TO MOVE TO THE FAST LANE; leaving the Internet open and non-discriminatory and improving the bandwidth and quality for all users equally. This is similar to how telephone lines work today; they are not allowed to sell good quality service vs. poor quality service, once you are connected you are connected to anyone that has a telephone number and all receive the same quality of service. The only differentiation is at the type and number of connections you purchase. That same pricing differentiation exists today on the Internet, and with net neutrality it will continue to exist.... Phone and cable are free to charge a variety of fees for the type and size of connection the customer wants.

Steve Worona, Director of Policy and Networking Programs, EDUCAUSE:

Consider distance education, an activity of interest to more and more campuses. Today, we can reach any Internet subscriber simply by putting our material on the network. It's just that simple, because all Internet users are connected to all Internet services. But in the new world envisioned by people like AT&T's CEO, Ed Whitacre, we would have to arrange with each student's network provider to be sure that our content reached their customers.

“Isn't that an exaggeration of what Ed Whitacre said?”

No, it's exactly what he said. In a famous (or should that be infamous?) Business Week interview in November, 2005 (http://www.businessweek.com/magazine/content/05_45/b3958092.htm), AT&T CEO Ed Whitacre said this of the companies providing Internet content and services to his subscribers:

“Now what [the companies] would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it. So there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using. Why should they be allowed to use my pipes?”

Today, the Internet is a set of open pipes where content flows from one network user to another. Internet users pay for their own connections to the network and have immediate access to all other users. In Ed Whitacre's new world, it's not enough for customers to pay for their own network connections. Instead, service providers must also pay for the "privilege" of reaching their customers.

Appendix B

Examples of blocking or discrimination

Madison River Blocks VoIP

In early 2005, Vonage alleged that Madison River Telephone Company was blocking consumers from obtaining access to Vonage's VoIP service. The FCC initiated an investigation of the allegations that Madison River had violated section 201(b) of the Communications Act. On March 3, 2005, the FCC's Enforcement Bureau reached a settlement agreement. The agreement prohibits Madison River from blocking the "ports" for VoIP traffic, and Madison River agreed to pay \$15,000 to the U.S. Treasury.

VPNs:

Cable operators have, at times, blocked consumers from using their cable modems for virtual private networks, which allows a residential consumer to access the company network as if he or she were at the office. Some cable operators banned VPN usage outright, or demanded additional fees. For instance, Cox Cable said that residential consumers who wished to use their broadband service for commercial grade purposes could purchase a different offering at a "slightly higher price point." When the issue was brought before the FCC, the cable companies withdrew these restrictions. (Ex parte letters from Cox and Comcast to the FCC in Docket 02-52, April 7, May 1, May 7 and May 15, 2003).

RBOCs Blocking "800" numbers:

On December 7, 2005, the Bell Companies announced that they would implement a new tool to enable them to block certain 800 calls transmitted by competitive VoIP service providers. If the Bell Companies activate this feature, consumers that purchased conferencing services, prepaid calling cards, paging services and other services will likely find their calls blocked with no advance notice. Literally millions of consumers could be adversely impacted through service disruptions and higher rates if this feature is implemented.

Qwest Limits on DSL:

Qwest (one of the four RBOCs) recently issued an acceptable use policy (AUP) that imposes limits on its DSL customers, including those who receive service from third party ISPs. Qwest prohibits, among other things, the use of a DSL line by a business to provide a wireless hotspot for its customers. It also prohibits all users from setting up any sort of server at all, either for personal or commercial use. (See Section 7(a) of the AUP). These limits apply even if Qwest is merely providing the line, and the consumer's Internet service is coming from a third party. The AUP also states that the user agrees to be liable for \$5.00 for each

spam message sent from his or her machine even if the machine was taken over by a worm or by spyware.

Clearwire reserves right to block Vonage

Clearwire, a start-up Wi-Max company owned by Craig McCaw, requires consumers to accept a subscriber agreement that allows Clearwire to block large bandwidth uses, which might include VoIP and streaming video. Clearwire maintains that such reservations are necessary to allow it to manage its network so that large uses by some users do not overwhelm its capacity to serve all its customers. However, Clearwire also is preparing to offer its own VoIP service after signing an agreement with Bell Canada.

Verizon Wireless blocks VoIP and streaming video

Verizon Wireless blocks customers from using its wireless services for VoIP, streaming video and other uses. Verizon's Acceptable Use Policy says: "Unlimited National Access/Broadband Access services cannot be used (1) for uploading, downloading or streaming of movies, music or games, (2) with server devices or with host computer applications, including but not limited to Web camera posts or broadcasts, automatic data feeds, Voice over IP (VoIP), automated machine-to-machine connections, or peer-to-peer (P2P) file sharing, or (3) as a substitute or backup for private lines or dedicated data connections."

States Bar Consumers' Use of Equipment:

State laws have been enacted in Arkansas, Delaware, Florida, Illinois, Maryland, Michigan, Pennsylvania, Virginia and Wyoming to curtail consumers' use of equipment. These overly-broad laws prevent consumers from making legitimate and lawful use of their equipment. For instance, many of these statutes make it illegal to use customer equipment for virtual private networks, for firewalls, or for networking multiple computers. The language of these statutes often puts the communications provider, not the consumer, in control of the uses of the broadband network. For instance, in Michigan, it is illegal to possess a device with the intent to receive or transmit any telecommunications service without the express authority of the telecommunications service provider. In effect, this statute prohibits consumers from attaching devices to the network without permission of the provider.

Appendix C

The FCC Four Principles

FOR IMMEDIATE RELEASE:
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FCC Adopts Policy Statement

New Principles Preserve and Promote the Open and Interconnected Nature of Public Internet

Washington, D.C. – The Federal Communications Commission today adopted a policy statement that outlines four principles to encourage broadband deployment and preserve and promote the open and interconnected nature of public Internet: (1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers. Although the Commission did not adopt rules in this regard, it will incorporate these principles into its ongoing policymaking activities. All of these principles are subject to reasonable network management.

Action by the Commission August 5, 2005, by Policy Statement (FCC 05-151).
Chairman Martin, Commissioners Martin, Abernathy, Copps, and Adelstein, with
Chairman Martin issuing a statement.

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News about the Federal Communications Commission can also be found
on the Commission's web site www.fcc.gov.

Appendix D

Suggested legislative language to strengthen the FCC Four Principles

- (A) GENERAL DUTIES: All broadband network operators shall, on a nondiscriminatory basis, ensure that:
- (1) consumers have access to the lawful Internet content of their choice;
 - (2) consumers are permitted to run applications and services of their choice, subject to the needs of law enforcement;
 - (3) consumers are permitted to connect their choice of legal devices that do not harm the network; and
 - (4) consumers have competitive choices among network providers, application and service providers, and content providers.
- (B) NETWORK MANAGEMENT: Broadband network operators may engage in reasonable and nondiscriminatory network management.
- (C) COMPLAINT PROCESS. –
- (1) Any consumer may file a complaint with the Commission alleging a violation of this Act. As soon as the Commission determines that the consumer has made a prima facie showing of a violation of section (A) that is not protected by subsection (B), the Commission shall immediately order the broadband network operator immediately to cease such violation.
 - (2) The Commission shall reach a final decision on the complaint within 45 days after the complaint is filed, unless both parties agree in writing to extend the time for a decision beyond 45 days.
 - (3) In reaching a final decision on the complaint, the Commission shall presume that the consumer’s use of the network is legal, and the broadband network operator shall bear the burden of proving that any violation of Section A is justified under Section B.
 - (4) If the Commission finds a violation of this Act, the Commission may award damages to the injured party, may impose penalties pursuant to Title V of the Communications Act, or enforce any other remedy it determines necessary to ensure compliance with this Act.
- (D) DEFINITIONS:
- (1) “Consumer” means any end user of a broadband network, including a residential or business customer and any person or entity providing an application or service over the broadband network.

- (2) “Nondiscriminatory” means that the broadband network operator may not give preferential access to itself or any other person, including any affiliate or company with which such operator has a business relationship, in allocating bandwidth or transmitting information over its broadband network.
- (3) “Lawful Internet content” means any Internet content except content deemed illegal under any other law.
- (4) “Competitive choices” means that a broadband network operator may not interfere with, block, degrade, modify or impair any information, applications or services carried over its network. This term also means that a broadband network operator must provide service on reasonable request to any consumer and must interconnect its network with any other broadband network operator under reasonable terms and conditions.
- (5) “Needs of law enforcement” means pursuant to a lawfully obtained warrant or similar legal instrument.
- (6) “Network Management” means reasonable and non-discriminatory action to protect consumers from unlawful content, protect the security of the network, give priority to emergency communication, and comply with any court-ordered law enforcement directive.
- (7) “Broadband Network Operator” means any owner or operator of a network that
 - (a) is capable of transmitting Internet information at greater than 200 kilobits per second;
 - (b) uses the public rights of way, radio frequency spectrum, numbering resources, or other inputs licensed or managed by governmental authority for the benefit of the public;
 - (c) is offered to the public or to such classes of consumers as to be effectively available directly to the public, with or without a fee, and
 - (d) enables any consumer to transmit content or provide services of his or her own design or choosing between or among points specified by such consumer.