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Federal Trade Commission

The Open Internet:
Regulating to Save the Unregulated Internet?

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before the

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Thank you, Dr. Fetzer, for that kind introduction. I have been asked here today to offer my perspectives on the "open internet" – what that term means to me and what I think the future holds for network neutrality and the debate over vertical foreclosure. I plan to offer a handful of observations and my position on the nature of regulation here that can serve as my re-entry in this highly-charged, decade-old debate about whether and how best to regulate the Internet. In short, my position is that less regulation is arguably better than more and the nature of that regulation should come in the form of cautious and informed enforcement of existing antitrust and competition norms as well as consumer protection requirements. We should first take stock of our existing inventory of regulatory

and enforcement tools before creating new ones that would be potentially redundant and counterproductive. Let me begin with my experiences studying network neutrality issues, offer some background on a few of the relevant and unique characteristics of the Internet, frame today's debate, and then explain how I reached my position on this issue. Please note that the opinions and perspectives I offer today are mine alone and not necessarily the views of the Commission or any other Commissioner.

I. Background and Recent Developments

A. Background

As many of you know, before I was appointed a Commissioner, I had the honor of serving the FTC for twelve years under both Democratic and Republican Chairmen. My last position at the FTC before heading to private practice in 2009 was as the Director of the Office of Policy Planning. In 2006, then-Chairman Deborah Majoras asked me to lead an Internet Access Task Force to reach out to interested stakeholders and investigate the issues surrounding Internet access and network neutrality. I and my team at the FTC spent roughly a year hearing from and working with consumer advocates and experts in industry, technology, and academia exploring competition and consumer protection issues relating to the Internet. In February 2007, we held a two-day workshop at the agency in which hundreds of people came together to discuss network neutrality issues and offer solutions, which some members of this audience attended. In June 2007, we published the *Broadband Connectivity Competition Policy* report summarizing our

findings and offering recommendations. I will refer to this report as the "*Net Neutrality Report*."[1]

We conducted the 2007 workshop and have begun more deeply examining internet neutrality issues at the FTC because over the last ten or so years we have begun seeing a shift in the regulation of the Internet from a pervasively regulated telecommunications environment to one that relies more heavily on antitrust principles to support the buoyancy of the markets. As a consequence, more people are looking to the FTC to enforce Section 5 of the Federal Trade Commission Act as an efficient (and time-tested) way to regulate unfair methods of competition and unfair or deceptive acts and practices online.

However, there is an historical impediment to the FTC's exercise of authority in this area. The FTC Act exempts from our jurisdiction "common carriers subject to the Acts to regulate commerce," which until recently had included most broadband services as "telecommunications services" under the Communications Act of 1934.[2] But over the last several years, the FCC has been de-regulating broadband services, reclassifying many of them as "information services" not subject to common-carrier regulation.[3] In 2005, the U.S. Supreme

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[1] FED. TRADE COMM'N, BROADBAND CONNECTIVITY COMPETITION POLICY (2007), *available at* http://www.ftc.gov/reports/broadband/v070000report.pdf.

[2] 15 U.S.C. §45 (a)(2).

[3] *In re High-Speed Access to the Internet Over Cable and Other Facilities*, 17 F.C.C.R. 4798, 4822-23, ¶¶ 38-39 (2002)[hereinafter 2002 *Cable Modem Order*]; *see* 47 U.S.C. §§ 153 (20), 153 (43) & 153 (46) (2009) (defining "information service," "telecommunications," and "telecommunications service").

Court affirmed that the FCC's interpretation of cable broadband as an information service was a reasonable construction of the Communications Act in *National Cable & Telecommunications Association v. Brand X Internet Services.*[4]

B. Recent Developments

Since *Brand X*, the FCC has asserted ancillary jurisdiction over broadband information services and imposed certain Internet freedoms "to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers."[5] The Internet freedoms and the FCC's jurisdiction over "information services" were challenged in court in 2007, after the FCC sanctioned Internet service provider Comcast for violating them.[6] The D.C. Circuit rejected the FCC's exercise of ancillary jurisdiction, calling it "flatly inconsistent" with controlling law.[7]

Reacting to this ruling, FCC Chairman Julius Genachowski in 2010 offered a "third way" to continue with FCC regulation of the Internet.[8] This approach involves recasting the transmission component of "broadband services" as

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[4] 545 U.S. 967, 1000 (2005), *affirming* the 2002 *Cable Modem Order*.

[5] *In re Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, 20 FCC Rcd 14986 (2005) (policy statement); *see also In re Appropriate Regulatory Treatment for Broadband Access to the Internet over Wireless Networks*, 22 FCC Rcd 5901, 5901-02 (2007) (declaratory ruling).

[6] *See id*.; Cecilia Kang, *Court Rules for Comcast over FCC in 'Net Neutrality' Case*, THE WASHINGTON POST (April 7, 2010), *available at* http://www.washingtonpost.com/wp-dyn/content/article//2010/04/06/AR2010040600742.html.

[7] *Comcast v. FCC*, 600 F.3d 642, 658 (D.C. Cir. 2010).

[8] Julius Genachowski, *The Third Way: A Narrowly Tailored Broadband Framework* (May 6, 2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297944A1.pdf.

"telecommunications services" subject to common carrier regulation and direct FCC jurisdiction and then applying only narrow portions of the Communications Act to those services.[9]

On December 23, 2010, the FCC set out three net neutrality rules, similar to those that had just been challenged in the DC Circuit. As summarized by the FCC, those rules are:

- Transparency. Broadband providers must disclose information regarding their network management practices, performance, and the commercial terms of their broadband services.
- No blocking. Fixed broadband providers (such as DSL, cable modem, or fixed wireless providers) may not block lawful content, applications, services, or non-harmful devices. Mobile broadband providers may not block lawful websites, or applications that compete with their voice or video telephony services.
- No unreasonable discrimination. Fixed broadband providers may not unreasonably discriminate in transmitting lawful network traffic over a consumer's broadband Internet access service. Unreasonable discrimination of network traffic could take the form of particular services or websites appearing slower or degraded in quality.[10]

These principles are again the subject of litigation, with two large internet service providers claiming this Net Neutrality Order also is beyond the FCC's mandate.[11]

The debate about the FCC's jurisdiction implicates the potential role of the FTC and, to me, raises deeper questions about the extent to which the Internet

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[9] *Id.* at 5.

[10] Summary of Open Internet Rules, available at http://www.fcc.gov/topic/open-internet (last visited October 26, 2012); see *In re Preserving the Open Internet Broadband Indus. Practices*, 25 FCC Rcd. 17,905 (2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf (emphasis added) [hereinafter *Net Neutrality Order*]; Babette E.L. Boliek, *FCC Regulation Versus Antitrust: How Net Neutrality Is Defining the Boundaries*, 52 B. C. L. Rev. 1627, 1632 (2011) (citing to FCC Commissioner concerns about jurisdiction).

[11] *See, e.g.*, *Verizon v. FCC*, Nos. 11-1355, 11-1356, 11-1404, and 11-1411 (D.D.C. 2011).

requires regulation at all and, if so, the appropriate standards to apply. The origins and structure of the Internet offer valuable insight in answering these questions – and in determining whether these are even the right questions to be asking.

II. Framing the Net Neutrality Debate

A. Design Characteristics Shaping The Debate

As we all know, the Internet grew out of U.S. government-funded research in the 1960s and 1970s by the Department of Defense's Advanced Research Projects Agency (DARPA).[12] Three of the original design characteristics of the Internet remain important to our analysis of net neutrality issues: decentralization and redundancy; packet-switched communication; and end-to-end architecture offering "first-in, first-out" or "best efforts" service across "dumb pipes."[13]

These design principles remain front and center in today's debate because questions persist about the ability of any single market participant to engage in meaningful vertical foreclosure in a system designed around technical and competitive decentralization. This has shifted the spotlight of our debate to where foreclosure might still occur due to potential bottlenecks, primarily at the "last mile," where access providers act as "gatekeepers," and, to a lesser extent, at the

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[12] Barry M. Leiner et al., A Brief History of the Internet, INTERNET SOCIETY http://www.isoc.org/internet/history/brief.shtml (last visited October 26, 2012).

[13] *See* David D. Clark, *The Design Philosophy of the DARPA Internet Protocols*, Computer Comm. Rev., Aug. 1988, at 106-107, *available at* http://nms.csail.mit.edu/6829-papers/darpa-internet.pdf; *Net Neutrality Report*, at 17; *see also* J.H. Saltzer et al., *End-to-End Argument in System Design*, 2 ACM Transactions on Computer Sys. 277 (1984).

network's backbone or core. Many of the concerns today echo or build on what I heard five years ago when leading the Internet Access Task Force.

B. Proponents of Net Neutrality Regulation

Proponents of network neutrality regulation believe the Internet's original design characteristics have allowed content and applications providers at the edge of the Internet to thrive and generate substantial positive externalities and dynamic efficiencies. For example, Professors Mark Lemly and Lawrence Lessig argued in 2000: "While the e2e [end-to-end] design principle was first adopted for technical reasons, it has important social and competitive features as well. e2e expands the competitive horizon by enabling a wider variety of applications to connect to and to use the network."[14] They concluded "[the] strong presumption [should be] in favor of preserving the architectural features that have produced this extraordinary innovation."[15]

Proponents of network neutrality regulation, mainly the content and applications providers at the "edge" of the Internet, fear that network owners could somehow hold them hostage.[16] As the FCC explained in the Net Neutrality Order:

> A broadband provider may act to benefit edge providers that have paid it to exclude rivals (for example, if one online video site were to contract with a broadband provider to deny a rival video site access to the broadband provider's subscribers). End users would be

[14] Mark A. Lemly & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. Rev. 925, 931 (2001).

[15] *Id.* at 929.

[16] Lawrence Lessig, *The Internet Under Siege*, FOREIGN POL'Y, Nov.-Dec. 2001, at 56.

> harmed by the inability to access desired content, and this conduct could lead to reduced innovation and fewer new services.[17]

During the workshop, participants raised similar concerns that "non-neutral" practices, mainly vertical in nature, could create such significant harms to content providers that the FTC, FCC, Department of Justice, as well as Congress, would be unable to prevent or remedy them. The practices most talked about then that are still debated today include: "(1) blockage, degradation, and prioritization of content or applications; (2) vertical integration by ISPs and other network providers into content and applications; . . . and [3] the diminution of political and other free expression on the Internet."[18]

C. Opponents of Net Neutrality Regulation

While it is hard to challenge the idea that decentralized design has fostered innovation on the Internet, others contend the freedom to experiment with business models has been just as important.[19] Their fear is that any attempt to maintain the original design principles by regulatory fiat risks stifling entrepreneurial spirit and reducing investment and innovation.[20] Opponents of additional network neutrality regulation, mainly network operators and internet service providers, advocated at the 2007 workshop for more flexible regulation of the Internet. They told us broad

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[17] *Net Neutrality Order*, at ¶23, at 17,918 (footnotes omitted).

[18] *Net Neutrality Report*, at 5.

[19] Thomas W. Hazlett and Joshua A. Wright, *The Law and Economics of Network Neutrality*, 45 Ind. L. Rev. 767 (2012); *see also* Christopher Yoo, *What Can Antitrust Contribute to the Network Neutrality Debate?*, 1 Int'l J. Comm 493, 517 (2007).

[20] *Id.*

prescriptive regulation would stifle investment in facilities upgrades and hamper technical innovation. They also argued additional regulation would set in stone the existing business and technical environment; restrict the freedom of network operators to innovate and experiment with business models; distort investment incentives by prohibiting price discrimination; and diminish procompetitive efficiencies of vertical integration. Moreover, they believed there was no evidence of a widespread problem compelling such a broad solution.[21]

III. Antitrust and Net Neutrality

A. Observations

With this background in mind, let me make a few observations. First, I think just about everyone would agree that the Internet is the most successful and reliable communications platform in history. Its backbone interconnects numerous public and private networks that supply highly redundant communications access to tens of millions of successful content and applications businesses. And this ecosystem, worth trillions of dollars, continues to evolve in new and sometimes unpredictable directions every day.

Second, the Internet has grown with very little direct regulation. Apart from the FCC's attempts to introduce network neutrality standards (in its 2005 policy statement and the more recent Network Neutrality Order), Internet market participants have been largely left alone to experiment with new business and

[21] *Net Neutrality Report*, at 6.

technological models. And, to me, an environment rewarding this type of experimentation is the key to unlocking innovation and expanding social welfare.

Third, the concerns about vertical restraints and foreclosure, particularly the anxiety over widespread "blocking" and abuse of "termination monopolies," have not materialized. You would think (although certainly not hope) that these fears would have been in some way realized in the more than ten years since the debate began. But besides a handful of highly-publicized instances, including *Comcast-Bit Torrent* (which the FCC lost on jurisdictional grounds), *Madison River*, and *Cogent-Sprint*, there has been relatively little. While these matters serve as a reminder that such conduct is possible, they are a minority of the many procompetitive vertical integrations and other fruitful interconnection relationships across the Internet. These incidents do not to me represent a market failure requiring a call-to-arms to introduce de novo net neutrality regulation. Rather, they perhaps signal that our debate should focus on how to handle periodic short-term capacity constraints on the Internet and occasional bad actors under the antitrust and consumer protection laws.

Fourth, and finally, overly aggressive policing of vertical relationships with new regulations runs a risk of stifling innovation on the Internet. As an initial matter, a standard vertical restraints analysis may not apply to a decentralized, packet-switched, network like the Internet. But if this analysis is appropriate, we should acknowledge that in most instances vertical combinations carry procompetitive benefits that must be part of our calculus.

In my mind, the open Internet is not a particular business model or internet architecture. To me, you cannot take a snapshot of the Internet as it stands today, as a largely open model with a primarily end-to-end architecture, and claim that this is how it is and shall always be. Not necessarily. The open Internet to me is a concept that allows for continued experimentation with business models and interconnection models largely free from regulatory infiltration. Regulation of the Internet should be a cautious, careful, and methodical enterprise that allows businesses the considerable flexibility they need to innovate.

B. Why Antitrust Is the Right Analytical Framework

The antitrust and competition laws offer the right lens through which to view most network neutrality issues. The legal and economics norms that influence antitrust analysis represent the light touch that Internet regulation requires. Rather than following dogmatic and static principles, antitrust and competition analysis involve a rigorous, fact-based approach to enforcement that provides normative flexibility intended to achieve the greatest social welfare when regulating particular conduct or transactions. We ask questions first and regulate second, in the hopes that our enforcement activities enhance a dynamic market environment, rather than forcing it into a predetermined box. The validity of an antitrust approach here is especially apparent to me because most of the theoretical fears raised by advocates of additional network neutrality regulation relate to vertical conduct – something antitrust practitioners and academics have studied and understand to be, more often than not, procompetitive.

Thinking through this as an antitrust problem helps illuminate a few points that are now making their way into the conversation on this subject. First, generally speaking the right analysis for vertical restraints (under applicable U.S. law) is the rule of reason (or for vertical integrations the similarly fact-intensive and flexible merger review standards under the Clayton Act), in which procompetitive benefits are weighed against anticompetitive harms, not the per se rule. To the extent conduct, whether it is vertical integration or price discrimination against certain types of transmissions, is lawful should depend largely on its net benefit to competition and consumers. Professors Thomas Hazlett and Josh Wright of George Mason University recently published a paper exploring net neutrality from this perspective.[22] They offer several examples showing the internet as we know it is not neutral and never has been – and for good reason. Vertically-integrated "walled gardens" of "non-neutral" content pervade the history of the Internet – and have succeeded and failed based on their value to consumers. For instance, in the 1990s, America Online (AOL) developed a closed platform with exclusive content for its users, in the process charging brand-name media companies, like TIME Magazine and The New York Times, for the right to publish on AOL while also developing proprietary content like financial site Motley Fool, through the AOL Greenhouse, an online start-up

[22] Hazlett and Wright, *supra* note 19, at 767.

incubator.[23] Even before its acquisition of Time Warner in 2001, AOL had taken steps to vertically integrate its content and delivery, entering strategic relationships with telecommunications providers like GTE, Ameritech Communications, and Bell Atlantic to guarantee customer access to the AOL service over digital subscriber (DSL) lines. And it owned small stakes in internet telephony companies like Net2Phone and Palm.com, which sold long-distance access to AOL users.[24] Despite being "non-neutral" and vertically-integrated, AOL was critical to the growth of the Internet. At a time when few consumers knew about or understood the Internet, AOL popularized it by offering an easy, user-friendly "on-ramp" to popular content and by distributing "more than 250 million disks bearing AOL software to the mass market."[25] At its peak in 2002, AOL had roughly 35 million subscribers.[26] It, along with a handful of other companies, was one of the driving forces of innovation during the earlier phases of mass market adoption of the Internet – and for much of its most influential years in the late 1990s and early 2000s, AOL discriminated against content providers, favored its own content, and charged for access to its platform – arguably a violation of the FCC's Internet freedoms and the Net Neutrality Order.

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[23] *Id.*at 795.

[24] Stanford Graduate School of Business, "AOL: The Emergence of An Internet Media Company," Case SM-75, at 10 (03/20/01) *available at* https://gsbapps.stanford.edu/cases/documents/SM75.pdf. (citing "Why AOL is on the Case," *America's Network*, Shira Levine, May 15, 2000).

[25] Hazlett & Wright, supra note 19, at 795.

[26] Form 10-K, AOL Time Warner (2002), at 3, *available at* http://www.uic.edu/classes/actg/actg500rr/Notes/05-AOL-Time-Warner-10K-2002.pdf.

Nor is AOL the only example of lawful and beneficial vertical integration or content discrimination on the web. Web portal Excite merged with high speed internet provider @Home to launch Excite@Home – at the time intended to be a broadband version of AOL.[27] AOL's chief competitor in the 1990s, Earthlink, teamed up with Netscape to move over its users to Netscape Navigator. It also entered strategic vertical relationships with Sprint (a large telephony company) and, later, with Apple to be the default Internet software on the new iMac.[28] And, as Hazlett and Wright point out, Google was able to achieve scale in its early days in 2002 only after winning a bid to be the default search engine on AOL's start-up page – beating out rivals Inktomi and Overture for the plum position.[29] And, just this year, despite the fears over vertical foreclosure when Comcast bought a majority stake in NBC Universal last year, Comcast entered into a ten-year multi-platform deal with Disney that will allow Comcast subscribers to view Disney programming on television, online, or an a tablet or other handheld device – notably, the Comcast/NBCU deal had been subject to scrutiny and a consent

[27] Frank Rose, *The Seven Billion Dollar Delusion*, WIRED (October 2001), *available at* http://www.wired.com/wired/archive/10.01/excite_pr.html.

[28] *Earthlink*, GALE ENCYCLOPEDIA OF E-COMMERCE (2002), *available at* http://www.encyclopedia.com/doc/1G2-3405300149.html.

[29] Hazlett and Wright, supra note 19, at 796.

decree by the DOJ's Antitrust Division.[30] Each of these deals is an example of a business model that arguably could violate net neutrality principles. And, yet, most offered tangible procompetitive benefits and grew into successful businesses. Others quietly faded away because of changing consumer demands or economics without in the process degrading the Internet experience or realizing the deepest fears of net neutrality advocates.

These examples suggest to me that at a minimum any inquiry into alleged blocking or discrimination must be a fact-intensive enterprise faithfully applying antitrust principles. Vertical relationships offer many potential procompetitive efficiencies, including reducing double marginalization, minimizing the possibility of free riding, and facilitating investment.[31] For instance, a content provider that also owns a broadband network would likely be able to distribute its content to its users without paying interconnection or transit fees to another network. These savings free up capital for the vertically-integrated company to make additional investments in infrastructure or programming or to lower its prices, any of which is a potential benefit to competition and the consumer. A review of the economics literature by several current and former FTC and DOJ economists found that most

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[30] *See* Tim Molloy, *Disney-Comcast Make Ten-Year XFinity Multi-platform Deal, available at* http://www.reuters.com/article/2012/01/04/idUS230102746820120104; Claire Atkinson, *Comcast Snares Mouse House Deal*, N.Y. Post, Jan. 5, 2012, *available at* http://www.nypost.com/p/news/business/comcast_snares_mouse_house_deal_NIrN3PEQOXmJ5QNBfAN3JL.

[31] Hazlett and Wright, supra note 19, at 796.

analyses of vertical integration did not show compelling evidence of net anticompetitive harm.[32]

Even if one does not agree that vertical integration or vertical restraints can often be efficiency-enhancing, adopting what amounts to a per se prohibition on blocking conduct and something awfully close to that on discrimination – which theoretically could implicate many closed platform business models like AOL and Apple – is likely inappropriate under US antitrust law. The U.S. Supreme Court has said that conduct may be condemned on a per se basis only where it is "plainly" or "manifestly" anticompetitive.[33] Such categorical condemnation is appropriate only where a "practice facially appears to be one that would always or almost always tend to restrict competition and decrease output" instead of "one designed to 'increase economic efficiency and render markets more, rather than less, competitive.'"[34] I think it would be quite a stretch to conclude that much of the vertical conduct debated in the net neutrality context, blocking and discrimination (both in terms of price and delivery), as a rule constitutes facially anticompetitive conduct. This is why I agreed in large part with my colleague, and FTC Bureau of Economics Director, Howard Shelanski when he observed that:

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[32] *Id.* at 801, *quoting* James C. Cooper, et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 Int'l J. Indus. Org. 639, 658 (2005).

[33] *Broadcast Music, Inc. v. CBS*, 441 U.S. 1, 8 (1979); *accord Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 50 (1977) (noting that per se treatment is only proper for "conduct that is manifestly anticompetitive.").

[34] *Broadcast Music*, 441 U.S. at 19-20.

> It is this very ambiguity in the welfare effects of price discrimination and in the incentives to discriminate inefficiently that is important. The welfare ambiguity means that any rule patently barring discrimination could have unintended, negative consequences because the conduct sought to be barred—price discrimination—is neither always bad nor always good.[35]

C. Is The Market Already Resolving The Concerns of Net Neutrality Advocates?

In addition to my skepticism over the scope of the proposed net neutrality rules and my preference for applying existing antitrust and other regulatory principles, I also wonder whether much of the net neutrality debate is tied to increasingly stale assumptions about network capacity constraints and, in particular, the ability of last mile providers to exercise monopoly power. The concern over "termination monopolies" comes from a perception in the United States that broadband access in most geographic areas is controlled mainly by legacy cable and telephone networks, such that each of them could lock-in customers and potentially discriminate against them and the content providers looking to access them.[36]

But the Internet is changing quickly and these days more consumers have a wider choice of last mile providers. While I have not conducted any independent

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[35] Howard A. Shelanski, *Vertical Relations and 'Neutrality' in Broadband Communications: Neither Market nor Hierarchy*, *in* Regulation, Deregulation, Reregulation: Institutional Perspectives 151, 158 (Michael Ghertman & Claude Ménard eds., 2009).

[36] *See, e.g.*, U.S. DEPARTMENT OF JUSTICE, VOICE, VIDEO AND BROADBAND: THE CHANGING COMPETITIVE LANDSCAPE AND ITS IMPACT ON CONSUMERS, at 19 (Nov. 2008) (noting "[t]he principal competitors providing residential broadband services are the incumbent telephone and cable companies."), *available at* http://www.justice.gov/atr/public/reports/239284.pdf.

empirical studies in this area, three recent publicized trends help reinforce my belief in the adaptability of the Internet and the lack of need for a new, static, regulatory mechanism.

First, the move to mobile broadband appears to have accelerated in the last few years and this trend is reshaping the way people access and interact with the Internet. As the FCC noted in its August 2012 *International Broadband Data Report*, "[w]ireless broadband subscriptions topped 500 million in OECD countries [at] the end of 2010 (compared to 300 million fixed broadband subscriptions."[37] The FCC also commented that "[a]ccording to Cisco, global mobile data in 2011 (597 petabytes per month) more than doubled for the fourth consecutive year. Cisco also reports all mobile data traffic generated in 2011 was 'eight times the size of the entire global Internet in 2000.'"[38]

While mobile broadband access generally is not yet as fast or widespread as wireline, it is an increasingly important option for consumers, especially in rural or less developed areas. The build out of the 3G and more recently, in the United States, 4G LTE wireless networks has introduced potentially viable competitors to the legacy cable and DSL access providers. As the FCC notes, "aggressive LTE network build-out by U.S. providers has been a driving force in customer take-up and we anticipate that this trend will continue. Analysts anticipate that globally,

[37] FCC, INTERNATIONAL BROADBAND DATA REPORT (THIRD), No. 10-171, at 7 (FCC Aug. 21, 2012), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0821/DA-12-1334A1.pdf.

[38] *Id.* (citations omitted).

LTE subscribership will reach at least 400 million by 2016."[39] Here are a couple of additional facts to consider: "[O]f Americans with mobile phones, 31% only or mostly use the Internet on their mobiles. More than a third of the people in the US don't have Internet access at home, but nine out of ten have a mobile phone."[40] In addition, "Mobile internet use accounted for 10.1% of media use in the US at the end of last year . . ."[41] While the advance of mobile broadband access is still underway, it cuts against the "last mile" problem and signals a potential shift in the debate about network neutrality.

Second, content delivery networks, or "CDNs," have proliferated over the last several years and are changing the economics of legacy network infrastructure providers.[42] CDNs can connect content providers directly with last mile networks and offer innovations like caching closer to end users.[43] They allow for less reliance on backbone networks by content businesses at the "edge" of the Internet and reduce their use of terminating networks through caching technology, saving these content providers money.[44] As a result, content and applications companies

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[39] *Id.* at 2.

[40] See Olof Schybergson, *The Trend that Terrifies Big Tech*, FORTUNE (Aug. 21, 2012), *available at* http://tech.fortune.cnn.com/2012/08/21/mobile/.

[41] Richard Waters, *Advertisers Cautious of Move to Mobile*, FINANCIAL TIMES (Aug. 8, 2012), *available at* http://www.ft.com/intl/cms/s/0/3458d640-e165-11e1-9c72-00144feab49a.html#axzz2AR1jV215.

[42] *See generally* Christopher Yoo, Innovations in the Internet's Architecture that Challenge the Status Quo, 8 J. High Tech. and Telecomm. Law 79, 86-90 (2010).

[43] Dennis Weller & Bill Woodcock, *Internet Traffic Exchange, Market Developments and Policy Challenges*, OECD Digital Economy Papers, No. 207, at 27 (OECD 2012).

[44] *Id.*

are increasingly turning to CDNs, with some even building their own networks. As Hazlett and Wright note, "[c]ontent companies like Google [are] constructing their own global delivery networks; others purchase such speed-enhancements through content delivery networks (CDNs) like Akamai, BitGravity, or Limelight Networks."[45] A recent paper at the OECD notes that "Google … carried about 6% of Internet traffic in 2009…"[46]

CDNs also give content providers more control over the quality of their service. As the OECD paper remarks, "Providers of online services, such as the BBC, Google, Netflix, and Hulu, seek to improve the quality of the experience they provide to their customers. More direct delivery, fewer intermediate hops, and local caching reduce latency and improve the quality of service."[47] This vertical integration has prompted competitive responses from backbone networks, which are expanding to provide their own CDNs,[48] and from ISPs, some of which now offer content and applications companies local caching for a fee.[49]

Third, capacity in the aggregate across the Internet, although relatively difficult to measure, continues to expand rapidly, at a rate of roughly 50% per year. TeleGeography estimates that international internet bandwidth has grown 400% since 2008, from less than 20 terabits per second to almost 80 terabits per

[45] Hazlett and Wright, supra note 19, at 780.

[46] Weller & Woodcock, supra note 43, at 27.

[47] *Id.*

[48] *Id.*

[49] Hazlett and Wright, supra note 19, at 780.

second this year.[50] This growth appears to have been enough to keep pace with demand thus far, at least in the United States, where the FCC's 2012 *Measuring Broadband America* report indicates the average wireline ISP delivers 96 percent of the advertised download speed during peak usage periods, and that consumers are paying for and receiving increasingly faster access speeds.[51] From 2011 to 2012, the experienced speed for users in the United States increased 38%, from 10.6 Megabits per second (Mbps) to 14.6 Mbps. This again suggests to me that the market, left largely alone, is ably and efficiently meeting growth in demand.

On the other hand, while the increases in speed and reliability during peak periods are certainly engineering and commercial successes, studies show that with increased access speeds come increases in demand.[52] Consumers likely use the Internet more often and for more data-intensive purposes.[53] This correlation, along with the Internet's architecture of interconnected private networks, means congestion likely will remain an issue in the foreseeable future.

But the best way to incentivize continued development of congestion solutions that accommodate new technologies and services may be to allow for

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[50] *See* Global Internet Capacity Reaches 77Tbps Despite Slowdown (Sep. 6, 2012), *available at* http://www.telegeography.com/products/commsupdate/articles/2012/09/06/global-internet-capacity-reaches-77tbps-despite-slowdown/.

[51] FCC, MEASURING BROADBAND AMERICA, A REPORT ON CONSUMER WIRELINE BROADBAND PERFORMANCE IN THE U.S. (July 2012), *available at* http://transition.fcc.gov/cgb/measuringbroadbandreport/2012/Measuring-Broadband-America.pdf.

[52] *Id.* at 43-44.

[53] *Id.*

tiered pricing or pricing flexibility, as opposed to dictating a one-size-fits-all approach. As in any other industry, differentiated pricing sorts out higher priority from lower priority uses of limited resources and allows for necessary investment in infrastructure and content that expands supply and enhances social welfare. The FCC appears in part to agree with this sentiment. Chairman Genachowski noted recently it is efficiency-enhancing for broadband providers to charge tiered pricing to users based on usage, despite the protests of video streaming services like NetFlix that such conduct is discriminatory.[54] This is a view also reflected in the Net Neutrality Order.[55] In my opinion, this is a step in the right direction.

IV. The FTC and Net Neutrality

Let me close by noting that these net neutrality issues implicate extremely complex legal, economic, and technological problems and I do not have (nor do I claim) the expertise of a technologist or an engineer. But I think as an enforcer among my core responsibilities is to learn as much as possible about these markets before taking any action and to refrain from assuming that my job is to make the markets perfect with regulatory tinkering – if that's even possible. Technology

[54] *See* Cecilia Kang, *FCC Chairman Supports Broadband Data Caps Amid Netflix Protests*, Washington Post, May 22, 2012, *available at* http://www.washingtonpost.com/blogs/post-tech/post/fcc-chairman-supports-broadband-data-caps-amid-netflix-protests/2012/05/22/gIQAfdN9hU_blog.html; *see also FCC Chair Approves Tiered Pricing for Broadband*, RedOrbit (May 23, 2012), *available at* http://www.redorbit.com/news/technology/1112540810/fcc-chair-approves-tiered-pricing-for-broadband/.

[55] *Net Neutrality Order*, at ¶72 (stating "However, prohibiting tiered or usage-based pricing and requiring all subscribers to pay the same amount for broadband service, regardless of the performance or usage of the service, would force lighter end users of the network to subsidize heavier end users.").

markets are notoriously susceptible to regulatory failures, which is in large part why I think we should first look to our existing (well-stocked) inventory of antitrust, competition, and consumer protection laws before creating new, and perhaps counterproductive, regulations.

I think my agency is up to the task of maintaining free and competitive markets, and has substantial expertise training an unbiased eye on competition and consumer protection issues in numerous Internet contexts. And our prior work gives us a particular understanding of the type of vertical issues that concerns net neutrality advocates today. For instance, in the early days of the net neutrality debate, the FTC examined the AOL/Time Warner merger, which brought together at that time the nation's largest internet service provider with one of its largest cable and content companies. After careful analysis, the agency entered a consent decree requiring that AOL and Time Warner open their cable systems to competing ISPs, refrain from discriminating against the content of competitors, decline exclusive deals on ISP or interactive TV services with other cable companies, and refrain from discriminating against the content of non-affiliated ISPs or interactive TV services, among other obligations.[56] And, of course, although I haven't addressed it much today, the FTC has nearly a century of

[56] Press Release, Fed. Trade Comm'n, FTC Approves AOL/Time Warner Merger with Conditions (Dec. 14, 2000), *available at* http://www.ftc.gov/opa/2000/12/aol.shtm. When considered along with the Antitrust Division of the Department of Justice, antitrust enforcers in the United States have looked at numerous deals involving Internet access and backbone infrastructure, including Microsoft/WebTV (1997), MCI/Worldcom (1998), AT&T/MediaOne (1999), WorldCom/Sprint (2000), Verizon/MCI (2005), SBC/AT&T, and AT&T/Bell South.

consumer protection expertise to bring to bear in fighting unfair or deceptive acts or practices online, meaning we can guard against transparency concerns raised by the FCC and others.

I contend that we are on the right path in developing and maintaining an open Internet as I understand it. We do not need additional regulation that may ultimately do more harm than good, particularly given the dynamism in most technology markets and their sensitivity to burdensome regulation. As we move forward in this debate we should all keep in mind that well-meaning government enforcers can impose regulations with unintended negative effects. While I have no doubt about the good intentions of all parties in this debate, I believe cautious and informed action will allow free markets to serve the greatest good.

Thank you. I am happy to take your questions.