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The Network Neutrality Debate

How Irrelevant Arguments Can Decide the Outcome of a Controversy over Technology

The situation seemed pretty bad for network neutrality proponents in the early months of 2006. The telecom companies were confidently planning bills that allowed for a multi-tiered internet, while some news articles said that “it may be too late” to defeat or even hinder the bill.¹ However, for most part, people were unaware of the situation. Even in May 2006, lobbyists were saying that the telecom companies’ bill “caught a lot of people off guard.”² However, a group of grass roots organizations was somehow able to change all of this in a matter of a several months, and create a massive public backlash against the bill.

What makes this feat even more impressive is that the organizations were able to generate so much support, despite the fact that network neutrality is such a complex and technical issue. Although network neutrality proponents had a solid argument supported by reliable studies, this was not enough to interest the general public in the debate over network neutrality. Instead, they had to resort to a campaign based on deceptive language, entertaining videos, and anti-corporate propaganda.

The surprising effectiveness of this grass roots campaign led the telecom companies to start their own campaign. This campaign was very similar to that of the network neutrality proponents; they created “grass roots” organizations, and produced propaganda that attacked the large corporations who supported network neutrality. Even U.S. senators, like Ted Stevens, got involved in the rhetoric, by speaking out against network neutrality using misleading metaphors and irrelevant information.

Unfortunately for the telecom companies, their campaign provoked an even more powerful backlash. Network neutrality proponents responded with even more anti-corporate propaganda and even resorted to simply mocking those who oppose network neutrality. Although these arguments may not have been totally relevant, they did help stymie the bill that could have ended network neutrality. The debate over network neutrality is an interesting example of how complex technical controversies are communicated to the public and how the debates that ultimately decide the outcome of these controversies may have little to do with the actual issues at hand.

Technical Background

To fully comprehend the issues surrounding network neutrality, you must have a basic technical understanding of the Internet. For a brief and entertaining explanation of the low-level workings of the Internet, I highly suggest that you watch the award-winning³ animated video, *Warriors of the Net*, available at this website: <http://www.warriorsofthe.net/movie.html> . (Approx. 12 minutes)

As shown in the video, the Internet consists of many computers sending messages to each other over a series of wires. A key thing to note is that each message is broken up into a series of smaller messages called *packets*, and each packet travels separately. This means that each component of a message (a request, a webpage, a video, a picture, etc.) may take a radically different path to reach the same destination. It is also important to remember that a computer will resend a packet, if it takes too long to receive an acknowledgement stating that the other computer has received that packet. Consider these things when you hear dramatic stories about the effects of Internet congestion. (Does it make sense that someone's message could be delayed for five days because someone else was streaming large files over the Internet?)

Recently, the United States has become very concerned with the state of its Internet. Although the U.S. was responsible for creating the internet, as of 2006 it was “no longer tops in the world in high speed online connections. In fact, the U.S. dropped below tenth place.”⁴ Those who oppose network neutrality claim that the U.S.'s lack of high speed connections is a result of ‘net congestion’ caused by all the media on the Internet that requires a large amount of bandwidth (like streaming video and audio.) So, they have proposed to create a multi-tiered Internet with premium service for those willing to pay extra fees.

Although the details of this solution are sketchy, it would involve prioritizing each packet, and creating special ‘express lanes’ for packets that are ‘high priority’. Theoretically, this could allow video information to travel separately from normal web traffic and relieve the congestion on the non-video wires. While this may sound good in theory, it is not a practical solution to the U.S.'s Internet problems.

The Logical Argument for Network Neutrality

On February 7th of 2006, Gary Bachula testified before the House Committee on Commerce, Science and Transportation on the matter of network neutrality. At the time, Bachula was the Vice President of Internet2. Internet2 is a “not-for-profit advanced networking consortium comprising more than 200 U.S. universities in cooperation with 70 leading corporations, [and] 45 government agencies”⁵ whose mission is “to advance the state of the internet.”⁶ In 1996, Internet2 created the Abilene network, which is a futuristic “ultra-high-speed research and education network... [that is] 10,000 times faster than home broadband.”⁷

In his speech, Bachula outlines some of the popular arguments in favor of network neutrality:

- ISPs could potentially block specific sites
- Quality may be degraded for those who do not pay for premium service
- High fees could put an end to Internet entrepreneurship

However, his most interesting, yet least reported, point was that giving priority to certain packets is not a feasible solution to the to the U.S.'s Internet problems. He went on to explain that Internet2 had been experimenting with different “Quality of Service” schemes on the Abilene network to address the connection problem. After several years of research, they found that offering premium Internet service

would only work on small networks, not large ones like the Internet.⁸ In addition, the researchers determined “that it was [a] *far more* cost effective [solution] to simply provide more bandwidth [via fiber-optic cables]⁹. With enough bandwidth...there is no congestion and video bits do not need preferential treatment.”¹⁰ So, the problem is not actually too much information on one set of wires, it is a lack of bandwidth provided by the telecoms companies.

One might assume that such strong statements would come from an organization that has ties to the e-commerce giants who support network neutrality (i.e. Google, Yahoo, Microsoft), and it is true that Internet2 does receive some funding from Microsoft. However, it also receives a large portion of its funding from both Qwest Communications and Cisco Systems, who both strongly oppose network neutrality. In fact, the Abilene network was constructed entirely from circuits, wires and routers donated by Cisco and Qwest. Clearly, Internet2 has strong ties to those who oppose network neutrality, which makes their argument seem even more pertinent. However, despite their strong arguments and impeccable credentials, Internet2 was unable to motivate the house to vote in favor of network neutrality.

The Grass Roots Response

Inspired by the efforts of organizations like Internet2, or perhaps a hatred of large corporations, a group of bloggers and Internet activists were able to give new life to the fight for network neutrality. On April 24th of 2006, Craig Aaron, communications director of *Free Press*, started the *SaveTheInternet.com Coalition*.¹¹ The website started as just a blog and a petition, but it quickly became one of the most popular and influential forces in the fight for network neutrality. It has become a central organization for over 700 groups that support network neutrality, and a major news source for those interested in the issue.¹²

However, if you explore Aaron’s website, you will have a hard time finding anything about the technical impracticality of premium internet service. Rather, the articles focus on speculations of what the telecommunication companies might do if they end network neutrality, and the debate is framed as a fight between us (the public) and them (the big corporations).¹³ Nevertheless, the *SaveTheInternet.com Coalition* had an enormous amount of success using these tactics. In only four months, the coalition was able to get over 800,000 unique signatures on their petition to protect network neutrality.¹⁴

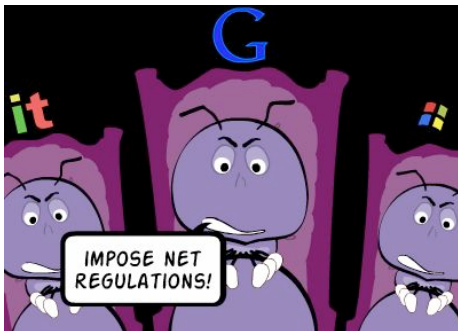


Above is a still from a pro-network neutrality propaganda video. The video depicts a future, in which an evil telecom company, ‘Concast,’ controls everything on the Internet. The speculation that this could happen if the telecom companies end network neutrality, was a common argument used by the grass roots organizations. Full video available at www.youtube.com/watch?v=8CHzuSTowRg&url=

So, why was the *SaveTheInternet.com Coalition* so successful? The answer is that the site focused their argument on an emotional appeal. *SaveTheInternet.com* took principles that average Americans care a lot about (freedom, equality, entrepreneurship, and a lack of censorship) and claimed that these ideals would be in peril without network neutrality. While this was very effective in getting people involved, it did have one major consequence: it did nothing to promote an alternative solution to the United States' Internet problems. Instead of fighting to improve internet, activists had to settle for fighting to *preserve* the Internet.

The Telecom Backlash

The telecom companies were not so confident about their ability to get their bill passed, after they saw the intense public response started by the grass roots organizations. Once the telecoms realized that this debate would no longer be limited to Capital Hill, they decided to start their own campaign to sway public opinion. Inspired by the network neutrality proponents, the telecom companies developed their own organizations and propaganda.



Above is a still from an anti-network neutrality propaganda video. In the video, the e-commerce giants are portrayed as greedy dictators who demand regulations.

In June of 2006, *NetCompetition.org* was launched as a response to sites like *SaveTheInternet.com*. It too relied on the emotional appeal of its language to promote its agenda. One propaganda video on the website¹⁵ tries to diminish the friendly term “network neutrality” by associating it with unpopular phrases like:

- “government regulations”
- “special interest legislation”
- “corporate welfare for dot-com billionaires”¹⁶

The website also accuses network neutrality of being “bankrolled by the e-commerce giants, who enjoy 80-90% gross profit margins.”¹⁷ Although some of these accusations may be true, they are all irrelevant and hypocritical. They are irrelevant because they only criticize those who support network neutrality, not the idea itself. And, they are hypocritical because *NetCompetition.org* is heavily funded by telecom companies like AT&T, Verizon, Qwest and Time Warner,¹⁸ who all have a vested interest in ending net neutrality. Not to mention, most of the telecom companies' net incomes surpassed those of the e-commerce giants (Google, Yahoo, eBay, etc.) by the billions, in 2006.¹⁹

Not surprisingly politicians, who may have had ties to the telecom companies, started to speak out at about the same time. Probably the most famous of these politicians was Senator Ted Stevens (R.), from Alaska, who is the Chairman of the Senate Committee on Commerce, Science and Technology.²⁰ On June 28th of 2006, Stevens made an infamous speech on the topic of network neutrality.²¹ In the speech, Stevens argued

“that those people who support these [regulations]...are the people who want to use the Internet for the end use of their profit, not for the consumer...[and these] people who are streaming 10-12 movies at a time...for consumers’ use, those are not you or me...they are not the consumers, they are the providers.”

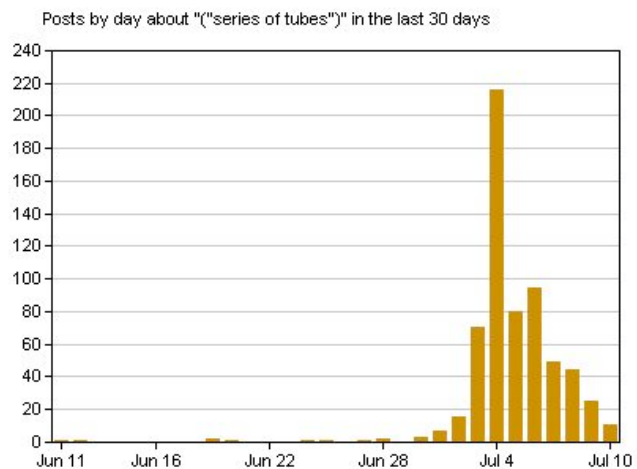
However, this argument does not make a lot of sense, since the sole purpose of these companies is to make the Internet useful for the consumers (imagine trying to use the Internet without sites like Google, Yahoo, eBay and Amazon). And the idea of blaming the e-commerce companies for overloading the web with streaming media is simply ridiculous. These companies are not just randomly streaming media across the Internet, they are streaming to consumers who have specifically requested that media. Obviously, we can not just blame one group for the amount of traffic on the Internet, since everyone who uses it is responsible.

Another argument that Senator Stevens made is that network neutrality is really just a ploy to allow the e-commerce giants to save money. Stevens claims that by imposing network neutrality regulations “[we] are asking now that you tell [the Internet Service Providers] that they can not ask that someone pay for the increased capability they provide” and that “you can order ten movies [on the internet] and now the delivery charge is free.”²² This argument that the e-commerce sites are using up massive amounts of bandwidth for free, is completely false. Anyone who has ever run their own website knows that you must pay a monthly fee for the amount of bandwidth you plan to use. On the other end, users must also pay a fee to their broadband provider for the bandwidth they want to use. However, the new telecommunications bill wants to allow the telecom companies to charge companies and consumers for the bandwidth used in the middle, as well.²³ Despite the fact that most of Stevens’ arguments were easy to counter, most network neutrality proponents chose not to focus on disproving his statements in their responses.

A Series of Tubes

In only a couple of days, Senator Stevens’ speech became an Internet phenomenon. The day after he delivered the speech, one of *Wired Magazine’s* blogs, 27B Stroke 6, posted a transcript of sections of Stevens’ speech, in which he tried to explain how the Internet works. The transcript is preceded by the following sarcastic statement: “[Stevens] gave an amazing primer on how the internet works.”²⁴ The post focused on Stevens’ odd examples, and improper terminology (he accidentally said “Internet” instead of “e-mail”), as well as his infamous statement that

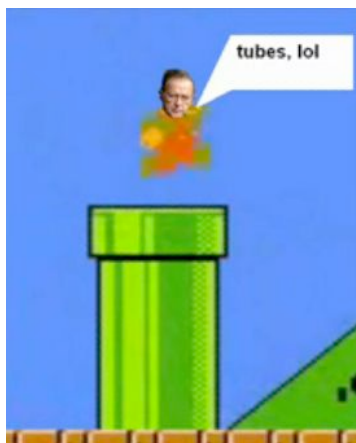
“the internet is not something you just dump something on. It’s not a big truck. It’s a series of tubes.”



The phrase “series of tubes,” from Senator Ted Stevens’ speech on June 28th quickly became an Internet sensation in just about one week. (Graph is from www.publicknowledge.org/node/521)

About one week after this article was posted, the phrase “series of tubes,” was being used in hundreds of blogs everyday, to ridicule Senator Stevens’ lack of understanding about the Internet,²⁵ and to promote network neutrality. Currently, the phrase even has its own page on Wikipedia.²⁶

The phrase became so popular, that it was referenced in five separate episodes of *The Daily Show with Jon Stewart*.²⁷ In the phrase’s first appearance on the show, on July 12th of 2006, Stewart plays the infamous audio clip and proceeds to compare Ted Stevens to “a crazy old man in an airport bar at 3:00 am.”²⁸ The segment ends with a clip of Stevens’ explaining that it took about five days for him to receive an office e-mail because of net congestion. To which Stewart responded “[or] maybe it’s because you don’t seem to know jack shit about computers or the Internet.”²⁹



This video from YouTube merely consists of one image with Ted Stevens’ head superimposed on to Super Mario, while the Mario theme plays with Stevens’ “series of tubes” quote looped over it. (Available at www.youtube.com/watch?v=9IQbOr_mJpE)

These segments on the *Daily Show* became wildly popular and were posted all over the video hosting site *YouTube*. In fact, the first result you get when you search for “net neutrality” on *YouTube* is a clip from the *Daily Show*.³⁰ These videos and the blogs inspired countless other Internet users to create their own videos in support of network neutrality, most of which merely set Ted Stevens’ words to music, while displaying silly pictures of tubes.

Once again, not only were these arguments irrelevant to the issues, but they were not even valid. The mudslinging directed at Stevens was not very surprising, since by this point the network neutrality debate had degenerated into an argument over which side had the dumbest and greediest supporters. But, what makes the “series of tubes” phenomenon really interesting is that Stevens’ statement is a totally valid way of describing the Internet at a high-level. The award-winning

video mentioned above uses tube-like structures to represent the Internet, and compares the connections to pipes, and the word “pipe” is synonymous with the word “tube.”³¹ In fact, the term “pipe” was used in a similar fashion in the speech by Gary Bachula (who is an *expert* on the Internet) mentioned above. Nonetheless, the phrase had the ability to get a large group of people involved in an important cause.

As result of the increased amount of attention, the public outcry was massive. The *SaveTheInternet.com Coalition*’s petition to protect network neutrality had over 1,210,000 signatures as of October 2006.³² In fact the response was so huge that it was able to hinder the bill that reporters once thought was unstoppable.³³ Although it was good that these videos and blogs increased awareness of the problem, neglecting the really relevant issues involved was in poor taste. While this campaign may have helped save network neutrality, it has done little to nothing to fix the current state of the Internet in the United States.

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- ¹ Reuters. "'Net Neutrality' Battle Widens." *Wired* 2 May 2006. <http://wired.com/news/wireservice/0,70800-0.html> .
- ² Ibid.
- ³ "Warriors of the Net." Warriors of the Net. 18 Oct 2006 <http://www.warriorsofthenet/misc/awards.html> .
- ⁴ "Net At Risk." *Moyers on America*. PBS. 18 Oct. 2006.
- ⁵ "About Internet2." Internet2. 30 Oct. 2006 <http://www.internet2.edu/about/> .
- ⁶ Bachula, Gary R. Speech. House of Representatives, Washington D.C. 7 Feb. 2006 <http://commerce.senate.gov/pdf/bachula-020706.pdf> .
- ⁷ Ibid.
- ⁸ Teitelbaum, Ben, and Stanislav Shalunov. *Why Premium IP Service Has Not Deployed (and Probably Never Will)*. Internet2. 2002. <http://qos.internet2.edu/wg/documents-informational/20020503-premium-problems-non-architectural.html> .
- ⁹ The telecom companies were supposed to install fiber-optic cables across the United States in the 1990s, in return for large tax breaks. However, they never followed through with this plan.
- ¹⁰ Bachula, Gary R. op. cit.
- ¹¹ "Save the Internet: Fighting for Internet Freedom." 30 Oct. 2006 <http://www.savetheinternet.com/> .
- ¹² Ibid.
- ¹³ These statements are based on an analysis of <http://www.savetheinternet.com/=faq> .
- ¹⁴ *Democracy Now*. Pacifica. 1 Nov. 2006 <http://www.youtube.com/watch?v=6ctfGSdlSPw> .
- ¹⁵ Watch the video here: <http://www.youtube.com/watch?v=w5ERpQ6nv0Q>
- ¹⁶ *What is Net Neutrality?* Dir. *NetCompetition.org*. 2006. *YouTube*. 31 Oct. 2006 <http://www.youtube.com/watch?v=w5ERpQ6nv0Q> .
- ¹⁷ Ibid.
- ¹⁸ For the full list visit: <http://www.netcompetition.org/docs/about/>
- ¹⁹ "AT&T." "eBay." "Google." "Yahoo." "Time Warner." "Qwest." "Verizon." *Wikipedia*. 31 Oct. 2006.
- ²⁰ "About Senator Stevens." 31 Oct. 2006 <http://stevens.senate.gov/about.cfm> .
- ²¹ Curtis, Alex. "Senator Stevens Speaks on Net Neutrality." *Public Knowledge*. 28 June 2006. <http://www.publicknowledge.org/node/497> .
- ²² Ibid.
- ²³ *Democracy Now*. Pacifica. 1 Nov. 2006 <http://www.youtube.com/watch?v=6ctfGSdlSPw> .
- ²⁴ Singel, Ryan, and Kevin Poulsen. "Your Own Personal Internet." *27B Stroke 6*. *Wired Magazine*. 30 June 2006 http://blog.wired.com/27bstroke6/2006/06/your_own_person.html .
- ²⁵ Schneider, Tim. "Mr. Stevens' Wild Ride through a 'Series of Tubes'." *Public Knowledge*. 28 June 2006. <http://www.publicknowledge.org/node/521> .
- ²⁶ "Series of Tubes." *Wikipedia*. 31 Oct. 2006 http://en.wikipedia.org/wiki/Series_of_tubes .
- ²⁷ Ibid.
- ²⁸ *The Daily Show with Jon Stewart*. Comedy Central. 12 June 2006. http://www.youtube.com/watch?v=6_LVz1BAr7w .
- ²⁹ Ibid.
- ³⁰ The search was performed on November 1, 2006
- ³¹ "Pipe." *Roget's Thesaurus*.
- ³² "Save the Internet: Fighting for Internet Freedom." 30 Oct. 2006 <http://www.savetheinternet.com/> .
- ³³ Ibid.