

NBA 6120
Disruptive Technologies
Spring 2014

DRAFT

Assignment #2

Assigned: February 25, 2014

Due: March 5, 2014

The original Internet basically guaranteed net neutrality, that is, every author or sender was guaranteed the same equal rights on a first-come, first-serve basis. The charge for the transmission of the data was free. More recently, Obama in 2012 emphasized that net neutrality was important to maintain as it provided a foundation for much of the innovation in the technology area in the United States.

During the past few years, the FCC has actively behaved as a guardian of net neutrality. For example, they accused ComCast of violating the net neutrality rules when they throttled the available bandwidth of a competitor's program broadcast using BitTorrent technology (Ref. 1). The ruling was ultimately overturned due to the interpretation of the FCC's authority over telephone systems. (Ref. 2)

More recently, the original rules were overturned at least for wired transmission. (Refs 3, 5).

It did not take long for the owners of the pipes, the service providers, to take advantage of this ruling. During the past month, we now have already seen the throttling of data by Verizon and users are complaining. The time for delivery of NetFlix, which was taking advantage of its low-cost bandwidth-hogging-streaming-video-delivery-system, was substantially increased. (Ref. 6) Two days ago, Comcast and Netflix reached a deal on service where Netflix pays a fee and delivers content directly to Comcast. (Ref. 4) They avoided violating net neutrality rules since Comcast then delivers the content to its customers. All of this was somewhat expected. The service providers cannot continue the existing business model nor should be expected to provide the investment to improve the wired (fiber optic) technology for delivery of data without some compensation.

Maybe this explains why Apple acquiring small service providers. Note that Google is now talking about wiring 34 more cities with optical fiber (Ref. 15).

Wireless technology, however, is a different case. Clearly wireless and mobile technology will be the dominant on-ramps to the next generation digital highway. Yet spectrum is limited and bandwidth is already constrained. With the increase in the number of users and the amount of bandwidth required for still images, video, and movies, the existing wireless channels will be clogged in the near future. Even though the FCC has provided regulations for wired technology, no such set of regulations is currently imposed with the exception that the FCC monitors the spectrum. It does not make sense to have different rules for wired and wireless connectivity since many distribution systems depend on both technologies.

How can net neutrality be continued? How can we prevent a Tragedy of the Commons? Can the available, local spectrum be "hogged" by companies such as content providers or search engine companies who can afford to pay for preferential treatment? What should these rules be for the wireless technology? These rules are not in place but what would you propose that the FCC do?

References

1. Fred Von Lohmann. "FCC Rules Against Comcast for BitTorrent Blocking," Electronic Frontier Foundation, August 3, 2008.
<https://www.eff.org/deeplinks/2008/08/fcc-rules-against-comcast-bit-torrent-blocking>
2. Grant Gross (IDG News Service. "Court Rules Against US FCC's Comcast Net Neutrality Decision," PCWorld Business Centre. April 7, 2010.
http://www.pcworld.idg.com.au/article/342167/court_rules_against_us_fcc_comcast_net_neutrality_decision/
3. Wikipedia. Comcast Corp. v. FCC.
http://en.wikipedia.org/wiki/Comcast_Corp._v._FCC
4. Edward Wyatt, Noam Cohen. "Comcast and Netflix Reach Deal on Service, The New York Times, February 24, 2014.
<http://www.nytimes.com/2014/02/24/business/media/comcast-and-netflix-reach-a-streaming-agreement.html>
5. Gautham Negesh, Amol Sharma. "Court Tosses Rules of Road for Internet," The Wall Street Journal, January 14, 2014.
<http://online.wsj.com/news/articles/SB10001424052702304049704579320500441593462>
6. Drew FitzGerald, Shalini Ramachandran. "Feud Over Netflix traffic leads to Video Slowdown," The Wall Street Journal, February 19, 2014.
<http://www.theaustralian.com.au/business/wall-street->

journal/feud-over-netflix-traffic-leads-to-video-slowdown/story-fnay3ubk-1226832287080#

7. Edward Wyatt. "Judges Hear Arguments on Rules for Internet," *The New York Times*, September 10, 2013.
<http://cornell.summon.serialssolutions.com/search?s.q=appeals%20panel%20dubious%20of%20net%20neutrality>
8. Ryan Knutson and Brent Kendall. "Appeals Panel Dubious Of Net Neutrality," *The Wall Street Journal*, September 10, 2013.
<http://search.proquest.com/docview/1430986772>
9. Kevin Parrish. "FCC Passes Net Neutrality Rules," *Tom's Guide US*.
<http://www.tomsguide.com/us/Net-Neutrality-FCC-Julius-Genachowski-broadband-transparency,news-9478.html>
10. Amy Schatz, Shayndi Raice. "Internet Gets New Rules of the Road," *The Wall Street Journal*, December 22, 2010.
<http://online.wsj.com/article/SB10001424052748703581204576033513990668654.html>
11. Amy Schatz, Shayndi Raice. "Internet Gets New Rules of the Road," *The Wall Street Journal*, December 22, 2010.
<http://online.wsj.com/article/SB10001424052748703581204576033513990668654.html>
12. Brian Stelter. "F.C.C. is Set to Regulate Net Access," *The New York Times*, December 21, 2010.
<http://www.NYTimes.com/2010/12/21/business/media/21fcc.html? r=1&pagewanted=print>
13. Brian Stelter. "F.C.C. Faces Challenges to Net Rules," *The New York Times*, December 22, 2010.
<http://query.NYTimes.com/gst/fullpage.html?res=9801E6D91739F931A15751C1A9669D8B63&ref=federalcommunicationscommission>
14. Ross Gerber. "Net Neutrality's demise is channel changer in TV land," *Forbes*, February 21, 2014.
<http://homes.yahoo.com/news/net-neutrality-s-demise-is-channel-changer-in-tv-land-004742214.html>
15. Emma Woollacott. "FCC to write new net neutrality rules," *Forbes*, February 20, 2014.
<http://www.forbes.com/sites/emmawoollacott/2014/02/20/fcc-to-write-new-net-neutrality-rules/>
16. William H. Lehr and John M. Chapin. "On the Convergence of Wired vs. Wireless Access in Network Architectures," *Massachusetts Institute of Technology*,

http://businessinnovation.berkeley.edu/Mobile_Impact/Lehr_Chapin_IEP.pdf

17. Edward Wyatt. "Verizon-FCC Court Fight Takes on Regulating Net," The New York Times, September 9, 2013.
<http://www.nytimes.com/2013/09/09/business/verizon-and-fcc-net-neutrality-battle-set-in-district-court.html?pagewanted=all&r=0>
15. Brian Fung. "Map: The 34 cities that may be awarded Google Fiber by year's end," The Washington Post, February 19, 2014.
<http://www.washingtonpost.com/blogs/the-switch/wp/2014/02/19/map-the-34-cities-that-may-be-awarded-google-fiber-by-years-end/>