Before the

Federal Communications Commission DOCKET FILE COPY ORIGINAL

Washington, D.C. 20554

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

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Summary and Overview of Comments

For older Americans, i.e., those in age 50+ households, the [illegible] 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 providers[6] 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.*

> "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, th*
> *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 ordin 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://

[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

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 [illegible] 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

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delivering regulatory certainty is to establish common carrier principles for wireline networks. Open Internet principles for wireless 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

[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 bottlene[illegible] 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]

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[26] "Interconnection and Peering among Internet Service Providers, A Historical Perspective," Interisle Consulting Group, LLC, December 13, 2005. [illegible]. See also, the NSF [illegible] 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 Remo[illegible] 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:[33]

> 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 [illegible] 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 traffic[49] 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

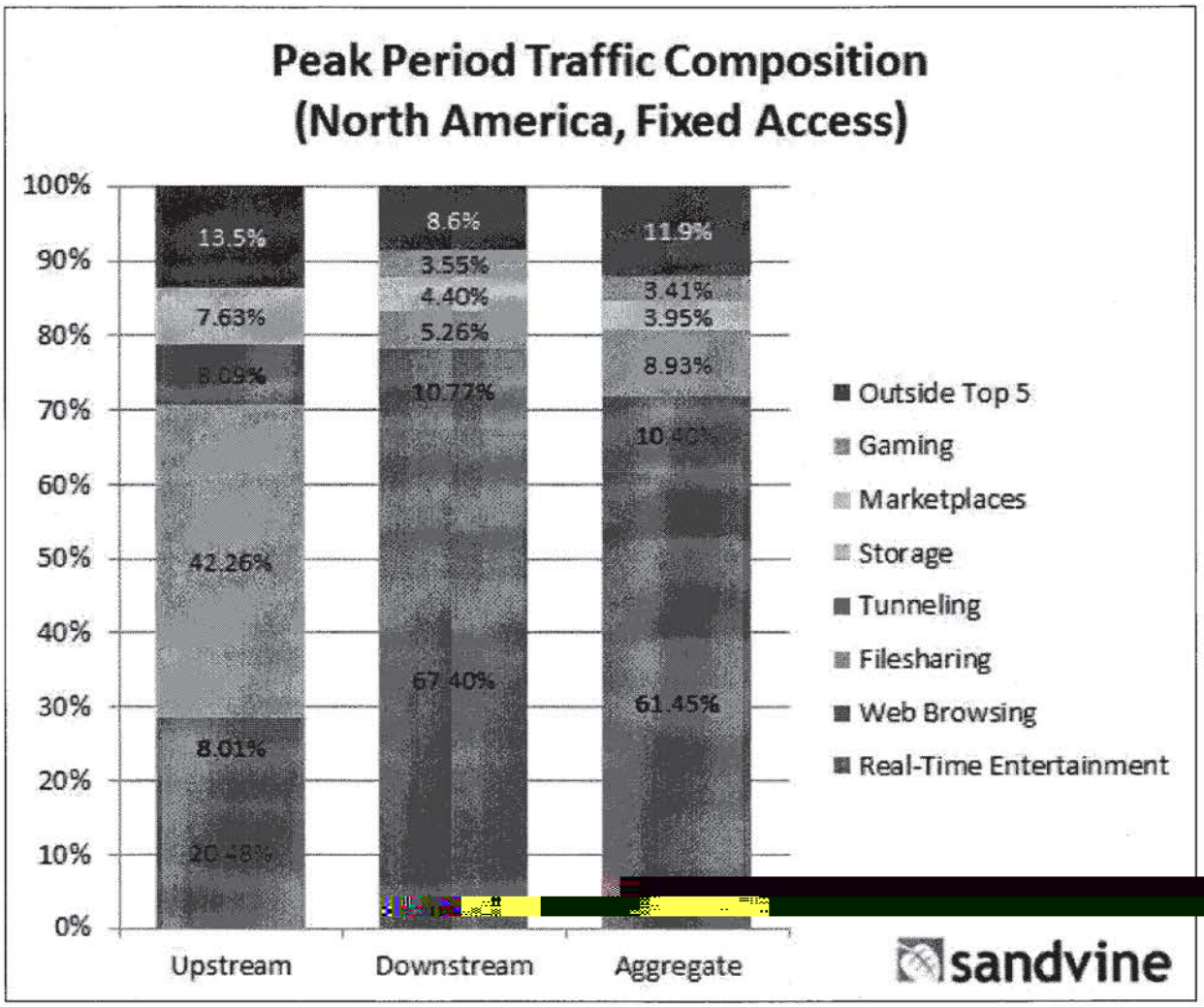

Figure 1: Internet Usage Profile

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]

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[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.