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Net Neutrality in the U.S. ? 2015

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Abstract

A U.S. Federal Court ruling in January 2014 overturned Net Neutrality rules issued in 2010 by the Federal Communications Commission (FCC), the body that regulates both the telecommunications and the cable industries in the U.S. This sparked significant support for establishing new rules to provide Net Neutrality and resulted in the submission of more than one million comments to the FCC, which broke all records. This led to the FCC adopting new Net Neutrality rules in February 2015. The FCC followed President Barack Obama's lead and classified the broadband operators as common carriers, which will require that they treat all of their customers and all content providers equally. As common carriers the broadband operators will not be able to favour one content provider over another or favour their own content services. It is very likely that these new rules will not settle the issue and will be challenged in Congress and in the courts. The Net Neutrality controversy will continue.

Introduction

I wrote an article called "A Fair Approach to Net Neutrality" that appeared in the July 2009 edition of this publication. It proposed an approach to Net Neutrality that recognised that traffic engineering is a necessary part of an Internet Network, which is required in order to optimise all of the different services carried on the Internet. It took the position that broadband operators should treat content providers on an equal basis and not use traffic engineering to favour one content provider over another or use traffic engineering to favour its own content services over those competing content providers. In this approach, for example, AT&T and Comcast could use traffic engineering to improve the performance of video streaming for all content providers but could not degrade the performance of the popular Netflix video streaming service in order to favour their own competing video services.

This approach to Net Neutrality has been gaining support. The rules that the FCC issued in 2010 are consistent with it. However, the rules that the FCC adopted in February 2015 will regulate broadband services as common carriers under Title II of the Communications Act of 1934 that has defined how the telephone services industry operated in the U.S. ever since. Title II regulation was pushed by supporters of Net Neutrality because they believe that it would be accepted by the courts and would require the broadband operators to treat all of their customers and all the content providers equally and fairly. The broadband operators object, saying that regulation under Title II will make it much more difficult to introduce new, innovative services.

The fundamental problem with Net Neutrality is that it does not have a rigorous technical definition. Net Neutrality advocates talk about "fast lanes" and "treating all packets equally". It is not clear what this means. These concepts do not draw a clear line between acceptable traffic engineering practices and abuses that favour broadband operators' own content services or favour content from favoured providers.

Origins of Net Neutrality

In the 1990s the Internet became widely available and provided new information services such as the World Wide Web and new communication services such as emailing and instant messaging. It was revolutionary. Communication could be accomplished more quickly, more conveniently, and at little or no additional cost over the cost of a basic Internet connection. Emails could be delivered in seconds to any place in the world at no cost compared to being delivered in days at the cost of postal services. The World Wide Web provided instant access to information, provided a platform for social networking, created a soap box for ideas and opinions, and gave businesses an inexpensive way to communicate with their customers and suppliers.

The Internet also facilitated the formation of new online businesses and industries – Amazon for selling and distributing products, eBay for online auctions, and PayPal for online payments – to name just three of the most successful. These three companies became billion dollar businesses along with others including Google, Face Book, and Salesforce.com and made fundamental changes in how business is done in the U.S. and globally.

The benefits that came with the Internet were quickly and universally recognised. People liked the openness and the innovations that it brought. It was easy and inexpensive for users and businesses to connect to the Internet. In the 1990s it was also easy and inexpensive to set up an Internet Service Provider (ISP) business: all you needed was a couple of servers and a dialup communications multiplexor along with a connection to an Internet backbone provider, and many people did it.

During the 1990s most users accessed the Internet using dialup modems. These modem users relied on the ubiquitous switched voice telephone network to make a connection to their ISP. In the U.S. ISPs located their termination equipment within the users' local dialling areas to insure that there were no per-minute usage charges for Internet calls. This approach allowed users to spend hours connected to the Internet for fixed monthly fees for their telephone and for their Internet service with no per-minute charges for communications.

The ease of setting up an ISP business, at least in a local area, helped to create a large number of ISP companies. The result was that Internet services were highly fragmented, and there were no companies that had significant market power. Even the large ISPs of that time including AOL, Prodigy, and CompuServe were not able to dominate Internet services either locally or nationally. This kept prices low and made it easy for users to change providers if service was unacceptable or if they found better services or prices with another ISP.

This started to change in the late 1990s with the introduction of ADSL and cable modem broadband services. These broadband technologies used the existing telephone local loop networks or cable hybrid fibre coaxial cable plants for their physical connections. Broadband required the addition of new electronic systems to provide the broadband connection to the user and the creation of a data network to aggregate the broadband traffic and interconnect with the global Internet. Broadband services no longer used the existing switched voice telephone network to connect to the Internet.

These ADSL and cable modem broadband networks concentrated the ISP business into the large telephone and cable television companies. The Federal Communications Commission (FCC), the communications regulatory body in the U.S., did issue regulations based on the Telecommunications Act of 1996 that provided a way for ISPs to set up competitive broadband businesses by giving them the ability to install their own broadband equipment in the telephone company's central offices. However, the cost for doing this was high enough that most of these new broadband competitors failed, and by the year 2000 it was clear that the large telephone companies and the cable modem companies would dominate the broadband market in the U.S. This gave these companies an unprecedented amount of power over the consumer Internet market. Different approaches to regulation governed the formation of successful competitive broadband operators in many countries in Europe and Asia and led to strong competition in broadband services there.

This consolidation of broadband services continued in the U.S. The FCC abandoned its attempt to encourage the formation of new competitive broadband companies based on sharing the facilities of the major telecom companies. The FCC came to believe that the competition between the telecom companies and the cable companies would generate enough competition to create a free market in broadband services and that sharing facilities was unnecessary. This left the ISP business in the hands of a small number of very large companies. As a result most of the small ISPs that were started in the 1990s went out of business. The problem was that these large companies such as AT&T and Comcast were generally more interested in protecting the business that they already had rather than developing disruptive strategies that would bring higher speeds and lower prices as has occurred in Asia and Europe.

People in the U.S. already had a strong distrust for both the telecom and the cable companies. They just did not believe that these companies could be trusted to continue to develop a free and open Internet. This was confirmed in many people's minds in 2005 when AT&T's CEO Ed Whitacre set off a fire storm when he was quoted as saying that Google got a "free ride" on his network and that this unfairness could only be rectified by charging companies to ensure that their traffic reaches AT&T consumers quickly. People were up in arms over this statement and inundated the FCC with comments defending Net Neutrality to prevent the broadband operators for setting up so called "fast lanes" for those content providers who can pay. Whitacre's statement created a public relations problem for AT&T and the broadband industry in general. People believed that the Internet belonged to them and not to AT&T or Ed Whitacre and were afraid that AT&T, Comcast, and the other large broadband providers would take advantage of their position to provide undue influence over the Internet.

Even with all of this concern, few blatant violations of Net Neutrality principles have been identified in the U.S. Comcast was found to be blocking peer-to-peer file sharing of public files in 2007. Netflix complained that Comcast was discriminating against Netflix's video streaming service in favour of its own video services in 2012.

Technical Basis of Net Neutrality

The issues of Net Neutrality derive from the fundamental architecture and practices of the Internet. The Internet started as a government-funded project on a non-commercial basis. When it was formed there was no consideration of making money from the Internet. In fact the original Internet backbone funded by the U.S. National Science Foundation (NSF) was built as an academic network and was not supposed to carry commercial traffic.

A major result of this non-commercial approach was that there were no settlement charges. ISPs exchanged traffic with no charges to each other. There was an assumption that the traffic coming into a network was roughly equal to the traffic going out of it. Settlement charges would require a complex accounting infrastructure and generate little net revenue for most ISPs. The non-commercial and government-funded nature of the early Internet made settlement charging unnecessary.

On the other hand there was a long tradition of settlement charges in the switched telephone networks. Telephone companies charged on a call-by-call basis for all calls they carried that originated on the networks of other telephone companies. Per minute rates were very high through the 1980s and 1990s, so these settlement charges generated significant revenues for the telephone companies.

The lack of settlement charges in the Internet must have been difficult for the executives of telephone companies who were now in the broadband business to accept, since they were so accustomed to a business environment with settlement charges. This is why Ed Whitacre can say that Google pays nothing to AT&T for the traffic that it terminates on its broadband network, since there are no settlement charges between AT&T and Google. This was made worse from the perspective of the telephone and cable companies by the fact that the broadband operators were terminating much more traffic than they were generating. Their customers were receiving much more data than they were sending to the network.

This situation was exacerbated as video streaming services became more and more popular. This trend started with the success of YouTube and the increasing use of video in web sites. It has now moved to the streaming of TV shows and movies along with the move from Standard Definition (SD) to High Definition (HD) formats. Many people now have TVs, DVD/Blu-Ray players, or DVRs that support access to video streaming service such as Netflix, Vudu, and Hulu and spend many hours a week streaming video to their TVs over broadband networks.

All of the broadband operators, such as AT&T and Comcast, offer their own video services that compete with Netflix, Vudu, and Hulu. This puts AT&T and Comcast in direct competition with the video streaming companies and creates the potential for a significant Net Neutrality issue where AT&T or Comcast, for example, would throttle back streaming traffic from Netflix, Vudu, or Hulu to make their own service look better in comparison.

Net Neutrality is a bigger issue with the broadband service providers than with the Internet backbone providers. Content distribution networks significantly reduce the load of content distribution on the backbone. The content distribution networks collect Internet content in data centres in every major region and fulfil repeated requests for content locally without burdening the backbone. A piece of content is sent once across the backbone to the regional data centre and all further requests for that content are fulfilled locally.

The situation is different for the broadband service providers. They have to provide bandwidth for every time that someone requests a particular piece of content. This is particularly troublesome for video content, which requires high bandwidth, and is getting worse with the broad adoption of HD TV and the impending adoption of 4K Ultra HD TV sets.

The concept of Net Neutrality lacks a rigorous technical definition. Supporters talk about Net Neutrality as 'fast lanes' and are basically concerned about the fairness of broadband services. They do not want the broadband operators to favour one content provider over another, and they especially do not want the broadband operator to favour their own content services over other content service providers. So far traffic engineering and private peering are two technical tools commonly used in Internet architectures that are particularly troublesome for Net Neutrality supporters.

Net Neutrality and Traffic Engineering

The concept of Net Neutrality is bound up with traffic engineering. Packet network operators of all types now have powerful tools available that permit them to optimise the performance of their networks. They can apply deep packet inspection on their networks, which lets them look into every packet and make routing decisions based on the contents of the packet. They can route packets based on who sent them, who is receiving them, or the type of service that generates them. Traffic engineering tools are powerful and can be used for both good and bad ends.

Each Internet service has specific performance requirements associated with it. Internet browsing is bursty with long periods of inactivity while the user reads the page. It is also very resilient and can recover from packet loss or packet errors with little or no impact on the user's experience. Internet telephony requires relatively low bandwidth, but it needs packets to be delivered promptly, in order, and without loss. Packet delivery problems can cause clicks or pops in an Internet telephony call and can even make the call unusable in extreme cases. Video streaming requires high, constant bandwidth but is more tolerant of lost or error packets than Internet telephony.

Over-provisioning is the classic way to provide good quality of service over the Internet. Over-provisioning requires providing substantially more bandwidth than is required to support all of the services running. It is clear that over-provisioning will work, at least most of the time, but it is inefficient. The network operator must provide enough capacity so that the total amount of traffic is well below the capacity of the network.

Over-provisioning is certainly expensive; however, it cannot guarantee high quality services at all times. Traffic on the Internet has continued to grow at high rates with video streaming accounting for a higher and higher proportion of the total (CISCO 2015 ^[5]). It is difficult for network operators to keep up with the growth and to maintain sufficient capacity margins to guarantee the correct transmission of all packets.

The traffic load on the Internet is highly dynamic. Traffic on the Internet can vary tremendously from day to day if not minute by minute. A viral YouTube video can drive traffic up, as can the introduction of a new iPhone by Apple or the release of a new line of lingerie by Victoria's Secret. Network operators have absolutely no control over these events, any of which can absorb all of their excess capacity in a matter of seconds.

One of the goals of traffic engineering is to let different services operate over the Internet and provide a good quality of service to all of them, or at least to the most important. In general it is more important to deliver Internet telephony packets correctly and in time than packets for web browsing.

Traffic engineering can prioritise traffic so the most highly affected services such as Internet telephony or video streaming get priority over lower priority services such as Internet browsing. Many people accept this kind of prioritisation, even though it does not treat all users equally and seems to violate the principles Net Neutrality.

The other side of the coin is that traffic engineering can be used by a network operator to put themselves in a favourable position relative to their competitors, or even to suppress entire classes of service. Netflix has expressed concerns that cable companies have degraded their service on their cable modem networks to make their own video services look better in comparison. There have also been complaints that network operators have suppressed peer-to-peer file transfer applications in order to protect the copyright of content. These kinds of actions have raised public ire and helped to generate strong public support for Net Neutrality.

Net Neutrality and Private Peering

Public peering points have been set up to allow Internet network operators to exchange traffic with each other. For example a public peering point may be used by AT&T and Verizon to exchange traffic with each other as well as all other Internet networks. Traffic that originates on AT&T's network that is destined for a user on Verizon's network may be exchanged at a public peering point and vice versa.

This is, in general, a good approach that provides connectivity between a broad set of networks. However, the major backbone providers long ago found that congestion at the public peering points could degrade the quality of service to other major backbone providers. It became common for the major backbone providers to set up private, direct private peering connections with each other that bypass the public exchange points. This improved the quality of their services and relieved congestion at the public peering points.

What has happened more recently is that content providers have begun to generate significant amounts of traffic. Netflix by itself can generate more than one-third of all Internet traffic during busy periods. This seemed to be more traffic than the public peering points could handle, and seemed to cause a noticeable degradation in Netflix's video streaming service. In 2014 Netflix implemented private peering relationships directly with Comcast, Time Warner, AT&T, and Verizon – the largest broadband operators in the U.S. – and saw improvements in the quality of its video delivery as a result.

Net Neutrality advocates seized upon this as unfair because it allowed Netflix to purchase a "fast lane" that gave it preferred access to these broadband networks. Again, this is an issue of trust. The question is whether or not these broadband companies are limiting the availability of private peering connections to create an advantage for themselves or for preferred content providers. That is certainly a possibility, but no significant examples of such discriminatory private peering practices have been identified as yet.

However there is no transparency to these private peering arrangements. The networks with private peering arrangements do not disclose the terms of these agreements and in most cases do not disclose that these private peering arrangements have been put in place. This lack of transparency makes these private peering arrangements suspect in the minds of Net Neutrality advocates.

The Federal Communications Commission Takes Action

The Federal Communications Commission (FCC) regulates both the telecom and the cable companies in the U.S. The FCC has attempted to adopt policies that were consistent with the principles of Net Neutrality but has been blocked by the Federal Courts.

In 2010, the FCC approved an order (FCC 2010 [6]) that prevented network operators from blocking access to competitive services and web sites that included three Net Neutrality principles:

- **Transparency:** That all Internet Service Providers (ISPs) must transparently disclose to their subscribers and users all relevant information as to the policies that govern their network;
- **No Blocking:** That no legal content may be blocked; and
- **No Unreasonable Discrimination:** That ISPs may not act in a commercially unreasonable manner to harm the Internet, including favouring the traffic from an affiliated entity

This measure was denounced by Net Neutrality advocates as a capitulation to telecommunication companies that allowed them to discriminate on transmission speed, while pro-business advocates complained about any regulation of the Internet at all.

In early 2014 the Federal Courts ruled in a case brought by Verizon that the FCC has no authority to enforce two of these Net Neutrality rules since the broadband service providers have not been classified as Common Carriers under Title II of the Communications Act of 1934. Specifically, the court said that the "No Blocking" and the "No Unreasonable Discrimination" clauses were unconstitutional. The court did uphold the "Transparency" clause. This has thrown the FCC into a quandary and has reignited the public clamour for Net Neutrality. In response to this court ruling the FCC stated that it would propose new rules for Net Neutrality.

The Title II approach received strong support in November 2014 when President Barack Obama announced his support for it. He said that the FCC should create a new set of rules protecting Net Neutrality and ensuring that neither the cable company nor the phone company will be able to restrict what you can do or see online. He urged the FCC to reclassify the broadband operators such as Comcast and Verizon under Title II, giving the agency more power over how the companies operate.

The FCC received more than one million positive comments from the public for new rules that supported Net Neutrality. Supporters of Net Neutrality organised an 'Internet Slowdown' on September 10, 2014 where participating web sites were purposely slowed down to demonstrate what would happen without Net Neutrality.

All of this resulted in the FCC issuing new rules in February 2015 (FCC 2015^[7]) that brought the fixed line broadband under regulation as common carriers under Title II of the Communications Act of 1934 using a 'modernised, light-touch approach'.

The FCC first adopted three rules ban practices that it believes harm the Open Internet:

- **No Blocking:** broadband providers may not block access to legal content, applications, services, or non-harmful devices.
- **No Throttling:** broadband providers may not impair or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices.
- **No Paid Prioritisation:** broadband providers may not favour some lawful Internet traffic over other lawful traffic in exchange for consideration of any kind. This rule also bans ISPs from prioritising content and services of their affiliates.

The rules against blocking and throttling are to prohibit harmful practices that target specific applications or classes of applications. The ban on paid prioritisation is to ensure that there will be no 'fast lanes'.

The FCC established a standard to address any concerns from new services and practices. This standard is that ISPs cannot 'unreasonably interfere with or unreasonably disadvantage' the ability of consumers to select, access, and use the lawful content, applications, services, or devices of their choosing; or of edge providers to make lawful content, applications, services, or devices available to consumers. The FCC will address questionable practices on a case-by-case basis based on this standard.

The existing transparency rule from its 2010 Net Neutrality rules, which was not struck down by the court remains in place. In addition the FCC will require that broadband providers disclose promotional rates, fees, surcharges, and data caps. Disclosures must also include packet loss as a measure of network performance, and provide notice of network management practices that can affect service. Small ISPs with 100,000 or fewer subscribers will temporarily be exempt from the transparency requirements for fixed and mobile providers.

The FCC also stated that other than paid prioritisation, an ISP may engage in reasonable network management. This recognises the need of broadband providers to manage the technical and engineering aspects of their networks.

- In assessing reasonable network management, the FCC will take account of the particular engineering attributes of the technology involved.
- The FCC stated that the network practice must be primarily used for and tailored to achieving a legitimate network management 'and not business' purpose. For example, a provider can't cite reasonable network management to justify reneging on its promise to supply a customer

with ?unlimited? data.

The FCC will also make sure that a fixed line broadband provider's services that do not go over the public Internet, but are delivered over broadband access services, do not undermine the effectiveness of its Net Neutrality rules. Examples of these services include voice over IP services and IP-based pay TV services. The broadband operator's transparency disclosures will cover these offerings as well as their Internet offerings.

The FCC believes that for the first time it can address issues that may arise in the exchange of traffic between broadband providers and other networks and services. The FCC will be able to hear complaints and take appropriate enforcement action if it determines the interconnection activities of ISPs are not just and reasonable.

The FCC did not put broadband wireless under Title II, so broadband wireless will not be subject to the same rules as fixed line broadband. This may change as broadband data grows in importance and becomes a target for Net Neutrality advocates.

Is Title II the Answer?

This is a controversial question that does not have a clear answer. Many people think that Title II will require the broadband operators to treat all of the content providers equally, and that Title II will prevent the network operators from prioritising traffic of one content provider over another.

Other people point out that there is nothing in Title II that would prevent broadband operators from using traffic management or offering high speed private peering connections that would improve the performance of a content provider's service across the operator's broadband network. If these people are right, Title II would not meet a fundamental requirement put forward by Net Neutrality advocates.

However, almost everybody agrees that Title II would require that the broadband operators to treat all content providers equally. It would prevent broadband operators from offering a preferential deal to one content provider without offering to other content providers on an equal basis. They would not be able to play favourites.

The Communications Act of 1934 and Title II resulted in the heavy regulation of voice telephony in the U.S. The FCC regulated it at the Federal level and each of the states regulated it at the state level. This made it difficult to introduce new services or new pricing models. The result discouraged innovation. The biggest change in public telephone service since the 1934 Communications Act was passed was probably the introduction of touch tone dialing in the 1960s, which slowly led to the introduction voice mail services and other voice response services over the next couple of decades. This is a very weak record of service innovation.

The FCC has chosen to apply only certain parts of Title II to the broadband operators. It seems possible that other parts of Title II could be added later based on pressure from Net Neutrality advocates and based on shifting opinions of the Commission itself as its membership changes over time. The American Cable Association has expressed concern that rate regulation could be added in the future (Light Reading 2015c ^[8]).

A group of people who pioneered the implementation of Internet-based Voice over IP (VoIP) services objected to the FCC's Net Neutrality rules that brings broadband under Title II regulation. Title II regulation was a serious impediment to their services. They had to deal with regulators at both the national and the state level to address the technical differences between VoIP and PSTN services.

In the United States, the FCC required VoIP service providers to comply with requirements comparable to those for PSTN providers (Light Reading 2015a^[9]). VoIP operators in the US are required to support local number portability; make service accessible to people with disabilities; pay regulatory fees, universal service contributions, and other mandated payments; and enable law enforcement authorities to conduct surveillance, and provide a form of 911 emergency calling service.

The FCC's new rules state that 27 provisions of Title II and over 700 regulations adopted under Title II will not apply to broadband. Most importantly broadband operators will not be subject to utility-style rate regulation, including rate regulation, tariffs, and last-mile unbundling.

The FCC believes that its new rules are unlikely to have any negative financial effect on the broadband operators. Operators such as Sprint, Frontier, along with representatives of hundreds of smaller carriers that have already voluntarily adopted Title II regulation, have said that a light-touch, Title II classification of broadband will not depress investment.

The Next Steps for Net Neutrality

The problem with Net Neutrality arguments is that they address moral principles such as the openness of the Internet. These arguments reflect the general lack of trust in the cable and telephone companies that operate the broadband networks and have created a major public relations problem for these companies. The arguments about Net Neutrality are not technical arguments about how to fairly apply traffic management or how to fairly set up private peering arrangements between content providers and broadband operators. Technical issues can be resolved. Arguments about moral principles or arguments that stem from distrust of the broadband operators are much more difficult to address.

It appears that the FCC's ruling is based on these moral arguments. This ruling will give the FCC the ability to closely monitor how the fixed line broadband operators run their networks and businesses based on the fear that they may take unfair advantage of their position rather than being based on past bad actions. There have been only a few violations of Net Neutrality that have been brought to the FCC. Net Neutrality is more of a public relations issue than a technical issue.

The FCC's new Net Neutrality rules will be enforced on a case by case basis (Light Reading 2015b^[10]). The rules do not clearly defined traffic management practices or business practices that violate Net Neutrality. The broadband operators may find only after completing an expensive development and marketing program that they are violating Net Neutrality rules and withdraw new services or modify their network operations.

Net Neutrality is a distraction from the most important broadband issues: the deployment of fibre and the creation of new business models to support advanced services. Fibre will provide broadband networks with the speeds that will needed for future services. The likely broad acceptance of 4K Ultra HD TVs among other new services will push many current broadband networks beyond their capacity. Fibre technology will solve this problem. Fibre deployments are likely to require new business models to support them. Raising the monthly price for a broadband is not likely to be the answer.

The broad availability of fibre access services will enable the deployment of new, high bandwidth services. It seems that the Internet is in the process of becoming the medium for all television services, especially for 4K Ultra HD and higher resolutions that current cable TV technology may not have enough bandwidth to support. Just as people are listening to all of their radio broadcasts over the Internet today, they are likely to watch all of their TV over the Internet.

Watching TV over the Internet benefits from new business models that could easily be construed to violate Net Neutrality. For example, a content provider may want to provide a portion of their subscription fees to the broadband operators to support the cost of deploying fibre networks. It seems fair that the content providers should support the investment required to deploy fibre networks, but it not clear that this will be allowed under these new rules.

For example, Netflix is being criticised for creating a new business model that would exempt its service from usage caps in Australia ([Washington Post 2015](#) ^[11]). As part of its March 24, 2015 launch of the Netflix service in Australia, it was revealed that the broadband operator iiNet will exempt Netflix traffic from its customers' monthly bandwidth quotas ([Gigaom 2015](#) ^[12]). This certainly makes Netflix more attractive for Australian customers since they will not have to track their usage and stop watching Netflix as they approach their cap. It is not clear that eliminating such arrangements is in the best interest of the consumer. With the caps the consumer may have to upgrade to a more expensive broadband plan to get a higher cap. Consumers may well prefer that Netflix use some portion of their monthly fees to compensate the broadband operator for removing their caps for its content.



It seems possible that content distribution networks (CDNs) could be considered as a violation of Net Neutrality. A CDN distributes content from the source to regional data centres. The customer requesting the content will get it from a local data centre and will not have to go across the backbone to get the content from the source. This can significantly reduce the amount of traffic on the backbone; but it can also be interpreted as giving an advantage to content providers that can pay for CDN services and putting those who can't at a disadvantage. This would seem to violate Net Neutrality rules. However, CDNs are now an important resource for delivering content across the Internet, and challenging them could have significant deleterious effects.

It seems inevitable that the Net Neutrality controversy will continue, but it also seems that this does not have to be the case if the large broadband operators such as AT&T, Verizon, and Comcast would start treating Net Neutrality as a public relations issue rather than a regulatory issue. The first thing they should do is declare that Net Neutrality is a fundamental policy of their business. They should state that they will treat all of their customers and all of the content providers equally, and that they will apply network technologies only to provide the best experience for all of their customers and not to discriminate unfairly.

It may be too late to implement this approach in the U.S. Countries that are still developing Net Neutrality strategies should consider it. Managing Net Neutrality as a public relations problem is likely to be much more successful than slugging it out in the courts or with regulatory bodies. Declaring support for Net Neutrality would put the broadband operators on the right side of the moral argument and would defuse the public relations controversy. Maybe then we could all move on and focus on fibre deployment and creative new business models that will bring us more innovative new services.

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Comments

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Gary McLaren

- 14/04/2015 at 22:58

Excellent article on the Net Neutrality issue. I particularly like the positioning of Net Neutrality as a public relations issues for the larger ISPs. But the dilemma remains - flat rate plans without download caps encourage higher usage and higher cost but not cost recovery to the ISP. Low usage customers end up subsidising high usage customers and ISPs have no incentive to invest in more network capacity - fibre, routers, transmission systems etc.

Broadband, just like other services where increased usage has increased costs, needs to have a feedback system to encourage investment and competition that prevents dominant players taking monopoly rents.

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