



**net neutrality:**

## A Consumer Perspective

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**8x8, Inc.**

## Net Neutrality— A Consumer Perspective

When the modern Internet was created in 1981—no one envisioned the notion that carriers, content providers, consumers and Congress would end up fighting each other for preferential access, or control. In the early 1980's, as Arpanet was morphing into the Internet, the thought of voice, video, or even e-commerce on the net had yet to emerge, and no one even knew what a Web site was. The early Internet was a text-only world with long strings of typing required to download and view graphic images. The World Wide Web revolution came about because entrepreneurs invented new ways to access and view information on the net in the form of Web servers and Web browsers, and the underlying Internet dutifully carried these new bits to-and-from net locations around the world, without regard to what they were, or to any business arrangements that were in place.

Today, the Net Neutrality debate is shaping the future of the Internet in ways its creators never envisioned, by pitting the needs of consumers against the goals and business models of service and content providers. In the simplest terms, Net Neutrality is about treating all traffic equally. If a consumer buys a certain amount of bandwidth per second from a service provider, then the consumer should be able to do with those bits as they please—and the provider should pass those bits through at the agreed upon rate, without worrying about what they're used for, where they came from, where they are going, or whom they're allocated to.

It sounds simple, but it's not. Consider the fact that access to the Internet is controlled by a small number of large service providers who have made significant investments—investments from which they are seeking a return. Added to the mix is the fact that these service providers are proposing to enter into agreements with content providers—the websites and applications that the Internet community uses every day—to obtain preferential treatment for “enhanced” content. When this happens, it leads to an environment where consumer choice and innovation are influenced, limited and controlled by those large companies that provide access to the Internet. Unlike the early years of the Internet, which were accompanied by phenomenal growth and innovation in Internet use, these access providers no longer want to agnostically pass bits of information, but rather, look at the content of information flowing over their access networks and pass the information differently depending on what it is, who it might have come from, and where it might be going.

Are the principles that the Internet was founded upon being ignored? The type of innovation that has served the net so well for decades was never intended to be guided by the business models of the access and content providers who provide and carry the bits across the Internet. Innovation has always come from individuals with bright new ideas, many who work outside of these large service and access providers. As we look forward, we must ask ourselves—“what happens to tomorrow's entrepreneurs who are not affiliated with the dominant access and content providers?” Will new and fresh ideas get the attention and the funding they need to come to market? And if they do, will consumers have free & easy access to them, or will they be spoon-fed to consumers as part of next season's business plan and programming lineup?

The answers to these questions will have a profound effect on the consumer experience—and these answers are currently being formulated by Congress as part of the current telecommunications bill. Earlier this year, the House of Representatives passed a bill, the “Communications Opportunity, Promotion, and Enhancement (COPE) Act of 2006” (H.R. 5252), by a vote of 321-101 that provides for national video franchises for access providers and obligations for Voice over IP (VoIP) telephone service providers, but did not include any provisions or guarantees for network neutrality relating to these applications.

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More recently, the US Senate Commerce Committee introduced its own telecom bill, the “Communications, Consumer’s Choice and Broadband Deployment Act,” which would allocate Universal Service Fees paid by VoIP service providers and other contributors to the deployment of broadband lines in rural and high-cost areas of the country, but did not address network neutrality that should exist for applications that run over these high speed lines. Amendments to these bills that include Net Neutrality safeguards have not yet been enacted, but are gaining momentum.

As consumers of VoIP services that run over these high speed lines increasingly pay more in federal taxes and surcharges, and a rising amount of state and municipal fees, it is vital that these customers retain their rights to unfettered access to run these applications utilizing the data services and location of their choice.

One of the big issues affecting the price consumers pay for VoIP calls is an assortment of state and other local taxes whose applicability to VoIP calling is unclear, because no one (including the phone company, the IRS, and in some cases, the user) knows where VoIP calls originate. If a company doesn’t know where its customers are on the Internet, that causes a host of problems from a legacy local tax perspective. Cable providers know where their customers are, because the cable modem is tied to a physical, non-mobile address. But pure, network independent VoIP providers facilitate calls to mobile devices that can be located anywhere in the world. Today, 60% of residential VoIP customers get their service from a cable network. Recent orders released by the Federal Communications Commission (FCC) relating to the applicability of Universal Service Fund (USF) fees to VoIP providers have encouraged some state and local taxing authorities to pursue VoIP providers, especially those with fixed services provided by cable companies, to pay other fees and surcharges.

By next year, legislation that retains elements of legacy telecom policy will be passed, and it will affect consumers in a profound way. According to 8x8’s Chief Executive Officer Bryan Martin, “There’s a tremendous amount of industry knowledge that lawmakers need to understand in order enact the type of legislation that helps the consumer, and the consequences for getting it wrong may be steep.”

Any new legislation must guard against retrofitting the old telecom ideals. “The pace of innovation we have witnessed on legacy, copper and wireless networks over the last 30 years is incompatible with the IP world, where change and innovation happen overnight,” adds Martin. “When you think about it, the only major telephone service innovation consumers have seen on copper networks is the advent of caller ID and related services. The wireless arena has seen even less applications development, limited to ring tones and limited data services that run at copper modem speeds. By contrast, the rate of progress and enhancement of applications in the IP space is exponential compared to these two industries and their closed, non-neutral networks, all due to competition,” states Martin.

“The best, and most interesting consumer applications, like Google, MySpace, YouTube, Slingbox, even VoIP telephone services, were not invented by legacy phone companies, but rather, by entrepreneurs with bright ideas who had freedom to develop and run these new applications on the Internet. Given the opportunity, a free market will always find a better way to do things, just as VoIP phone services have improved consumer choice, costs and functionality over what is available from legacy phone services,” concludes Martin.

How long will this “free market” environment exist? As access providers align themselves with content providers, they’ll need to show (quickly) that they can offer video quality that’s as good as a cable company. And as cable companies sell more voice services, they’ll need to demonstrate calls that are just as clear as the traditional phone companies. Through this

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lens, it's easy to imagine that access providers might implement measures to prioritize their own traffic, in order to meet these objectives and market pressures.

When this happens (and some argue it's happening today), problems will soon follow, because service provider networks are used by an array of consumers with different needs, budgets, and goals. Some will sign up for premium content services, while others won't. How do we ensure that everyone gets the bandwidth and the service they need to interact with everyone they choose to—fairly, and evenly?

Premium content applications, like Voice, Music, Video, Gaming and others, are creating a need for more bandwidth, and tiered services, which add fuel to the Net Neutrality debate. And things are only going to get more crowded as these applications increase in sophistication.

“Videophones have been commercially available to consumers since 1991, but they've yet to saturate the market,” states Martin. “Today, new video-on-the-net applications and video playback capabilities on cell phones are starting to accelerate the social shift that will bring video calling to the mainstream. New and innovative applications in the gaming industry will also affect the need for bandwidth and better services. Today, content is shared by multiple parties playing X-box live games via the net, while simultaneously talking to other gamers using SIP-based VoIP headphones. Soon these games will be re-written so that gamers can see, and talk with the people they're playing against.”

When these evolutions materialize, the need for more resources across IP networks will increase. The good news is that there is a tremendous amount of idle bandwidth available to consumers. Countries like Korea have figured this out, and are able to provide their consumers with more than 10X the bandwidth for less money than what consumers pay in the United States.

“The unused fiber stored in the ground will provide the capacity we need in the years ahead, so bandwidth isn't necessarily something that consumers should worry about,” states Martin. Perhaps the one thing that all camps in the Net Neutrality debate can agree on is the fact that consumers should be willing to pay more for increased bandwidth, because that's simply a supply & demand issue.

The essence of the Net Neutrality argument centers on the principle that Internet users should be in control of what content they view, what applications they use, and all of these choices should be equal. The determination of what content makes its way to consumers first, fast, and consistently should not be made by an access provider. More importantly, access providers should not be permitted to use their power to discriminate against competing applications or content—just as phone companies should not discriminate which calls go through, which calls get blocked, and which calls receive acceptable levels of voice quality.

The Internet has followed this neutrality principle since its earliest days. Indeed, it is this neutrality that has allowed many companies to form, expand, and innovate. The desired solution to today's Net Neutrality debate must strike a balance between the conflicting interests of access providers and consumers, and incorporate a mix of business, technical, and legislative contributions. In the end, the ultimate goal is to protect the type of innovation that provides consumers with more options, and more value, because it is this type of innovation that will usher in the next generation of voice, video, and other new and enhanced applications that we haven't even begun to think of yet.

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