Saving the Internet:  
The Need for Net Neutrality

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Net neutrality has become a popular term in the news as of late. There are many facts and myths circulating in the media and on the Internet about what this idea actually involves. In early 2015, the United States Federal Communications Commission (FCC) enacted a version of net neutrality called Open Internet. It is difficult to determine how the government will represent the true ideas of an open Internet. The FCC’s plan has become a very divisive political topic mired in a lot of misinformation. Technology is evolving at such a fast space that at times it leaves people confused. This paper will seek to address the political, economic, and technological reasons that net neutrality is needed.

In 1969, the United States government established a network connecting four computer systems across the country. This network, known as ARPANET, is widely considered to be the beginning of what is known today as the Internet. Eventually it was used to connect university computer systems around the country to share research and documentation. In the 1990’s it became available to the general public. Today, the Internet is considered to be a basic necessity of American life. It is used for information finding, communicating with loved ones, and shopping. The United States Census determined that in 2013 over 73% of Americans lived in a household with high-speed Internet use (File & Ryan, 2014, p. 2). This is no longer a discussion about a novelty item or a luxury. The Internet has fundamentally altered the very nature of everyday life for the average American citizen. A large help to this was the computer itself evolving from a large room-sized mainframe to a pocket-sized smartphone.

In simplest form, net neutrality refers to a free and open Internet. The Internet consists of billions of computers and servers connected together. Information travels between these machines in chunks of data called packets. An open Internet would declare that all of these packets of data would be treated equally regardless of the content or the people involved in sending and receiving the information. This is a difficult concept for many because since its inception the Internet has operated much in this manner. Recently, however, the popularity of the Internet and the rise in streaming video and music services has caused a sharp increase in Internet traffic. Companies that provide Internet access have enacted agreements with companies such as Netflix for more money to ensure that their service is not restricted or limited. While this may seem harmless at first glance, it sets a precedent that could lead to a much different Internet than has existed up to this point.

The politics of net neutrality are already being discussed by the tech industry after the FCC’s announcement that they are enacting Open Internet rules. On February 26, 2015 the FCC met and voted that the Internet would be ruled under their purview as a public utility. Three of the main concerns the FCC is addressing are blocking, throttling, and paid prioritization. Their ruling declares that no Internet company can block lawful content, impair or degrade traffic, or allow for paid priority of traffic. Tom Wheeler, the Chairman of the FCC, assured in his statement that, “These enforceable, bright-line rules assure the rights of Internet users to go where they want, when they want, and the rights of innovators to introduce new products without asking anyone’s permission” (FCC, 2015, p. 315). The White House and many in the Democratic Party support this measure.

However, on the other side of the issue, the Republican Party has seen the move as a power grab by the Executive branch. They believe a government takeover of the Internet will lead to slower speeds, higher costs, and limitations on the freedoms of speech and privacy. There are campaigns underway to enact legislation and pursue lawsuits to block the FCC ruling. Representative Greg Walden was quoted as saying, “Consumers, innovators, and job creators all stand to lose from this misguided approach. What’s more, this plan sends the wrong signal around the globe that freedom and openness on the Internet are best determined by governments – a far cry from decades of bipartisan commitment to light-touch regulation" (Brodkin, 2015).

The partisan politics involved with net neutrality have been made clear not only by the members of congress and the President, but also by the Federal Communications Commission itself. The Commission is made up of three Democrats, and two Republicans. When the vote was held to decide if the FCC would enact its Open Internet rules, the vote was split along party lines, with the three Democrats voting for, and the two Republicans voting against. In her statement supporting the rules, Democrat Commissioner Mignon Clyburn said, “We are here to ensure that there is only one Internet where all applications, new products, ideas and points of view, have an equal chance of being seen and heard” (FCC, 2015, p. 317). In his dissent, Republican Commissioner Ajit Pai rejected the rules saying, “The Commission’s decision to adopt President Obama’s plan marks a monumental shift toward government control of the Internet. It gives the FCC the power to micromanage virtually every aspect of how the Internet works. It’s an overreach that will let a Washington bureaucracy, and not the American people, decide the future of the online world” (FCC, 2015, p. 321).

One of the issues that both sides are concerned about is Freedom of Speech. The United States Bill of Rights ensures that the government cannot abridge the free speech of its citizens. In the Open Internet rules, the FCC states, “Indeed, rather than burdening free speech, the rules we adopt today ensure that the Internet promotes speech by ensuring a level playing field for a wide variety of speakers who might otherwise be disadvantaged” (FCC, 2015, p. 272). If the rules stand as is, this may not become more of an issue. However, there are many that worry this is only a stepping-stone to further restrictions. In an Op-Ed piece published by Politico Magazine, Commissioners Ajit Pai and Lee Goodman wrote, “While the FCC is inserting government bureaucracy into all aspects of Internet access, the FEC is debating whether to regulate Internet content, specifically political speech posted for free online” (Pai & Goodman, 2015). The United States has a responsibility to ensure that no matter what party is in control, and no matter what rules are put into place, that the ability for free speech to thrive on the Internet is never affected. For many people, it is one place that offers a safe haven and a cheap, easy method to share their opinions and beliefs. That is the very foundation of this nation’s history and it should be maintained and protected.

The other huge concern is in that of privacy. The recent National Security Agency (NSA) spying controversy has made Americans suspicious of the government having access to their online activities. There is worry that if the FCC has authority over the Internet they will use that to demand access to the private lives of citizens. The protections for privacy in the FCC rules seem to be geared towards consumer protections at the Internet Service Provider level. The rules do not seem address protections against government intrusion or what powers the FCC would have to access user information.

Outside of the concern for government intruding on privacy, it appears as if the FCC’s involvement in the Internet could bring stronger privacy protection for users in general. They will now have the power to regulate the Internet Service Providers in the same way the currently oversee telephone service providers. Harold Feld, Senior Vice President of the advocacy group Public Knowledge, pointed out that, “The FCC's privacy regulations have worked very well, which is why so many people are unaware of them - because they are so rigid about enforcing them, people don't even have to think about it. It's an area they've always taken things very seriously” (Peterson, 2015).

Prior to this decision, the Federal Trade Commission (FTC) regulated much of the protections provided on the Internet. According to Republican FTC Commissioner Maureen Ohlhausen, “If an entity is a common carrier providing common carrier services, we can't bring actions against them. If broadband service is reclassified as a common carrier service under Title II, I think that would seriously call into question the ability of the FTC to bring those kinds of actions" (Peterson, 2015). Since the FCC’s announcement did in deed reclassify the services as a common carrier service, it will now be responsible for bringing action against the carriers themselves. The FTC is not completely out of the picture though. "The FTC can go after telemarketers even though they use phone lines as their medium for communications," Laura Moy, senior counsel at New America's Open Technology Institute, explained. “The same principle will apply to the Internet: The FCC will oversee the pipes, while the FTC will be able to wield their enforcement tools against those who operate services that use the pipes” (Peterson, 2015). Despite who is in charge, there should still be a reasonable effort made by users to understand that in the end the Internet is inherently not private by its very nature.

The economics of net neutrality are yet to be determined by the marketplace. However, there is a strong voice from opponents of the new rules that claim it will only have a negative impact on economic growth. One of the arguments against net neutrality is that the FCC has “created uncertainty in the marketplace” (Moy, 2015). The complaint is that at one time the FCC planned to take a hands-off approach to the Internet, but with the new rules they have changed their mind. The fact is that times change and so does technology. Ten years ago streaming service was not as popular as it is today. There was also not the level of connectivity that exists now due to increased broadband and smartphones. If anything, governmental assurance that all Internet traffic is equal should bring much needed stability and confidence to Internet companies and service providers. Business will be able to plan accordingly within the guidelines set forth.

Another argument is that somehow net neutrality will “institutionalize crony capitalism and limits entrepreneurism and competition” (Moy, 2015). In fact, one of the biggest reasons to support net neutrality is to enable competition between bigger companies and startups. If all Internet sites and traffic are equal, then there is no ability for a large company to pay to have their site prioritized above others. Without an open Internet, a company like Google would not have had a chance to become the dominant search engine it is today. In the same regards, Facebook would also not have overtaken MySpace as the most popular social media website. These companies started without a large bank account and without any name recognition. Companies have to rely on innovation and quality to drive users to their services. The Internet today is a place where anyone can start a blog or a YouTube channel and become a celebrity with thousands of followers.

The FCC has claimed they are going to use a “light touch” with regulating the Internet, however, they are a government agency. Edmund Moy, Chief Strategist of Fortress Gold Group, says, “Expect the FCC to eventually get into regulating pricing and profit just like other public utilities” (2015). This argument actually has merit and should be closely scrutinized. The only stance that should be taken on net neutrality is to declare all traffic equal. Beyond that, the government should remain out of the equation. The free market will determine the pricing and profit structure of how ISPs will charge for access to the Internet. Internet services like Netflix and Amazon are better equipped to adjust price based on supply and demand. The consumer holds the power of the dollar in determining where they will spend their money. If the FCC makes a future decision to involve themselves more in these transactions, it will be for the detriment of a free and open society. Capitalism is the economic system that is enjoyed in the United States. The basis of this system is that private companies are in control of trade and industry, not government agencies.

A 2010 article in Bloomberg Businessweek cites a New York Law School study that predicts net neutrality could cost the economy “$62 billion annually over the next five years and eliminate 502,000 jobs” (Kharif, 2010). The concern is that ISPs will not have an incentive to invest in new technologies and upgrade equipment; therefore they will not need the staff. The same article points to another study that reports the rules “could slow the growth of the broadband sector, potentially affecting as many as 1.5 million jobs” (Kharif, 2010). This article is several years old but opponents of net neutrality are still using the same argument. The problem with this train of thought is that it is simply not the way most companies choose to do business. If a company failed to improve and adapt to changing technologies they would more than likely fail. Customers would find ways to switch to those companies that chose to invest in their infrastructure. Recently, in response to this accusation, Chief Technology Officer of Sprint, Stephen Bye, said, “Our competitors are going to continue to invest so they are representing a situation that won't play out” (Nayak, 2015).

Until this point in time, the Internet has been neutral. There has not been a need for any regulation. Companies have found success and thrived on their own. College dropouts have had opportunities to develop their own web-based applications and become billionaires. This has led many to argue that net neutrality has been a government solution to a non-existent problem. The issue, however, is that the companies that have provided a connection between the consumer and these applications began throttling traffic or charging the content providers higher prices to keep their content moving through the system. These actions have created an unfair condition for content providers, as well as stifled competition and diminished service quality for consumers. The very fact that these practices were allowed to happen is evidence that there needed to be action taken in order to protect the future of Internet traffic. Putting policies in place that make the online experience worse for consumers is not acceptable.

The Internet is not free. There is a high cost to maintaining the infrastructure that Internet providers use to connect the world. The ISPs constantly have to upgrade equipment and the connection lines that carry Internet to homes and businesses. It is a real possibility that the price of broadband Internet service will increase now that net neutrality rules have been put into place. When ISPs were forcing companies like Netflix to participate in paid prioritization, Netflix argued that it was the consumer that was requesting the traffic. Netflix did not feel they should pay because the customer wants their content. The decision by the FCC to enact rules supports Netflix’s argument. Unfortunately, the money to continue upgrading and maintaining equipment will have to come from somewhere. If the ISPs are unable to collect from the content providers, they will pass on the cost to the customers. This will lead to an increase in the average broadband cost across the nation, which is already approaching $60 a month. The United States ranks 33rd in the world for its value of Internet service; paying $3.51 for each megabit per second according to broadband testing company Ookla.

The current model for Internet service pricing is to charge customers based on the speed of their connection. One proposed change is to charge users based on actual Internet usage. This plan would resemble the way customers currently pay for electricity. A meter measures how many kilowatt-hours are used and then customers are charged a set fee per kilowatt-hour. In the same way, Internet companies would measure the amount of Internet traffic used and charge a fee based on the number of bytes downloaded in a given period. This is the most fair and reasonable method of charging for service, but given the unlimited nature of the Internet up until now, many consumers would have an issue with it. Those who do not use streaming services may find extremely low bills, while others who do use high volume services would experience larger bills. In his March 2015 article on Tech Times, Fergal Gallagher explains, “Wealthy users won't be put off by higher prices and will continue to consume as much data as they like, whereas the more budget-concerned may have to restrict the amount of data they consume. This may just mean watching less Netflix, but would also restrict their access to information, which is the whole reason broadband is being described as a utility.”

Another economic question that has been brought up in the net neutrality discussion is whether or not the FCC ruling will eventually lead to an Internet tax. FCC Chairman Tom Wheeler addressed this initially by saying, “The Order will not impose, suggest or authorize any new taxes or fees - there will be no automatic Universal Service fees applied and the congressional moratorium on Internet taxation applies to broadband” (Takala, 2015). However, when pressed by Congress on a future tax, Wheeler admitted, “There is a joint federal-state board addressing that very question today. How they resolve things in the future I do not know” (Takala, 2015). Congress is working on taking steps to address this on their own. According to The New York Times, “Republican and Democratic senators last week presented legislation that would permanently ban taxes on high-speed Internet service to American homes” (Lohr, 2015).

Not everyone feels that net neutrality will be bad for the economy. The Institute for Policy Integrity wrote, “Without net neutrality rules, new technologies could lead to pricing practices that transfer wealth from content providers to ISPs, a form of price discrimination that would reduce the return on investment for Internet content – meaning website owners, blogger, newspapers, and businesses would have less incentive to expand their sites and applications” (Chettiar & Holladay, 2010, p. viii). It is essential to the future of the Internet as we know it that everyone has the same opportunity for their opinions and their business to exist and find success. While it appears the majority of economic opinions speak out against net neutrality, this seems to be an unfounded bias. Net neutrality will provide challenges to the status quo of Internet service; with the cost of service and the potential for future government overreach being the only negatives facing the economy.

The concept of treating all traffic on the Internet equally is a positive thing for network engineers and the equipment used to support the Internet. If Internet providers were permitted to enact policies that restrict certain websites or certain types of data, then it would require specific equipment and programming to sort the different traffic. It would be similar to needing a traffic cop at a busy intersection to route certain cars onto certain roads. Allowing all traffic to move through will still have its technological challenges. As users demand more access to content, there is an increase in the amount of data being pushed through existing equipment and data lines. Internet providers will have to invest millions of dollars in upgrading key pieces of network infrastructure in order to support the increased bandwidth. Another comparison that can be made is in terms of plumbing. The more water that is needed at a certain location, the larger the pipes needed to carry the load. In the beginning stages of the Internet, there was not as much content or as many users. Now both factors have increased exponentially.

The new rules that have been put in place will offer opportunities for technology companies to advance in their research. These companies will have to develop equipment that allows greater speed and traffic. According to the FCC, “There is significant evidence that a vibrant and neutral online economy is critical for a healthy technology industry, which is a significant creator of jobs in the U.S” (FCC, 2015, p. 39). There will be many new startup Internet companies. If there were not a neutral Internet, these companies would not have an opportunity to compete with the existing larger companies. Thus, they would be more apt to fail resulting in job loss. Allowing these companies to have a level playing field has resulted in a company like Facebook to overtake MySpace as the biggest social media company.

Another technology area that has seen a large increase in investment and research is fiber optics. The University of Denmark recently conducted a test on a new type of fiber optic cable that resulted in a 43 terabits per second speed. According to a 2014 article by Sebastian Anthony, “you could transfer the entire contents of your 1TB hard drive in a fifth of a second.” Most telephone and Internet cables have been copper wires. There are scientific and physical limitations with this medium that have limited network speeds. However, fiber optic uses light which travels at much higher speeds which allows data to move quicker along the route from its source to its destination. The main lines that connect many Internet providers have been fiber for many years. However, at some point it is converted over to copper prior to reaching its destination. There are many Internet providers that are now switching over to Fiber-to-the-Home service. This allows a fiber optic connection all the way to the end point and offers much higher speed capabilities.

This paper has addressed the political, economic, and technological reasons that net neutrality is needed. It is encouraging that the Federal Communications Commission has taken steps in the right direction to protect the current levels of freedom that Internet users have enjoyed since its inception. There are many who feel that this is simply addressing a problem that does not exist. However, now there are certain guarantees that will allow competition and equality of ideas. There are still hurdles to face as the new rules face stiff opposition and legal action. It will probably be a decade before the true effects of the rules will be noticed. Net neutrality is a vital concept if the Internet is going to survive. Saving the Internet may sound drastic, but a non-neutral net would have changed the entire online experience. If the FCC sticks to the spirit behind the rules they set in place, then this will have a positive impact on the future of Internet technology.

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