

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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| In the Matter of |) | |
| |) | |
| Protecting and Promoting the Open Internet |) | GN Docket No. 14-28 |
| |) | |
| |) | |

Comments of AARP

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Summary and Overview of Comments

For older Americans, i.e., those in age 50+ households, the benefits of broadband are substantial and growing. The widespread availability of high quality and affordable broadband connections—both fixed and mobile—is enabling new applications and services that are enhancing older American’s quality of life, including new methods of delivering healthcare and support for independent living. Policies to promote a vibrant and competitive Internet ecosystem are essential for the continuation of this success. Absent open Internet policies that manage market power in last-mile broadband networks, the growth of broadband benefits will be limited, and undue power will be handed to broadband gatekeepers who have the ability to disadvantage suppliers of Internet content and services. Unless robust open Internet policies are established, rather than generating benefits for all, Internet technology may instead be shaped for the narrow gain of broadband providers.

The implications of the open Internet issues raised in the NPRM also extend to freedom of expression. AARP believes strongly in the principles of collective purpose, collective voice and the collective power of the age 50 and over population to change the market based on their needs. These principles guide our efforts. AARP, an organization with over 37 million members, relies on the Internet to communicate with members and other older Americans, and to inform them about issues that are vital to the age 50+ population. Up to this point the content that AARP distributes using the Internet, which older Americans ultimately access using broadband connections, is treated on a non-discriminatory basis, thus promoting AARP’s ability to advance the collective interests of the 50+ population. However, the proposals contained in the NPRM, by enabling Internet “fast lanes” and discrimination, will hinder AARP’s ability to pursue the principles of AARP’s mission, and the proposed changes are of great concern to AARP and all older Americans. It is clear to AARP that the stakes of this proceeding could not be higher.

The benefits of an open Internet require common carriage

The Commission is facing an all-too familiar scenario—the need to establish a legal basis for rules that will protect the openness of the Internet. Reclassification of broadband Internet access as *telecommunications* will deliver the needed regulatory certainty. The D.C. Circuit ruling in *Verizon v. FCC* clearly illustrates that what is missing from the framework contained in the Commission’s 2010 *Open Internet Order*¹ is a Title II telecommunications foundation.² A Title II foundation will solidify the Commission’s ability to prevent discrimination and blocking of lawful Internet content, services, and technologies.

The NPRM suggests that the D.C. Circuit’s review of the *Verizon* challenge prescribes a preferred path forward for the Commission—what the NPRM refers to as the D.C. Circuit’s

¹ *In the Matter of Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52 Report and Order, December 23, 2010. (“*Open Internet Order*.”)

² *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014), p. 4 (“*Verizon v. FCC*.”)

“blueprint.”³ The NPRM indicates that it will follow the D.C. Circuit’s advice and plot a course inspired by applying Section 706 of the Act in combination with principles contained in the *Data Roaming Order*.⁴ Unfortunately, that path forward requires that the Commission enshrine *discrimination*, which is antithetical to the open Internet. It is also clear from the *Verizon* ruling that the D.C. Circuit did not provide a unique blueprint requiring discrimination; rather, the D.C. Circuit also recognized the acceptability, and common sense, of the reclassification approach and the reclassification of broadband as a Title II telecommunications service.⁵

Broadband has changed since the Cable Modem Order—telecommunications is the dominant service provided to end-users and edge providers⁶ over broadband connections

The NPRM asks whether circumstances have changed since the Commission’s 2002 decision to classify cable modem Internet access as an information service.⁷ The 2002 decision was based on an earlier generation of Internet technology. Information services like e-mail and web hosting that the *Cable Modem Order* described as being inexorably linked with broadband transmission are today provided primarily by entities unaffiliated with the broadband provider. Consumers’ e-mail is primarily handled by third parties.⁸ Web hosting is competitively provided, with U.S. broadband providers not even making the top 25 of U.S. web hosting services.⁹ Furthermore, many end-users’ “web presence” is now associated with third party applications such as Facebook and Twitter. As a result, the broadband service that consumers primarily rely on today is *pure transmission* between their device and remote computing resources or content. The fact that a broadband provider may offer information services like e-mail or web hosting does not imply that the customer will use the information services offered by the broadband provider any more than the consumer will exclusively utilize the proprietary television and video services offered by the broadband provider—the rise of Netflix, YouTube, and other sources of over-the-top video also illustrate consumers’ use of telecommunications to reach the video content they prefer.

In addition, at the time of the *Cable Modem Order* user-generated content was in its infancy. Facebook was founded in 2004,¹⁰ two years following the *Cable Modem Order*. YouTube did

³ NPRM, ¶4.

⁴ NPRM, ¶4 and ¶110, citing to *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265, Second Report and Order, 26 FCC Rcd 5411, 5433, (2011). (“*Data Roaming Order*”).

⁵ *Verizon v. FCC*, pp. 8, 9, 12-13, 24-25.

⁶ Edge providers produce Internet content and services. They may be for-profit businesses, non-profit organizations, governments, schools, libraries, or private citizens.

⁷ NPRM, ¶150.

⁸ See “Gmail Opens Increase 243%; Android Drops Back to #4,” Litmus, February 7, 2014, which identifies at least 86% of e-mail opens being associated with Gmail, Outlook.com, Yahoo, and AOL. <https://litmus.com/blog/gmail-opens-increase-android-drops-january-email-client-market-share>

⁹ According to data from ICANN. Furthermore, the 25th largest U.S. based web hosting entity has a market share of 0.119%. <http://www.webhosting.info/registrars/top-registrars/global/>

¹⁰ <http://en.wikipedia.org/wiki/Facebook>

not launch until 2005,¹¹ three years after the *Cable Modem Order*. The peer-to-peer technology BitTorrent was developed in 2001, but could not reach its full potential until the mid-2000s, precisely because the number of broadband subscribers, with their improved ability to upload and download information, had to reach a critical mass. Broadband subscribers now demand, and broadband providers supply, pure telecommunications to *deliver* voice, video, text, and images to the end-user's subscribers, followers, and/or viewers. When a broadband subscriber uploads video to YouTube, updates their Facebook page, posts on their blog, or shares files, all that is needed from the broadband provider is pure transmission.

This transformation points to the need for reclassification. The broadband provider's delivery of *telecommunications* now takes precedence over the broadband provider's delivery of information services.

The NPRM's discrimination solution to no-blocking will harm the Internet ecosystem

The NPRM now proposes to reinstate a modified no-blocking rule that would empower broadband providers to enter into individualized pay-for-priority agreements with the entities that provide Internet content and services. In other words, the NPRM proposes to enable *discrimination*. Pay-for-priority "fast lane" schemes will, however, undermine broadband innovation and investment. The Commission need look no further than the 2010 *Open Internet Order* to understand why. That *Order* made clear that "pay-for-priority" would raise significant concerns. In summary, the *Open Internet Order* identified key problems with pay-for-priority schemes:

- Pay-for-priority would represent a significant departure from historical and current practice on the Internet.
- Pay-for-priority arrangements could raise barriers to entry on the Internet by requiring fees from edge providers, as well as transaction costs arising from the need to reach agreements with one or more broadband providers to access a critical mass of potential end users.
- Pay-for-priority arrangements may particularly harm non-commercial end users, including individual bloggers, libraries, schools, advocacy organizations, and other speakers, especially those who communicate through video or other content sensitive to network congestion.
- Broadband providers that sought to offer pay-for-priority services would have an incentive to limit the quality of service provided to non-prioritized traffic.¹²

In light of these harms, the *Open Internet Order* concluded that "as a general matter, it is unlikely that pay for priority would satisfy the 'no unreasonable discrimination' standard."¹³

¹¹ <http://en.wikipedia.org/wiki/YouTube>

¹² *In the Matter of Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52 Report and Order, December 23, 2010, ¶76. ("*Open Internet Order*.")

¹³ *Id.*

Pay-for-priority and fast lanes will cause customer confusion and will degrade the value of broadband connections. Incentives consumers would have to upgrade to higher capacity broadband connections would be muted, as the full value of more bandwidth can only be achieved if *all web sites and content* have the potential to be delivered at the “up to” speed for which a consumer pays.

Fast lanes will harm edge providers. Each broadband provider holds bottleneck on access to the edge provider’s potential users, viewers, or customers. Thus, the edge provider would have to entertain negotiation with many broadband providers to reach fast-lane agreements to cover all broadband mass-market customers. In and of itself, that process of negotiation will introduce substantial transaction costs for edge providers, thus draining operating funds, and reducing edge provider profitability. Assuming that the edge provider has the financial wherewithal to purchase fast lane services, here too, the profitability of the firm is negatively affected as payment for superior access to customers now comes at a premium. As the Commission noted in the 2010 *Open Internet Order*:

Continued operation of this virtuous circle,¹⁴ however, depends upon low barriers to innovation and entry by edge providers, which drive end-user demand. Restricting edge providers’ ability to reach end users, and limiting end users’ ability to choose which edge providers to patronize, would reduce the rate of innovation at the edge and, in turn, the likely rate of improvements to network infrastructure.¹⁵

Increases in edge provider transaction costs will lead to lower profits at the network edge and lower levels of innovation and undermine incentives for broadband adoption.

“Minimum levels of access” require Title II classification

The NPRM states that a “minimum level of access under the no-blocking rule will ensure that all users have access to an Internet experience that is sufficiently robust, fast, and effectively usable.”¹⁶ However, the “minimum access” proposed in the NPRM requires a common-carriage service quality standard. The NPRM states that: “broadband providers [would] have no obligation to actually provide an edge provider with the minimum service necessary to satisfy the rules,’ because they could instead ‘deliver all edge providers’ traffic’ in a manner that exceeds that minimum.”¹⁷ How is a requirement that a broadband provider *exceed* a minimum level of service at a price of zero anything other than a Title II common carriage requirement? The NPRM clearly proposes that a Commission order will require that broadband providers furnish service above a service quality standard to all potential customers, which has a familiar ring:

¹⁴ The “virtuous circle” identified in the *Open Internet Order* is based on unhindered innovation by edge providers driving the demand for higher quality broadband, which in turn results in broadband providers upgrading facilities to meet that demand. See, *Open Internet Order*, ¶¶13-14.

¹⁵ *Open Internet Order*, ¶14.

¹⁶ NPRM, ¶98.

¹⁷ NPRM, ¶99.

“It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service upon reasonable request therefor; and, in accordance with the orders of the Commission. . .”
(Communications Act, §201(a).)

The Commission cannot escape common carriage through the “fast lane” plus “minimum level of access” approach. Reclassification would directly support the *Open Internet Order’s* framework and avoid the uncertainty associated with the NPRM’s approach.

Case-by-case evaluation of “commercially unreasonable” practices based on the “totality of circumstances” will place an impossible burden on the Commission

In order to create an environment of discrimination that is consistent with the provisions of the Commission’s *Data Roaming Order*, the NPRM proposes to prohibit only “commercially unreasonable practices,” based on the case-by-case evaluation of the “totality of circumstances” associated with the discrimination. While assessing the “totality of circumstances” associated with a data roaming agreement might be tractable given the small number of wireless carriers needing such an agreement, implementing a similar assessment in the Internet ecosystem would be next to impossible. A case-by-case evaluation of the potential interactions between the 17 broadband providers that control 93 percent of broadband end-users and the millions of edge providers would place an exponential burden on the Commission, as compared to the data roaming environment. The strain of that case-by-case burden would hamstring the Commission’s ability to deal with bad actors, thus upending the “virtuous circle.”

The “totality of circumstances” approach proposed in the NPRM is destined to fail. However, even if it were to be tractable, the purpose of “totality of circumstances” approach will nonetheless harm the Internet ecosystem precisely because the “totality of circumstances” approach advanced in the NPRM is designed to provide a foundation for *discrimination*. Discrimination is entirely inconsistent with the *Open Internet Order’s* virtuous circle and the continuing success of the Internet.

Reclassification will support Internet innovation and broadband investment

Title II is the needed foundation for whatever action the Commission will take regarding the open Internet issue. Title II has provided an entirely workable framework for managing the behavior of broadband providers. As recently noted by Tim Wu:

The services offered by an Internet-access provider fit easily under the authority of Title II, which is why, in the nineteen-nineties, they were originally so classified, and remained so until the early two-thousands. You pay your provider to deliver the information you seek, unchanged; Verizon’s job is to get you Wikipedia entries, not to edit them. And net-neutrality rules, just like Title II, ban unjust and unreasonable discrimination. Moreover, the Commission is allowed to forebear, or not enforce, any part of Title II it might

consider too onerous. *It is, in short, the obvious basis of authority for a net-neutrality rule.*¹⁸

With Title II, the Commission can protect the “virtuous circle” with a high degree of certainty. It can also ensure that edge providers do not face undue discrimination. Other than Sections 201, 202, and 208, the Commission should forbear from other Title II provisions as it reclassifies. The reclassification will resolve the problems identified by the D.C. Circuit, and allow the Commission to reestablish certainty regarding edge providers’ ability to access their users and customers, and consumers’ ability to access the legal content and services of their choice.

While reclassification will possibly result in legal challenges, changed circumstances clearly support the reclassification. Court precedent is clear that the Commission is free to change its mind. As the Supreme Court noted in *FCC v. Fox Television Stations*:

To be sure, the requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it is changing position. An agency may not, for example, depart from a prior policy *sub silentio* or simply disregard rules that are still on the books. . . . And of course the agency must show that there are good reasons for the new policy. *But it need not demonstrate to a court’s satisfaction that the reasons for the new policy are better than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates.*¹⁹

As summarized above, there certainly are good reasons for reclassification. Treating broadband as a Title II service would create an environment of regulatory certainty regarding the rights and obligations of edge providers, broadband providers, and consumers. That regulatory certainty will ensure a long and robust future for the “virtuous circle” identified in the 2010 *Open Internet Order*.

¹⁸ “The Solution to the F.C.C.’s Net-Neutrality Problems,” *The New Yorker*, May 9, 2014, emphasis added. <http://www.newyorker.com/online/blogs/elements/2014/05/tom-wheeler-fcc-net-neutrality-problems.html>

¹⁹ *FCC v. Fox Television Stations*, 556 U.S. 502, (2009).

I. Introduction

AARP respectfully submits these Comments for the FCC’s consideration, and thanks the Commission for the opportunity to participate in this important proceeding. The issues raised in the NPRM are of profound importance. AARP believes strongly in the principles of collective purpose, collective voice and the collective power of the age 50 and over population to change the market based on their needs. These principles guide our efforts. AARP, an organization with over 37 million members, relies on the Internet to communicate with members and other older Americans, and to inform them about issues that are vital to the 50+ population. Up to this point, the content that AARP distributes using the Internet, which its members and all Americans ultimately access using broadband connections, is treated on a non-discriminatory basis, thus promoting AARP’s ability to advance the collective interests of the age 50+ population. However, the proposals contained in the NPRM, by enabling Internet “fast lanes” and discrimination, will hinder AARP’s ability to pursue the principles of AARP’s mission. These proposed changes are of great concern to AARP and all older Americans.

Furthermore, AARP is also deeply concerned regarding harms to competition and innovation that will arise should the NPRM’s “fast lane” proposal be pursued. These harms will have the potential to negatively affect the quality of life for older Americans. As noted by Chairman Wheeler:

The importance of the basic network has always come from how it enables other networks to exist. The railroad, for instance, enabled networks for the delivery of parcels and mail order retail as well as the refrigerated delivery of food that substantially reduced prices and put meat on tables. The telegraph enabled the establishment of news networks and financial networks. These were substantial network effects; but today’s networks are even more critical in their effects.²⁰

²⁰ Tom Wheeler. NET EFFECTS: The Past, Present, and Future Impact of Our Networks, November 26, 2013. <http://www.fcc.gov/page/net-effects-past-present-and-future-impact-our-networks>

For older Americans, i.e., those in age 50+ households, the potential for network effects arising from broadband are substantial. The widespread availability of high quality and affordable broadband connections—both fixed and mobile—can enable new applications and services, including new methods of delivering healthcare and support for independent living—issues that are of pressing importance for older Americans. The additional network effects that Chairman Wheeler acknowledges have tremendous potential for all Americans will be maximized if broadband networks operate in an open and transparent environment.

It is important to note, however, that broadband providers are currently taking positions in key industries that may result in them gaining competitive advantage in areas such as home automation, smart grid, and medical monitoring.²¹ Absent policies that manage ongoing market power in last-mile broadband networks, the growth of the related network effects that can arise from broadband will be limited. Unless the Commission delivers pro-competition and pro-innovation regulatory *certainty*, the exponential growth in economic benefits that have been enabled by an open Internet to date will be threatened, and the foundation of future network effects will be handed to broadband gatekeepers who have the power to shape technology for narrow gain. The stakes of this proceeding could not be higher.²²

²¹ See, for example, "Verizon Gains FDA Clearance for Remote Health Monitoring Solution," August 8, 2013, Verizon Press Release, <http://newscenter.verizon.com/corporate/news-articles/2013/08-08-fda-clearance-for-remote-health-monitoring/#sthash.ZG31xMpR.dpuf> . See also, <http://www.verizonwireless.com/b2c/device/connected/sureresponse?&zipRdr=y> ; <http://www.verizon.com/support/residential/homecontrol/home+monitoring+and+control/overview/129406.htm> . See also, "AT&T Partners with VRI on Remote Medical Monitoring Service, NTCA, May 4, 2012, <http://www.ntca.org/new-edge/other/att-partners-with-vri-on-remote-medical-monitoring-service> . See also, <https://my-digitallife.att.com/learn/> ; and <https://www.wireless.att.com/businesscenter/solutions/industry-solutions/vertical-industry/healthcare/remote-patient-monitoring.jsp> . See also, <http://www.verizonenterprise.com/solutions/utility/utility-solutions/smartgrid/> <http://about.att.com/mediakit/smartgrid> . See also, <http://blogs.wsj.com/digits/2014/06/16/udacity-att-team-up-in-online-ed/> ; http://www.verizonenterprise.com/worldwide/industry/public_sector/education/

²² The discussion in these comments is directed primarily at wireline broadband networks. However, the open Internet also depends on the openness of wireless networks. Given that wireless networks rely on public airwaves, the case for openness is all the more compelling. AARP believes that the logical first step in the process of

II. The benefits of an open Internet require common carriage

The Commission's *Open Internet Order*, by relying on Section 706 of the 1996

Telecommunications Act, developed an innovative approach to protect the edge competition and innovation associated with broadband networks. As noted by the D.C. Circuit:

The Commission, we further hold, has reasonably interpreted section 706 to empower it to promulgate rules governing broadband providers' treatment of Internet traffic, and its justification for the specific rules at issue here—that they will preserve and facilitate the “virtuous circle” of innovation that has driven the explosive growth of the Internet—is reasonable and supported by substantial evidence.²³

What is missing from the *Open Internet Order* framework is the common carriage foundation that the D.C. Circuit clearly states is lacking.²⁴ As a result, the Commission again finds that it is facing a familiar scenario—the need to establish a legal foundation for rules that will protect the openness of the Internet. Unless corrected, the lack of certainty regarding the rights and obligations of consumers, edge providers, and broadband providers will harm Internet innovation and broadband deployment.²⁵

A. The roots of the Internet's success are in common carriage requirements

The roots of the success of the Internet can be found in common carriage. When the National Science Foundation supervised the privatization of the Internet backbone, it laid down interconnection and non-blocking requirements when creating Network Access Points (NAPs). The companies that operated the NAPs were required to allow any network provider to

delivering regulatory certainty is to establish common carrier principles for wireline networks. Open Internet principles for wireline networks will positively spill over and affect wireless technologies, as substantial volumes of wireless data traffic is offloaded by users onto Wi-Fi networks, which in turn rely on wireline technologies. AARP encourages the Commission to resolve wireline issues first, and to then return to wireless technologies once wireline broadband facilities are properly reclassified as Title II common carriage.

²³ *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014), p. 4. (“*Verizon v. FCC*”). References in these comments are to the version available at:

[http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/\\$file/11-1355-1474943.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/$file/11-1355-1474943.pdf)

²⁴ “Given that the Commission has *chosen to classify broadband providers in a manner that exempts them from treatment as common carriers*, the Communications Act expressly prohibits the Commission from nonetheless regulating them as such.” *Verizon v. FCC*, p. 4, emphasis added.

²⁵ See, for example, *ex parte* letter from Brad Burnham to Marlene Dortch, May 6, 2014.

interconnect and exchange traffic on a non-discriminatory basis, under tariff, and with technical transparency:

In 1993, as the National Science Foundation began the transition to private ownership and management of the NSFnet infrastructure, it established four geographically distributed, privately owned and operated Network Access Points (NAPs), operated by Sprint, Pacific Bell, Ameritech, and MFS. Under the terms established by the NFS, a NAP operator was required to provide and operate an interconnection facility on a nondiscriminatory basis, using published pricing and established technical operating specifications.²⁶

Of course, the National Science Foundation did not have to worry about imposing common carriage requirements on the companies that provided the facilities that enabled Internet access. Mass-market access was provided over dial-up connections, which were regulated as common carrier services, and high capacity circuits provided by telephone companies were also classified as common carriage. Those high-capacity bottleneck facilities do nothing more than provide a telecommunications pathway between the entities at the network edge, a technological fact that was long-ago recognized by the Commission:

We conclude that advanced services are telecommunications services. The Commission has repeatedly held that specific packet-switched services are "basic services," that is to say, pure transmission services. xDSL and packet switching are simply transmission technologies. To the extent that an advanced service does no more than transport information of the user's choosing between or among user-specified points, without change in the form or content of the information as sent and received, it is "telecommunications," as defined by the Act. Moreover, to the extent that such a service is offered for a fee directly to the public, it is a "telecommunications service."²⁷

²⁶ "Interconnection and Peering among Internet Service Providers, A Historical Perspective," Interisle Consulting Group, LLC, December 13, 2005. <http://www.interisle.net/sub/ISP%20Interconnection.pdf>. See also, the NSF Solicitation: https://w2.eff.org/Infrastructure/NREN_NSFNET_NPN/nsf_nren.rfp

²⁷ *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability, Petition of Bell Atlantic Corporation For Relief from Barriers to Deployment of Advanced Telecommunications Services, Petition of U S WEST Communications, Inc. For Relief from Barriers to Deployment of) Advanced Telecommunications Services);Petition of Ameritech Corporation to Remove Barriers to Investment in Advanced Telecommunications Technology; Petition of the Alliance for Public Technology Requesting Issuance of Notice of Inquiry and Notice of Proposed Rulemaking to Implement Section 706 of the 1996 Telecommunications Act; Petition of the Association for Local Telecommunications Services (ALTS) for a Declaratory Ruling Establishing Conditions Necessary to Promote Deployment of Advanced Telecommunications Capability Under Section 706 of the Telecommunications Act of 1996 ; Southwestern Bell Telephone Company, Pacific Bell, and Nevada Bell Petition*

Common carriage is also implicit in the “end-to-end” principle that provides the “core architectural guideline of the Internet.”²⁸ The “end-to-end” principle states that a network function can only be completely and correctly implemented with the knowledge and help of the applications standing at the communication endpoints.²⁹ Key to the success of the end-to-end principle is the lack of interference from the network that connects the computers that are located at the network edge—i.e., the networks connecting the edge computers must not interfere with the endpoints. As a result of common carrier principles applied to the early Internet, the innovative engine associated with the “end-to-end principle” was free to operate. Competition and innovation were promoted, as evidenced by the rapid growth of new applications and services, not to mention a highly competitive dial-up ISP market, which, by the year 2000, had more than 7,400 providers nationwide.³⁰

B. The *Cable Modem Order*’s “information service” classification is based on an outmoded view of the Internet

The introduction of broadband disrupted the dial-up Internet access world, and the Commission laid the groundwork for its current dilemma when it classified cable broadband as an information service, with the reclassification of other broadband services from telecommunications to information services following thereafter.³¹ It is critical, however, that the Commission now

for Relief from Regulation Pursuant to Section 706 of the Telecommunications Act of 1996 and 47 U.S.C. § 160 for ADSL Infrastructure and Service. CC Docket No. 98-147, CC Docket No. 98-11, CC Docket No. 98-26, CC Docket No. 98-32, CCB/CPD No. 98-15, RM 9244, CC Docket No. 98-78, CC Docket No. 98-91. FCC 98-188.

Memorandum Opinion and Order, and Notice of Proposed Rulemaking, August 7, 1998, ¶35.

²⁸ "The Rise of the Middle and the Future of End-to-End: Reflections on the Evolution of the Internet Architecture," J. Kempf, Ed., R. Austein, Ed. Network Working Group, Request for Comments: 3724, Internet Architecture Board, March 2004. <http://www.ietf.org/rfc/rfc3724.txt>

²⁹ Saltzer, J.H., Reed, D.P., and Clark, D.D., "End-to-End Arguments in System Design," ACM TOCS, Vol. 2, Number 4, November 1984, pp 277-288.

³⁰ "The Best and Worst ISPs," *PC World*, November 2000.

³¹ *Inquiry Concerning High-Speed Access to the Internet Over Cable & Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, GN Docket No. 00-185, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798, 4824, para. 41 (2002) (*Cable Modem Order*)

recognize that the nature and usage of Internet access services have fundamentally changed since the early 2000s, making Title I classification an historical anachronism. The changes provide indisputable evidence that broadband facilities are primarily utilized to provide telecommunications, and that the *Cable Modem Order* determination that information services were inexorably linked to telecommunications is no longer the case.³²

The NPRM asks a series of questions regarding “changed circumstances” associated with broadband markets and technology and the appropriateness of reclassification:

What factors should the Commission keep in mind as it considers whether to revisit its prior decisions? Have there been changes to the broadband marketplace that should lead us to reconsider our prior classification decisions? To what extent is any telecommunications component of that service integrated with applications and other offerings, such that they are “inextricably intertwined” with the underlying connectivity service? Is broadband Internet access service (or any telecommunications component thereof) held out “for a fee directly to the public, or to such classes of users as to be effectively available directly to the public?”³³

As will be discussed below, there have been fundamental changes since the issuance of the *Cable Modem Order*—telecommunications is offered and utilized outside of broadband-provider information services, and broadband providers hold out telecommunications to the public for a fee.

Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities et al., CC Docket Nos. 02-33, 01-337, 95-20, 98-10, WC Docket Nos. 04-242, 05-271, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853, 14863-65, 14909-12, paras. 14-17, 103-06 (2005).

Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, WT Docket No. 07-53, Declaratory Ruling, 22 FCC Rcd 5901, 5909-10, 5912-14, paras. 19-26, 29-33 (2007).

United Power Line Council’s Petition for Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access Service as an Information Service, WC Docket No. 06-10, Memorandum Opinion and Order, 21 FCC Rcd 13281 (2006).

³² *Cable Modem Order*, ¶38.

³³ NPRM, ¶150.

C. Internet access was fundamentally different in 2001

The *Cable Modem Order*, issued in March of 2002, was necessarily based on perceptions of Internet access in the early 2000s. The *Cable Modem Order* was established when broadband was in its infancy. According to FCC data, there were approximately 9.6 million broadband connections in 2001, of which 5.2 million were on cable platforms.³⁴ However, 80 percent of Internet users still connected using dial-up services.³⁵ Thus, the dominant method by which end-users accessed the Internet continued to be through dial-up connections, and the network effects associated with broadband, which ultimately would inspire the *Open Internet Orders* “virtuous circle” perspective, were only just being conceived. Dial-up Internet access was provided by firms that offered consumers an online platform that included *Internet access* as one of the services. The dial-up ISP provided consumers a proprietary software “portal” through which they could utilize proprietary information services, as well as access Internet content and services.³⁶ The most popular dial-up ISP in 2001 was America Online (AOL), with over 21 million subscribers. AOL offered consumers an online “walled garden” that provided proprietary content, news groups, bulletin boards, instant messaging, and e-mail, as well as access to the “web.”³⁷ Smaller ISPs offered services in the same spirit, but without the proprietary network effects enjoyed by AOL.

During this period, edge providers were a much less diverse group than is the case today, and edge-provider technology was not mature. Online video was virtually unheard of, e-commerce

³⁴ FCC, Industry Analysis Division, Common Carrier Bureau, "High-Speed Services for Internet Access: Subscribership as of June 30, 2001," February 2002, Table 1.

³⁵ NTIA, “A NATION ONLINE: How Americans Are Expanding Their Use Of The Internet,” February 2002, Chapter 4. <http://www.ntia.doc.gov/legacy/ntiahome/dn/anationonline2.pdf>

³⁶ Dial-up ISPs required proprietary software that had to be loaded on the consumer’s PC. Given the impracticality of downloading software over dial-up connections, marketing strategies then known as “carpet bombing” of software CDs were used. Those CDs were sent in the mail, placed as newspaper inserts, or left in bins at retail stores. See, for example, “America Online Sets New Round of 'Carpet-Bombing' Software,” *Wall Street Journal*, September 24, 1998. <http://online.wsj.com/news/articles/SB906565407265912000>

³⁷ See the AOL commercial archived at: <http://www.youtube.com/watch?v=1npzZu83AfU>

sales were about 10% of today's level,³⁸ and social media had not yet been invented. Internet users were confronted with the pure "client/server" model, where the end user accessed the content and services from remote computers connected to the Internet. And because content delivery networks did not yet exist, Internet users were forced to traverse many Internet hops to reach the web content and services of their choice, all but ensuring the "world wide wait."³⁹ The potential for low levels of service quality associated with using the web encouraged users to stay closer to their ISP's walled garden, which, of course, explained the popularity of larger ISPs like AOL, which provided proprietary content and delivered substantial network effects from its large community of users. In summary, at the time of the *Cable Modem Order*, ISPs played a much more prominent role in the user's "Internet experience."

Thus, it is not surprising to find that the *Cable Modem Order* describes an environment where the relationship between edge providers and end users was moderated by an ISP. In a discussion of cable modem service, the *Cable Modem Order* offers a description of the market which is strongly colored by the prevalence of that ISP role:

Cable operators often include in their cable modem service offerings all of the services typically provided by *Internet access providers*, so that subscribers usually do not need to contract separately with another *Internet access provider* to obtain discrete services or applications, such as an email account or connectivity to the Internet, including access to the World Wide Web.⁴⁰

In a footnote to that paragraph, the *Cable Modem Order* notes that "Internet access providers" are also "referred to as ISPs," citing to a 1999 FCC *Order* in support.⁴¹ Clearly, in the view of

³⁸ About \$7 billion in 2000 vs. \$71 billion in 2014.

³⁹ "W3C Recommendations Reduce 'World Wide Wait'; Tired of having to make coffee while you wait for a home page to download?" July 8, 1999. <http://www.w3.org/Protocols/NL-PerfNote.html>. In response, innovation at the network edge introduced the first content delivery network, Akamai, which launched in 2001. (http://en.wikipedia.org/wiki/Akamai_Technologies#History).

⁴⁰ *Cable Modem Order*, ¶11, emphasis added.

⁴¹ That the ISPs that the *Cable Modem Order* is referring are of the dial-up variety is clear from the reading of the supporting 1999 reference:

Cable Modem Order, an ISP is a necessary intermediary between an end-user and Internet content and services. In the above passage, the *Cable Modem Order* notes that but for the presence of the cable ISP services, an end user would have to find another ISP in order to utilize the Internet. This perspective on broadband Internet access is also evident in the *Cable Modem Order*'s discussion of "business models" associated with broadband ISPs. Excite@Home and Road Runner were two of the predominant broadband ISPs of the period, and the *Cable Modem Order* notes:

Excite@Home and Road Runner employed similar business and technical models. Both ISPs obtained exclusive contracts with the cable operators they served. Both ISPs operated regional networks and *provided operators with connections from the cable headend to the Internet, as well as content, e-mail, and web-hosting, and varying levels of network management, provisioning, and customer service. . . .* In exchange for these services, cable operators typically paid Excite@Home or Road Runner a share of subscriber revenues.⁴²

Thus, the *Cable Modem Order* sees an ISP relationship that is similar to the dial-up model, however, it is the cable company that initially receives the broadband ISP services, with potential rebranding under the cable providers name.⁴³ Thus, at the time, the broadband ISP was an important intermediary to Internet content and services, with the broadband ISP providing content and information services of its own.

"An ISP is an entity that provides its customers with the ability to obtain a variety of on-line information through the Internet. *However, ISPs typically own no telecommunications facilities.* In order to provide those components of Internet access services that involve information transport, ISPs lease lines, and otherwise acquire telecommunications, from telecommunications providers. . . Thus, the information service is provisioned by the ISP 'via telecommunications' including interexchange telecommunications although the Internet service itself is an 'information service' under section 3(2) of the Act, rather than a telecommunications service."

Cable Modem Order, ¶11, footnote 43, citing to in re *Deployment of Wireline Services Offering Advanced Telecommunications Capability* CC Docket No. 98-147, Order on Remand, 15 FCC Rcd 385 ¶ 34.

⁴² *Cable Modem Order*, ¶22, emphasis added.

⁴³ *Cable Modem Order*, ¶22.

In the *Cable Modem Order*, the Commission concluded that cable broadband was an information service based on a perception of the intertwined nature of content and information services that were provided by broadband ISPs over the cable modem connection:

E-mail, newsgroups, the ability for the user to create a web page that is accessible by other Internet users, and the DNS are applications that are commonly associated with Internet access service. Each of these applications encompasses the capability for “generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications.” Taken together, they constitute an information service, as defined in the Act. Consistent with the analysis in the Universal Service Report, we conclude that the classification of cable modem service turns on the nature of the functions that the end user is offered. *We find that cable modem service is an offering of Internet access service [i.e., ISP service], which combines the transmission of data with computer processing, information provision, and computer interactivity, enabling end users to run a variety of applications. As currently provisioned, cable modem service supports such functions as email, newsgroups, maintenance of the user’s World Wide Web presence, and the DNS. Accordingly, we find that cable modem service, an Internet access service, is an information service.*⁴⁴

Given that the business relationship between the broadband ISP and the cable company was intertwined, the *Cable Modem Order’s* perspective is easier to understand. The perception reflects the state of Internet access at that time—with ISPs providing content and services that the network edge had yet to fill, or which it was difficult for consumers to reach. However, this is no longer the way that cable modem (or other broadband services) are “currently provisioned.”

D. Broadband Internet access has been transformed

Broadband Internet access has been transformed—today the broadband provider delivers *telecommunications* that enables end users to reach edge providers. No longer do consumers need a proprietary software portal to reach the Internet content and services of their choice. Indeed, a review of broadband provider products finds that the predominant service offering is nothing more than *upload and download speed*. The Verizon FiOS advertising message is

⁴⁴ *Cable Modem Order*, ¶38.

typical “Unreal Speed: Stream, download, upload, game, share, connect faster than ever before with FiOS Quantum Internet. Do what you want online, right now.”⁴⁵ This clearly describes an offering of “transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.”

Technological change has transformed the relationship between end-user and the content and services that they demand. The capabilities of technology at the network edge have dramatically advanced—ISPs are no long necessary intermediaries between end-users and content and services. Today, e-mail is primarily provided by third parties;⁴⁶ web hosting is competitively provided, with U.S. broadband providers not even making the top 25 of U.S. web hosting services;⁴⁷ furthermore, many end-users’ “web presence” is now associated with third party applications such as Facebook and Twitter; even DNS service is no longer the exclusive domain of broadband providers—broadband subscribers regularly utilize third-party DNS services to improve their Internet experience.⁴⁸

The fact that a broadband provider may today offer content, e-mail, or web hosting does not imply that the customer will use the information services offered by the broadband provider any more than the consumer will utilize the proprietary television and video services offered by the broadband provider. As a result, the broadband service that consumers rely on primarily today is *pure transmission* between their device and remote computing resources or content of their choice. For example, the rise of over-the-top video, which now makes up nearly 70% of peak

⁴⁵ <http://fios.verizon.com/fios-internet.html>

⁴⁶ See “Gmail Opens Increase 243%; Android Drops Back to #4,” Litmus, February 7, 2014, which identifies at least 86% of e-mail opens being associated with Gmail, Outlook.com, Yahoo, and AOL. <https://litmus.com/blog/gmail-opens-increase-android-drops-january-email-client-market-share>

⁴⁷ According to data from ICANN. Furthermore, the 25th largest U.S. based web hosting entity has a market share of 0.119%. <http://www.webhosting.info/registrars/top-registrars/global/>

⁴⁸ See, for example, <https://code.google.com/p/namebench/>. See also, “7 reasons to use a third-party DNS service,” How-to-Geek, July 9, 2013. <http://www.howtogeek.com/167239/7-reasons-to-use-a-third-party-dns-service/>

downstream traffic⁴⁹ clearly illustrates broadband providers supply of *telecommunications*. Video service providers like Netflix, Hulu, Google, and other over-the-top video sources result in a relationship where both the video service provider and end user view the broadband Internet access service as nothing more than pure transmission. A similar relationship results from streaming audio or over-the-top voice. This transformation in the relationship between consumers and Internet services provides sufficient grounds for the Commission to revisit, and overturn, the framework identified in the *Cable Modem Order*, and the subsequent decisions that similarly classified other broadband platforms as information services.⁵⁰

E. The line between “end-user” and “edge provider” has become less distinct

It is certain that that technical transformation led to dramatic growth in end-user demand for broadband *telecommunications* to *consume* the content and services of their choice. However, an even greater transformation has occurred at the network edge arising from consumer demand for *upstream* bandwidth on broadband platforms. The offering of expanding upstream transmission service is the broadband provider’s response to the transformation of “end-users” into *producers* of Internet content and services. At the time of the cable modem order user-generated content was in its infancy. Facebook was founded in 2004,⁵¹ two years following the *Cable Modem Order*. YouTube did not launch until 2005,⁵² three years after the *Cable Modem Order*. BitTorrent, a peer-to-peer technology that enables the efficient sharing of large files, was developed in 2001, but could not reach its full potential until the mid-2000s, precisely because the number of broadband subscribers, with their improved ability to upload and download

⁴⁹ Sandvine, “Global Internet Phenomena Report,” 2H 2013. <https://www.sandvine.com/downloads/general/global-internet-phenomena/2013/2h-2013-global-internet-phenomena-report.pdf>

⁵⁰ See note 34 (??), above.

⁵¹ <http://en.wikipedia.org/wiki/Facebook>

⁵² <http://en.wikipedia.org/wiki/YouTube>

information, had yet to reach a critical mass.⁵³ Thus, when the *Cable Modem Order* was issued, the Internet was still oriented toward the client/server model, where end-users downloaded the information that they wanted, and did relatively little uploading of information that they had produced. Today broadband subscribers demand *pure telecommunications* to deliver voice, video, text, and images to the end-user's subscribers, followers, and/or viewers. When a broadband subscriber uploads video to YouTube, updates their Facebook page, posts on their blog, or shares files, all that is needed from the broadband provider is pure transmission. Information services provided by the broadband provider have nothing to add to the subscriber's use of the telecommunications functionality required for broadband subscribers' production and distribution of content. Data from Sandvine for the second half of 2013 clearly illustrates the transformation in the use of upstream Internet resources.⁵⁴

⁵³ And once that critical mass was reached, the Commission quickly discovered that that legal technology was being undermined by a broadband provider. See, *In the Matters of Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management"*, File No. EB-08-IH-1518 WC Docket No. 07-52, Memorandum Opinion and Order, August 20, 2008.

⁵⁴ Sandvine, "Global Internet Phenomena Report," 2H 2013. <https://www.sandvine.com/downloads/general/global-internet-phenomena/2013/2h-2013-global-internet-phenomena-report.pdf>

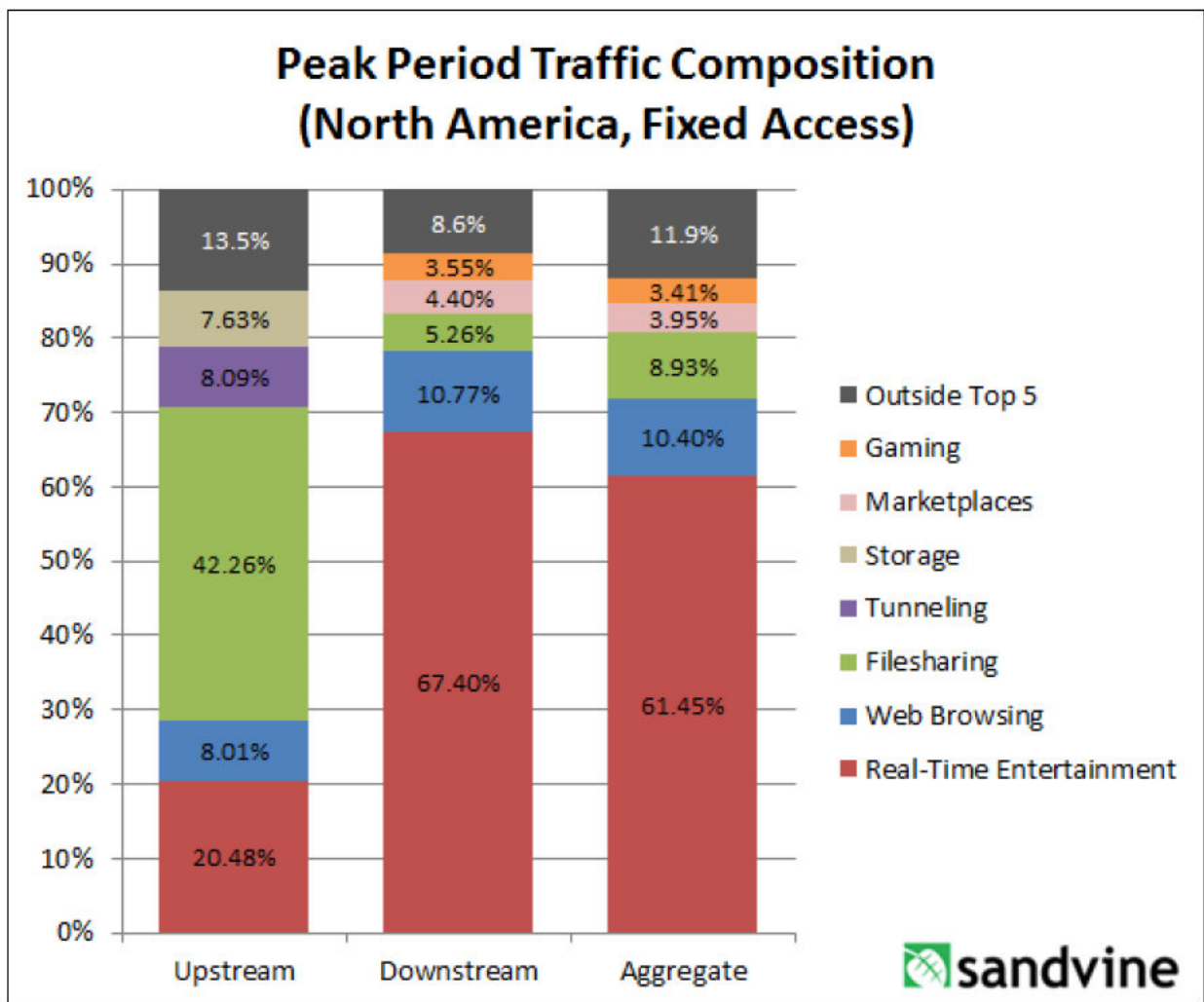


Figure 1: Internet Usage Profile

Figure 1 shows that upstream traffic is dominated by non-client/server activities such as file sharing, real-time entertainment, and storage (accounting for 70.37% of peak-period traffic).

Downstream traffic is predominantly real-time entertainment, which also illustrates the predominant telecommunications characteristic of today’s broadband connections. The prevalent client/server activities at the time of the *Cable Modem Order* (web browsing) make up only 8.01% of upstream, and 10.77% of downstream traffic in 2013.

The technology setting that inspired the *Cable Modem Order* clearly no longer exists and the ensuing technological transformation has minimized the role of information services offered by

broadband providers. Instead, broadband markets are characterized by the supply and demand of the pure telecommunications needed to send and receive the content and services of the “producer/consumer’s” choice. The transformation that has occurred since the *Cable Modem Order* was issued provides strong evidence of the appropriateness of reclassification.

III. The NPRM's Title I “no-blocking” proposal

It is highly disappointing that the NPRM advances, as its apparent primary path forward, the continuing treatment of broadband Internet access services as Title I information services. While the NPRM points to the D.C. Circuit’s blessing of the *Open Internet Order’s* Section 706 foundation for ensuring Internet openness, it is clear that Section 706 alone does not provide a sufficient foundation absent a common carriage requirement. As will be discussed in more detail below, the NPRM's proposal for a salvaged Section 706 approach implicitly continues to rely on common carriage requirements. As a result, unless Title II authority is reestablished, the new proposal is destined to fail, for the same reason that the previous *Open Internet Order* failed—the Commission cannot impose common carrier requirements on broadband providers as long as Title I classification continues.

A. The NPRM and the D.C. Circuit Court’s “blueprint”

The NPRM suggests that the D.C. Circuit’s review of the Verizon challenge prescribed a preferred path forward for the Commission—what the NPRM refers to as the D.C. Circuit’s “blueprint.”⁵⁵ The NPRM indicates that it will follow the D.C. Circuit’s advice and plot a course inspired by applying Section 706 of the Act in combination with principles contained in the *Data*

⁵⁵ NPRM, ¶4.

Roaming Order.⁵⁶ Unfortunately, that path forward requires that the Commission enshrine *discrimination*, which is antithetical to the open Internet. It is also clear from the *Verizon* ruling that the D.C. Circuit also recognized the acceptability, and common sense, of the Title II reclassification approach. As the D.C. Circuit noted, the Commission has a long history of applying the Title II common carrier approach:

For more than twenty years, the Commission applied some form of the Computer II regime to Internet services offered over telephone lines, then the predominant way in which most end users connected to the Internet. . . . Telephone companies that provided the actual wireline facilities over which information was transmitted were limited in the manner in which they could provide the enhanced services necessary to permit end users to access the Internet. . . . They were also required to permit third-party Internet Service Providers (ISPs), such as America Online, to access their wireline transmission facilities on a common carrier basis.⁵⁷

Pursuant to the Act, and paralleling its prior practice under the Computer II regime, the Commission then classified Digital Subscriber Line (DSL) services—broadband Internet service furnished over telephone lines—as “telecommunications services.” . . . DSL services, the Commission concluded, involved pure transmission technologies, and so were subject to Title II regulation. . . . A DSL provider could exempt its Internet access services, but not its transmission facilities themselves, from Title II common carrier restrictions only by operating them through a separate affiliate (i.e., a quasi-independent ISP).⁵⁸

Furthermore, the D. C. Circuit recognized that the Commission has choice in the matter of reclassification—the Commission’s Title I approach is not carved in stone. Discussing the Commission’s path following the *Comcast* decision, the D.C. Circuit notes:

. . . [A]fter our decision in *Comcast* undermined that theory (that anti-discrimination and anti-blocking rules do not impose per se common carrier obligations), the Commission sought comment on whether and to what extent it should reclassify broadband Internet services as telecommunications services. . . . *Ultimately, however, rather than reclassifying broadband*, the Commission adopted the Open Internet Order that *Verizon* challenges here.⁵⁹

⁵⁶ NPRM, ¶4 and ¶110, citing to *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265, Second Report and Order, 26 FCC Rcd 5411, 5433, (2011). (“*Data Roaming Order*”).

⁵⁷ *Verizon v. FCC*, p. 8, citations omitted.

⁵⁸ *Verizon v. FCC*, p. 9, citations omitted.

⁵⁹ *Verizon v. FCC*, pp. 12-13, emphasis added.

And the D.C. Circuit emphasized that it was the Commission's *choice* as to the classification of broadband as a Title I information service that upended the *Open Internet Order*:

Given that the Commission has *chosen* to classify broadband providers in a manner that exempts them from treatment as common carriers, the Communications Act expressly prohibits the Commission from nonetheless regulating them as such.⁶⁰

Of course, the Commission is free to change its mind regarding the classification of broadband, and this is the only reasonable path forward. As the Supreme Court noted in *FCC v. Fox*

Television Stations:

To be sure, the requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it is changing position. An agency may not, for example, depart from a prior policy *sub silentio* or simply disregard rules that are still on the books. . . . And of course the agency must show that there are good reasons for the new policy. *But it need not demonstrate to a court's satisfaction that the reasons for the new policy are better than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates.*⁶¹

There is no question that there are good reasons for the Commission to change its mind and reclassify broadband as a Title II service.

B. The NPRM's approach to a no-blocking rule is not reasonable

In the 2010 *Open Internet Order*, the Commission proposed the following no-blocking framework for wireline providers:

A person engaged in the provision of fixed broadband Internet access service, insofar as such person is so engaged, shall not block lawful content, applications, services, or non-harmful devices, subject to reasonable network management.⁶²

The NPRM now proposes to address the common carriage nature of this requirement by applying the D.C. Circuit's response to a theory offered by the Commission in oral argument in the

⁶⁰ *Verizon v. FCC*, p. 4, emphasis added.

⁶¹ *FCC v. Fox Television Stations*, 556 U.S. 502, (2009).

⁶² *In the Matter of Preserving the Open Internet, Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, December 23, 2010, ¶63.

Verizon appeal of that order—i.e., that negotiated discrimination negates the common carriage requirement associated with a required level of basic service. The D.C. Circuit summarized the Commission’s oral argument in the *Verizon* appeal as follows:

“[i]t’s not common carriage to simply have a basic level of required service if you can negotiate different levels with different people.” . . . This contention rests on the fact that under the anti-blocking rules broadband providers have no obligation to actually provide any edge provider with the minimum service necessary to satisfy the rules. . . . Thus, *if the relevant service that broadband providers furnish is access to their subscribers generally, as opposed to access to their subscribers at the specific minimum speed necessary to satisfy the anti-blocking rules*, then these rules, while perhaps establishing a lower limit on the forms that broadband providers’ arrangements with edge providers could take, might nonetheless leave sufficient “room for individualized bargaining and discrimination in terms” so as not to run afoul of the statutory prohibitions on common carrier treatment. . . .⁶³

Thus, in the spirit of the oral argument position advanced by the Commission in the *Verizon* case, the NPRM seeks to salvage the Section 706 approach by creating an environment where individualized bargaining and discrimination are permitted.⁶⁴ The NPRM states:

we propose to make clear that the no-blocking rule would allow individualized bargaining above a minimum level of access to a broadband provider’s subscribers—the revised rationale the court suggested would be permissible rather than per se common carriage—but, also consistent with the court’s analysis, separately subject such practices to scrutiny under the commercially reasonable practices rule (or its equivalent).⁶⁵

This proposal is a recipe for disaster. Individualized bargaining will institutionalize pay-for-priority schemes and undermine innovation and investment. The Commission need look no further than the 2010 *Open Internet Order* to understand why:

For a number of reasons . . . a commercial arrangement between a broadband provider and a third party to directly or indirectly favor some traffic over other traffic in the broadband Internet access service connection to a subscriber of the broadband provider (i.e., “pay for priority”) would raise significant cause for concern. First, pay for priority

⁶³ *Verizon v. FCC*, pp. 60-61, citations omitted, emphasis added.

⁶⁴ However, as will be discussed in more detail below, the D.C. Circuit’s discussion does not provide a clear roadmap for the resolution of the issue, and, because of the D.C. Circuit’s incomplete and cursory analysis, the solution that the Commission desires will not be forthcoming.

⁶⁵ NPRM, ¶95, footnote omitted.

would represent a significant departure from historical and current practice. Since the beginning of the Internet, Internet access providers have typically not charged particular content or application providers fees to reach the providers' retail service end users or struck pay-for-priority deals, and the record does not contain evidence that U.S. broadband providers currently engage in such arrangements. *Second this departure from longstanding norms could cause great harm to innovation and investment in and on the Internet. As discussed above, pay-for-priority arrangements could raise barriers to entry on the Internet by requiring fees from edge providers, as well as transaction costs arising from the need to reach agreements with one or more broadband providers to access a critical mass of potential end users. Fees imposed on edge providers may be excessive because few edge providers have the ability to bargain for lesser fees, and because no broadband provider internalizes the full costs of reduced innovation and the exit of edge providers from the market. Third, pay-for-priority arrangements may particularly harm non-commercial end users, including individual bloggers, libraries, schools, advocacy organizations, and other speakers, especially those who communicate through video or other content sensitive to network congestion. Even open Internet skeptics acknowledge that pay for priority may disadvantage non-commercial uses of the network, which are typically less able to pay for priority, and for which the Internet is a uniquely important platform. Fourth, broadband providers that sought to offer pay-for-priority services would have an incentive to limit the quality of service provided to non-prioritized traffic. In light of each of these concerns, as a general matter, it is unlikely that pay for priority would satisfy the "no unreasonable discrimination" standard. The practice of a broadband Internet access service provider prioritizing its own content, applications, or services, or those of its affiliates, would raise the same significant concerns and would be subject to the same standards and considerations in evaluating reasonableness as third-party pay-for-priority arrangements.*⁶⁶

In a nutshell, as the Commission correctly recognized in 2010, the potential for individualized bargaining and pay-for-priority will unravel the entire Internet ecosystem, and introduce a multiplicity of harms. This is too high a price to pay to salvage a Title I Section 706-based approach.

C. The D.C. Circuit's Title I non-blocking discussion is based on flawed and contradictory analysis

It is important to consider what the D.C. Circuit court said, and did not say, on the non-blocking solution that is now formally proposed by the NPRM. The D.C. Circuit recognized that key to the enforcement of the *Open Internet Order's* no-blocking provisions is the impact of broadband provider behavior on the "usability" of the transmitted services:

⁶⁶ *Open Internet Order*, ¶76. Emphasis added.

The anti-blocking rules establish a minimum level of service that broadband providers must furnish to all edge providers: edge providers’ “content, applications [and] services” must be “effectively [u]sable.” . . . The Order also expressly prohibits broadband providers from charging edge providers any fees for this minimum level of service. . . . In requiring that all edge providers receive this minimum level of access for free, these rules would appear on their face to impose per se common carrier obligations with respect to that minimum level of service.⁶⁷

As will be discussed below, the “usability” provision of the *Open Internet Order* is inexorably linked to common carriage requirements, a fact which is alternatively acknowledged and ignored by the D.C. Circuit.

When interpreting the Commission’s revised no-blocking oral argument (i.e., it is not common carriage if different service levels can be negotiated with different parties), the D.C. Circuit notes that the “effective usability” standard associated with the *Open Internet Order*’s no-blocking provision creates the need for a minimum service standard:

If, for example, all edge providers’ “content, applications [and] services” are “effectively usable,” . . . at download speeds of, say, three Mbps, a broadband provider like Verizon could deliver all edge providers’ traffic at speeds of at least four Mbps. Viewed this way, the relevant “carriage” broadband providers furnish might be access to end users more generally, not the minimum required service. In delivering this service, so defined, the anti-blocking rules would permit broadband providers to distinguish somewhat among edge providers, just as Commission counsel contended at oral argument.⁶⁸

In this hypothetical the D.C. Circuit describes a situation where a minimum threshold of service (3 Mbps) is needed for services to be “effectively usable,” and the service provider (Verizon in the D.C. Circuit’s example) delivers service to “all edge providers” at speeds that exceed the minimum needed for effective usability.⁶⁹ The contradiction in the D.C. Circuit’s analysis appears to be lost to the court majority. How is it not common carrier regulation to establish a

⁶⁷ *Verizon v. FCC*, p. 60, with citations to the *Open Internet Order*, ¶¶66 & 67 omitted.

⁶⁸ *Verizon v. FCC*, pp. 60-61, citations omitted.

⁶⁹ The Commission should also recognize the can of worms that this approach will open in that broadband providers can discriminate based on different applications, and/or different source addresses. Thus broadband provider A might argue that 1.2 Mbps is all that is needed for web site α , and that 750 kbps is all that is needed for web site β . Each broadband provider might determine their own minimum standards for various web sites.

minimum level of service performance, and then to *require* that the service provider *meet or exceed that minimum*?⁷⁰ As noted elsewhere in the D.C. Circuits decision “[i]f a carrier is forced to offer service indiscriminately and on general terms, then that carrier is being relegated to common carrier status.”⁷¹ Defining a minimum threshold of service, and requiring that the minimum be offered (or exceeded and offered) to all comers indiscriminately and on general terms is certainly in the spirit, if not the letter of, a common carrier requirement. Furthermore, not only will the broadband provider have to offer to all comers speeds that exceed the minimum standard, but they will be required to deliver the service at a regulated price of zero. Judge Silberman’s dissent in the *Verizon v. FCC* case points to this very problem:

“while there is a possibility that a ‘fast lane’ Internet service might be offered on a non-common carriage basis, the service that most users receive under this rule would still have to be offered as common carriage, at a regulated price of zero.”⁷²

Thus, the D.C. Circuit’s attempt to flesh-out the “[i]t’s not common carriage to simply have a basic level of required service if you can negotiate different levels with different people” argument illustrates the implicit common carriage requirement in the “basic level of required service” which necessarily arises due to the “effectively usable” standard. The Commission cannot escape imposing a common carriage requirement if it wants a no-blocking requirement that delivers effective usability, and as a result, the NPRM’s Title I-based Section 706 approach is vulnerable to the same criticism as the *Open Internet Order*.

D. Fast lanes will affect the “effective usability” of non-fast-lane services

Judge Silberman points to additional problems with the D.C. Circuit majority’s perspective on the minimum level of service:

⁷⁰ The application of the “effective usability” standard places the Commission’s proposed approach on the horns of a dilemma. If the Commission cannot maintain the “exceed the minimum service level” requirement under Title I, then effective usability will not be ensured, and blocking will result. Under Title II, no such problem exists.

⁷¹ *Verizon v. FCC*, pp. 49-50.

⁷² *Verizon v. FCC*, Silberman dissent, *op. cit.*

By exceeding the minimum level of service, the majority suggests, the broadband providers would have wide latitude to engage in individualized bargaining, which might take this rule outside of common carriage per se. *My concern with this hypothesis is that the phrase “effectively unusable” is subject to manipulation.* I think it should mean that whatever speed is generally offered to most edge providers is the minimum necessary to be effectively usable. *After all, it is artificial to distinguish between what is “effective” and what consumers expect. If a faster speed were to become standard, we would likely consider a slower speed to be effectively unusable. . . .*⁷³

Judge Silberman’s observations identify another set of problems with the NPRM’s proposal to enable fast lanes. The determination of the effective usability of a service, as noted by Judge Silberman, is an evolving concept that will affect the relative usability of services. There is clear evidence of the dynamic of effective usability. For example, according to separate studies conducted by Akamai and Google, consumer expectations for web page load-times have declined dramatically over time. Akamai studies conducted in 2006 and 2009 found that consumer expectations associated with the time an e-commerce web page should load dropped from four (4) seconds to two (2) seconds over that period.⁷⁴ By 2012, research conducted by Google found that consumers’ decisions to stay on a page can be made in *milliseconds*. According to the Google study “People will visit a Web site less often if it is slower than a close competitor by more than 250 milliseconds (a millisecond is a thousandth of a second).”⁷⁵ Given these trends, the slippery slope described by Judge Silberman is clear to see. If an edge provider finds that failure to pay for the fast lane results in declining site visits or sales, their offering has become “effectively unusable” as a result of the fast lane, thus violating the non-blocking requirement. To ensure that the service offered to the edge provider would not result in network-generated outcomes where an edge provider’s service become “unusable,” *the source of the difference in the performance of the edge provider’s service cannot be the result of the*

⁷³ *Verizon v. FCC*, SILBERMAN, Senior Circuit Judge, concurring in part and dissenting in part, p. 17.

⁷⁴ Akamai Reveals 2 Seconds as the New Threshold of Acceptability for eCommerce Web Page Response Times. http://www.akamai.com/html/about/press/releases/2009/press_091409.html

⁷⁵ “For Impatient Web Users, an Eye Blink Is Just Too Long to Wait,” *New York Times*, February 29, 2012. <http://www.nytimes.com/2012/03/01/technology/impatient-web-users-flee-slow-loading-sites.html?pagewanted=all>

broadband network operator creating service grades—in other words, the only way to satisfy the “effectively usable” no-blocking requirement is if there are no fast lanes, a point that was recognized in the *Open Internet Order*: “*as a general matter, it is unlikely that pay for priority would satisfy the ‘no unreasonable discrimination’ standard.*”⁷⁶

In the end, that no-blocking requires common carriage is proved by the NPRM. The NPRM’s discussion of the reintroduced no-blocking rule quickly gravitates to the key issue of the “Minimum Level of Access.”⁷⁷ The NPRM states that a “minimum level of access under the no-blocking rule will ensure that all users have access to an Internet experience that is sufficiently robust, fast, and effectively usable.”⁷⁸ However, the iron link between “minimum access” and “effectively usable service” is a common-carriage service quality requirement: “broadband providers [would] have no obligation to actually provide an edge provider with the minimum service necessary to satisfy the rules,’ because they could instead ‘deliver all edge providers’ traffic’ in a manner that exceeds that minimum.”⁷⁹ How is a requirement that a broadband provider *exceed* a minimum level of service anything other than a Title II common carriage requirement? The NPRM clearly proposes that a Commission order will require that broadband providers furnish service above a quality standard to all potential customers, which has a familiar ring:

“It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service upon reasonable request therefor; and, in accordance with the orders of the Commission. . .”
(Communications Act, §201(a).)

⁷⁶ *Id.*

⁷⁷ NPRM, ¶97, the NPRM’s Minimum Level of Access proposals are discussed further below.

⁷⁸ NPRM, ¶98.

⁷⁹ NPRM, ¶99.

The Commission cannot escape common carriage through the “fast lane” plus “minimum level of access” approach.

E. “Fast lanes” and “minimum levels of access” will sow customer confusion and harm broadband adoption

The wisdom of the *Open Internet Order* clearly explains why fast lanes and discrimination will harm broadband adoption:

The Internet’s openness . . . enables a virtuous circle of innovation in which new uses of the network—including new content, applications, services, and devices—lead to increased end-user demand for broadband, which drives network improvements, which in turn lead to further innovative network uses. Novel, improved, or lower-cost offerings introduced by content, application, service, and device providers spur end-user demand and encourage broadband providers to expand their networks and invest in new broadband technologies.⁸⁰

Fast lanes can do no good to that virtuous circle. Consumers today purchase broadband services based on a representation by the broadband provider of “up to” speeds. While “up to” speed representations are less than perfect, they are at least testable by consumers, through the use of a variety of competitively provided “Internet speed tests.”⁸¹ What the NPRM proposes would effectively destroy the ability of consumers to validate “up to” offers. Rather than being able to conduct a generic test of the bandwidth available, the ultimate “up to” speed *will depend on the specific web site or service that the consumer is interested in using, as services will perform differently based on the broadband provider’s control of fast-lane offerings*. Indeed, the existence of fast lanes will create an environment where broadband provider representations of speed, if they are to be commercially honest, would need to provide lists of potential web sites and/or other services that would be able to achieve the “up to” speeds that are represented.⁸²

⁸⁰ *Open Internet Order*, ¶14.

⁸¹ E.g., <http://www.speedtest.net/>; <http://www.speakeasy.net/speedtest/>; <http://www.bandwidthplace.com/>; <http://www.internetfrog.com/mypc/speedtest/>; etc.

⁸² The imperative of this aspect of “truth in advertising” would be especially important if the consumer has a choice of broadband service providers. There is every reason to believe that fast lane offerings by various broadband

That is, if the consumer chooses the “wrong” web site or service, then they will never be able to achieve the advertised “up to” speeds. This will degrade the value of a broadband connection and will damage the “virtuous circle.”

From a consumer’s perspective, the artificial gradations of network performance that fast-lanes enable will undermine the value of all non-fast-lane services. This in turn will degrade the value of the broadband connection. *Incentives consumers would have to upgrade to higher capacity broadband connections would be muted, as the full value of more bandwidth can only be achieved if all web sites and content have the potential to be delivered at the “up to” speed.* The degraded performance of some web sites and content will upend the “virtuous circle.”

F. Edge providers will be harmed by the NPRM's no-blocking approach

As noted in a May 6, 2014 *ex parte* filing in this proceeding by Union Square Ventures, fast lanes will discourage investment at the network edge and destroy consumer value.

The Chairman's proposal to permit paid prioritization and discrimination will change the relationship between creators and investors. Creators will no longer be able to launch first, prove they have an audience, and then raise capital to support their growth. Investors like us will need to extract a risk premium before supporting an unproven service, which will hurt the creators who are ultimately responsible for innovation. Worse, investors like us will decide not to risk our partners' capital at all to back an applications layer start-up, because an incumbent could easily copy the basic elements of a new service and beat them in the market by paying for a faster connection to consumers. We will also be very reluctant to fund companies building services that compete with current or future offerings of the cable or telecommunications companies that can directly impact a consumer's experience of a new service. Once the FCC opens the door to allow access providers to discriminate between applications layer services for the purpose of provisioning and billing for fast lanes, there are just too many ways for access providers to subtly discriminate against applications layer services for the FCC to effectively ensure a level playing field.⁸³

providers will not be offered to edge providers at identical prices. Thus, some edge providers might find that their business plan could justify fast lane services on broadband provider A’s network, but not on broadband provider B’s. Thus, from the consumer’s perspective, the performance of their favorite web site may be fundamentally different on the alternative broadband provider networks, even if both provider A and provider B offer identical “up to” speeds.

⁸³ Letter from Brad Burnham to Marlene Dortch, May 6, 2014.

The lack of a level playing field at the network edge comes at far too high a price. Edge providers will be at a perpetual disadvantage vis-à-vis broadband providers, with the outcome being higher costs and lower innovation. The Union Squares *ex parte* also points to what would be a likely development of fast lanes—the “channelization” of Internet content under the control of broadband providers. Fast lane offerings will begin the process of reestablishing content “channels” and “packages” similar to cable television channels, packages, or pay-per-view, undermining the advantages of *à la carte* video content delivered over neutral broadband connections. Furthermore, once they have charged edge providers for fast lane service delivery, broadband providers would have incentives to turn around and charge end-use customers additional fees for access to the fast-lane services, thus replicating the packages associated with the video programming revenue models that consumers have been fleeing in large numbers.⁸⁴

This too will stifle the “virtuous circle.”

Today, given the absence of fast lanes, edge providers can improve customer performance through optimization of their web sites and e-commerce tools, and utilize competitive service providers to distribute content closer to end users. Introduce the potential for fast-lane services and the edge provider’s view relationship with its customers, subscribers, or users is disrupted. As noted in the NPRM, seventeen (17) broadband providers accounted for 93 percent of retail broadband subscriptions.⁸⁵ Each broadband provider has potential customers for the edge provider’s services and holds a bottleneck on access to those customers. Thus, the edge provider would have to entertain negotiation with many broadband providers if it hoped to reach as much

⁸⁴ “Rise in cord cutting creates opportunities for marketers,” Experian Marketing, May 6, 2014. <http://www.experian.com/blogs/marketing-forward/2014/05/06/rise-in-cord-cutting-creates-opportunities-for-marketers/> See also, “Cord-Cutting Alert: Americans Watch Just 9% of TV Channels Available to Them,” *Variety*, May 6, 2014. <http://variety.com/2014/tv/news/cord-cutting-alert-americans-watch-just-9-of-tv-channels-available-to-them-1201172883/>

⁸⁵ NPRM, ¶170.

as 93 percent of broadband mass-market customers. That process of negotiation in and of itself will introduce substantial transaction costs for edge providers, thus draining operating funds and reducing edge provider profitability.⁸⁶ Assuming that the edge provider had the financial wherewithal to purchase fast lane services, here too, the profitability of the firm is negatively affected as payment for superior access to customers now comes at a premium extracted in a monopoly access market. As the Commission noted in the 2010 *Open Internet Order*:

Continued operation of this virtuous circle, however, depends upon low barriers to innovation and entry by edge providers, which drive end-user demand. Restricting edge providers' ability to reach end users, and limiting end users' ability to choose which edge providers to patronize, would reduce the rate of innovation at the edge and, in turn, the likely rate of improvements to network infrastructure.⁸⁷

Increases in edge provider transaction costs will lead to lower profits at the network edge and lower levels of innovation. Lower levels of innovation at the network edge will harm broadband deployment.

G. The NPRM's no-blocking "Minimum Level of Access" proposals are flawed

Before turning to the specific proposals contained in the NPRM associated with the "minimum level of access," it is important to note that the NPRM's general approach to this concept is less than clear. For example, at one point the NPRM indicates:

Consistent with the court's ruling, we tentatively conclude that the revived no-blocking rule should be interpreted as requiring broadband providers to furnish edge providers with a minimum level of access to their end-user subscribers.⁸⁸

The first problem with the NPRM's "minimum level of access" (MLA) approach is that end-users do not have identical subscription speeds—how would the MLA be reconciled with that fact? Would an edge provider only be promised a "fast lane" up to the maximum speed at which

⁸⁶ The NPRM (¶174) requests comments on whether "alternative dispute resolution" such as "arbitration" should be employed. The Commission should not abandon its responsibility to correct bad actors by employing an alternative dispute resolution process, which would severely disadvantage edge providers and consumers.

⁸⁷ *Open Internet Order*, ¶14.

⁸⁸ NPRM, ¶97.

a consumer subscribes? Would the non-fast-lane services be designed *never to achieve* the up-to speeds at which a consumer subscribes? Under the NPRM’s approach, would the broadband provider be free to artificially degrade non-fast-lane services on matters other than speed, such as jitter and delay? Would the broadband provider be free to artificially degrade service delivery for non-fast-lane offerings during “peak” periods? As discussed above, each of these potential points of discrimination has the potential to render the edge provider’s service “effectively unusable.”⁸⁹

With regard to the impact of the approach on consumer demand and investment, the NPRM states:

A defined minimum level of access provides assurances both to end users, by helping them understand the potential uses of their service, and to edge providers. Such assurances should enhance consumer demand, which drives investment both in the network and at the edge.⁹⁰

AARP strongly disagrees with this conclusion. In fact, as discussed above, the minimum level of access approach envisioned by the Commission (and the existence of “fast lanes” in general), will generate customer confusion, undermine innovation, and dampen consumer demand for broadband.

H. The NPRM's three MLA proposals are flawed

Turning to the specific MLA proposals contained in the NPRM, each alternative discussed in the NPRM is highly problematic.

⁸⁹ The “effectively unusable” standard arises from the *Open Internet Order’s* non-blocking requirement. That is, the *Open Internet Order* considers any action that renders Internet content or services effectively unusable to be blocked. *Open Internet Order*, ¶66.

⁹⁰ NPRM, ¶100.

1. Best Effort

In motivating this approach the NPRM points to RFC 5290 “Comments on the Usefulness of Simple Best-Effort Traffic.”⁹¹ However, the “best effort” envisioned by the NPRM is entirely inconsistent with the best effort service discussed in RFC 5290. RFC 5290 states:

. . . best-effort traffic serves a useful role in the Internet, and is worth keeping. While differential treatment of traffic can clearly be useful, we believe such mechanisms are useful as *adjuncts* to simple best effort traffic, not as *replacements* of simple best-effort traffic.⁹²

However, RFC 5290 goes on to discuss the potential for a differentiated service model to improve outcomes on networks where *congestion* is an issue.⁹³

In contrast to "simple best-effort traffic", intserv- or diff-serv enabled traffic relies on differential scheduling mechanisms at *congested routers*, with packets from different intserv or diffserv classes receiving different treatment. Similarly, in contrast to "simple best-effort traffic", *cost-based fairness* would most likely require the deployment of traffic marking (e.g., Explicit Congestion Notification (ECN)) at *congested routers*, along with policing mechanisms near the two ends of the connection providing differential treatment for packets in different flows or in different traffic classes. *Intserv/diffserv, cost-based fairness, and congestion-based pricing* could also require more complex pairwise economic relationships among Internet Service Providers (ISPs), and between end-users and ISPs.⁹⁴

In other words, the RFC identifies *technical* reasons that may introduce the need for a differentiated service model (as opposed to pure best effort), and those technical reasons are related to *congestion*. This stands in contrast to the NPRM, which proposes fast lanes not for technical reasons, but rather to address the Commission’s ongoing legal dilemma resulting from its refusal to correctly classify broadband telecommunications services as telecommunications.

In other words, the NPRM's approach would embrace *gratuitous discrimination* as a remedy for

⁹¹ NPRM, ¶102, footnote 225.

⁹² RFC 5290, p. 1, emphasis in the original.

⁹³ RFC 5290, p. 6.

⁹⁴ RFC 5290, p. 6, emphasis added.

a legal problem, rather than a differentiated service model designed to solve legitimate congestion problems.⁹⁵

While it is clear from RFC 5290 that issues of *congestion* are driving its discussion of the potential for prioritization of traffic (which is consistent with the seminal literature regarding the potential for differential traffic charges⁹⁶), the proposal in the NPRM is about enabling gratuitous discrimination.⁹⁷ The NPRM's suggestion that best effort service could reflect "typical" service levels while at the same time broadband providers would be "free to negotiate 'better than typical' delivery with edge providers"⁹⁸ takes the Internet into uncharted territory. The "fast-lane" model that would be enabled by the NPRM's proposal is not based on any premise associated with technical congestion-related problems in broadband networks. It rests instead on the need to introduce gratuitous discrimination to induce compliance with the *Data Roaming Order* framework. No good can come of such an approach.

The Commission should also heed the warning in RFC 5290:

⁹⁵ The degree of congestion on wireline broadband networks is less than clear, as are the impact of broadband provider "solutions." The data caps that have been implemented by wireline broadband providers are not oriented toward discouraging usage during peak periods, which might address congestion issues, and the cable broadband industry has finally admitted that the caps have nothing to do with congestion ("Cable Industry Finally Admits Caps Not About Congestion After Insisting For Years Caps Were About Congestion," DSLReports, January 18, 2013, <http://www.dslreports.com/shownews/Cable-Industry-Finally-Admits-Caps-Not-About-Congestion-122791>). Likewise, wireless mobility broadband providers have gravitated to data caps, which also do not reflect peak-usage pricing variation. Thus, from a theoretical perspective, data caps in both wireline and wireless broadband networks appear to do little to abate congestion on broadband networks. They instead appear to be means to enhance price discrimination.

⁹⁶ See, Jeffrey K. MacKie-Mason & Hal R. Varian, "Pricing the Internet," Mimeo, 1993. http://people.ischool.berkeley.edu/~hal/Papers/UM/Pricing_the_Internet.pdf . See also, RFC 1633 "Integrated Services in the Internet Architecture: an Overview," R. Braden, D. Clark, & S. Shenker, July 1994. <http://tools.ietf.org/pdf/rfc1633.pdf>

⁹⁷ The *Open Internet Order* allowed "reasonable network management" associated with both wireline and wireless broadband providers' networks. This opened the door for "fair" and transparent approaches to dealing with network congestion.

⁹⁸ NPRM, ¶102.

*Intserv/diffserv, cost-based fairness, and congestion-based pricing could also require more complex pairwise economic relationships among Internet Service Providers (ISPs), and between end-users and ISPs.*⁹⁹

Clearly “more complex pairwise economic relationships” can and will impose transactions costs on innovators, interfere with free competition, and degrade consumer’s valuation of broadband.

Furthermore, even if one accepts the NPRM’s unconventional view of best-effort service, the Commission is still facing the prospect of imposing service quality regulation on broadband providers. How else could the “typical” level of best-effort service be identified? And it is difficult to see how service quality specifications of the sort needed to define a “typical” level of best effort service are not Title II common carrier requirements.

2. Minimum quantitative performance

The NPRM suggests an alternative where the MLA could be addressed through a set of specific technical parameters, “such as minimum speed.”¹⁰⁰ The NPRM questions as to whether “the Commission would need to differentiate between different broadband access technologies?”¹⁰¹ In reality, the level of “differentiation” would be much more complex than that associated with various access technologies, as each access technology has consumers who subscribe to various speed tiers. As a result, setting a minimum speed for an edge provider would potentially run afoul of the minimum access speeds to which the consumer subscribes. Would the minimum speed offered to edge providers be no higher than the lowest-speed consumer broadband product available on the broadband provider’s network? Or would each edge provider be only promised a minimum that would not exceed some percentage of the end-users subscription speed, with the broadband provider artificially degrading each edge provider’s (and end-user’s) performance on a dynamic and real-time basis? In either case, troubling issues associated with discrimination,

⁹⁹ RFC 5290, p. 6, emphasis added.

¹⁰⁰ NPRM, ¶103.

¹⁰¹ NPRM, ¶103.

truth-in-advertising (and billing), and technological progress are raised. In addition to preventing consumers from realizing the data speeds for which they have paid, the NPRM would introduce incentives for broadband providers to introduce perverse innovations designed to do nothing more than discriminate for no good technical reason. Nowhere does the MLA approach identified in the NPRM consider whether there is a reason for discrimination, rather, discrimination for discrimination's sake is pursued, simply to chase the prospect of avoiding reclassification of broadband access as a telecommunications service.

The NPRM's discussion of the "minimum quantitative performance" approach also raises the issue of the unavoidable impact of technical change on any performance standard. It is certain that today's "minimum standard" will become tomorrow's equivalent of a dial-up connection. As a result, should the Commission pursue this approach to delivering the MLA, it would need to dynamically adjust the Minimum Quantitative Performance. Such an approach to promoting technical progress is decidedly inferior to the current market dynamic, which is encouraged by the lack of fast lanes. Today, broadband providers respond to consumer demands for broadband speeds based on the unimpeded consumer choice of applications and services. With the creation of a fast lane and the necessarily degraded "minimum level of access," consumers' ability to serve as the arbitrator of the success of edge services will be diminished, and so will consumer's ability to drive demand for higher speeds. If, for example, some video services are constrained to slower speeds, the need to upgrade to higher speed connections to consume those services is undermined. Use of the services created by edge providers who cannot afford fast lane treatment will, precisely because the minimum standard must be logically below the fast-lane speed, undermine the incentives for consumers to upgrade their speeds, and also undermine the

incentives broadband providers currently receive to expand their network capacity and speed.

This approach should not be pursued by the Commission.

Finally, as was the case for the “best effort” approach described above, it is clear that “minimum quantitative performance” standards are service quality regulations that are only consistent with an application of Title II of the Communications Act. Should the Commission attempt to follow the “minimum quantitative performance” path with requirements that impose performance constraints on broadband providers, it is all but certain that the same problems that emerged with Verizon’s challenge to the *Open Internet Order* will recur.

3. An objective, evolving “reasonable person” standard

With this approach to deliver the MLA, the NPRM proposes to define “the level that satisfies the reasonable expectations of a typical end user.”¹⁰² The NPRM goes on to explain:

[A] typical end user may reasonably expect the ability to *access* streaming video from any provider, place and receive telephone calls using the VoIP service of the end user’s choosing, and *access* any lawful web content. Under this approach, a broadband provider that satisfies these and other reasonable expectations would be in compliance with the no-blocking rule.¹⁰³

Presumably the key terminology in this discussion is *access*, otherwise, how can the discrimination that the NPRM elsewhere envisions arise? Under this approach, would the end user be able to *access* streaming video, but find that that streaming video would perform differently, depending on the agreement that the edge provider has with the broadband provider? Likewise, the consumer would be free to *access* any lawful web content, but might find that the content (speech) available from a non-profit organization or private citizen will not perform as well as the content (speech) available from an entity that can afford the fast lane? It is reasonable to assume that today the typical consumer expects that when they purchase a

¹⁰² NPRM, ¶104.

¹⁰³ NPRM, ¶104, emphasis added.

broadband connection that advertises an “up-to” speed, they will have the potential to reach all Internet content at the speed for which they pay. This is the only “reasonable person” assumption that the Commission should make.

I. Summary: The NPRM's approach to a no-blocking rule is flawed and destined to fail

As the discussion above illustrates, the NPRM's attempt to reinstitute the *Open Internet Order's* no-blocking provisions by enabling “fast lanes” and discrimination will upend the Internet ecosystem, and harm innovation and broadband adoption. Because the no-blocking provision requires that services remain “effectively usable,” the approach advanced in the NPRM implicitly requires common carrier service quality standards, and the NPRM's failure to address the implications of the need for standards points to future setbacks with regard to the Commission’s attempt to institute a no-blocking rule outside of the Title II framework. Furthermore, fast lanes will introduce uncertainty for consumers who purchase broadband connections as to how the content and services that they want to utilize will perform. Broadband provider representations of the performance of broadband connections which are characterized today in “up to” speeds would become meaningless, as choosing the “wrong” web site, service, or content could lead to degraded performance. Reclassification of broadband Internet access services as Title II services will enable the key no-blocking protection that is needed to ensure that all lawful content and services can be used over broadband connections. The best path forward on the no-blocking issue is reclassification.

IV. The NPRM's “unreasonable discrimination” rule will undermine competition and innovation

The NPRM notes that the D.C. Circuit overturned the 2010 anti-discrimination rule due to it running afoul of the Commission’s classification of broadband services as information

services.¹⁰⁴ The NPRM goes on to pursue the *Cellco* decision’s approach of enabling discrimination among edge providers.¹⁰⁵ This is exactly the wrong approach.

With regard to discrimination, the NPRM proposes to prohibit only “commercially unreasonable practices.”

Our proposed approach is both more focused and more flexible than the vacated 2010 non-discrimination rule. It would prohibit as commercially unreasonable those broadband providers’ practices that, based on the totality of the circumstances, threaten to harm Internet openness and all that it protects.¹⁰⁶

The Commission must recognize the complexity that will follow should it adopt such an approach. The Internet ecosystem is more complex and diverse than the facet of wireless markets associated with the establishment of data roaming agreements. There are millions of Internet users and edge providers, and the line between an edge provider and end-user is often not clear-cut. To grasp the “totality of the circumstances” in such an environment would be a daunting task, and would quickly tax the information processing capabilities of the Commission.

A. The “totality of circumstances” and “case-by-case” approach will fail the “virtuous circle”

Given the NPRM’s reliance on the *Data Roaming Order* as the model for the future of the relationships between edge providers and ISPs, it is important to evaluate key provisions of that *Order* related to the “totality of the circumstances” and case-by-case approach contained therein.¹⁰⁷ The NPRM indicates that the list of specific factors it considered appropriate in a case-by-case determination of whether a data roaming provider’s conduct and offerings were commercially reasonable should also apply in the case of the relationships between edge

¹⁰⁴ NPRM, ¶114.

¹⁰⁵ NPRM, ¶115.

¹⁰⁶ NPRM, ¶116.

¹⁰⁷ *Data Roaming Order*, ¶86.

providers and broadband providers.¹⁰⁸ The NPRM envisions “allowing individualized broadband provider practices, akin to the ‘commercially reasonable’ standard adopted by the Commission in the data roaming context.”¹⁰⁹ The standards for determining whether negotiations are “commercially reasonable,” based on the “totality of circumstances” from the *Data Roaming Order* are as follows:

- Whether the host provider has responded to the request for negotiation;
- Whether it has engaged in a persistent pattern of stonewalling behavior, and the length of time since the initial request;
- Whether the terms and conditions offered by the host provider are so unreasonable as to be tantamount to a refusal to offer a data roaming arrangement;
- Whether the parties have any roaming arrangements with each other, including roaming for interconnected services such as voice, and the terms of such arrangements;
- Whether the providers involved have had previous data roaming arrangements with similar terms;
- The level of competitive harm in a given market and the benefits to consumers;
- The extent and nature of providers’ build-out;
- Significant economic factors, such as whether building another network in the geographic area may be economically infeasible or unrealistic, and the impact of any ‘head-start’ advantages;
- Whether the requesting provider is seeking data roaming for an area where it is already providing facilities-based service;
- The impact of the terms and conditions on the incentives for either provider to invest in facilities and coverage, services, and service quality;
- Whether there are other options for securing a data roaming arrangement in the areas subject to negotiations and whether alternative data roaming partners are available;
- Events or circumstances beyond either provider’s control that impact either the provision of data roaming or the need for data roaming in the proposed area(s) of coverage;
- The propagation characteristics of the spectrum licensed to the providers;
- Whether a host provider’s decision not to offer a data roaming arrangement is reasonably based on the fact that the providers are not technologically compatible;
- Whether a host provider’s decision not to enter into a roaming arrangement is reasonably based on the fact that roaming is not technically feasible for the service for which it is requested; whether a host provider’s decision not to enter into a roaming arrangement is reasonably based on the fact that changes to the host network necessary to accommodate the request are not economically reasonable;
- Whether a host provider’s decision not to make a roaming arrangement effective was reasonably based on the fact that the requesting provider’s provision of mobile data

¹⁰⁸ NPRM, ¶116.

¹⁰⁹ NPRM, ¶115.

service to its own subscribers has not been done with a generation of wireless technology comparable to the technology on which the requesting provider seeks to roam; other special or extenuating circumstances.¹¹⁰

This is a long list, and presumably other factors associated with the relationships between broadband providers and edge providers will need to be added to replace the data-roaming-specific factors. However, AARP cannot imagine that such a list would be any less complex. While assessing the “totality of circumstances” associated with a data roaming agreement might be tractable given the number of wireless carriers needing such an agreement, implementing a similar assessment in the Internet ecosystem would be next to impossible. The potential interactions between the 17 broadband providers that control 93 percent of broadband end-users, and the millions of edge providers would place an exponential burden on the Commission, as compared to the data roaming environment. The strain that such a burden would place on the Commission to determine, on a case-by-case basis, whether the particulars of a situation are commercially reasonable, would hamstring the Commission’s ability to deal with bad actors. The “totality of circumstances” approach proposed in the NPRM is destined to fail. However, even if it were to be tractable, the purpose of “totality of circumstances” in establishing “commercially reasonable” behavior will nonetheless harm the Internet ecosystem. “At the same time, it (the totality of circumstances approach) could permit broadband providers to serve customers and carry traffic on an individually negotiated basis, ‘without having to hold themselves out to serve all comers indiscriminately on the same or standardized terms,’ so long as such conduct is commercially reasonable.”¹¹¹ Thus, the application of the “totality of circumstances” approach advanced in the NPRM is designed to provide a foundation for *discrimination*. As discussed elsewhere in these comments, discrimination is entirely

¹¹⁰ *Data Roaming Order*, 26 FCC Rcd at 5452-53, para. 86. Cited in footnote 243 of the NPRM.

¹¹¹ NPRM, ¶116.

inconsistent with the *Open Internet Order's* “virtuous circle” and the continuing success of the Internet.

B. The proposed case-by-case approach will impede competition and innovation

The distinguishing characteristic of a case-by-case approach to discrimination is the lack of edge-provider certainty regarding the ability to deal with broadband providers. The NPRM speaks of the advantages of the case-by-case approach in “allowing parties flexibility in their individualized dealings.”¹¹² The conclusion that this is an advantage is simply incorrect. The envisioned “flexibility” is a giant step backward from the current environment where individualized negotiations are not required. The Commission must recognize that an edge provider could face different discriminatory practices from alternative ISPs, and as the NPRM notes, there are at least seventeen broadband providers¹¹³ that could create “innovative” discriminatory regimes. Thus, edge providers could experience a complex and multifaceted set of restrictions on their ability to design and market their products as they see fit. The only outcome of such an environment will be a chilling effect on innovation and investment at the network edge, and a corresponding harm to the value that consumers experience from broadband connections.

C. Good faith negotiation requirements will not remedy harms

The NPRM indicates that requirements for “good faith” negotiation may be useful in ensuring the “commercially reasonable” standard.¹¹⁴ What the NPRM apparently envisions is an environment where broadband providers have the potential to impose a new process of negotiation on any edge provider. Such an approach will undermine competition and innovation. For example, should a broadband provider believe that an edge provider’s product is competing

¹¹² NPRM, ¶136.

¹¹³ NPRM, ¶170.

¹¹⁴ NPRM, ¶133.

with the broadband provider's offerings, the broadband provider could force the edge provider to negotiate terms on the delivery of the edge provider's service. Alternatively, should a broadband provider believe that an edge provider had developed a technology that the broadband provider would like to offer exclusively, the broadband provider could force the edge provider into negotiation to attempt to buy-out the edge provider's technology. Because of the inherent conflict of interest that broadband providers may have with regard to their competition with edge providers, and their unique position regarding the ability to monitor and assess traffic, *negotiation will always favor the broadband provider*. Such an advantage can only undermine competition and innovation at the network edge.

In summary, moving from an environment where edge providers face no transaction costs to one where broadband providers can strategically impose transaction costs will disrupt the virtuous circle that the D.C. Circuit recognized as providing a solid foundation for the encouragement of innovation and the expansion of broadband infrastructure.¹¹⁵

V. Legal authority

The NPRM seeks comment on legal authority, raising the potential for either Section 706 or Title II providing the necessary foundation. While the D.C. Circuit found that the Commission has authority under Section 706, the D.C. Circuit also found that that authority did not extend to information services.¹¹⁶ The statutory language makes it clear that Section 706 is directed at broadband *telecommunications*. Section 706 of the Act makes no mention of information services, and explicitly describes actions that the Commission may take regarding “advanced

¹¹⁵ *Verizon v. FCC*, p. 34.

¹¹⁶ “We think it obvious that the Commission would violate the Communications Act were it to regulate broadband providers as common carriers. Given the Commission’s still-binding decision to classify broadband providers not as providers of ‘telecommunications services’ but instead as providers of ‘information services,’” *Verizon v. FCC*, p. 45.

telecommunications capability.” Section 706(c)(1) does not leave any doubt as to whether “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology” might be construed as an information service. Rather such technology is simply *defined* as “advanced telecommunications capability.” This suggests that Title II and Section 706 are highly complementary.

As discussed above, Title II is the needed foundation for whatever action the Commission will take regarding the open Internet issue. Title II has provided an entirely workable framework for managing the behavior of broadband providers.¹¹⁷ As recently noted by Tim Wu:

The services offered by an Internet-access provider fit easily under the authority of Title II, which is why, in the nineteen-nineties, they were originally so classified, and remained so until the early two-thousands. You pay your provider to deliver the information you seek, unchanged; Verizon’s job is to get you Wikipedia entries, not to edit them. And net-neutrality rules, just like Title II, ban unjust and unreasonable discrimination. Moreover, the Commission is allowed to forebear, or not enforce, any part of Title II it might consider too onerous. *It is, in short, the obvious basis of authority for a net-neutrality rule.*¹¹⁸

With Title II the Commission can establish consumer protections with a high degree of certainty. It can also ensure that edge providers do not face undue discrimination.

A. Title II provides the needed foundation for the *Open Internet Orders*’ regulatory framework

As discussed earlier in these comments, the D.C. Circuit’s recent decision supports the view that the Commission should move towards establishing a Title II-based regulatory framework to

¹¹⁷ For example, under the Title II framework, the Commission was able to respond to attempts by AT&T to discriminate against customers of its broadband frame relay service. See, *In the Matter of Independent Data Communications Manufacturers Association, Inc. Petition for Declaratory Ruling That AT&T’s InterSpan Frame Relay Service Is a Basic Service; and American Telephone And Telegraph Company Petition for Declaratory Ruling That All IXCs be Subject to the Commission’s Decision on the IDCMA Petition*, DA 95-2190, Memorandum Opinion and Order, October 18, 1995.

¹¹⁸ “The Solution to the F.C.C.’s Net-Neutrality Problems,” *The New Yorker*, May 9, 2014, emphasis added. <http://www.newyorker.com/online/blogs/elements/2014/05/tom-wheeler-fcc-net-neutrality-problems.html>

protect an open Internet. However, when establishing the open Internet rules, the Commission can still rely on the framework established in the *Open Internet Order*. As discussed above, the D.C. Circuit only found fault in the application of the no-blocking and non-discrimination rules contained in the *Open Internet Order* due to the lack of the Title II classification. Thus, the Commission could continue to apply the *Open Internet Order* framework, based on the Section 706 authority that the D.C. Circuit clearly affirmed, by reclassifying the services as Title II common carrier services. As will be discussed further below, the Commission can also forbear from most Title II provisions at this time. In effect, the Title II classification would be for the limited purpose of reestablishing the *Open Internet Order* framework, thus avoiding the pitfalls associated with the pure Section 706/information service approach advanced in the NPRM, with its necessary reliance on the unworkable discrimination principles arising from the *Data Roaming Order*.

B. Reclassification combined with forbearance is the proper approach

To preserve the Section 706 framework, the Commission should reclassify and implement a policy of forbearance, i.e., the Commission should impose only the Title II requirements necessary to enable the Section 706 framework that it designed in the *Open Internet Order*. Clearly, Sections 201 and 202 must provide the foundation for the Section 706 framework advanced in the *Open Internet Order*. As has been previously noted by the Commission:

Sections 201 and 202, codifying the bedrock consumer protection obligations of a common carrier, have represented the core concepts of federal common carrier regulation dating back over a hundred years. Although these provisions were enacted in a context in which virtually all telecommunications services were provided by monopolists, they have remained in the law over two decades during which numerous common carriers have provided service on a competitive basis. These sections set out broad standards of conduct, requiring the provision of interstate service upon reasonable request, pursuant to charges and practices which are just and reasonable and not unjustly discriminatory. At bottom, these provisions prohibit unreasonable discrimination by common carriers by

guaranteeing consumers the basic ability to obtain telecommunications service on no less favorable terms than other similarly situated customers. The Commission gives the standards meaning by defining practices that run afoul of carriers' obligations, either by rulemaking or by case-by-case adjudication. The existence of the broad obligations, however, is what gives the Commission the power to protect consumers by defining forbidden practices and enforcing compliance. Thus, sections 201 and 202 lie at the heart of consumer protection under the Act. Congress recognized the core nature of sections 201 and 202 when it excluded them from the scope of the Commission's forbearance authority under section 332(c)(1)(A). Although section 10 now gives the Commission the authority to forbear from enforcing sections 201 and 202 if certain conditions are satisfied, the history of the forbearance provisions confirms that this would be a particularly momentous step. Consistent with the centrality of sections 201 and 202 to consumer protection, the Commission has never previously refrained from enforcing sections 201 and 202 against common carriers, even when competition exists in a market.¹¹⁹

Beyond Sections 201 and 202, Section 208, which provides for Commission review and enforcement, will provide a sufficient foundation to support the *Open Internet Order's* approach and ensure that the virtuous circle of innovation and investment continues. Other than Sections 201, 202, and 208, the Commission should forbear from other Title II provisions. The reclassification will resolve the problems identified by the D.C. Circuit, and allow the Commission to reestablish certainty regarding edge providers' ability to access their users and customers, and consumers' ability to access the legal content and services of their choice.

VI. Title II and remote delivery services—the Mozilla and Narechania & Wu proposals

The *Verizon v. FCC* ruling noted that while there might be ambiguity regarding whether a broadband provider is a carrier for its end-users, a common carriage relationship is evident for those edge providers *who are not its customers*:

¹¹⁹ *Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services*, WT Docket No. 98-100, Memorandum Opinion and Order and Notice of Proposed Rulemaking, 13 FCC Rcd 16857 (1998) at 16868-69, ¶5.

It is true, generally speaking, that the “customers” of broadband providers are end users. But that hardly means that broadband providers could not also be carriers with respect to edge providers. “Since it is clearly possible for a given entity to carry on many types of activities, it is at least logical to conclude that one may be a common carrier with regard to some activities but not others.” . . . Because broadband providers furnish a service to edge providers, thus undoubtedly functioning as edge providers’ “carriers,” the obligations that the Commission imposes on broadband providers may well constitute common carriage per se regardless of whether edge providers are broadband providers’ principal customers.¹²⁰

This discussion illustrates a portion of the ongoing common carriage services that broadband providers deliver. While the D.C. Circuit frames this discussion from the context of a “two-sided market,” one where broadband serves as a platform between “customers” and “edge providers,” it is important to note that the distinction between “customer” and “edge provider” has become more fluid. Because of the growing production of content by many end users, the proportion of pure “customers” is shrinking, and the proportion of “edge providers” is growing.

The NPRM requests comment on a proposal advanced by Mozilla that would reclassify “remote delivery services” as telecommunications services under Title II, leaving “end-user facing broadband services” classified as Title I information services.¹²¹ In addition, the NPRM also requests comment on a proposal submitted by two Columbia University professors that has similar implications.¹²² The Mozilla petition and Narechania & Wu *ex parte* are in the spirit of the D.C. Circuit’s observations regarding common carriage to third-parties. While AARP finds much to agree with in the analysis provided in the Mozilla petition and the Narechania & Wu *ex parte*, in both cases the approaches advocated are based on an interpretation of Internet services that results in an overly narrow view of the relationships between users and producers of Internet content and services. Both the Narechania & Wu *ex parte* and the Mozilla proposal are

¹²⁰ *Verizon v. FCC*, January 14, 2014, p. 51.

¹²¹ NPRM, ¶152.

¹²² “Sender-Side Transmission Rules for the Internet,” Tejas N. Narechania & Tim Wu. *Ex parte* filed on April 9, 2014 in GN Docket No. 14-28. (“Narechania & Wu *ex parte*.”)

inappropriately grounded in the “client/server” perspective of Internet architecture, which ignores Mozilla’s own assessment of the nature of today’s (and tomorrow’s) Internet. Given the significant conceptual overlap between the two proposals, Mozilla’s will be discussed in detail, with ancillary comments on the similar portions of the Narechania & Wu *ex parte*.

To motivate its proposal, Mozilla defines “side A” and “side B” Internet services that are “separable from interconnection and peering, as they apply only to the delivery of traffic within the network controlled by a single operator.”¹²³

The “side A” services connect local customers to the entire, outside Internet, while the “side B” services offer to remote endpoints the ability to reach the ISP’s local subscriber customers.¹²⁴

Mozilla argues that the Commission’s various Orders that classified broadband Internet access services as information services only addressed “side A” services.¹²⁵ Mozilla argues that “side B” remote delivery services should be classified as Title II telecommunications services, noting that such an action by the Commission would not be a “reclassification” as the commercial relationships between ISPs and their subscribers can remain information services. Mozilla also argues that the “side A” services can be left as Title I information services.¹²⁶

The Narechania & Wu *ex parte* offers, as one of the alternatives advanced therein, a similar approach based on what they denote as a “call” and “response” model of services provided over broadband Internet access networks:

. . .the FCC can split the facilities-based services offered by broadband carrier (*sic*) into two discrete transactions: first, a *call* by broadband subscribers to request data from a third-party content provider; and second, a content provider’s *response* to the subscriber. Imposing this constructed two-state call-and-response frame on the structure of internet

¹²³ Mozilla Petition, p. 8.

¹²⁴ *Id.*

¹²⁵ Mozilla Petition, p. 9.

¹²⁶ Mozilla Petition, p. 12.

traffic—a frame that is derived from the D.C. Circuit’s recent decision in *Verizon*—allows the Commission to separately consider the appropriate regulatory treatment for each.¹²⁷

The Narechania & Wu *ex parte* goes on to recommend that the “sender-side” traffic be classified as a telecommunications service.

AARP finds merit in aspects of both the Mozilla’s petition and Narechania & Wu *ex parte*, and certainly agrees with examples and conclusions regarding the importance of common carriage classification for remote delivery (or sender-side delivery) services. However, the Mozilla and Narechania & Wu *ex parte* proposals to leave the commercial relationship between ISPs and their subscribers as information services is not reasonable, a point which a complete reading of Mozilla’s petition makes abundantly clear.¹²⁸ The fact that the Mozilla’s Petition proves the need for blanket reclassification of “side A” and “side B” are discussed below.

A. Mozilla and Narechania & Wu prove the need for blanket reclassification

To clarify the discussion, Mozilla defines “remote delivery services” and its “side B” construct as the same thing:

The actual and potential services between an ISP and a remote endpoint enable that endpoint to communicate with the ISP’s local subscribers. *This represents a “side B” or “remote delivery” service in the “two sided” Internet access service structure.*¹²⁹

Mozilla also notes that the modern Internet, the “vibrant, dynamic, evolving many-to-many universe,”¹³⁰ is one where “any organization and *any individual* can be a remote ‘host’ for Internet traffic.”¹³¹ Thus, any individual can utilize “side B” services, but Mozilla overlooks where “side B” begins for those hosts that are connected via mass-market broadband

¹²⁷ Narechania & Wu *ex parte*, p. 13, emphasis in the original.

¹²⁸ To be clear, the Narechania & Wu *ex parte* does not limit its recommendations to the “sender-side” proposal. Rather, the Narechania & Wu *ex parte* points to the appropriateness of the reclassification of broadband Internet access services as telecommunications. See, Narechania & Wu *ex parte*, pp. 15-20.

¹²⁹ Mozilla Petition, p. 7, emphasis added.

¹³⁰ Mozilla Petition, p. 4.

¹³¹ Mozilla Petition, p. 11, emphasis added.

connections. For example, a Web Real-Time Communication (WebRTC) user's delivery of voice, video, and peer-to-peer information will result in an end-user becoming a remote endpoint that needs the ability to reach another broadband subscriber that is connected to some other ISP located elsewhere on the Internet. What the Mozilla petition misses is the fact that mass-market broadband subscribers acquire some of the "remote delivery" service that they need from the same entity that provides their "side A" broadband Internet access service. Of course, the mass-market broadband subscriber also requires "remote delivery" service offered by some other broadband provider on the terminating end of the transmission. Mass market broadband Internet access customers already demand, and are sold, the first leg of remote delivery services by their broadband provider. Specifically, mass market broadband subscribers are sold a service that provides the ability to both *upload*, as well as download information. *Every time that a consumer uploads, they are using a service that enables "remote delivery."*¹³² As Mozilla notes, any individual can be a remote host for Internet traffic.¹³³ Thus, it makes no sense to leave the "side A" services classified as Title I information services.¹³⁴ Classification of both "side A" and "side B" of the access market as telecommunications makes sense from a technical, market, and legal perspective. Ease of administration is also promoted by classification of both "side A" and "side B" as telecommunications services.

VII. Peering relationships and Title II

The NPRM offers the tentative conclusion that peering, because it was not considered in the *Open Internet Order*, should remain off the table as a matter for consideration in light of the

¹³² This is just as true when a consumer sends an e-mail message, clicks a web link, or uploads a video to YouTube.

¹³³ Mozilla Petition, ¶11.

¹³⁴ The split suggested by Mozilla and the Narechania & Wu *ex parte* would also have the perverse incentive of discouraging innovation associated with consumers' ability initiate communications that required remote delivery, i.e., to upload information, and would also potentially discourage broadband providers from investing in improvements in the upload side of Internet access.

Open Internet Order's requirements.¹³⁵ AARP believes that the Commission must take a broader view of discrimination and blocking. Broadband providers have access monopolies for their subscriber base. As noted in the NPRM, “absent multi-homing, an end user has only one option to reach a given edge provider’s content.”¹³⁶ The market power possessed by broadband providers in retail markets for broadband Internet access also translates into market power with regard to edge providers who need to reach their subscribers/users. Recent actions taken by broadband providers to extract payment from edge providers through interconnection charges raise troubling questions regarding the ability of broadband providers to disadvantage rivals, and to assess charges on both sides of the broadband platform.¹³⁷

Arguments that broadband providers are somehow disadvantaged by the growth of Internet traffic are specious. Broadband providers have faced nearly exponential year-over-year growth in traffic flows for the entire history of the broadband market. Figure 2 summarizes the trend.¹³⁸

¹³⁵ NPRM, ¶59.

¹³⁶ NPRM, ¶46.

¹³⁷ “Comcast and Netflix Reach Deal on Service,” *New York Times*, February 23, 2014.

<http://www.nytimes.com/2014/02/24/business/media/comcast-and-netflix-reach-a-streaming-agreement.html>

¹³⁸ “Internet Usage Data Show U.S. Expanding International Leadership,” USTelecom Research Brief, November 7, 2013, p. 2. <http://www.ustelecom.org/sites/default/files/documents/110613-usage-research-brief.pdf>

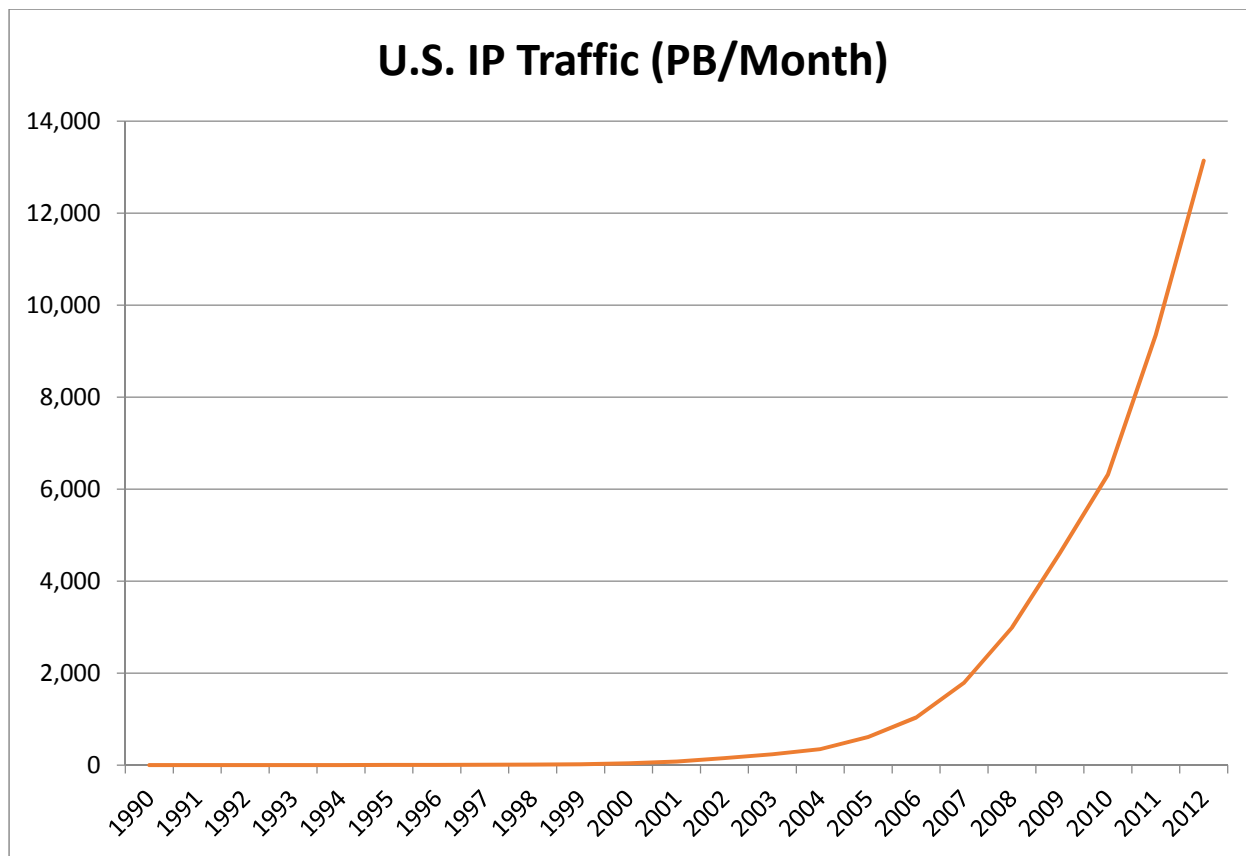


Figure 2: U.S. IP Traffic, 1990-2012

Figure 2 shows dramatic growth in traffic, starting at about the time that the *Cable Modem Order* was released. Because of the ongoing growth in traffic, broadband providers have had to continuously upgrade their network's capacity, both at the interconnection ports at the edge of their network where they exchange traffic with other networks, and from their network edge to the end user. The costs of these upgrades were recovered, until very recently, exclusively from end-users through their monthly fees for broadband Internet access. There was no indication that the historical growth in traffic was imposing any financial or technical burden on the broadband providers. In fact, broadband providers benefit from the growth in traffic volume associated with video services as it drives end-user demand for higher-priced, higher-speed offerings. For

example, as recently noted in *Forbes*, Comcast is not a victim of the growth in video traffic, but will instead reap financial rewards because of the growth in over-the-top video traffic:

Comcast offers high speed Internet to more than 20 million customers, and we expect this number to reach around 33 million by the end of our forecast period. Driving this growth will be further market penetration in the U.S. *and increasing demand for high priced tiers for video streaming.*¹³⁹

Network neutrality and an open Internet depend on the lack of discrimination and blocking from end-to-end. Competitive Internet transit and peering markets operated successfully until the maturation of last-mile broadband markets. Last-mile broadband providers have access monopolies to the end users that edge providers need to reach.¹⁴⁰ The recent activities of Comcast and Verizon vis-à-vis Netflix are inspired not by problems associated with the continuing trend of increasing traffic volume, but by the fact that Netflix has been so successful. Netflix provides an easy target for hold-up by broadband providers. The Commission should extend network neutrality oversight to interconnection arrangements associated with broadband providers precisely because those firms have access monopolies, as well as incentives to hamstring over-the-top rivals of their affiliated services.

VIII. Transparency

The NPRM tentatively concludes that broadband providers should disclose meaningful information regarding the “source, location, timing, speed, packet loss, and duration of network congestion.”¹⁴¹ AARP believes that this type of information, if accessible and presented to end-user consumers and edge providers in an easy-to-understand format, would prove to be useful.

¹³⁹ “Comcast Will Continue To Benefit From U.S. Broadband Growth,” *Forbes*, March 20, 2014. <http://www.forbes.com/sites/greatspeculations/2014/03/20/comcast-will-continue-to-benefit-from-u-s-broadband-growth/>

¹⁴⁰ Peyman Faratin, David Clark, Steven Bauer, William Lehr, Patrick Gilmore, & Arthur Berger, "The Growing Complexity of Internet Interconnection, *Communications & Strategies*, no. 72, 4th quarter 2008.

http://www.akamai.com/dl/technical_publications/growing_complexity_of_internet.pdf

¹⁴¹ NPRM, ¶83.

AARP believes that information regarding network outages should be added to the NPRM's proposed list of metrics, and that because interconnection ports are infrastructure under the broadband providers direct control, data on network congestion should extend to delays associated with traffic entering and leaving the broadband provider's network.

AARP notes that most providers make available a statement of network management principles on their web sites. AARP found, however, that some are easier to find than others. The Commission should, as part of the transparency requirement, require the prominent placement of information regarding network management practices in broadband provider marketing materials, and should require broadband providers to include keywords in descriptive materials that would encourage easy identification of the materials by search engines.

The Commission should work with broadband providers and other interested parties (including consumer organizations) to develop a standardized reporting format for information regarding the “source, location, timing, speed, packet loss, and duration of network congestion.”

Standardized reporting will encourage consumer understanding, and will enable side-by-side comparisons of performance.

IX. Conclusion

AARP urges the Commission to reclassify wireline broadband services as common carrier services. The alternative of enshrining discrimination as a means to support Section 706 authority will undermine edge-provider innovation, thus chilling demand for broadband services and undermining the “virtuous circle” so clearly illustrated by the Commission in the *Open Internet Order*. While reclassification could be subject to legal challenges, changed circumstances clearly support the reclassification, and Title II classification should withstand

those challenges. Treating broadband as a Title II service would create an environment of regulatory certainty regarding the rights and obligations of edge providers, broadband providers, and consumers. That regulatory certainty will ensure a long and robust future for the “virtuous circle” identified in the 2010 *Open Internet Order*.

Glossary of Terms

| | |
|-------------------------|---|
| ADSL | Asymmetric Digital Subscriber Line. Broadband services that are provided by telephone companies. |
| Bandwidth | A measure of the capacity of a communications channel. |
| Best Effort Service | On the Internet there is no centralized control of the network. As a result, service quality on the Internet is not guaranteed and may deteriorate during times of heavy use. This type of service is called best effort—the user gets best the network can deliver at a point in time. |
| Broadband | According to the FCC’s most recent definition, data transmission speeds of at least 4 Mbit/s downstream (from the Internet to the user’s device) and 1 Mbit/s upstream (from the user’s device to the Internet). |
| Broadband ISP | A company that provides broadband Internet access services. Typically a telephone company that provides DSL service, a cable company that provides cable modem service, or a fiber based provider. |
| Cable Modem | A device that allows connection of a computer to a cable television company’s network for the delivery of Internet access service. |
| Client | A computer or device that uses information provided by host computers (or servers). Personal computers, tablets, and smartphones typically are "clients." (See also, remote computer.) |
| Client/Server | An approach to network computing where powerful computers deliver content and services over a data network to computers or devices that are less powerful. An individual using a Google search on a tablet computer provides an example of client/server computing, with the tablet being the “client.” |
| Common Carrier | A common carrier offers its services to the general public, and is typically obligated to offer service on a nondiscriminatory basis. |
| Communications Act | The federal Communications Act of 1934, as amended. |
| Data | Representations of information in a manner that is suitable for communication, interpretation, or processing. |
| Data Communications | The transfer of data between points. |
| Data Network | Networks that are designed to transmit data. |
| Dial-up Connection | Connecting to an Internet service provider using the telephone network. The telephone network’s switches are used to complete the connection. |
| Digital Subscriber Line | High-speed communication facilities which uses a telephone company’s existing local loops to connect end users to Internet service providers. |
| Downstream | In data networks, the transmission of information from the serving computer to the client computer. |
| DSL | Digital Subscriber Line |
| Edge Provider | An entity that supplies Internet content or services. Some edge providers are for-profit (Google, Facebook, <i>New York Times</i>), other are not-for-profits or private citizens. |

| | |
|---------------------------|---|
| End-to-End Principle | In a data communications network, application-specific functions ought to reside in the host computers of a network rather than in intermediary nodes – provided they can be implemented "completely and correctly" in the end hosts. |
| Forbearance | An explicit policy of the FCC refraining from imposing certain aspects of its authority. Typically implemented by reference to sections of the Communications Act. |
| Host Computer | A computer that provides content or services over the Internet. (See also "Server".) |
| Interconnection | The process of connecting two or more telecommunications networks. |
| Internet | The global network of networks that enables data communications using the TCP/IP protocol. |
| Internet Services | Services provided with the Internet such as e-mail, World Wide Web (WWW), streaming audio and video, social media, etc. |
| Internet Service Provider | A company that enables end-users' ability to connect with the Internet. May also provide some Internet Services like e-mail or web hosting. |
| ISP | Internet Service Provider |
| Mbps | Megabits per second. A measure of data transmission speed. Millions of bits per second. |
| Modem | A device that allows digital computers to communicate over analog networks. |
| Open Network Architecture | An FCC policy that required that telephone companies provide open access to their network technology for use by other firms. |
| Remote Computer | A computer or device that uses information provided by host computers. Personal computers, tablets, and smartphones typically are remote computers. (See also, "Client.") |
| Server | A computer that provides content or services over the Internet. (See also "Host Computer.") |
| Title I | The section of the federal Communications Act that provides general FCC authority over communications by wire and radio. Title I authority does not govern issues such as discrimination, service quality, or rates. |
| Title II | The section of the federal Communications Act that governs common carriers. Title II provides authority for the FCC to govern issues such as discrimination, service quality, and price. |
| TCP/IP | Transmission Control Protocol/Internet Protocol. Allows computers with diverse operating systems and hardware to communicate over computer networks. |
| Upstream | In data networks, the communications channel that a client uses to send information to a server, or to other clients. |
| Web Hosting | An Internet service that allows a user to establish and maintain a web page. |