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

In the Matter of	
Restoring Internet Freedom	WC Docket No. 17-108

COMMENTS OF PUBLIC KNOWLEDGE AND COMMON CAUSE [UPDATED VERSION]

Ryan Clough
John Bergmayer
Phillip Berenbroick
Sara Kamal
Yosef Getachew

Public Knowledge
1818 N Street NW
Suite 410
Washington, DC 20036
(202) 861-0020

Todd O'Boyle

Common Cause
805 15th Street NW
Suite 800
Washington, DC 20007
(202) 833-1200

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INTRODUCTION

Public Knowledge and Common Cause[1] hereby submit the following comments in the above-captioned proceeding. The instant filing is an updated version, in full, of the comments dated July 17, 2018 that Public Knowledge and Common Cause previously submitted in this proceeding.[2]

ARGUMENT

I. The Core Transmission Function of Broadband Internet Access Service, and its "Factual Particulars"

The Commission's 2015 classification decision was "derive[d] from the characteristics of [broadband] service as it exists and is offered today," which showed that broadband service is "offered on a common carriage basis by virtue of its functions."[3] This focus on "the nature of the functions the end user is offered"[4] was entirely correct, reflecting longstanding judicial and Commission precedent.[5]

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[1] Common Cause is a nationwide, nonpartisan grassroots network dedicated to upholding the core values of American democracy. On behalf of its more than 900,000 members in all 50 states, Common Cause works to create open, honest, and accountable government that serves the public interest; and to empower all people to make their voices heard in the political process.

[2] *See* Comments of Public Knowledge and Common Cause (document ID No. 107180046918671). We submit this revised version to correct miscellaneous citation, formatting, and other non-substantive errors in our original comments, and to add several pages that were inadvertently omitted from Appendix A.

[3] *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 F.C.C. Rcd. 5601 at 5776, para. 384 (2015) [hereinafter *2015 Open Internet Order*], *available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1_Rcd.pdf; *id.* at 5763, para 363.

[4] *Nat'l Cable & Telecomm's Ass'n v. Brand X Internet Svcs.*, 545 U.S. 967, 969 (2005).

[5] *E.g.*, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, 13 F.C.C. Rcd. 11501 at 11530, para. 59 (1998) (*Stevens Report*); *See 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 F.C.C. Rcd. 4798, 4822 para. 38 (2002) (*Cable Modem Order*).

Fundamentally, broadband service offers a modular transmission conduit. As the Commission found in 2015, this is its primary and essential function. Broadband providers transmit information sent and received by their customers, to and from other Internet end users. They operate and provide this service through a combination of physical transmission mediums, switching and routing hardware, and software that follows switching and routing protocols. Customers use the resulting conduit in combination with the devices, applications, and content of their own choosing. In other words, broadband access networks and Internet applications are essentially agnostic to each other. Customers can mix and match the former with the latter, and do not expect broadband providers to alter information they send to and receive from other Internet endpoints.

This core transmission function is readily apparent from the "factual particulars"[6] of broadband service and how it is offered to and perceived by end users. As detailed below, these factual particulars include: (1) the technical characteristics of how broadband providers transmit information from their customers to the Internet; (2) the predominant uses of broadband services in the present day; and (3) broadband provider representations of the nature of their service. If anything, the record on each point is even stronger now than it was in 2015.

A. How Broadband Service Provides Internet Connectivity and IP-Based Transmission

Broadband providers offer Internet connectivity to end users. Providers typically connect their network to an "edge router" in a customer's network, which in turn connects to the customer's computers and other devices ("end systems"), either directly or via other intermediate switches and routers.[7] To communicate with other end systems elsewhere on the Internet, the

[6] *Brand X*, 545 U.S. at 991.

[7] James F. Kurose & Keith W. Ross, Computer Networking: A Top-Down Approach 9-12 (7th ed. 2017) [hereinafter Kurose & Ross].

customer's end system sends information through the edge router to their provider, who then transmits over its own network and passes it to another internet-connected network, where the information will continue onward toward its intended recipient.[8] The Internet as a whole is "a network of networks," and a broadband access provider essentially provides service across one of those networks (along with connectivity to other networks).[9] Broadband provider networks are in an intermediate position between customer networks and other end system networks, and provide transmission between the two.[10]

The core functions of broadband access service are best understood within the layered model of the Internet protocol stack. This conceptual scheme describes components of Internet architecture according to the "service model" at each of five layers, which is defined by "the services that a layer offers to the layers above":

- The **application layer** includes the applications that run over the internet, and their related protocols, such as the World Wide Web and the HTTP protocol for requests and responses between a client's Web browser and the server that hosts a web page.[11]
- The **transport layer** includes protocols such as TCP and UDP that "transport application-layer messages to application endpoints," for example by breaking transmissions into discrete packets on the sender-side and reassembling those packets on the receiver-side.[12]

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[8] *Id.* at 12; *see also id.* at 500-505. After leaving the broadband provider network, a packet will often travel across multiple intermediate networks before reaching the local-area network of the recipient end system.

[9] *Id.* at 31-32.

[10] *Id.* at 33; *see also id.* at 42 (describing illustrations of transmission path over internet via Traceroute application).

[11] Kurose & Ross at 50; *see also* A TCP/IP Tutorial, RFC 1180, at 2-3 (January 1991).

[12] Kurose & Ross at 51.

- The **network layer** is responsible for taking packets from the transport layer at the sending system (or "source host"), routing them across the internet, and ultimately delivering them to the transport layer at the receiving system (or "destination host"); this includes the IP protocol, which is explained below in more detail.[13]
- The **link layer** provides protocols for moving packets across each specific link from one network node to another; for example, Ethernet provides protocols for how one router will communicate with another router over a wired Ethernet connection,[14] and WiFi provides protocols for how wireless access points will communicate with wireless-enabled devices.[15]
- The **physical layer** includes the physical media comprising each network link (copper wire, fiber optics, radio waves, etc.) and how signals are sent across each medium.[16]

Above the application layer at the top of this model, one can also refer to a "content layer," which includes the human-intelligible content that is displayed or otherwise provided by an internet application.[17] For example, protocols for delivering streaming video are at the application layer, whereas the final images and audio displayed in a specific video are at the content layer.

Packet switching is a central feature of Internet communications, including the specific functions performed by broadband access providers. In this method, transmitted information is

[13] *Id*.
[14] *Id.* at 51-52.
[15] *Id.* at 520-21.
[16] *Id.* at 52; *see also* Jonathan E. Nuechterlein & Philip J. Weiser, Digital Crossroads (2nd ed. 2013) 162-64 (for example, describing the physical layer in a telegraph transmission as the copper wire) [hereinafter Nuechterlein & Weiser].
[17] Nuechterlein & Weiser at 163.

split up into smaller packets which are routed to their destination along different paths, as opposed to sending the entirety of the information over a single, reserved path, as in circuit switching.[18] Each packet includes both header information, which specifies the source and destination addresses and other metadata, as well as the data payload itself.[19]

Broadband access service operates at the lowest three layers of the Internet Protocol stack, using a combination of the physical, link, and network layers to transmit packets sent and received by end systems. The physical layer of broadband access networks includes the media connecting end user networks to the larger ISP networks[20] as well as the media connecting different intermediate nodes within the provider's network.[21] At the link layer of broadband access networks, adjacent nodes in the network use specific protocols to transmit and receive data over each connecting link, such as a DOCSIS connection between a subscriber's cable

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[18] Nuechterlein & Weiser at 30-31. In this regard, packet switching is similar to disassembling a piece of furniture and packing each part in a different box. The various boxes then may be shipped on different trucks and routes, and the furniture is reassembled at its final destination.

[19] *See* Kurose & Ross at 330-32; *see also id.* at 4 ("the sending end system segments the data and adds header bytes to each segment"). A packet can be compared to a letter mailed via the post office. A packet is equivalent to the entire physical shipment: both the envelope and its contents. The data payload of a packet is equivalent to the letter inside, whereas the packet header is equivalent to the destination and return addresses and other shipment information (weight, sending date, etc.) printed on the outside of the envelope. The postal service may add additional shipping information or labels to the outside of the envelope, or even place the envelope within another container for the purposes of shipping, but this does not alter the original content inside the envelope. Similarly, services at different layers of the IP stack add their own header information, but this process of "encapsulation" does not disturb the contents of either the packet payload or preexisting header fields passed on from the layers above. *Id.* at 53-54.

[20] For example, coaxial cable connecting subscribers to fiber nodes in hybrid fiber coax ("HFC"), or fiber optics connecting an individual subscriber optical network terminator to the optical line terminator at the central office for fiber-to-the-home ("FTTH"). *See* Kurose & Ross at 14-15.

[21] For example, twisted-pair copper wire or fiber optics between two routers within a provider's internal network. *See id.* at 20.

modem and the cable company's headend facility.[22]

At the network layer, broadband access networks use the IP protocol suite to route packets across the nodes of their own network and onward to their next destination.[23] In concrete terms, this means that a series of routers within a broadband provider network will perform both forwarding and routing actions. Forwarding is a local hardware process: moving a packet from a router's input port to the correct output port for the next leg of its journey.[24] Routing is a network-wide software process: determining the packet's overall path[25] both within a provider's network and on the larger internet.[26] At the network layer, broadband providers also perform IP addressing—assigning IP numbers to customer networks and end systems, which use the assigned addresses to request and receive data from other internet endpoints.[27]

In contrast to the physical, link, and network layers, the transmission of Internet traffic across a broadband access network does not operate at the transport layer. "[T]ransport-layer protocols live in the end systems," whereas "intermediate routers neither act on, nor recognize, any information that the transport layer may have added to the application messages."[28]

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[22] *See id.* at 14-15; 440-44; 465-66.

[23] Nuechterlein & Weiser at 165 (describing network layer functions for IP traffic, which operate "according to a common addressing scheme," along with other "protocols for the accurate and efficient transmission of packet switched data across different computer networks").

[24] *Id.* at 313.

[25] *Routing Basics: Path Determination*, Cisco docwiki, http://docwiki.cisco.com/wiki/Routing_Basics#Path_Determination (last visited Jul. 17, 2017); *see also* Kurose & Ross 306-08. The difference between forwarding and routing is comparable to taking the correct exit off of a highway versus determining on an overall route from one city to another.

[26] *See Border Gateway Protocol*, Cisco docwiki, http://docwiki.cisco.com/wiki/Border_Gateway_Protocol (last visited Jul. 17, 2017) (describing the Border Gateway Protocol); *see also* Kurose & Ross 376-79, 395-96 and 403-05.

[27] *See* Kurose & Ross at 339-41.

[28] *Id.* at 190, 188.

Transport-layer protocols such as TCP segment data into packets on the sending side and reassemble them on the receiving side.[29] They check for and correct errors in packet delivery, such as packets that are lost en route. This means that TCP can offer "reliable data transfer," even though a broadband access network (and the rest of the internet) provides an unreliable communications path.[30] If a broadband access network drops a packet (for example, due to congestion), it is up to the sending and receiving end systems, not the network, to identify the loss and resend the packet.[31]

Nor do broadband access networks transmit IP packets using the application layer:

> Again, the 1s and 0s in the header of each packet contain addressing information to ensure that the return message reaches your computer. Other 1s and 0s identify the content of the webpage using protocols specific to the World Wide Web. Your computer is able to translate those 1s and 0s into pictures and words only because it is outfitted with client software (a browser such as Explorer, Safari, or Chrome). This is a critical point: the telecommunications facilities of the Internet itself—and more generally, the Internet's physical and logical layers—do not generally 'know' what those 1s and 0s mean; they simply send the 1s and 0s your way and let your computer software figure out the rest.[32]

In other words, the content of the payload in a given packet is determined and acted upon by end systems, not the network. While network routers will add certain information to the packet header, this information does not alter the payload, and "it is removed before the packet is handed over to the application at the destination."[33]

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[29] *See* Nuechterlein & Weiser at 167; *see also* Kurose & Ross at 188-90 (describing how the transport layer "provides logical communications between processes running on different hosts" whereas the network layer "provides logical communications between hosts"); *see also* RFC 1180 at 23-24.

[30] Kurose & Ross at 206-207 ("TCP is a reliable transfer protocol that is implemented on top of an unreliable (IP) end-to-end network layer"); *see also* Nuechterlein & Weiser at 165-67.

[31] *See* Kurose & Ross at 210, 214-21.

[32] Nuechterlein & Weiser at 167; Kurose & Ross at 96 (the application layer "defines how an application's processes, running on different end systems, pass messages to each other," with HTTP as one of many examples).

[33] *2015 Open Internet Order* at 5762, para. 362.

Broadband Internet access does typically include DNS, an application-level service that translates requests with plain language domain names into corresponding IP addresses that are passed to the transport layer for packet addressing. For a variety of reasons, this does not alter the functional character of broadband access service. DNS is discussed in greater detail below, along with other add-on applications that providers may bundle with broadband access service.

The technical workings of broadband service reflect the Internet's original design: "placing intelligence at the edges rather than control at the middle of the network."[34] In other words, Internet applications run on end systems, not in between. The other layers of the Internet are, fundamentally, "an infrastructure that provides services to applications."[35] As a result, Internet technologies—including broadband access networks—are modular. Broadband subscribers can use their service to send and receive their choice of "[e]very single form of content ever conveyed over any electronic communications system—voice (telephony), audio (radio), video (television), documents (faxes), and so forth."[36]

B. How Broadband Service is Actually Used in 2017

The functional reality of broadband service is obvious in practice, looking at how subscribers use their internet access, who provides these applications, and how the applications interact with broadband access networks. In each respect, the distinction between broadband service and Internet applications is undeniable. Broadband customers obtain service in order to access content, services, and applications from third-party edge providers. It is this demand that has driven the enormous and continuing growth in Internet traffic, both globally and in the

[34] Letter from Vint Cerf to the Hon. Joe Barton, et al. (Nov. 8, 2005) (https://googleblog.blogspot.com/2005/11/vint-cerf-speaks-out-on-net-neutrality.html).

[35] Kurose & Ross at 5; *see also id.* at 9.

[36] Nuechterlein & Weiser at 187; *see also id.* at 164-65.

United States. In 2016, global IP traffic totaled 1.2 zettabytes,[37] and Cisco forecasts a rise to 3.3 zettabytes by 2021.[38] Internet applications are overwhelmingly offered, provided, and selected separately from broadband access service. For example, nearly all of the 25 most popular websites in the U.S. are unaffiliated with any broadband provider, and in the few exceptions—such as Verizon's corporate ownership of Tumblr—access to the website is not tied to broadband service plans in any meaningful way.[39]

Internet services and applications continue their rapid evolution. In just a few years, the capabilities and prevalence of many applications have grown dramatically. We discuss the most prominent examples below. Each demonstrates the modular transmission function that is central to broadband access service.

1. Mobile Apps and Devices

The last decade's explosive growth in mobile devices has come to define much of today's Internet. Globally, IP traffic from mobile wireless devices grew 63% in 2016, and now accounts for nearly half (49%) of all IP traffic.[40] As a result, the relative time that users spend on traditional personal computers is plummeting, with Cisco forecasting that PCs will account for only 25% of IP traffic by 2021.[41] Smartphones in particular have become the dominant "communications hub" for most types of applications, from social media to video chat to

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[37] 1.2 zettabytes equals 1.2 trillion gigabytes.

[38] Cisco, *Cisco Visual Networking Index: Forecast and Methodology, 2016-2021* (June 6, 2017), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html.

[39] *Top Sites in the United States*, Alexa, http://www.alexa.com/topsites/countries/US (last visited Jul. 17, 2017).

[40] Cisco, The Zettabyte Era: Trends and Analysis (June 7, 2017), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/vni-hyperconnectivity-wp.html.

[41] *Id.*

transportation services to entertainment and news.[42]

In many different ways, the mobile application ecosystem has developed independently from broadband provider networks (both fixed and wireless). It is not the ISPs but other companies who manufacture smartphones, design their operating systems, and/or provide the mobile app stores where the overwhelming majority of customers choose which apps to install on their devices.[43] Nearly all popular apps, and the Internet services to which they connect, are operated by third parties.[44] While there are some isolated exceptions—for example, carrier-installed (and typically unpopular) apps on some smartphones—the basic point here is beyond dispute. Consumers choose mobile applications and services independently from their choice of broadband providers, and expect that a given smartphone can send and receive the same information to and from those services regardless of the access network to which it is connected.

This is especially apparent from how smartphone users typically move across multiple different access networks in a single day—for example, from local wireless networks in homes and offices to cellular data networks elsewhere.[45] Globally, Wi-Fi networks handle the majority

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[42] *Id.*; Sandvine, *2016 Global Intenet Phenomena: Inside the Connected Home*, https://www.sandvine.com/resources/global-internet-phenomena/spotlight/the-connected-home.html, at 7.

[43] *See, e.g.*, Comments of AT&T Services, Inc., WC Docket 16-106 (filed May 27, 2016) 24-25, https://ecfsapi.fcc.gov/file/60002080023.pdf (AT&T arguing that there is a clear distinction between mobile operating system designers and app developers on the one hand and ISPs on the other).

[44] Gian Fulgoni, *comScore's State of Digital, TV, and IoT 2017*, https://www.comscore.com/Insights/Presentations-and-Whitepapers/2017/comScores-State-of-Digital-TV-and-IoT-2017 (showing the most popular and fastest growing mobile apps in the United States).

[45] *See* Nuechterlein & Weiser at 178-79; Peter Swire et al., The Inst. for Info. Sec. & Privacy at Ga. Tech, *Online Privacy and ISPs: ISP Access to Consumer Data is Limited and Often Less than Access by Others* (Feb. 29, 2016) (white paper) 24-25, *available at* http://www.iisp.gatech.edu/sites/default/files/images/online_privacy_and_isps.pdf [hereinafter "Swire"]; Comments of AT&T Services, Inc., WC Docket 16-106 (filed May 27, 2016), 26

of mobile device traffic.[46] Smartphones often automatically and seamlessly switch from one access network to another while their owners are in the middle of using some application, without any difference in the information that the application is sending or receiving.

2. Cloud Applications and Storage

In addition to the growth of mobile, the last decade has also seen a broad transition to many cloud-based applications. This encompasses applications that were previously centralized and run on a single system or local network, but now operate in a distributed environment, with different components of the application communicating over the internet. For example, many enterprises now run much of their information technology in the cloud, including applications such as email servers, database storage, and worker interface software that was previously run on local devices.[47] As a result, the share of information technology spending on cloud-based applications rose from 23% in 2013 to 37% in 2016.[48] As in other applications, end users expect their broadband service provider to provide a transmission conduit for their communications with cloud-based systems, and nothing more. Indeed, it is unlikely that cloud applications would have been widely adopted if this was not the case. For example, the utility of the cloud depends in

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(AT&T arguing that "a typical consumer today uses several different ISPs in the course of a day, and he goes dark for each ISP when he moves from one connection to another"); Comments of Comcast Corporation, WC Docket 16-106 (filed May 27, 2016), 27, *available at* https://ecfsapi.fcc.gov/file/60002081094.pdf (Comcast arguing that the average broadband consumers has multiple connected devices that "are mobile and connect from diverse and changing locations that are served by multiple ISPs").

[46] Cisco, *Cisco Visual Networking Index: Forecast and Methodology, 2016-2021* (June 6, 2017), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html (reporting that WiFi networks handled 60% of mobile device traffic in 2016).

[47] *See* David Mitchell Smith, Cloud Computing Primer for 2017, Gartner Research (Jan. 13, 2017).

[48] Mary Meeker, *Internet Trends 2017* (May 31, 2017) at 181, http://kpcb.com/InternetTrends; *see also id.* at 184 (describing various emerging cloud applications, such as new methods for software delivery and "elastic analytical databases").

large part on being able to access the same information from any geographic location and access network, and an enterprise would be understandably reluctant to decentralize some IT system if the connections between system components would vary the information being sent or received.

3. Streaming Media

Streaming media services such as Hulu and Spotify provide important examples of cloud-based applications. In such applications, the media files are stored remotely on the provider's servers, and typically accessed by users on demand, with only temporary storage (e.g., buffering) of the data on a user's device. Video traffic in particular has become the dominant source of IP traffic by volume, accounting for 70% of all global IP traffic in 2016, with Cisco forecasting an increase to 82% by 2021.[49] From the end user perspective, broadband access offers the same modular transmission function for streaming video as with other cloud services. Streaming services are typically portable, and customers expect to access the same media on different devices in different places and over different access networks.

4. Encrypted Communications

Another recent and significant development in the modern Internet is the rise of encryption. While encryption technologies have been available for decades, their adoption has jumped significantly in the last few years. Sandvine reported that, as of January 2016, 37.5% of fixed traffic and 64.5% of mobile traffic in North America was encrypted.[50] This is consistent

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[49] Cisco, *Cisco Visual Networking Index: Forecast and Methodology, 2016-2021* (June 6, 2017), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html; *see also* Sandvine, 2016 Global Internet Phenomena: Latin & North America, at 4.

[50] Sandvine, *2016 Global Internet Phenomena: Spotlight: Encrypted Internet Traffi*c, at 4, 6, https://www.sandvine.com/resources/global-internet-phenomena/spotlight/internet-traffic-encryption.html [hereinafter *Sandvine Spotlight*].

with other estimates—according to one report, HTTP Secure ("HTTPS") accounted for 49% of web traffic in February 2016, as compared to 13% in April 2014.[51] Sandvine predicts that, once Netflix finishes its implementation, 80% of North American traffic on fixed access networks will be encrypted.[52]

Much of this traffic uses Secure Sockets Layer/Transport Layer Security (SSL/TLS) protocols, which build upon TCP. Using SSL/TLS, the sending end system encrypts data before passing it to TCP, which then performs its usual functions (like segmenting the data into packets). The data is decrypted on the receiving end system, after the packets have been received and reassembled at the transport layer.[53] As a result, the operators of intermediate networks or third parties who intercept the packets cannot understand the contents of their payloads without some other way to defeat the encryption.[54] HTTPS is an implementation of SSL/TLS for Web traffic.[55] Virtual private networks (VPNs) are another important encryption method, used by many enterprises and other organizations to protect the confidentiality of communications over the Internet between their secure home networks and remote users on other access networks.[56]

The ubiquity and characteristics of encrypted traffic confirm the core transmission function of broadband access service, as compared to what it does not do: act on the higher layer information sent and received by end users. When data is encrypted with SSL/TLS on a broadband customer's end system and routed to a third party, the broadband provider can act as

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[51] Swire at 10 (also noting that "all of the top 10 websites either encrypt by default or upon user-login, as do 42 of the top 50 sites," through the use of HTTPS).

[52] Sandvine, *The Encryption Tipping Point in North America* (April 25, 2017), http://www.internetphenomena.com/2017/04/the-encryption-tipping-point-in-north-america/.

[53] Kurose & Ross 94.

[54] *See generally id.* 596-600 (regarding the basics of how encryption works).

[55] *Sandvine Spotlight* at 3.

[56] *See* Swire 30-35; Kurose & Ross 638-39; *Sandvine Spotlight* at 3.

usual on the routing fields in the packet header, but it cannot understand or make use of the contents of the packet payload where application and content layer information resides. For example, HTTPS prevents the ISP from performing deep packet inspection, or from directly identifying the particular URLs of the web pages requested by the user (though it can ordinarily see the basic domain and IP address).[57] VPNs go even farther, setting up an encrypted tunnel between the end user and a proxy server, hiding other routing information from an ISP in between the two.[58]

Broadband providers have made these same points in other recent proceedings before the Commission. For example, in last year's broadband privacy rulemaking, AT&T claimed, "a clear and rapidly growing majority of Internet traffic . . . blocks ISPs from viewing not only the content of Internet communications, but also the detailed URLs of visited websites."[59] Given the rising prevalence of encrypted internet traffic, the Commission cannot ignore its implications in assessing the functional nature of broadband service.

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[57] Swire at 26-27; GSM Association, *Network Management of Encrypted Traffic*, Version 1.0 (February 28, 2015), *available at* http://www.gsma.com/newsroom/wp-content/uploads/WWG-04-v1-0.pdf; Comments of AT&T Services, Inc., WC Docket 16-106 (filed May 27, 2016), 24-25, *available at* https://ecfsapi.fcc.gov/file/60002080023.pdf.

[58] *See* Swire 31-35; Kurose & Ross 638-39. An analogy to postal mail can show the level of confidentiality in both HTTPS and VPNs. Using HTTPS is like mailing a letter inside a locked safe that the postal service cannot open, though it at least knows the recipient's address that is printed on the outside of the safe. Using a VPN is like locking the recipient's address inside the safe and then mailing it from a post office to FedEx, which has a key to the safe and delivers it according to the final destination found inside. In the latter case, the postal service only knows that the safe is going from the sender to FedEx, and not where it goes from there.

[59] Comments of AT&T Services, Inc., WC Docket 16-106 (filed May 27, 2016) at 3-4; see also id. at 11, 15; *see also* Reply Comments of AT&T Services, Inc., WC Docket 16-106 (filed July 6, 2016), https://ecfsapi.fcc.gov/file/10706139179197/CPNI%20reply%20comments%207-6%20305pm%20_2_.pdf, at 19 (noting, "by the end of the year, all iPhone apps will have to use Apple's App Transport Security, which uses HTTPS to encrypt communications between apps and the servers that feed apps information")

C. How Broadband Providers Represent the Service they Offer to End User

1. Marketing to Customers

Appendix A contains select excerpts from ISP marketing of their broadband services.

2. Legal and Regulatory Representations

Appendix B includes various examples in which broadband providers have claimed eligibility for the safe harbor against intermediary copyright liability under Section 512(a) of the DMCA.[60] Such representations are relevant to the instant proceeding in that they show providers representing themselves to fulfill a functional role that mirrors the definition of telecommunications services.

II. Broadband Internet Access Service Is a Telecommunications Service

In light of the factual record detailed above, broadband Internet access service plainly meets the Communications Act's definition of a "telecommunications service." First, it includes the "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."[61] Second, broadband providers offer this transmission service "for a fee directly to the public, or to such classes of users as to be effectively available to the public."[62]

A. Broadband Service Transmits Information of the User's Choosing, Without Change in its Form or Content

It is beyond doubt that broadband providers transmit "information of the user's

[60] 17 U.S.C. § 512(a); see also 17 U.S.C. § 512(k)(1)(A) (defining a "service provider" for the purposes of section 512(a) to mean "an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user's choosing, without modification to the content of the material as sent or received").

[61] 47 U.S.C. § 153(50).

[62] 47 U.S.C. § 153(53).

choosing."[63] As detailed above, providers offer a modular conduit between end user networks and other Internet endpoints. Applications running on an end user's system (such as a personal computer or a smartphone) define the data to be sent over the ISP's access network. These applications pass the data to a transport-layer service, which assembles the packets, including the destination information in their headers and the actual information in their payloads that is to be received by an application at the intended destination. The broadband access provider accepts these packets and routes them as appropriate towards their final destination—across the provider's network and then onto the next Internet-connected network in their end-to-end path. This technical process is consistent with the ubiquitous perspective of broadband customers in the present day—that they, not their ISPs, choose what services, content, and applications to use online, that they will choose the destination of the information they send over Internet, and that their ISP will transmit that information accordingly.

Nor do broadband providers change the "form or content" of the user-defined information that they transmit over their networks and onto the rest of the Internet.[64] "Internet applications run on end systems—they do not run in the packet switches in the network core."[65] Nor does an ISP's routers or other systems typically alter the content of application-layer data within packet payloads. Indeed, this would often be impossible, given that much of this data is encrypted in present-day traffic.

Of course, provider networks do include systems that process information in the course of transmitting packets. For example, like all other networks on the Internet, broadband access

[63] 47 U.S.C. § 153(50).
[64] *Id.*
[65] Kurose & Ross at 5.

networks include some number of routers, each of which includes a processor to carry out the routing and forwarding functions described above.[66] Routers also include physical storage media for the temporary storage of information in transit—for example, buffers at a router's input and output ports, which queue packets while the link to their destination is occupied by other transmissions.[67] All of this is done for the purpose of routing the packets to their sender-defined destination.

This network-layer processing does not change the form or content the information being sent by an end user. Unlike circuit switching, all packet switching is inherently digital—it requires the electronic processing of digital information.[68] It would be absurd to suggest that a communications network is not providing telecommunications simply because it is packet-switched as opposed to circuit-switched. The Commission has long recognized that a transmission service may be "analog or digital,"[69] and that "[u]se internal to the carrier's facility of companding techniques, bandwidth compression techniques, circuit switching, message or packet switching, error control techniques, etc. that facilitate the economical, reliable movement of information does not alter the nature of the basic service."[70] For example, telephone networks

[66] *Id.* at 313-315.

[67] *See id.* at 319-321.

[68] *See* Nuechterlein & Weiser 162.

[69] *Second Computer Inquiry*, 77 FCC 2d 384, 419 para. 93 (1980) (hereinafter *Computer II*).

[70] *Id.* at 419 para. 95; *see also id.* at 420 para. 96 ("It is clear that in defining a basic service in this manner, we are in no way restricting a carrier's ability to take advantage of advancements in technology in designing its telecommunication network"); *see also In the Matter of Indep. Data Commc'ns Manufacturers Ass'n, Inc., Am. Tel. & Tel. Co.*, 10 F.C.C. Rcd. 13717, 13721 para. 33 (1995) (finding that use of a a discard function on a frame-relay network "to facilitate the economical, reliable movement of information in this manner does not alter the nature of the basic service"); *In the Matter of Petition for Declaratory Ruling That AT&T's Phone-to-Phone IP Telephony Servs. Are Exempt from Access Charges*, 19 F.C.C. Rcd. 7457,

have long included digital processing and transmission[71] as well as packet switching.[72] Needless to say, the inclusion of packet-switching or other processing of routing information does not mean that a telephone service no longer constitutes "telecommunications" under the Communications Act.[73]

A straightforward analogy to the postal service is instructive here. After a sender drops an envelope containing a letter into a mailbox, the postal service will examine and act upon the routing information (mailing address) printed on the envelope. It will often add other routing information to the outside of the envelope, such as printed barcodes or labels. It might even place the envelope within a larger container for shipping. But none of these actions alter the form or content of the original letter inside, which was written by the sender and will be read in the same form by the final recipient.

Similarly, the network-layer systems and processes of a broadband access network will examine and act upon the routing information of a packet presented for transmission over its network. The provider's routers may add certain routing information to a packet's header. The

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7472 para. 24 (2004) (finding that AT&T's VoIP service "is a telecommunications service and is subject to section 69.5(b) of the Commission's rules").

[71] *See* Nuechterlein & Weiser at 162; *Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, 19 F.C.C. Rcd. 3307, 3315 para. 13 (2004) (describing how telephone networks have incorporated "computing capabilities" to "facilitate and modernize the provision and use of basic telephone service"); *Rules and Policies Regarding Calling Number Identification Service— Caller ID*, 10 F.C.C. Rcd. 11700, 11704 para. 7 (1995) (describing "Signaling System 7," a digital system for processing "signaling information that enabled call routing and billing").

[72] Kurose & Ross 31 ("Although packet switching and circuit switching are both prevalent in today's telecommunication networks, the trend has certainly been in the direction of packet switching. Even many of today's circuit-switched telephone networks are slowly migrating toward packet switching. In particular, telephone networks often use packet switching for the expensive overseas portion of the telephone call.").

[73] *See also* 47 U.S.C. § 53 (defining a "telecommunications service" regardless of the "facilities used").

network may even encapsulate a packet within a new, larger one, such as in IPv6 to IPv4 "tunneling," which is described below. However, none of these processes alter the original packet's data payload, which contains the information sent and received by its end users.

Furthermore, from the perspective of a broadband customer, there is plainly no change in the form or content of the information she sends and receives over her access network. For example, when a smartphone user switches over from his fixed home broadband to a mobile broadband network, he neither expects nor actually experiences (as a technical matter) a change in the form or content of the websites he is viewing on his device, or the information he is sending to those websites. In other words, broadband access networks are "virtually transparent in terms of [their] interaction with customer supplied information," regardless of the routing processes they use to transmit that information to its destination.[74]

The NPRM suggests that broadband service may change the form or content of transmitted information in the course of either "protocol-processing" or network security practices, such as the use of firewalls. Both of these suggestions, which are meritless, are addressed below.

B. Broadband Service Transmits Between or Among Points Specified by the User

The NPRM states:

> Internet service providers do not appear to offer "telecommunications," i.e., "the 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," to their users. For one, broadband Internet users do not typically specify the "points" between and among which information is sent online. Instead, routing decisions are based on the architecture of the network, not on consumers' instructions, and consumers are often unaware of where online content is stored. … In short, broadband Internet users are paying for the access to information "with no knowledge of the physical location of the server where that information resides."[75]

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[74] *Computer II*, 77 FCC 2d at 420, para. 96.
[75] *2017 NPRM* at para. 29.

This framing is wildly out of step with consumer expectations, and is an implausible reading of the law. Broadband consumers do not passively consume content, but interact with a variety of online services. Users search on Amazon and post to Facebook, they read articles and comment at NYTimes.com and Foxnews.com, they send email, and they share photos. At all times, users are in control of their online experience and choose for themselves the nature of their experience. They control what URLs to put into the address bar of a browser, which apps to use, and which links to click. In each of these interactions it is the consumer, not the ISP that determines the endpoints with which she communicates--be it a multi-billion dollar web giant, a small startup, or family member or a friend, or a complete stranger. They can control exactly what content to view, and when, as well as engage in two-way communication. Every technical routing decision that happens, happens either as a result of the consumer's express instruction or through software in the user's control. Because broadband Internet access is telecommunications, and not a more passive broadcast medium like cable TV, user control and not the decisions of a large communications company are paramount.

It is true that, just as with the telephone network, modern telecommunications networks abstract away the precise physical location of servers, or other internet users. A few analogies may help clarify this. The telephone network is telecommunications and regulated under Title II of the Communications Act. If you call a mobile phone user, you don't necessarily know where that user is located since by nature mobile phones are mobile. More than that, even by looking at the phone number you have no way of knowing anything specific about the users' current or usual location: phone number portability, and the fact that users can keep their phone numbers when they move, has largely erased the correspondence between area codes, office codes, and geography. Thus, when you call a mobile phone user, you likely will not be aware of the user's

geographic location—but you do know the "point" you are calling: the individual user. Even if you call some fixed numbers you may have no way of knowing anything about the physical location of the called party. You might call toll-free number, or a VOIP number, for instance. You might even call a fixed, copper-line, POTS number, but then be routed via a PBX system anywhere in the world.

Similarly, when a user accesses netflix.com or isitchristmas.com, she doesn't necessarily know or need to know the physical location of the servers hosting the content. When a user sends an email to a coworker, she doesn't need to know whether the coworker is at his desk, or working from home. But she does know the "points" she intends to communicate with all the same. The "point" is not the precise server, or data center, or the sector of a hard drive where particular content is stored—it is just the intended recipient of content or the service the user has chosen to interact with. The NPRM fails to demonstrate why a more technical reading of this term is warranted, and there is no reason to understand it to refer to a precise geographic location.

In fact, the NPRM mischaracterizes the 2015 Open Internet Order's analysis of this issue. The NPRM asks, "[i]s it enough, as the Title II Order asserted, for a broadband Internet user to specify the information he is trying to access but not the 'points' between or among which the information will be transmitted?" But the Open Internet Order did not assert this. It found, correctly, that "[a]lthough Internet users often do not know the geographic location of edge providers or other users, there is no question that users specify the end points of their Internet communications."[76] The Open Internet Order went out of its way to clarify that broadband users specify the points with which they communicate. It simply and correctly found that "point" as

[76] *2015 Open Internet Order* at 5761, para. 361.

used in the statutory definition does not to refer to a geographic location. This is consistent with precedent: The Commission has never required, nor has the applicable law ever required, knowledge of a specific geographic location to meet the definition of transmission under the user's control to a point of the user's choosing.[77] In addition to being legally correct, the prior Commission's reading the word "point" reinforces one of the essential aspects of telecommunications—that users, not the network, determine who it is they communicate with. The job of the network operator—in this case, the broadband provider—is to facilitate these communications with recipients selected by the network's users, not to interject their own business models in between.

This understanding of the word "point" also answers the Commission's question as to how to read the statute to avoid surplusage. The best way to do this is to maintain the 2015 Open Internet Order's correct interpretation. By contrast, adopting the NPRM's proposed reading of "points" would make not just one phrase, but the entire statutory category of "telecommunications" surplusage, since no mass-market service today meets this "geographic location" requirement. It is difficult to think of a more arbitrary and ends-focused reading of a statute than one that confines the concept of "telecommunications" to little more than tin cans

[77] To the contrary, "point to point" communication has always been in contrast with "broadcast," an omni-directional signal received by unknown individuals. *See National Ass'n of Reg. Util. Com'rs v. FCC*, 533 F.2d 601 (D.C. Cir. 1976) ("*NARUC II*") (leased access programming constituted common carrier communications, despite one way nature and inability of send to know precisely who receives the transmission); *affirmed in relevant part sub nom FCC v. Midwest Video*, 440 U.S. 689. *See also In re Subscription Video Services*, Report and Order, 2 F.C.C. Rcd. 1001 (1987), *aff'd sub nom. National Association for Better Broadcasting v. FCC*, 849 F.2d 665 (D.C. Cir. 1988), *on reconsideration, Memorandum Order and Opinion*, 4 F.C.C. Rcd. 4948 (1989) (distinguishing between broadcast, common carrier and and subscription video service).

and string.

C. Broadband Service Offers Telecommunications for a Fee Directly to the Public

Broadband providers offer to their subscribers a modular transmission conduit for Internet traffic, across their access networks and onto the rest of the Internet. This transmission function—which constitutes "telecommunications" as explained above—is offered "for a fee directly to the public, or to such classes of the users as to be effectively available to the public."[78] Thus, broadband Internet access service is a "telecommunications service" under the Communications Act.

It is beyond dispute that broadband providers offer Internet connectivity directly to the public. The Commission's 2015 findings on this point remain true today: "broadband providers routinely market broadband Internet access services widely and to the general public."[79] As detailed above, broadband providers market and sell their services at uniform prices and on standard terms (e.g., at various advertised speed tiers) to anyone within their service areas. No individualized negotiations are required for a customer to purchase such service—for example, most customers can sign up for retail broadband service through an automated process online, without any interaction with a human agent for the provider.[80] Indeed, these facts are self-evident from the very definition of BIAS: a "mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints," or

[78] 47 U.S.C. § 153(53).

[79] *2015 Open Internet Order* at 5763, para. 363.

[80] *See also id.* at n. 1009-1011 (citing extensive Commission precedent in "reject[ing] the suggestion that we must evaluate such offerings on a narrower carrier-by-carrier or geographic basis" and in finding that "offering a service to the public does not necessarily require holding it out to all end users").

the functional equivalent thereof.[81]

Nor is there any credible argument that broadband service should be understood more narrowly to encompass only a portion of a broadband access network--for example, defining the service to include transmission across only the "last mile" physical link to a customer's home, while excluding the rest of a provider's network over which Internet traffic flows. Any such distinction would be arbitrary and without any factual basis in the functions actually provided to broadband customers.[82] End users do not purchase service for access to a broadband provider's network, nor do they perceive or use broadband service that way. Instead, they purchase transmission to and from the Internet as a whole. This definition of broadband service, which includes the processes and facilities that deliver traffic to and from other Internet-connected networks, reflects longstanding Commission precedent regarding telephone networks. As the Commission previously argued to the D.C. Circuit, "[l]ocal telephone service was not confined to a single wire running from a customer's home to the end office," but "necessarily included as well the functionality . . . that routed a telephone call from the caller to its intended destination."[83] This is also consistent with Commission precedent regarding IP-based

[81] *Id.* at 5609, para. 25; *see also 2017 NPRM* at 4464, para. 93 (proposing to "maintain[ ] the definitions of the services applicable to the rules"). In 2015, the Commission explained that "mass market" meant "services marketed and sold on a standardized basis to residential customers, small businesses, and other end-user customers such as schools and libraries." *2015 Open Internet Order* at 5745, para. 336, n. 879.

[82] As the D.C. Circuit explained, "the Court [in *Brand X*] focused on the nature of the functions broadband providers offered to end users, not the length of the transmission pathway…" *United States Telecom Ass'n v. Fed. Commc'ns Comm'n*, 825 F.3d 674, 702 (D.C. Cir. 2016).

[83] *United States Telecom. Ass'n v. F.C.C.*, Brief for Respondents (D.C. Cir. No. 15-1063, filed Sept. 14, 2015) at 56-57 (citing *AT&T v. Iowa Utils. Bd.*, 525 U.S. 366, 371 (1999) (a "local exchange network" consists of, "among other things, . . . local loops, . . . switches, and . . . transport trunks").

transmission services.[84]

Because broadband ISPs provide a telecommunications service—that is, they offer telecommunications for a fee directly to the public—they must be treated as common carriers in their provision of that service.[85] This conclusion is consistent with—indeed, is compelled by—the law of common carriage, when applied to the factual record of broadband service as it is offered today. Following passage of the 1996 Telecommunications Act, the Commission determined that Congress intended the definition of "telecommunications service" to follow the analysis set forth in *NARUC v. FCC*.[86] Under this inquiry, the Commission looks to whether the provider offers "telecommunications" in an indifferent manner to the general public.[87] No one

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[84] *See In the Matter of Gte Tel. Operating Cos. Gtoc Tariff No. 1 Gtoc Transmittal No. 1148*, 13 F.C.C. Rcd.. 22466, 22476-77 (1998) (rejecting argument that DSL transmission to separate ISP is an intrastate service, and analyzing the service according to "the nature of the end-to-end transmission between an end user and the Internet website accessed by the end user"); *In the Matter of Bell Atl. Tel. Cos. Bellsouth Telecommunications, Inc. Gte Sys. Tel. Cos. Pac. Bell Tel. Co.*, 13 F.C.C. Rcd.. 23667, 23670-71 (1998).

[85] 47 U.S.C. § 153(51) ("The term "telecommunications carrier" means any provider of telecommunications services, except that such term does not include aggregators of telecommunications services (as defined in section 226 of this title). A telecommunications carrier shall be treated as a common carrier under this chapter only to the extent that it is engaged in providing telecommunications services, except that the Commission shall determine whether the provision of fixed and mobile satellite service shall be treated as common carriage.")

[86] *See Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC*, 525 F.2d 630, 644 (D.C. Cir. 1976) (*NARUC I*); *Virgin Islands Tel. Corp v. FCC*, 198 F.3d 921, 927 (D.C. Cir. 1999). (affirming Commission interpretation that proper analysis for definition of "telecommunications service" in 47 U.S.C. § 153(46) applies *NARUC* analysis).

[87] *NARUC I*, 525 F.2d at 641-42 (explaining "[t]he common law requirement of holding oneself out to serve the public indiscriminately, and distinguishing common carriers from other carriers whose "practice is to make individualized decisions, in particular cases, whether and on what terms to deal"); *see also NARUC II* 608 ("the primary sine qua non of common carrier status is a quasi-public character, which arises out of the undertaking to carry for all people indifferently"); *Verizon v. FCC*, 740 F.3d, 623, 651(D.C. Cir. 2014) (stating, "[a]lthough the nature and scope of the duties imposed on common carriers have evolved over the last century . . . the core of the common law concept of common carriage has remained intact," and discussing *NARUC I* and *NARUC II*).

can dispute that broadband access providers hold themselves out as serving the public in an indifferent manner. Indeed, over the course of over a decade opposing consumer protection regulation, broadband access providers have repeatedly asserted that they serve all members of the public equally and without discrimination as to terms and price. They advertise generally available prices and do not "make individualized decisions, in particular cases, whether and on what terms to deal."[88] Furthermore, broadband providers plainly allow users to "transmit intelligence of their own design and choosing,"[89] and hold out their service accordingly.

Common carriage under the Communications Act is not some optional regulatory category that the Commission decides to apply through a process of "classification." Instead, common carriage ultimately reflects the realities of what a provider actually offers:

> [W]e reject those parts of the [FCC's] orders which implies an unfettered discretion in the commission to confer or not common carrier status on a given entity, depending upon the regulatory goals it seeks to achieve. The common carrier is sufficiently definite as not to admit of agency discretion in the classification of operating communications entities. **A particular system is a common carrier by virtue of its functions, rather than because it is declared to be so.**[90]

Thus, broadband providers should be treated as common carriers because they are common carriers. Common carriage is not a policy position nor a regulatory determination, but a description. This is clear not only from the legal history of common carriage,[91] but also from the

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[88] *NARUC I*, 525 F.2d at 641. The fact that broadband providers routinely authorize their sales staff to offer special rates in some individualized cases to attract or retain customers does not transform a telecommunications service provider into a private carrier. *See Orloff v. FCC*, 352 F.3d 415 (D.C. Cir. 2003). Nor does the fact that providers reserve the right to make individualized decisions matter where this is not, in fact, their general practice. *NARUC I*, 525 F.3d at 641 ("It is not necessary that a carrier be required to serve all indiscriminately; it is enough that its practice is, in fact, to do so."); *see also 2015 Open Internet Order* at para. 363.

[89] *NARUC II*, 533 F.2d at 609.

[90] *NARUC I*, 525 F.2d at 644 (emphasis added).

[91] *See generally* Barbara A. Cherry, *Experimenting With Governance for U.S. Broadband Infrastructure: The Wisdom of Retaining or Dismantling Prior Legal Innovations*, TPRC 2010

statutory scheme enacted in the Telecommunications Act of 1996, in which a provider must be treated as a common carrier to the extent it is "engaged in providing telecommunications services."[92]

III. Broadband Internet Access Service Is Not an Information Service

A. The NPRM's Interpretation of "Information Service" is Untenable

The NPRM proposes an unprecedented and illogical interpretation of "information service" as defined in the Communication Act. It claims that broadband service is an information service because the ISPs "offer the 'capability for generating, acquiring, storing, processing, retrieving, utilizing, or making available information via telecommunications.'"[93] In essence, the NPRM contends that broadband service is an information service because it allows customers to reach and use other information services on the Internet, such as a "newspaper's website," a "search engine," or online versions of "an address book or a grocery list."[94] According to this logic, broadband providers need not provide any of these services or applications themselves. Instead, broadband access networks "offer [their] users the 'capability' to perform" all informational functions simply because they offer connectivity to (i.e., transmit data to and from) third-party providers of such functions.[95]

Several critical flaws render this interpretation of the Communications Act untenable. First, it essentially ignores the phrase "via telecommunications" in the definition of "information

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Oct. 2010) at 32, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1989645; William Jones *The Common Carrier Perspective as Applied to Telecommunications: A Historical Perspective* (1980), *available at* http://www.cybertelecom.org/notes/jones.htm.

[92] 47 U.S.C. § 153(51).

[93] *2017 NPRM* at 4442, para. 26 (quoting 47 U.S.C. § 153(24)).

[94] *Id.* at para. 27.

[95] *Id.*

service,"[96] and would effectively write that phrase out of the statute.[97] By necessity, an information service that offers a capability for manipulating information via telecommunications cannot refer to the same thing as the underlying telecommunications. To conclude otherwise would be like saying that a driver is driving on a highway via that highway. In drafting this definition, Congress must have intended some difference between the information service and the telecommunications that provide access to its capabilities (i.e., transmission between the information service and its user). The NPRM apparently disagrees, and the Commission must explain this discrepancy.

Second, the NPRM's interpretation is flatly inconsistent with all of the controlling case law, including *Brand X*. If the *Brand X* Court had agreed with the NPRM's interpretation of "information service," it would have never reached or even discussed any of the questions that occupied its analysis. For example, it would have never asked "whether the transmission component of cable modem service is sufficiently integrated with the finished [cable modem] service to make it reasonable to describe the two as a single, integrated offering."[98] If the Court had applied the NPRM's interpretation, it would have found that "the high-speed transmission used to provide cable modem service" inherently offers the capabilities of generating, receiving, and storing information, regardless of how "functionally integrated" the former is with the latter.[99] Likewise, there would be no need for either the Court or the Commission to examine

[96] 47 U.S.C. § 153(24).

[97] *See USTA*, 825 F.3d at 702 (rejecting argument equivalent to the NPRM's interpretation, because it "ignores that under the statute's definition of 'information service,' such services are provided 'via telecommunications'").

[98] 545 U.S. §§ 967, 990.

[99] *Id.* at 991.

"the factual particulars of how Internet technology works and how it is provided."[100]

Third, the NPRM's interpretation would lead to illogical outcomes that Congress could not have possibly intended. Any telecommunications network may be used to reach sources of information. For example, voice communications over the traditional telephone network have long offered access to either automated information services[101] or a live person who can generate, receive, store, and otherwise act upon information. Thus, under the NPRM's interpretation, any telephone service would be (and always has been) an "information service." And because the NPRM also reasons that information services by definition are not telecommunications services, this would effectively write telecommunications out of the Communication Act. Congress could not have possibly intended such as result, and such a wildly expansive reading of "information service" also flies in the face of Commission precedent. Even when the Commission has previously decided, for other reasons, that broadband service providers do not offer a telecommunications service, it has always recognized that they at least include a telecommunications component.[102] If the Commission adopts the NPRM's

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[100] *Id.*

[101] For example, automated dial-in services provide a voice interface for a caller to access airline flight information, movie show times, weather reports, and so forth. Indeed, by the logic the Commission follows in para. 27 of the NPRM, the Title II telecommunications lines a consumer users to access a dial-up ISP, and then the entire internet, would be information services since they, just like a broadband connection, allow an internet user to "store and utilize information online."

[102] *See, e.g.*, *Cable Modem Order* at 4823, para. 40 ("The Commission has previously recognized that "[a]ll information services require the use of telecommunications to connect customers to the computers or other processors that are capable of generating, storing, or manipulating information." (quoting *Implementation of the Non-Accounting Safeguards of Section 271 and 272 of the Communications Act of 1934*, as amended, CC Docket No. 96-149, Order on Remand (*Non-Accounting Safeguards Remand*), 16 F.C.C. Rcd. 9751, 9770 para. 36 (2001)); *see also Brand X*, 545 U.S. at 988 (noting the Commission's concession in 2002 that, "like all information-service providers, cable companies use 'telecommunications' to provide consumers with Internet service").

interpretation of "information service," it must account for this radical departure from its past assumptions.

Fourth, recall that the *Brand X* Court did not find that terms like "telecommunications" or "information service" were ambiguous. The question presented to the Court, and the question it answered, is whether the Commission had discretion to determine what it meant to "offer" telecommunications as a "telecommunications service." Based on the record of facts about how broadband was sold, used, marketed, and understood at the time, the Court concluded that it did, and upheld the Commission's view that 2005-era broadband internet access service, which consisted of information service and telecommunications components, could be considered an information service when offered as a bundle.[103] The Court's analysis was consistent with *NARUC I*, which held that whether a service is common carriage depends on what the carrier offers, or holds itself out to do.[104] But the NPRM goes further than *Brand X* and deviates from the *NARUC I* test by proposing to redefine not the "offer," but what until now were universally accepted to be telecommunications components of BIAS as information services. While the Commission may be attempting to save time by decreeing the statutory category of "telecommunications service" out of existence rather than undertaking a more detailed analysis of what constitutes an "offer" of BIAS in today's market, such shortcuts are not allowed.

Fifth, the NPRM's interpretation would also read the telecommunications management

[103] *National Cable & Telecommunications Assn. v. Brand X Internet Services*, 545 US 967, 989-998 (2005).

[104] *Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC* (*NARUC I*), 525 F.2d 630, 641-42, 644 (D.C. Cir. 1976)

exception[105] out of the statutory definition of an information service. By its necessary implication, any "capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service" could be used in the course of accessing a third-party information service, and thus would offer a "capability for generating, acquiring, storing, [etc.] . . . information via telecommunications.[106] The NPRM's interpretation offers no coherent way to distinguish services that meet the telecommunications management exception from other offerings that qualify as information services.

The better way to read the definition of an "information service"—indeed, the only coherent way—is to recognize that information services exist in the end systems at the edges of the Internet, and communicate with one another via telecommunications. In the Internet, "generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information" occurs through applications that run on these end systems. "Although packet switches facilitate the exchange of data among end systems, they are not concerned with the application that is the source or sink of the data."[107] Transmission across broadband networks between Internet endpoints does not, on its own, provide a capability for generating, acquiring, storing, or otherwise manipulating information. Instead, end systems must be connected to those networks to create such capabilities. It is the end systems that offer end users those capabilities, via the telecommunications function offered in broadband access service. Accordingly, end users perceive third-party services, content, and applications as providing the informational capabilities they choose to access over the Internet. Thus, the interpretation of an "information

[105] 47 U.S.C. § 153(24) (specifying that "[t]he term information service . . . does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service").

[106] *Id.*

[107] Kurose & Ross 5.

service" must make a distinction between end systems and the networks in between. This is the only reading that is logically consistent with the statutory text, judicial and Commission precedent, and the factual particulars of how broadband Internet service works and how it is offered.

B. The NPRM Misinterprets Sections 230 and 231

The NPRM claims that the plain language of Sections 230 and 231 of the Communications Act clearly indicate BIAS is an information service.[108] The NPRM's reading of the statute is incorrect, implausible, and inconsistent with holdings by the Supreme Court, D.C. Circuit, and prior Commission precedents.

The NPRM's conclusions that Section 230 of the Communications Act plainly defines BIAS as an information service, or that Section 231 makes clear that BIAS is not a telecommunications service, are shockingly incorrect. First, the Commission's reasoning would overrule the Supreme Court's holding in *Brand X*. In *Brand X*, the Court ruled that the Communications Act does not make explicit the correct classification of BIAS.[109] For this reason alone, the NPRM's assertion that Sections 230 and 231 clearly define BIAS as an information service and not a telecommunications service is unsupportable.

Second, the NPRM's claims regarding Sections 230 and 231 are also brazenly inconsistent with prior FCC precedents. The Commission's reversal of its prior interpretations of the Communications Act, without any explanation for the Commission's new interpretation, would be arbitrary and capricious. For example, the Commission's 2002 Cable Modem Declaratory Ruling did not even contemplate that Section 230(f)(2) of the Communications Act

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[108] *NPRM* at 4444, paras. 31-32.

[109] *See Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Services*, 545 U.S. 967, 996-97 (2005).

defined BIAS as an information service.[110] Following the *Brand X* decision, the Commission's 2005 Wireline Broadband Classification Order explained, "[a]s the Supreme Court held in *NCTA v. Brand X*, the Communications Act does not address directly how broadband internet access service should be classified or regulated."[111] The Commission's 2015 Open Internet Order also recognized this holding of *Brand X*, noting that classification turned on the factual record showing the nature of a broadband service offering.[112]

The 2015 Open Internet Order also specifically rejected the NPRM's conclusion that Section 230 defines BIAS as an information service. The 2015 Open Internet Order explained that Section 230 of the Commissions Act addressed the issue of allowing consumers to adopt technologies and services to avoid unwanted or inappropriate obscene and violent content, not the appropriate regulatory classification of BIAS.[113]

Similarly, the NPRM's claim that Section 231(e)(4) states that "internet access service" is not a telecommunications service is inconsistent with prior Commission precedent. In fact, the NPRM points out that the Commission's 2002 Cable Modem Order interpreted Section 231 as not intending to impair the ability of the FCC or state commissions to regulate basic telecommunications services.[114] While the current NPRM acknowledges the inconsistency with

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[110] *See Inquiry Concerning High-Speed Access to the Internet Over Cable and 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 F.C.C. Rcd. 4798 (2002).

[111] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, et. al.*, CC Docket No. 02-33, et. al., Report and Order and Notice of Proposed Rulemaking, 20 F.C.C. Rcd. 14853, 14859 para. 8 (2005).

[112] *See 2015 Open Internet Order* at 5614, para. 43; 5743-44, paras. 331-332.

[113] *Id*. at 5777, para. 386.

[114] *2017 NPRM* at 4444, para. 32 (citing *Cable Modem Order*, 17 F.C.C. Rcd. at 4799 para. 1, n.2.).

the agency's prior interpretation of Section 231, it does not provide any analysis or explanation to justify its new and inconsistent interpretation of the statute.[115]

One of the basic procedural requirements of administrative rulemaking is that the agency must provide adequate reasons for its decisions.[116] The Supreme Court has held that "[a]gencies are free to change their existing policies as long as they provide a reasoned explanation for the change."[117] In making such a change, the agency must show awareness that it is changing course, as well as a good justification.[118] Unexplained inconsistencies in agency policy are a reason for holding that an agency's changed interpretation of a statute is an arbitrary and capricious change of agency practice.[119]

The Commission's claim that its novel, plain language reading of Sections 230 and 231 makes clear that Congress intended to classify BIAS as an information service and not a telecommunications service conflicts with more than a decade of Commission precedent, and is unsupported by any additional analysis. Thus, the NPRM's conclusion that Sections 230 and 231 clearly indicate that BIAS is an information service is arbitrary and capricious.

Further, it is unfathomable that Congress would have buried such a fundamental issue – the appropriate regulatory classification of BIAS – within the ancillary provisions of the Communications Act where Sections 230 and 231 reside. Section 230 is part of Title V of the Telecommunications Act of 1996, which is Titled: "Title V—Obscenity and Violence" and subtitled: "Subtitle A—Obscene, Harassing, and Wrongful Utilization of Telecommunications

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[115] *Id*.
[116] *Encino Motorcars, LLC v. Navarro*, 136 S.Ct. 2117, 2125 (2016).
[117] *Id*. (citing *Brand X* at 981-82).
[118] *Id*. (citing *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009)).
[119] *Id*. at 2126 (citing *Brand X* at 981).

Facilities."[120] The subject matter of Section 230 focuses on promoting consumer control over information received over the internet, including consumer use of technologies that allow parents to restrict access to online materials they deem inappropriate for children.

It reasons that if Congress clearly meant to define BIAS as an information service in Section 230, the legislative history would make clear Congress's intent to answer that fundamental question. Instead, the Conference Report's language on Section 230 is silent on its definition of "interactive computer service" in Section 230(f)(2), and does not address any ramifications for the regulatory classification of BIAS. Instead, the relevant section of the Conference Report focuses entirely on the "Good Samaritan" protections in Section 230(c).[121]

A plain reading of the statutory text demonstrates the fallacious[122] logic the Commission employed to conclude that the plain language of Section 230(f)(2) "deems Internet access service an information service."[123] The relevant section defines "interactive computer service" as:

> any information service, system, or access software provider that provides or enables computer access by multiple users to a computer server, including specifically a service or system that provides access to the internet and such systems operated or services offered by libraries or educational institutions.[124]

While this states that information services are interactive computer services, it does not follow that all interactive computer services are information services. Indeed, it is more natural to conclude that "a service or system that provides access to the internet" is not an information service, since both information services and such systems are listed separately as examples of

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[120] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 133.

[121] *See* H.R. Rep. No. 104-458, at 194 (1996) (Conf. Rep.).

[122] Specifically the NPRM commits the fallacy of composition, concluding that something is true of the whole because it is true of a part. *See Fallacy of composition*, Wikipedia, https://en.wikipedia.org/wiki/Fallacy_of_composition (last accessed Jul. 17, 2017).

[123] *2017 NPRM* at 4444, para. 31.

[124] *Id*.

interactive computer services. In any event, the NPRM's proposed reading ("any information service...that provides access to the internet") could only support the conclusion that there exists information services that provide access to the internet, not that all services that provide access to the internet are information services. What's more, the NPRM's reading relegates key statutory terms ("system," for instance) to surplusage.[125]

Additionally, the definition of "interactive computer service" to which the NPRM points cannot be read to modify or inform the definition of "information service" throughout the rest of the Communications Act. Section 230 expressly directs that definitions of terms within Section 230(f) are only applicable to "this section" – Section 230 – and is not relevant elsewhere.[126] Moreover, the D.C. Circuit has held that statutory provisions that serve different purposes should not be read in pari materia.[127] Thus, "it is not impermissible under Chevron for an agency to interpret an imprecise term differently in two separate sections of a statute which have different purposes."[128] Certainly if the Commission concludes that these statutory provisions inform the entire Communications Act, it should be prepared to explain whether, because it has found that broadband providers are telecommunications carriers for the purposes of Communications Assistance for Law Enforcement Act ("CALEA"),[129] it should apply CALEA's definitions more

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[125] *But see, e.g., Marx v. Gen. Revenue Corp*., 133 S. Ct. 1166, 1178 (2013) ("[T]he canon against surplusage is strongest when an interpretation would render superfluous another part of the same statutory scheme.")

[126] 47 U.S.C. § 230(f).

[127] *See Common Cause v. FEC*, 842 F.2d 436, 441-42 (D.C. Cir. 1988); *United Shoe Workers of Am. v. Bedell*, 506 F.2d 174, 188 (D.C. Cir. 1974).

[128] *Abbott Labs v. Young*, 920 F.2d 984, 987 (D.C. Cir. 1990). *See also Verizon California, Inc. v. FCC*, 555 F.3d 270, 276 (D.C. Cir. 2009).

[129] *See* Communications Assistance for Law Enforcement Act, Pub. L. 103-414, 108 Stat. 4279 (codified at 47 U.S.C. § 1001). *See also American Council on Educ. v. FCC*, 451 F.3d 226, 229, 232-233 (D.C.Cir. 2006) (explaining that CALEA's definition of "telecommunications carrier" is broader than the Communications Act).

widely, as well.

Section 231 of the Communications Act is an even further afield from the core components of the statute that are addressed by the NPRM. Section 231 is part of the Child Online Protection Act ("COPA"), which was enacted more than two years after the Telecommunications Act of 1996.[130] COPA made it illegal for materials deemed harmful to minors to be accessible for minors on the internet. As with Section 230, the Conference Report for legislation adopting Section 231 provided no indication that Congress intended to determine the foundational question of the appropriate regulatory classification of BIAS.[131] In any event, no one contests that BIAS consists of components that, considered individually, may be either telecommunications or information services. The pertinent question since the issuance of the Cable Modem Order, if not earlier, has concerned the regulatory status of a product that combines internet access and transmission into a single offering. The COPA definition, like much 1990s-era material, is plainly drafted with dial-up ISPs in mind, which are uncontroversially information services (and that were, at all times, accessed by consumers over last-mile access connections regulated under Title II). This provides no insight into how to properly understand BIAS, which combines the functionality of dial-up ISPs with the functionality of a physical telecommunications connection. At most, the definitions in Section 231 demonstrate that COPA is concerned with the aspects of BIAS besides physical lines and transmission.

Finally, in 2016, the D.C. Circuit upheld the 2015 Open Internet Order's finding that Section 230's definition of "interactive computer service" did not define BIAS as an information

[130] Child Online Protection Act, Pub. L. 105-277, 112 Stat. 2681 (codified at 47 U.S.C. § 231).

[131] *See* H.R. Rep. No. 105-85, at 1546 (1998) (Conf. Rep.).

service. In *USTelecom*, the D.C. Circuit held the FCC was correct that it was "unlikely that Congress would attempt to settle the regulatory status of broadband Internet access services in such an oblique and indirect manner, especially given the opportunity to do so when it adopted the Telecommunications Act of 1996."[132] Amazingly, the NPRM does not even acknowledge the conflict that its reading of Section 230 creates with the D.C. Circuit's interpretation in *USTelecom*.

The D.C. Circuit further explained that, consistent with Supreme Court precedent, Congress does not "hide elephants in mouseholes" by "alter[ing] the fundamental details of a regulatory scheme in vague terms or ancillary provisions."[133] Thus, it is also implausible that Congress intended Section 231 to guide the Commission's decision making regarding the appropriate classification of BIAS.

C. Add-on Applications Bundled With Broadband Service Do Not Transform It into an Information Service

Beginning in the 2002 Cable Modem Order, when the broadband market was "still nascent, and the shape of broadband deployment [was] not yet clear,"[134] several Commission decisions found versions of broadband service to be "a single, integrated service that enables that subscriber to utilize Internet access service through a cable provider's facilities and to realize the benefits of a comprehensive service offering."[135] These findings relied heavily on the typical inclusion of additional applications, such as "e-mail, newsgroups, and the ability to create a web

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[132] *United States Telecom Ass'n v. FCC*, 825 F.3d 674, 702-703 (D.C. Cir. 2016).

[133] *Id.* (citing *Whitman v. American Trucking Ass'ns*, 531 U.S. 457, 468 (2001)).

[134] *Cable Modem Order* 4843-44 para. 83.

[135] *Cable Modem Order* at 4823 para. 38; *see also id.* at 4822 para. 38 (finding that "cable modem service is an offering of Internet access service, which combines the transmission of data with computer processing, information provision, and computer interactivity, enabling end users to run a variety of applications").

page that is accessible by other Internet users," in the service offered by broadband providers.[136] For example, the Cable Modem Order found that:

> 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.[137]

However, when the Commission examined an updated record in 2015, it found that "the market for both fixed and mobile broadband Internet access service has changed dramatically."[138] In particular, the "widespread penetration of [broadband service] has led to the development of third-party services and devices and has increased the modular way consumers have come to use them."[139] Especially from the perspective of end users, access to third-party content and applications had become broadband's predominant function, relative to the importance of access to ISP-provided content and applications.[140]

This record in support of this finding has only gotten stronger since 2015. As described above, the predominant applications on today's Internet are unquestionably modular, and broadband customers perceive a clear distinction between their broadband service and the services, content, and applications to which it provides access. As the D.C. Circuit found last year:

> That consumers focus on transmission to the exclusion of add-on applications is hardly controversial. Even the most limited examination of contemporary broadband usage reveals that consumers rely on the service primarily to access third-party content.[141]

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[136] *Id.* at 4821, para. 37.
[137] *Id.* at 4822, para. 38.
[138] *2015 Open Internet Order* at 5751-52, para. 346.
[139] *Id.* at 5753, para. 347; *see also id.* at 5753-54, paras. 348-349.
[140] *Id.* at 5754-55, paras. 349-350.
[141] *USTA v. FCC*, 825 F.3d 674, 698 (D.C. Cir. 2016).

Take email, for example. Third-party email services are vastly more popular than the email services offered by broadband providers.[142] As a result, although many ISPs still bundle email service with their Internet access offerings, not all of them do, with at least one large provider recently deciding to cease such service altogether.[143]

This pattern also holds true for other add-on applications. While a few broadband providers offer cloud file storage bundled with their Internet access service, third-party providers are far more popular.[144] The same is true for web hosting, which is entirely dominated by independent providers.[145] Likewise, most major ISPs have stopped providing newsgroup services.[146] At a minimum, if the Commission refers to bundled add-on applications in justifying a reclassification of broadband service as an information service, it must account for the

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[142] *See* Inntopia, *The most popular email domain resorts send to just keeps growing*, Inntopia (Feb. 28, 2017), http://corp.inntopia.com/email-domain-update-2017/ (finding that five other email services were far more popular than the largest ISP-run service--whereas Gmail accounted for 29.3% of addresses to which email was delivered, and Yahoo accounted for 17.8%, Comcast was at only 4%); *see also* Omair Khan, *Major Email Provider Trends in 2015: Gmail's Lead Increases,* MailChimp (Jul. 15, 2015) https://blog.mailchimp.com/major-email-provider-trends-in-2015-gmail-takes-a-really-big-lead/; Ross Miller, *Gmail now has 1 billion monthly active users*, The Verge (Feb. 1, 2016), https://www.theverge.com/2016/2/1/10889492/gmail-1-billion-google-alphabet (as of February 2016, Gmail had 1 billion users worldwide).

[143] *Email Service Notice*, Verizon https://www.verizon.com/Support/Residential/email/migrations.htm (last visited Jul. 17, 2017) (Verizon announcing decision to "close down our email business," because "[o]ver the years we've realized that there are more capable email platforms out there").

[144] *See, e.g.*, Erin Griffith, *Who's winning the consumer cloud storage wars?,* Fortune (Nov. 6, 2014) http://fortune.com/2014/11/06/dropbox-google-drive-microsoft-onedrive/.

[145] *See, e.g.*, HostAdvice, *Top 10 Web Hosting Companies in United States - Market Share 2017*, https://hostadvice.com/marketshare/us/ (last visited Jul. 17, 2017) (reporting the top 30 web hosting companies in the United States by market share, none of which appear to be broadband access providers).

[146] *See, e.g.*, *United States, Usenet Newsgroups Provider Reviews*, http://www.ngprovider.com/isp-newsservers.php#US (last visited Jul. 17, 2017).

declining prevalence and use of these applications, and also explain whether its classification must vary according to the extent of add-on applications offered by a particular broadband provider (and if not, why not).

Even aside from the dominance of third party applications and services, there is another reason why add-on applications that are bundled with broadband Internet service no longer transform the entire service package into a "single, integrated" information service.[147] The present factual record regarding add-on services makes clear that they are not "functionally integrated"[148] nor otherwise "inextricably intertwined"[149] with the transmission function offered in broadband service. As a technical matter, a broadband user need not use any of these add-on services, such as email and web hosting, in order to use their broadband service to access other Internet endpoints. The reverse is also true: even when a broadband user decides to use a bundled application provided by her ISP, access to that bundled application no longer requires the use of that same provider's broadband access network. For example, a Comcast broadband subscriber can easily access their Comcast webmail interface and the Comcast email servers from any other access network.

These technical realities are consistent with end user perceptions. This functional separation of add-on applications from access networks is hardly a surprise, given the Internet's typical separation of the application layer from the network and other layer. As the D.C. Circuit found last year, "the record contains extensive evidence that consumers perceive a standalone offering of transmission, separate from the offering of information services like email and cloud

[147] *Cable Modem Orde*r at 4824, para. 41.
[148] *Brand X*, 545 U.S. at 991.
[149] *Id.* at 978.

storage."[150] As detailed above, the present day record is the same, and leaves no room for any other reasonable conclusion. Finding otherwise would allow a telecommunications provider to deny and evade the true functional classification of its offerings, simply by bundling their telecommunications service with any number of extraneous, non-telecommunications services.[151]

It is also important to note that the classification of telecommunications providers as common carriers is not all-or-nothing under the Communications Act. Instead, a provider is a common carrier "only to the extent that it is engaged in providing telecommunications services."[152] This is a codification of longstanding common carriage precedent, which recognizes that, "[s]ince it is clearly possible for a given entity to carry on many types of activities, it is at least logical to conclude that one can be a common carrier with regard to some activities but not others."[153] Because common carriage is a description applied to particular activities, as opposed to characterizing entire entities, the Commission must parse the various offerings in a service provider's bundle. At a minimum, statutory text and precedent both require genuine functional integration from the end user perspective in order to characterize some larger bundle of services as entirely telecommunications services or entirely information services.

D. Other Incidental Provider Activities Fall Within the Telecommunications Management Exception and/or Do Not Otherwise Transform Broadband Service into an Information Service

The NPRM suggests that broadband service includes a variety of other services—in particular, DNS, caching, protocol conversion, and firewalls—that each constitute an information

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[150] *USTelecom*, 825 F.3d at 704-705.

[151] *See 2015 Open Internet Order* at 5773, para. 376 (quoting *Brand X*, 545 U.S. at 997-98).

[152] 47 U.S.C. § 153(51).

[153] *NARUC II*, 533 F.2d 601, 608 (rejecting Commission's status-based argument that certain communications via cable "are not common carrier communications because they are carried on by entities (cable operators) previously adjudged to be non-common carriers").

service, transforming the functional nature of the entire service offering. Each of these arguments is entirely without merit, for a combination of three different reasons. First, most of these activities are network-layer functions that do not even meet the basic definition of an information service, as properly understood. Second, none of these activities are functionally integrated with the modular transmission function in broadband service, and thus they do not change the latter's identity as a telecommunications service. Third, the factual record shows that each of these activities falls within the telecommunications management exception.

Under the telecommunications management exception, an activity (i.e., "capability") that would otherwise meet the definition of an information service does not qualify if it "include[s] any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service."[154] This provision codified the long-established concept of an "adjunct-to-basic" service.[155] As the Commission stated in 2015:

> Such functions, the Commission has held: (1) must be "incidental" to an underlying telecommunications service—i.e., "'basic' in purpose and use"" in the sense that they facilitate use of the network; and (2) must "not alter the fundamental character of [the telecommunications service]."[156]

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[154] 47 U.S.C. § 153(24).

[155] *North Amer. Telecoms. Ass'n Petition for Declaratory Ruling Under Section 64.702 of the Comm'n's Rules Regarding the Integration of Centrex, Enhanced Servs., and Customer Premises Equip.*, 101 F.C.C. 2d. 349, paras. 22-28 (1985) (*NATA/Centrex Order*).

[156] *2015 Open Internet Order* 5766 para. 367 (quoting *NATA/Centrex Order*, 101 F.C.C. 2d. 359-61, paras. 24, 27, 28). *See also id.* at para. 367 (noting examples of "speed dialing, call forwarding, [and] computer-provided directory assistance" that were found to be adjunct-to-basic services, even though they involved information retrieval through computer processing (quoting *Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as Amended*, CC Docket No. 96-149, First Report and Order and Further Notice of Proposed Rulemaking, 11 F.C.C. Rcd. 21905, 21958, para. 107 n. 245 (1996) (*Non-Accounting Safeguards Order*), recon., 12 F.C.C. Rcd. 2297, 2298-99, para. 2 (1997))).

Thus, services that "are used solely to facilitate the movement of information"[157] are not information services.[158]

1. DNS

Whereas other incidental services like caching operate at the network layer, DNS ("Domain Name System") service does operate at the application layer.[159] However, DNS is unlike other Internet applications:

> Like HTTP, FTP, and SMTP, the DNS protocol is an application-layer protocol since it (1) runs between communicating end systems using the client-server paradigm, and (2) relies on an underlying end-to-end transport protocol to transfer DNS messages between communicating end systems. In another sense, however, the role of the DNS is quite different from Web, file transfer, and e-mail applications. Unlike these applications, the DNS is not an application with which a user directly interacts. Instead, the DNS provides a core Internet function--namely, translating hostnames to their underlying IP addresses, for user applications and other software in the Internet.[160]

In brief, DNS works as follows: an application (such as a Web browser) running in an end system needs to translate a domain name (such as is used in a hypertext Web link) to an IP

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[157] *In re Amendment of Sections 64.702 of the Commission's Rules and Regulations* (*Computer III*) (Docket No. 85–229), 104 F.C.C.2d 958 (1986) at para. 10.

[158] In fact, the Commission has repeatedly found that services necessary for the provision of transmission services should themselves be regulated as telecommunications services, whether those services are technological in character or not. For instance, in 2008, the Commission wrote that:

> We have previously found that services or functions that are "incidental or adjunct to common carrier transmission service" – i.e., they are "an integral part of, or inseparable from, transmission of communications" – should be classified as telecommunications services. For instance, the Commission has found that central office space for collocation, certain billing and collection services, and validation and screening services should be treated for regulatory purposes in the same manner as the transmission services underlying them, notwithstanding that none of these services actually entails transmission.

Bright House Networks v. Verizon Cal., Memorandum Opinion & Order, 23 F.C.C. Rcd.. 10704, 10715 para. 31 (2008) (footnote omitted).

[159] *See* Kurose & Ross at 50.

[160] *Id.* at 129.

address, in order to send requests to the corresponding server over the Internet. These queries are sent to a DNS server, which replies with a message containing the desired address, which is passed back to the inquiring application.[161] Although these interactions are typically more complex, with a series of different client and server interactions,[162] "from the perspective of the invoking application in the user's host," and thus from the perspective of the end user himself, "DNS is a black box providing a simple, straightforward translation service."[163] Broadband service providers typically operate DNS servers, which translate domain names to IP addresses in response to requests from their customers.

Despite operating at the application layer, DNS does not transform broadband service into an "information service" under the Communications Act, for at least two separate reasons. First, DNS is not functionally integrated or otherwise inextricably intertwined with the transmission function in broadband access service. It is true that many and likely most broadband customers use the default DNS server specified by their ISP. However, this is not required or at all necessary to use their ISPs broadband access service. Many third parties, such as Google and Cisco, offer public DNS services.[164] A broadband customer can configure the software on her device and router to use one of these alternative DNS servers, instead of her ISP's.[165]

If a broadband provider shut down its DNS server (and did not specify a replacement), this would likely be inconvenient for its users, in that they would be required to configure their

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[161] *Id.*

[162] *See, e.g.*, id. at 133-34.

[163] *Id.*

[164] *See, e.g.*, Tim Fisher, *Free and Public DNS Servers*, Lifewire (July 8, 2017) https://www.lifewire.com/free-and-public-dns-servers-2626062.

[165] *E.g.*, Google, *Get Started*, https://developers.google.com/speed/public-dns/docs/using (detailing instructions for configuring network settings to use Google Public DNS).

systems to use another DNS provider, at least before they could easily use any application that relies on DNS to operate smoothly.[166] But once configured, their Internet access service would run as normal.

Second, even if DNS is functionally integrated with the transmission function in broadband access service, it would fall within the telecommunications management exception, and thus not qualify as an information service. As detailed above, the DNS server operated by an ISP performs what is essentially a "network function,"[167] despite its formal operation at the application layer. The DNS server translates domain names into IP addresses not to provide that information in and of itself, but instead because it allows the applications running on customer end systems to route information efficiently and correctly. Thus, when provided by an ISP, DNS plainly facilitates use of the provider's access network to move information across it and onto the rest of the Internet. Nor does the provision of DNS alter the fundamental character of broadband service in any way.

This conclusion is especially apparent from the end user's perspective of DNS, in several different respects. In the typical communication between an end system and a DNS server, the user never sees (or is even aware of) the IP address information returned by the server. Instead, it is immediately acted upon by an application on the user's system to route data to the correct destination over the Internet.[168] Nor does the user actually seek to learn or otherwise comprehend

[166] To be clear, DNS translation is not actually required for a user to send and receive Internet traffic over a broadband access network. For example, users could theoretically access websites according to their numerical IP addresses instead of their domain names.

[167] Kurose & Ross at 50.

[168] In this regard, DNS can be understood as a functional interface between applications that use domain names and the IP transmission service offered by a broadband network. Such an interface is equivalent in purpose and end result to other "socket" interfaces between application-layer processes and the network layer. Kurose & Ross at 89.

the IP address returned by the DNS server—the only use of this information is to facilitate the transmission of other application-layer data (i.e., the information the user actually cares about). Finally, when it comes to the performance of a DNS service, the end user cares primarily about the speed of the "DNS lookup time," because DNS is effectively one step in the process of requesting and receiving a website (or other application content) from a remote server, and delays in DNS server responses will result in a delay in when an end user receives the information she desires.[169] Just like broadband access service, DNS services are primarily evaluated in terms of the speed of transmissions.

Other characteristics of DNS reinforce that its function is to facilitate the transmission of information across a broadband access network, as opposed to providing an information generating capability for its own sake. A local DNS server operated by an ISP does not maintain unique information, but instead acts as a sort of "proxy" for DNS queries, forwarding requests as necessary up to a larger hierarchy of higher-level DNS servers, which will ultimately return the correct IP address for a specific domain.[170] Thus, an ISP's local DNS server offers a connection to the larger DNS.[171]

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[169] Archana Kesavan, *Comparing the performance of popular public DNS providers*, Network World (May 10, 2017), http://www.networkworld.com/article/3194890/internet/comparing-the-performance-of-popular-public-dns-providers.html; *see also* Google Public DNS, *Performance Benefits* (last updated June 23, 2016), https://developers.google.com/speed/public-dns/docs/performance (discussing "causes and mitigations of DNS latency").

[170] *See* Kurose & Ross at 129-134 (describing process of communications between local DNS server and root, top-level domain, and authoritative DNS servers).

[171] In certain instances, a local DNS server may return an IP address that is has already cached for a domain name, based on the information it received from other DNS servers in response to a previous request. *Id.* at 134-35.

2. Caching

Caching involves "the storing of copies of content at locations in the network closer to subscribers than their original sources."[172] Although broadband providers may include such functionality in their access networks, this does not transform broadband service as a whole into an information service, for three independent reasons.

First, even under the ordinary definition of an information service, caching does not qualify. It is a "network entity" that provides intermediate storage of information from a remote host on the Internet, to be used in response to repeated user requests for identical information from that same destination.[173] Web caches, also known as proxy servers, execute processes to check whether the cached information has been updated at its original source, meaning that the cached information needs to be refreshed.[174] This is necessary because a "requirement for any caching system is the ability to ensure that users see the same content from a network cache as they would from the Web."[175] Thus, a Web cache does not alter the form or content of the communications being sent between.

Furthermore, a Web cache does not, on its own, provide a capability for "generating, acquiring, storing, transforming, [etc.]" information via telecommunications. Like other routers and other equipment in a broadband access network, proxy servers are functionally distinct from the end systems at the edges of the Internet. They do not independently generate, store or process

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[172] *Cable Modem Order*, 17 FCC Rcd at 4810 n. 76.
[173] Kurose & Rose at 110-111.
[174] *Id.* at 114-116.
[175] Cisco, *Network Caching Technologies*, http://docwiki.cisco.com/wiki/Network_Caching_Technologies#Ensuring_Fresh_Content (discussing methods for "Ensuring Fresh Content").

information—instead, they only transmit the information sent from an end system, as specifically requested by another end system.

Regardless, even if caching would otherwise meet the definition of an information service, it falls within the telecommunications management exception. Proxy servers have two primary functions from the perspective of a broadband access provider. First, they "can substantially reduce the response time for a client request," providing an effective speed boost to the transmission of information over the network.[176] Second, proxy servers "can substantially reduce traffic on an institution's access link to the Internet," which may mean the institution "does not have to upgrade bandwidth as quickly, thereby reducing costs."[177] Thus, caches plainly facilitate "economical, reliable movement of information" across the network.[178] And they do so not just for the benefit of the end user, who may experience faster transmission, but also for the benefit of the network provider, reducing the resource demands and traffic loads of their network.[179]

Finally, caching does not transform the nature of broadband access service because it is not functionally integrated with the rest of such service. While caching may, in practice, speed transmissions and reduce traffic loads on a broadband provider's network, caching is never required for a customer to access information from some other host on the Internet. For example, if information from a particular website is not stored in a user's proxy server, the original web server will receive the user's HTTP requests and respond accordingly. Furthermore, while

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[176] Kurose & Ross at 111.

[177] *Id.*

[178] *Computer II*, 77 FCC 2d at para. 95.

[179] *See also 2015 Open Internet Order* at para. 372, n. 1052 (also contending that caching is "akin to a 'store and forward technology [used] in routing messages through the network as part of a basic service'" (*quoting Computer II*, 77 FCC 2d at 421, para. 97 n. 35)).

broadband users will typically want to use a proxy server for faster responses to their Web requests, there is no requirement that they use their ISP's proxy server. Like third-party DNS servers, a user can configure her end system to use an alternative proxy server.[180]

Furthermore, it is not the ISPs but other third-parties who provide much of the actual caching functionality for broadband customers in the present day. "Content Distribution Networks" (CDNs) operate many different servers and storage facilities on behalf of content providers, to store copies of frequently-requested information closer to end users.[181] A CDN may be either a private CDN—meaning it is "owned by the content provider itself"—or a third-party CDN such as Akamai or Limelight, which "distributes content on behalf of multiple content providers."[182] In either case, it is these CDNs, and not the ISPs, who are operating the caching and optimization networks. For example, private CDNs are becoming increasingly crucial to bandwidth-intensive Internet traffic such as video. Netflix operates its own private CDN, and installs its own servers within ISP facilities."[183] Likewise, Google uses its private CDN for YouTube, with "server clusters in many hundreds of different IXP and ISP locations."[184] Cisco estimates that such CDNs—both public and private—will carry 71% of Internet traffic by

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[180] *See* Kurose & Ross at 110 (noting the specification of a proxy server in a Web browser's settings).

[181] *See id.* At 149-50; *see also* Akamai, What is a CDN?, https://www.akamai.com/us/en/cdn/what-is-a-cdn.jsp (A CDN is "a highly-distributed platform of servers optimized to deliver content including web applications and streaming media. This network of servers is dispersed across many physical and network locations, in order to respond directly to end user requests for web content and fast, secure media delivery. It acts as an intermediary between a content server, also known as the origin, and its end users or clients.").

[182] Kurose & Ross at 150.

[183] *Id*. at 155.

[184] *Id*. at 156.

2021.[185] Even if ISPs ceased to provide their own proxy servers, it is likely that, at least for bandwidth-intensive applications, CDNs would replace most or all of their functionality, to the extent they have not already done so.

3. Protocol Conversion

The NPRM contends that ISPs "routinely change the form or content of the information sent over their networks," including when they use "protocol processing to interweave IPv4 networks with IPv6 networks."[186] This claim misunderstands the functional distinction between network-layer protocols and application-layer protocols. IPv4 and IPv6 are network-layer protocols, which define the format of IP packets. IPv4 and IPv6 vary according to the length of IP addresses they use (32 bits in the former, 128 bits in the latter), along with other differences in the formats and fields they prescribe for packet headers.[187] These are network protocols to handle "a packet's path from source to destination."[188] In contrast, and as described above, the content of the data payloads in both IPv4 and IPv6 packets is determined by the application-layer protocols running in the end user systems.[189] For example, HTTP requests can be sent via either IPv4 or IPv6.

Protocol processing in the network layer does not alter the form or content of the information in packet payloads, which is being sent or received by an end user's applications. In particular, IPv4-to-IPv6 conversion processes do not alter the form or content of the underlying

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[185] Cisco, *Cisco Visual Networking Index: Forecast and Methodology, 2016-2021* (June 6, 2017), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html.

[186] NPRM at para. 30.

[187] *See* Kurose & Ross at 330-332 (describing IPv4 datagram); 349-353 (describing IPv6 datagram).

[188] *Id.* at 8.

[189] *See id.* at 50.

user data being transmitted over the Internet. The most widely adopted process for this conversion is "tunneling."[190] It works by creating a virtual tunnel between two compatible IPv6 routers that are separated by a number of intermediate, incompatible IPv4 routers. "[T]he IPv6 node on the sending side of the tunnel . . . takes the entire IPv6 datagram and puts it in the data (payload) field of an IPv4 datagram."[191] The IPv6 router on the other end of the tunnel extracts the original IPv6 packet from the IPv4 packet in which it was encapsulated. This process leaves the former packet unchanged. Nor is there any change in the form or content of the data payloads therein.

Furthermore, even if IPv4-to-IPv6 conversion changes the form or content of the information sent or received by an end user, it would still fall within the telecommunications management exception." Such network-layer protocol processing facilitates the efficient and reliable transmission of information across the Internet, and allows a network operator to upgrade its systems to IPv6 while preserving its ability to communicate with IPv4 systems. Again, this is not the same as protocol-conversion running at the application layer. Furthermore, from the perspective of the end user, IPv4 to IPv6 processes operate the same as other routing operations—indeed, the basic purpose of such processes is to allow network routing to proceed as normal.

4. Network Security

The NPRM also contends that broadband providers "routinely change the form or content of the information sent over their networks . . . by using firewalls to block harmful content. . ."[192] This argument fails for reasons similar to the previously-discussed functions. Firewalls are

[190] *Id.* at 352.
[191] *Id.* at 352-53.
[192] *NPRM* at para. 30.

network-layer processes installed on routers and other Internet-connected systems. They work by inspecting the contents of a packet, including its IP and TCP header fields, and blocking the further transmission of certain packets according to its policies.[193] Firewalls thus determine whether or not a packet can continue onward to its intended destination. They do not, however, change the form of content of information sent or received by end users—at most, they simply block its transmission. Furthermore, from the perspective of the end user, firewalls do little more than block unwanted and intrusive traffic from reaching them. For the Commission to find otherwise, there would need to be a record of how often and in what ways ISPs firewalls typically interfere with legitimate, intended transmissions to and from end users.

In any event, the operation of firewalls plainly falls within the telecommunications management exception. Such security processes protect the integrity and continued operation of a provider's own network, and do not alter the fundamental character of the modular transmission function in broadband access service. Firewalls are also analogous to various "call blocking" services in telephone networks, which have been regarded as adjunct-to-basic services.[194]

IV. The NPRM Distorts and Misinterprets Commission Precedent

A. The NPRM Proposes the Abandonment of the Commission's Longstanding Commitment to Protecting Internet Openness

The protection of consumer choice and the openness of communications networks has been "a hallmark of commission policy for over forty years."[195] In its 1968 *Carterfone* decision,

[193] Kurose & Ross at 348; *see also id.* at 651-52 (describing how "all traffic from outside to inside" the network passes through a firewall, and "[o]nly authorized traffic, as defined by the local security policy, will be allowed to pass").

[194] *See 2015 Open Internet Order* at para. 373.

[195] *2015 Open Internet Order* at 5618, para. 60.

the Commission recognized that "a customer desiring to use an interconnecting device" of their choice with their telephone service "should be able to do so, so long as the interconnection does not adversely affect the telephone company's operations or the telephone system's utility for others."[196] This policy of openness continued into the Computer Inquiries, which sought to ensure that "non-discriminatory access can be had to basic transmission services by all enhanced services."[197]

The Commission's recognition of the paramount value of openness, and the need to retain authority to protect it, is a bedrock of Commission decisions in the Internet age. While past Commission decisions have reached various conclusions regarding the classification of Internet access and related services, each has consistently reaffirmed this fundamental commitment to protecting the openness of the Internet:

- In the 1998 Stevens Report, the Commission sought to distinguish "competitive technologies from regulated services not yet subject to full competition remains viable."[198] It recognized that "[c]ommunications networks function as overlapping layers, with multiple providers often leveraging a common infrastructure," and focused on whether "the underlying market for provision of transmission facilities is competitive or is subject to sufficient pro-competitive safeguards."[199]

- In the 2002 Cable Modem Order, the Commission described cable broadband as a "nascent" business,[200] and declared its intent "to monitor the industry closely," including whether developments in the cable broadband market would "provide consumers a choice of ISPs without government intervention, or whether the absence of widespread business arrangements raises a level of concern sufficient to warrant Commission action."[201] In particular, the Commission inquired whether it should impose "multiple ISP access requirements" in order to "spur investment in facilities to provide high-speed Internet

[196] *In the Matter of Use of the Carterfone Device in Message Toll Tel. Serv.*, 13 F.C.C. 2d. 420, 423-424 (1968).

[197] *Computer II*, 77 FCC 2d at 475, para. 231.

[198] *Stevens Report* 13 FCC Rcd. at para. 95.

[199] *Id*.

[200] *Cable Modem Order* at 17 FCC Rcd. at 4843, para. 83.

[201] *Id*. at 4844, para. 84.

access service and innovation among service providers, ISPs, and creators of content."[202]

- In 2005, the Commission adopted the Internet Policy Statement, which proclaimed that its "Title I ancillary authority" gave it the "jurisdiction necessary to ensure that providers of telecommunications for Internet access or Internet Protocol-enabled (IP-enabled) services are operated in a neutral manner."[203] It articulated four central principles "to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers."[204]

- In the 2005 Wireline Framework Order, the Commission stated that it had "articulate[d] principles recognizing the importance of consumer choice and competition in regard to accessing and using the Internet" in the adoption of the Internet Policy Statement.[205] The Commission declared its intent "to incorporate these principles into our ongoing policymaking activities," and warned that, "[s]hould we see evidence that providers of telecommunications for Internet access or IP-enabled services are violating these principles, we will not hesitate to take action to address that conduct."[206]

- In the 2008 Comcast-BitTorrent Order, the Commission reaffirmed its intent to uphold its "duty to preserve and promote the vibrant and open character of the Internet" by enforcing the principles found in the Internet Policy Statement."[207] It went on to find that the Comcast practices at issue in the proceeding had "significantly impeded Internet users' ability to use applications and access content of their choice," and "pose[d] a substantial threat to both the open character and efficient operation of the Internet."[208]

- In the 2010 Open Internet Order, the Commission set forth new rules "to preserve the Internet as an open platform for innovation, investment, job creation, economic growth, competition, and free expression."[209] The Commission went on to articulate, in great detail, both the values derived from Internet openness and the "real threats" that endangered this openness.[210]

- In the 2015 Open Internet Order, the Commission reaffirmed that the "benefits of an open Internet are undisputed," and required "carefully tailored rules to protect Internet

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[202] *Id*. at para. 85.

[203] *In the Matter of Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, 20 F.C.C. Rcd. 14986, 14988, para. 4 (2005) (*Internet Policy Statement*).

[204] *Id*.

[205] *Wireline Framework Order*, 20 F.C.C. Rcd. 14853, 14904 para. 96 (2005).

[206] *Id*.

[207] *In the Matter of Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications*, 23 F.C.C. Rcd 13028, 13034, para. 13 (2008) (quoting *Internet Policy Statement*, 20 FCC Rcd at 14988 para. 5) (*Comcast-BitTorrent Order*).

[208] *Id*. at 13508, para. 51.

[209] *2010 Open Internet Order* 17906 para. 1.

[210] *E.g., id. at* 17907 paras. 3-4.

openness," based on a "strong legal foundation" including Title II of the Communications Act.[211] This decision evolved out of the Commission's commitment, over more than a decade, "to protecting and promoting an open Internet."[212]

The NPRM proposes a radical break with the Commission's past resolve to protect Internet openness. Nothing in the NPRM reaffirms any intent to preserve legal authority necessary to advance this fundamental policy. Instead, it shows nothing but skepticism towards potential sources of Commission authority to protect Internet openness—not only proposing to reclassify broadband Internet service out of Title II, but also suggesting that Section 706 is merely "hortatory" and instead reflects a "deregulatory bent," without containing an affirmative grant of authority.[213] Although the NPRM claims general fidelity to the principles articulated in the Internet Policy Statement, it provides no blueprint whatsoever for how the Commission would continue to advance such principles. Nor does the NPRM at all address the implications of recent D.C. Circuit case law, which has cast significant doubt on the extent of the Commission's ancillary jurisdiction. This is crucial, because the Commission's earlier decisions regarding broadband Internet service consistently assumed the existence of substantial authority to safeguard openness, even under Title I.

Instead of answering these critical questions, the NPRM defines "the free and open Internet" entirely by the absence of regulatory intervention, or even the possibility of regulatory intervention.[214] Furthermore, the NPRM repeatedly suggests that the legal authority of other agencies, under other bodies of law such as antitrust, may be sufficient to protect Internet openness without any role for the Commission.

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[211] *2015 Open Internet Order* at 603, paras 1-4.

[212] *Id*. at para. 1; see also *Verizon*, 740 F.3d at 631-32 (detailing history of Commission's commitment to protect Internet openness).

[213] *2017 NPRM* at para. 101.

[214] *2017 NPRM* at para. 70.

In essence, the NPRM's proposes that the Commission abandon its commitment to safeguarding the openness of the Internet, and communications networks generally. Such a move would be unjustifiable, and in any event, the Commission must expressly acknowledge and explain such a departure from established policy.

B. The NPRM Proposes that the Commission Effectively Abandon Its Fundamental Consumer Protection and Other Policy Goals for Broadband Networks

In addition to its longstanding commitment to protect Internet openness and consumer choice, the Commission has also repeatedly declared its intent to advance other public interest goals of the Communications Act in its treatment of Internet access service, even in the absence of Title II authority:

- The Cable Modem Order declared that it had ancillary authority "to promulgate regulations to effectuate the goals and accompanying provisions of the [Communications] Act in the absence of explicit regulatory authority."[215] It sought comment on various sources of such authority,[216] including its authority pertaining to a variety of particular issues, such as universal service and the protection of subscriber privacy.[217]

- The Wireline Framework Order contended that it had ancillary jurisdiction for "any consumer protection, network reliability, or national security obligation that we may subsequently decide to impose on wireline broadband Internet access service providers."[218] The Commission also emphasized that it would "not hesitate to adopt any non-economic regulatory obligations that are necessary to ensure consumer protection and network security and reliability in this dynamically changing broadband era."[219]

- In the Wireless Declaratory Ruling, the Commission "remind[ed] wireless broadband Internet access service providers that any consumer protections obligations adopted in the [Wireline Framework Order] will extend to wireless broadband Internet access services,"[220] reemphasizing that "consumer protection remains a priority and that the Commission would use its ancillary authority "to ensure that consumer protection needs

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[215] *Cable Modem Order*, 17 F.C.C. Rcd. at 1841, para. 75.
[216] *Id.*
[217] *Id*. at 4853-54, paras. 110-112.
[218] *Wireline Framework Order*, 20 F.C.C. Rcd. at 14914, para. 109.
[219] *Id*. at 14915, n. 111.
[220] *In the Matter of Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, 22 F.C.C. Rcd. 5901, 5925, para. 69 (2007) (*Wireless Declaratory Ruling*).

are met by all providers of broadband Internet access services regardless of the underlying technology, including providers of wireless broadband Internet access services."[221]

- In its 2007 Notice of Inquiry regarding broadband industry practices, the Commission again declared its "ancillary jurisdiction to impose regulatory obligations on broadband Internet access providers,"[222] in order to fulfill its core statutory mandate to "to make available ... a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges..."[223]

Here again, the NPRM ignores the Commission's longstanding commitment to advance the various social policies embodied in the Communication Act. The 2015 Open Internet Order contained an extensive analysis of its authority to pursue those policies under Title II, identifying specific sections from which the Commission declined to forbear—for example, to protect consumer, disabilities access, and infrastructure development.[224] The NPRM is all but silent on these points, instead merely suggesting that "restoring the classification status of broadband Internet access service to an information service will render any additional forbearance moot in most cases."[225]

The NPRM does ask for comments about the impact of reclassification on other policy issues, such as pole attachments.[226] But especially given the recent judicial skepticism of ancillary authority, nothing in the NPRM proposes or explains how the Commission will continue to uphold its prior commitment "to ensure that consumer protection needs are met by all providers of broadband service." The NPRM never reaffirms this policy in the first place. Instead, the NPRM seems to propose its practical abandonment. This would mark a major

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[221] *Id.* at 5924, paras. 70-71.

[222] *In the Matter of Broadband Industry Practices*, 22 F.C.C. Rcd. 7894, 7896, para. 5 (2007).

[223] *Id*. at para. 7 (quoting 47 U.S.C. § 1).

[224] *2015 Open Internet Order* at para. 434.

[225] *2017 NPRM* at para. 64.

[226] *See id.* at 66-69.

departure from the Commission's central policy goals regarding Internet access networks. Given that the Internet is the defining communications network of the present age, and offers a platform over which all communications are increasingly converging, such an abandonment would amount to an abdication of the Commission's basic statutory mandate.[227]

C. The NPRM Misrepresents the Regulatory History of Internet Access Service

The NPRM also distorts and misinterprets Commission precedent in other important ways, which cast serious doubt over its reading and application of the Communications Act. First, the NPRM hails a supposed "light-touch regulatory approach" towards Internet access service, stretching back "almost twenty years" to the Clinton Administration.[228] However, the NPRM conveniently omits a critical portion of this history: from 1980 to 2005, "facilities-based telephone companies were obligated to offer the transmission component of their enhanced service offerings . . . to unaffiliated enhanced service providers on nondiscriminatory terms and conditions pursuant to tariffs or contracts governed by Title II."[229] This open access regime was essential in the early emergence of online services such as dial-up ISPs, which guaranteed them access to the phone lines they needed to provide service."[230] The NPRM also ignores how this regime was applied to DSL service in particular, which required facilities-based wireline providers to offer unbundled transmission capacity to other ISPs.

The Commission would commit a basic error if it reclassified broadband Internet service

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[227] *See* 47 U.S.C. § 151.

[228] *2017 NPRM* at para. 1; *see also id.* at paras. 8-10.

[229] *2015 Open Internet Order* at para. 313; *see also Verizon*, 740 F.3d at 630 (describing the long history of how "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").

[230] *See* Jason Oxman, *The FCC and the Unregulation of the Internet*, FCC Office of Plans and Policy Working Paper No. 31 (July 1999), at 5 ("Open access across the telecommunications network has driven the deployment of innovative and inexpensive Internet access services.").

on the basis of decades-old Commission rationales and precedent, without acknowledging its full and accurate context. For example, the NPRM lauds the conclusions of the Stevens Report, drawing a line from 1998 to the present day, supposedly showing an unbroken "consensus" rationale for the classification of broadband Internet access as an information service.[231] But the NPRM's view fails to recognize both the open access rules that were in effect at the time of the Stevens Report as well as the prevalence of independent ISPs, who were separate from the facilities-based telephone companies and offered their service over a transmission service regulated under Title II.[232] In contrast, independent ISPs have essentially disappeared in today's broadband marketplace, such that "a broadband subscriber today essentially equates her last-mile transmission provider . . . with her ISP."[233] The NPRM misunderstands the Stevens Report in other ways as well. In particular, nothing in that decision resolved the appropriate classification of providers who offered Internet access over their own network facilities.[234]

Perhaps even more importantly, the NPRM also distorts and misunderstands the findings and reasoning in the *Computer Inquiries*. Much of this has already been detailed above, but we will recap here. First, the NPRM yet again overlooks open access rules that were at the heart of

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[231] *E.g.*, *2017 NPRM* at para. 38; *see also id.* at para. 10.

[232] *See* Rob Pegoraro, *The Trump administration gets the history of Internet regulations all wrong*, Washington Post (May 12, 2017), https://www.washingtonpost.com/posteverything/wp/2017/05/12/the-trump-administration-gets-the-history-of-internet-regulations-all-wrong/?utm_term=.1c4f5a1f4840 (detailing the regulatory history of Internet access service in the 1990s and 2000s, and how the NPRM's "history is wrong"); *see also* Jon Brodkin, *Ajit Pai accidentally supports utility rules and open-access networks*, Ars Technica (May 17, 2017), https://arstechnica.com/tech-policy/2017/05/ajit-pai-accidentally-supports-utility-rules-and-open-access-networks/.

[233] Nuechterlein & Weiser at 197; *see also id*. at 193 (noting the complexities and potential practical limitations of open access requirements as applied to cable Internet service).

[234] *See Stevens Report*, 13 F.C.C. Rcd. at 11530, para. 60; *id.* at 11535, n. 140 ("We express no view in this Report on the applicability of this analysis to cable operators providing Internet access service.").

the *Computer II* regime. Without such rules, it is highly unlikely that independent ISPs would have emerged in the first place, and yet it was the distinction between ISPs and facilities-based network providers that drove the practical distinctions between "enhanced" and "basic" service providers. Second, the NPRM overlooks *Computer II*'s lesson that a "basic" service may include "use[s] internal to the carrier's facility," such as "message or packet switching . . . that facilitate economical, reliable movement of information."[235] Such processing "does not alter the nature of the basic service."

Third, and most fundamentally, the NPRM misunderstands the distinction between "basic" and "enhanced services," as well as the purposes underlying these terms. *Computer II* proceeded from certain assumptions:

> As to common carrier regulation, availability of the telecommunications network would be a common denominator for any new entrant or existing provider of enhanced services; the same communications services would be available to all providers of enhanced services on the same terms and conditions.[236]

Computer II thus assumed that the perpetual existence of "basic" telecommunications services, which would be separately identifiable from the enhanced services whose traffic they transmit. "Because enhanced services are dependent upon the common carrier offering of basic services, a basic service is the building block upon which enhanced services are offered."[237] In the present day Internet, the only coherent way to understand this framework is to recognize that enhanced services are the equivalent of third-party content and applications that are hosted on and run by end systems, and they depend upon broadband access networks to provide the basic, "virtually

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[235] *Computer II*, 77 F.C.C. 2d at 458, para 193.

[236] *Id.*

[237] *Id.* at 476, para. 231 (also noting that "an essential thrust of this proceeding has been to provide a mechanism whereby non-discriminatory access can be had to basic transmission services by all enhanced service providers").

transparent" transmission of IP traffic to and from end users.

V. Section 706 Is Not Merely "Hortatory"

The NPRM seeks to reimpose a rejected view of Section 706 of the Telecommunications Act of 1996, whereby the language is rendered merely "hortatory"[238]–that is, as statutory surplusage that neither grants nor restrains Commission authority, but merely expresses the sense of Congress that advanced telecommunications services are important.

However, the D.C. Circuit has already rejected this line of reasoning, and the Commission must abandon it. The court held unambiguously that Section 706 "furnishes the Commission with the requisite affirmative authority to adopt" broadband regulations.[239] The D.C. Circuit rightly subjected the previous FCC's use of Section 706 to a Chevron analysis, which demonstrates that 706 is subject to a number of reasonable interpretations that, with the proper administrative record, the Commission might be able to adopt. This Commission might prefer that the statute did not grant it authority and would rather not use it. But the threshold question of whether the provision grants the Commission authority has already been answered.

Thus, a minimizing interpretation of Section 706 does not give the Commission a means to pull the statutory rug out from under pro-consumer and pro-competitive rules under an air of legal inevitability. For example, the Commission cannot lament that it would like to enact certain privacy, transparency, or universal service rules, if only Congress would grant it the authority to do so–because Congress already has given it all the authority it needs. It would be arbitrary and capricious for the Commission to gut existing rules by claiming a lack of legal authority that has already been found to exist.

To this point, it is notable that the Commission has advanced a theory of Section 706

[238] *2017 NPRM* at para. 101.
[239] *Verizon v. Federal Communications Commission*, 740 F.3d 623, 635 (D.C. Cir. 2014).

without noting what the consequences of its adopting that theory would be. In a breathtaking piece of legal and policy overreach, every rule that depends on Section 706 could be rendered unenforceable if this Commission has its way. While such a reckless and hasty move would no doubt be overturned by the courts, the damage it could do in the interim would be hard to estimate.

Opponents of consumer protection and Open Internet rules frequently hide their policy preference–that broadband providers be unregulated–behind a fog of legalisms that allow them to pretend they share the same goals as consumer advocates but simply see various legal obstacles that make those goals unrealizable. But the DC Circuit has systematically removed those obstacles, holding first that Section 706 is a grant of authority, and then that reclassifying broadband providers as telecommunications is reasonable and supported by the record.[240] It is thus somewhat surreal to see the current Commission returning to hyper-technical parsing of the Communications Act, trying to find some trick that will enable it to eliminate popular consumer protections on the sly. To be sure, the current Commission lacks the evidentiary and policy rationale to modify the current Open Internet rules as it has proposed to do. But at least a debate on the merits of the issue can be conducted in good faith. That much cannot be said for attempts to undermine the Commission's ability to enact rules at all.

VI. The Economic Rationales for Reclassification of Broadband as an Information Service are Fundamentally Flawed

A. The NPRM puts forth claims about broadband investment that are untrue, immaterial, and incomplete.

1. The NPRM Confuses the Distinction Between Online Services and Broadband Access

[240] *USTelecom*, 825 F.3d at 694, 701-07.

The NPRM's opening claim is that "[t]he Commission's Title II Order has put at risk online investment and innovation, threatening the very open Internet it purported to preserve. Investment in broadband networks declined"[241] This is simply confused. "Online investment and innovation" refers to investment and innovation by internet edge services,[242] one of the primary drivers of our economy, not to investment in infrastructure like broadband networks. Investment in access networks is important, but the NPRM's phrasing is indicative of a systematic and willful refusal to recognize the distinction between internet services and access infrastructure—a rhetorical move that allows the NPRM to make the false claim that the FCC previously applied "utility-style regulation to the Internet" and imposed "government control of the Internet." [243] This capricious rhetorical move poisons the NPRM's analysis from the beginning.

As the FCC recognized in 2015, the Open Internet rules impose modest costs on ISPs, chiefly in the form of compliance and reporting requirements. However, these are far outweighed by the broader benefits to the economy, which are realized by ensuring that consumers have access to an open and competitive internet, where they can access the services and content of their choice. It is difficult to see how these modest costs would result in a rollback of deployment plans or have any other measurable effect on broadband investment, and no credible evidence has been provided that they have.

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[241] *2017 NPRM* at 4435 para. 4.

[242] "[C]onnected to, served by, or available through a system and especially a computer or telecommunications system." *Online*, Merriam-Webster Dictionary, available at https://www.merriam-webster.com/dictionary/online?utm_campaign=sd&utm_medium=serp&utm_source=jsonld (last visited Jul. 17, 2017).

[243] *2017 NPRM* at 4435 para. 3.

2. The NPRM Relies On Faulty Evidence of Broadband Investment

The NPRM claims that "Internet service providers stated that the increased regulatory burdens of Title II classification would lead to depressed investment,"[244] and then cites broadband industry-supported evidence claiming that investment has in fact declined.[245] While the NPRM begrudgingly notes that "[o]ther interested parties have come to different conclusions,"[246] it proceeds to uncritically assume that the broadband industry-supported assertions are true. They are not.

However, since the Commission appears to accept industry claims as the definitive source for data on post-Title II investment, the Commission must also take account of other industry statements. For example, Free Press has conducted a study that concludes that broadband capital expenditures have not decreased as a result of Title II.[247] It has also compiled a list of industry statements that back up its findings, where broadband industry executives unequivocally tell investors that Title II reclassification has not had any effect on their plans.[248] Because these statements were often made to investors or to the SEC, they can be assumed to be

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[244] *2017 NPRM* at 4448, para. 45.

[245] The Singer report is highly contested by Free Press and others. The Phoenix Center report analyses the supposed effects of investment starting in 2010, with the first "threat" of reclassification. But nothing about the FCC's current proposal would do anything to get rid of this "threat," which is simply the current legal state of affairs that the FCC has the authority to classify broadband providers as telecommunications. Even if this FCC classifies them as information services once again, it will still be the case that the FCC possesses the authority to, once again, reclassify them as telecommunications. While opponents of Open Internet rules may see this as a justification for legislative intervention, the fact is that the Phoenix study, whatever its other flaws, has no bearing on the current FCC's planned course of action.

[246] *2017 NPRM* at 4470, para. 116.

[247] S. Derek Turner, *It's Working: How the Internet Access and Online Video Markets Are Thriving in the Title II Era*, Free Press (May 2017), https://www.freepress.net/sites/default/files/resources/internet-access-and-online-video-markets-are-thriving-in-title-II-era.pdf.

[248] *Id.* at 10.

correct—otherwise, they could carry civil or criminal penalties. By contrast, regulated industries frequently mislead the FCC, or make unsubstantiated claims, with no penalty.

More broadly, though, "investment" in and of itself is not a legitimate policy goal. Only the results of investment—that is, improved broadband networks—should be relevant to the Commission's analysis.[249] Fortunately, as NCTA has pointed out and FCC data confirms, broadband continues to improve.[250] NCTA further observed that "two years is too short a time to fully evaluate the impact of a Title II regime because investment horizons are typically much longer than two years. Many of the investments made in 2015 and 2016 were set in motion several years before and may not have accounted for the prospect of Title II regulation."[251]

3. The NPRM's Theories of Regulatory Harm on Broadband Investment are Unsupported and Incoherent

The NPRM's claim that the 2015 Open Internet Order created regulatory uncertainty and regulatory burdens that have depressed broadband investment and innovation, resulting in negative consequences for American consumers, is mere conjecture and ungrounded in fact. The Commission's conclusions rely almost exclusively on unsubstantiated BIAS provider claims of regulatory uncertainty and hypothetical harm arising from the 2015 Open Internet Order. In reality, the Order's extensive use of forbearance, along with the its invitation to BIAS providers to seek advisory opinions, ensured that consumers, commerce, and innovation that rely on the free and open internet are protected, while the burdens and uncertainty on BIAS providers are

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[249] Harold Feld, *NCTA Proves Virtuous Cycle Works*, Public Knowledge (June 8, 2017), https://www.publicknowledge.org/news-blog/blogs/ncta-proves-virtuous-cycle-works.

[250] NCTA, *America's Internet Speeds Continue to Soar* (June 2, 2017), https://www.ncta.com/platform/broadband-internet/americas-internet-speeds-continue-to-soar/. *See also* Industry Access Services: Status as of June 30, 2016, Wireline Competition Bureau (April 2017), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-344499A1.pdf.

[251] Rick Chessen, *Dear Harold Feld*, NCTA (June 13, 2017), https://www.ncta.com/platform/public-policy/dear-harold-feld/.

minimized.

The NPRM's theory that the Open Internet Order has created an overly burdensome and uncertain regulatory environment for BIAS providers is not supported by the record the Commission cites to make its case. First, the NPRM claims that the Order's reclassification of BIAS has depressed capital expenditures by BIAS providers.[252] However, the NPRM's reliance on ISP-funded studies purporting to show a post-reclassification decline in investment is misplaced.

The NPRM accepts as gospel unsubstantiated ISP complaints of heavy regulatory burdens and regulatory uncertainty, and provides no supplemental data or analysis to justify its reliance on these claims, which amount to little more than a policy or philosophical preference to be free of oversight of any kind. In contrast to the Commission's approach, the D.C. Circuit has expressed skepticism toward a party's reliance on regulatory uncertainty. For example, in New England Power Generators Ass'n, Inc. v. FERC, the D.C. Circuit found a petitioner did not have standing in part because the petitioner's relied on claims of regulatory uncertainty, not actual injury, to show it had suffered harm.[253] The Court explained the petitioner's claim of harm was "predicated not on any injury legitimately traceable to the order, but on the potential for [the agency] to issue future, contrary orders," and that "broad-based market effects stemming from regulatory uncertainty are quintessentially conjectural."[254] The Court opined, "[i]t would be a strange thing indeed if uncertainty were a sufficiently certain harm to constitute an injury in fact."[255]

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[252] *2017 NPRM* at 4448-50 paras. 44-46.

[253] *See New England Power Generators Ass'n, Inc. v. FERC*, 707 F.3d 364, 369 (D.C. Cir. 2013).

[254] *Id*. (citing *Shell Oil v. FERC*, 47 F.3d 1186, 1202 (D.C. Cir. 1995).).

[255] *Id*.

In contrast to the D.C. Circuit, the FCC appears to accept that the mere whisper of hypothetical harm caused by regulatory uncertainty constitutes an actual injury to BIAS providers that justifies a total abandonment of its efforts to protect consumers online. For instance, the NPRM cites letters from small BIAS providers and municipal BIAS providers and claims these small providers have been forced to reduce network investment, halt network expansion, slow or delay introduction of innovative services, and not engage in anti-consumer and anti-competitive business practices.[256] However, the texts of the letters provides no evidence or detail regarding any actual injury these BIAS providers have suffered, and merely point to an ominous "black cloud" of regulatory uncertainty and requirements to comply with rules they claim they have no interest in violating.[257] At its most specific, the small ISPs allege that the 2015 Open Internet Order's internet conduct standard has a chilling on their business practices.[258]

New reporting on this issue undermines even those claims. "Multiple respondents, when asked if Title II was hurting them, gave an unqualified 'no.'"[259] Moreover many of the alleged harms listed by small ISPs in interviews—such as an alleged duty to provide new service on demand to anyone who asks for it, to continue providing service to a delinquent customer, or non-existent reporting requirements—are purely imaginary and not part of the Commission's

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[256] *2017 NPRM* at 4450 para. 47 n.119.

[257] *See Ex Parte* Letter of Herb Longware, President, Cable Communications of Willboro, Inc., et. al., to The Honorable Ajit Pai, Chairman, FCC, GN Docket No. 14-28, WC Docket No. 16-106 (filed Apr. 25, 2017) ("Small ISP Letter"); *Ex Parte* Letter of William Bottiggi, General Manager, BELD Broadband, et. al., to The Honrable Ajit Pai, Chairman, FCC, WC Docket No. 17-108 (filed May 11, 2017).

[258] *See* Small ISP Letter at 2.

[259] Jacob Kastrenakes, *The FCC Says Net Neutrality Destroys Small ISPs. So Has It?*, The Verge (Jul. 13, 2017), https://www.theverge.com/2017/7/13/15949920/net-neutrality-killing-small-isps.

rules.

Additionally, the 2017 NPRM and the BIAS providers cited therein fail to account for the fact that BIAS providers can substantially reduce any regulatory uncertainty by availing themselves of advisory opinions from the Enforcement Bureau concerning any of the open internet rules or network management practices,[260] as well as the Commission's decision to periodically issue enforcement advisories to keep parties abreast of existing legal standards regarding the rules.[261] In USTelecom, the D.C. Circuit found that this process would help companies "avoid an inadvertent infraction," and "provides regulated entities with 'relief from [remaining] uncertainty."[262]

The 2017 NPRM's reliance on regulatory uncertainty to justify its proposals is severely deficient. Undocumented and unsubstantiated claims of regulatory burdens and bare claims of regulatory uncertainty without any supporting analysis simply do not establish that the 2015 Open Internet Order has materially harmed broadband investment and deployment, nor do they justify a full-scale abandonment of the Commission's authority and efforts to protect consumers, ease broadband deployment, and promote universal service.

The 2015 Open Internet Order made considerable use of the Commission's forbearance authority,[263] ultimately forbearing from 30 statutory provisions, rendering more than 700 of the FCC's Title II rules inapplicable for BIAS.[264] Forbearance is a tool that gives the Commission flexibility to respond to a dynamic marketplace. It is a powerful tool, to be used with precision

[260] *See 2015 Open Internet Order* at 5682, para. 185; 5701, para. 219; 5706-08, paras. 229-236.
[261] *See id*. at 5709-10 paras. 240-41.
[262] *US Telecom v. FCC* at 738.
[263] *2017 NPRM* at 4444-45, para. 33.
[264] *2015 Open Internet Order* at 5616, para. 51.

and care, because it overrides the initial judgment of Congress that a particular statute protects the public interest. The 2015 Open Internet Order's substantial forbearance reflects a cautious approach that largely kept in place light-touch regulatory framework for BIAS, while also ensuring the Commission has the tools and authority it needs to protect consumers and address anti-competitive conduct. Also, the 2015 Open Internet Order was not the first time the FCC took a broad approach to forbearance. The Commission's forbearance Order for ethernet loops went even further, forbearing from every provision of the statute and every regulation with the exception of Sections 201, 202 and 208.[265] This broad forbearance was recently affirmed and left undisturbed by the Commission in its BDS Order.[266]

As the Commission explained, the 2015 Open Internet Order's extensive forbearance ensured that Title II was "tailored for the 21st Century," and applied fewer sections of Title II than currently apply to mobile voice services.[267] As a result, the Order minimized burdens on BIAS providers while still enforcing sections of the Communications Act essential for protecting consumers, promoting competition, and advancing universal service.[268]

The Commission's refrain that classifying BIAS as a telecommunications service is "highly prescriptive," and akin to "government control of the Internet,"[269] is not credible. In one breath, the Commission claims that "heavy-handed" or "utility-style" Title II regulation is

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[265] *See Petition of AT&T Inc. for Forbearance Under 47 U.S.C. §160(c) from Title II and Computer Inquiry Rules with Respect to Its Broadband Services, Petition of BellSouth Corporation for Forbearance Under Section 47 U.S.C. §160(c) from Title II and Computer Inquiry Rules with Respect to its Broadband Services*, WC Docket No. 06-125, Memorandum Opinion and Order, 22 F.C.C. Rcd. 18705 (2007).

[266] *See Business Data Services in an Internet Protocol Environment, et. al.*, WC Docket No. 16-143, *et. al., Report and Order*, 32 F.C.C. Rcd. 3459 (2017).

[267] *Id*. at 5612, para. 38.

[268] *Id*. at 5616, paras. 51-52.

[269] *2017 NPRM* at 4435, para. 3; 4444-45 para. 33.

unduly burdensome on BIAS providers; in the next, it contradictorily complains the 2015 Open Internet Order's extensive use of forbearance to minimize regulatory burdens on BIAS providers "suggests the highly prescriptive regulatory framework of Title II is unsuited for the dynamic broadband Internet access service marketplace."[270] It is entirely illogical for the 2017 NPRM to criticize Title II regulation as unduly burdensome while complaining that the regulatory relief the Commission granted through forbearance went too far. The Commission cannot have it both ways, and its newfound lack of faith in forbearance is disingenuous.[271]

ISPs have therefore failed to make the case that the 2015 Open Internet Order has diverted resources that would otherwise have been used for deployment. Nor would it be plausible to claim that the 2015 Open Internet Order has created opportunity costs for ISPs, in the form of foregone revenue, that would reduce deployment.

As discussed below, the "single monopoly profit" theory is inapplicable to broadband markets as they exist today. Broadband providers' profit-maximizing strategy is not just to charge ever-higher rates for broadband access, but includes leveraging their dominance into adjacent markets such as online services and equipment and charging termination fees to content providers. One of the very purposes of the Open Internet rules is to prevent broadband providers from undertaking behaviors that they would otherwise have the incentive to do. The question is not whether ISPs are prevented from making business deals they otherwise would like to make,

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[270] *Id*. at 4444-45, para. 33.

[271] *See e.g., United States Telecom Association Petition for Forbearance Under 47 U.S.C. §160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, WC Docket No. 12-61, Order, Statement of Commissioner Ajit Pai, 28 F.C.C. Rcd. 2605, 2614 (2013) ("When Congress passed the Telecommunications Act of 1996, one of the most important tools it gave the FCC was forbearance authority. This authority allows the Commission to set aside outdated laws and regulations that once may have made sense but have come to stymie the pro-competitive, deregulatory objectives of the Act.").

but whether this dynamic harms consumers in any way, through reduced deployment or declining service. It does not.

In particular, no ISP has demonstrated with specificity how denying it the ability to toll-keep and extract additional consumer surplus has affected specific build-out plans, or why increased revenue would go toward deployment rather than shareholders or salaries. Are there unserved households where an ISP cannot make a sufficient return on its investment under an Open Internet regime, but where, if only it could block unaffiliated online video services from those households or charge fees to online gaming companies to reach them, it would have a viable business case? If so, where are they—do they have telephone, electricity, and water service? Could they afford broadband if it were available? If so, why can't the ISP simply charge them what it costs to provide service?

At the outset it seems unlikely that the number of marginal households on the knife edge between profitability and unprofitability, with only Title II standing in the way, is material. But even if it were, a more robust universal service system, grounded in the bedrock of Title II, would more than make up for it, with the added advantage of giving those marginal households access to the real internet and not an ISP's meager, manipulated version.

More to the point, however, a common carriage system for broadband better aligns an ISP's incentive to make money with the public interest in broadband deployment. An ISP that can increase its profitability by offering consumers an ever-less-neutral broadband access service would do so. Why bother deploying to rural communities when you can just extract ever more money from the urban and suburban, upper and middle class communities that already enjoy relatively high levels of broadband penetration? By contrast, a common carriage regime ensures that an ISP's financial health and growth is directly tied to the number of customers it serves, not

to the number of back-room deals it can cut.[272] The Commission's premise, then, that denying money-making (but discriminatory) courses of actions to ISPs would result in them slowing deployment is faulty.

B. ISPs Possess Gatekeeper, or Bottleneck, Power Due to Their Unique Position in the Network

As an initial matter, Open Internet rules and common carriage more generally are not simply a regulatory response to dearth of competition. While the number and quality of choices that are available to a consumer may influence the particular application of common carriage principles to broadband (for example, what behavior is "reasonable" can be context-specific), the general common carriage framework, while addressing some of the effects of a lack of competition, serves purposes beyond that.

For example, common carriage for broadband creates spillover effects that benefit the economy overall. It promotes economic equality by ensuring that startups, smaller companies, and independent creators can compete on fair terms with internet giants. Even when customers do have some broadband choice, it corrects for coordinated effects, switching costs, and other factors that limit the effectiveness of competition in promoting consumer welfare. Beyond these economic arguments, there are social arguments. "Correcting market failures is a reason for regulation, but it is not the only reason."[273] The Commission in particular is charged by Congress

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[272] "Termination fees may provide a way to increase profits of Internet service providers regardless of whether they upgrade their pipes; the impact on the marginal incentive to invest is indeterminate. Instead of investing in faster or more reliable service, firms could also pay out a (greater) dividend, undertake other projects, or even invest in increasing its returns on existing content by making it scarce and exclusive." Robin S. Lee & Tim Wu, *Subsidizing creativity through network design: Zero-pricing and net neutrality*, 23 The Journal of Economic Perspectives 61-76, 72 (2009).

[273] Office of Mgmt. & Budget, Exec. Office of the Presdient, Circular A-4, To the Heads of Executive Agencies and Establishements, *The Need for Federal Regulatory Action* (Sept. 17, 2013), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/#e.

to promote specific social goals,[274] and the Commission's mandate to promote the public interest in communications includes promoting access to information necessary to self-governance and free expression.[275] The common carrier regime, by addressing bottlenecks, is best suited for promoting these interests of free expression.[276] The Internet has become central to democracy, as many citizens' primary or only source of news, the way that families keep in touch, and the way that governments communicate with their citizens. Such a vital platform must be protected, and not left to the dictates of a few bottom-line-driven ISPs.

However, one of the foundational justifications for Open Internet rules and for common carriage is related to competition and market power, but not to the number of retail choices end users enjoy. Broadband providers are "gatekeepers," who possess a "terminating access monopoly." This argument is often conflated with arguments about retail competition more generally,[277] but it is a distinct concept that has been endorsed by the FCC and the courts in various contexts. Jonathan Nuechterlein and Christopher Yoo, who are critics of how the concept is applied, nevertheless summarize it well: "the [gatekeeper] concept holds that a consumer-facing network provider, no matter how small or how subject to retail competition, generally possesses monopoly power vis-à-vis third-party senders of communications traffic to its

[274] *E.g.*, 47 U.S.C. § 257(b); 47 U.S.C. § 1301.

[275] *See, e.g.*, *Red Lion Broadcasting Co. v. FCC*, 395 US 367 (1969); *Turner Broadcasting v. FCC*, 512 U.S. 622 (1994).

[276] *Denver Area Educational Telecommunications Consortium v. FCC*, 518 U.S. 727 (1996) (Kennedy, J. Concurring in Part and Dissenting in Part).

[277] For example, Verizon has argued at length, and irrelevantly, that competitive pressure its networks face means it does not possess a terminating access monopoly. Ex Parte Letter of Verizon, GN Docket No. 14-28 (filed January 15, 2015).

customers."[278] In other words, while the broadband choices available to a particular consumer--after accounting for switching costs, coordinated effects and the like--affect the extent to which that broadband provider is able to act as a gatekeeper between that consumer and the internet, an internet edge service or content provider nonetheless has no way to reach that consumer except through their broadband provider. An online video service that wants to reach Comcast customers has no choice but to connect through Comcast.[279] In this sense, every broadband ISP has a monopoly in the "market" for reaching its own customers, with the amount of leverage this gives it dependent on the size and characteristics of that market. As Level 3 put it in the context of a dispute with Comcast:

> Comcast and other last-mile providers enjoy a unique position within the Internet -- access to their subscribers must be achieved through direct or indirect interconnection with Comcast. There is simply no other way to deliver to Comcast's subscribers the content that they request. Absent governmental restrictions, Comcast and other residential broadband Internet service providers have the power to leverage their relationships with broadband consumers to act in an anticompetitive manner. Comcast has Internet access dominance because no other company (with the possible exception of another residential broadband Internet service provider) can directly provide high-speed Internet transmission to Comcast's subscribers. Comcast's unique position gives it substantial leverage to impose anticompetitive prices and conditions with respect to Level 3 and any other Internet backbone provider or content provider. [280]

Historically, this terminating access monopoly is strongest in situations where the sending party is legally required to pay a terminating access fee, as under the intercarrier compensation system for telephony. As an FCC working paper put it:

> The current requirement that carriers pay the called party's network to terminate calls

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[278] Jonathan E. Nuechterlein & Christopher S. Yoo, *A Market-Oriented Analysis of the 'Terminating Access Monopoly' Concept,* 14.1 Penn Law: Legal Scholarship Repository 21, 21 (2015).

[279] *See* Gregory Rose, *The Economics of Internet Interconnection: Insights from the Comcast-Level3 Peering Dispute* (March 28, 2011).

[280] Letter from Level3 Communication to US Department of Justice, Comcast and NBC Universal (filed December 16, 2010).

> confers monopoly power on the called party's network with respect to terminating access. This market power arises from the fact that the calling party's carrier … has no alternative carrier that can terminate a call to a particular called party. Thus, the calling party's carrier must pay the terminating network whatever price it demands in order to reach the called party. In effect, each terminating carrier, no matter how small, has a monopoly over termination to its own customers.[281]

However, terminatory access monopolies do not require a regulatory compulsion to pay. Any broadband ISP with enough subscribers can economically compel an edge service to pay monopoly rates, since it can control a large enough customer base that the edge service's alternative to paying would be to shut down or drastically reduce its business.[282]

Notably, the Supreme Court has endorsed a bottleneck theory in the context of cable television. In analyzing a cable regulation it wrote,

> When an individual subscribes to cable, the physical connection between the television set and the cable network gives the cable operator bottleneck, or gatekeeper, control over most (if not all) of the television programming that is channeled into the subscriber's home. Hence, simply by virtue of its ownership of the essential pathway for cable speech, a cable operator can prevent its subscribers from obtaining access to programming it chooses to exclude. A cable operator, unlike speakers in other media, can thus silence the voice of competing speakers with a mere flick of the switch.[283]

In cable television, as in broadband, the physical infrastructure provider owns the only path in between speakers and consumers, and it is this particular power that gives rise to the need for rules of some kind—in the telecommunications context, the need for common carriage.

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[281] Patrick DeGraba, *Bill and Keep at the Central Office As the Efficient Interconnection Regime*, at 25-26 (OPP Working Paper No. 33, 2000).

[282] "In order to be commercially viable, an OVD [online video distributor] often needs to secure uncompromised access to a large fraction of the nation's residential subscribers to high-speed broadband Internet access. ... [being denied access to enough broadband users] may not permit the OVD to operate profitably if the combined subscriber base of the other ISPs is sufficiently small." *Petition to Deny of DISH Network Corporation, Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations*, MB Docket No. 14-57 (Aug. 25, 2014), Exhibit B: Declaration Of Professor David Sappington, paras. 22-24.

[283] *Turner Broadcasting System, Inc. v. F.C.C.*, 512 U.S. 622, 656 (1994). While lower courts have misapplied this language to create what is simply a market power test, the Court's language is quite clear. *See Comcast Corp. v. FCC*, 579 F.3d 1 (D.C. Cir.. 2009).

While the effects of this gatekeeper power can vary based on the size of the ISP and other factors, it is always present. Thus, for instance, even though consumers have more choice in wireless broadband than in wireline, the millions of customers that each nationwide wireless carrier possesses gives it significant leverage to use its terminating access monopoly to limit the ability of content providers to reach consumers. Thus, common carrier rules are necessary.

C. The Poor State of Broadband Competition Provides Additional Justification for the Open Internet Rules

As discussed above, the need for common carrier regulation of broadband providers does not rise and fall with the number of retail competitors available to consumers. However, the application of those rules to broadband and the specific market context are certainly relevant, and the lack of broadband competition and choice reinforce how essential the Open Internet rules are, as well as Title II more broadly, to protecting broadband consumers.

The Commission asks, "[h]ow should we evaluate the prior Commissions' predictions of intermodal competition given the 4,559 Internet service providers now in the market? How many providers would likely have entered the market if traditional Title II regulation had been the norm?"[284]

The prior Commissions' predictions of intermodal competition have shown themselves to be illusory. At some points in the preceding decades, it may have been reasonable to predict that home broadband access would be able to overcome or at least mitigate the natural monopoly tendencies of last-mile infrastructure markets by leveraging existing plant: cable, power lines, and telephone lines. But in practice the advantages of coaxial cable over copper line telephone and power lines ensured that it would become the dominant form of home broadband access,

[284] *2017 NPRM* 4447 para. 39.

with only new fiber construction or fiber upgrades to telephone networks able to match it. Predictions (and hopeful descriptions[285]) of a market served by a more heterogeneous mix of access technologies have not come true, and today, cable and fiber providers together account for about 98% of home connections of at least 25 Mbps.[286] From a competitive perspective, 58% of census blocks in the United States have at most one provider that offers a 25 Mbps connection, with 26% with access to two.[287] In population terms, in late 2014 the Department of Commerce found that "[o]nly 37 percent of the population had a choice of two or more providers at speeds of 25 Mbps or greater; only 9 percent had three or more choices. Moreover, four out of ten Americans did not live where very-high-speed broadband service – 100 Mbps or greater – is available. Of those with access to broadband at this speed level, only 8 percent had access to two or more providers; 1 percent had access to three or more."[288]

Consumers of wireless broadband face a concentrated wireless market that is far from perfect,[289] but is inarguably more competitive than fixed and wireline broadband–even if more

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[285] Remarks of FCC Commissioner Ajit Pai at The International Institute Of Communications Forum, London, England (April 27, 2015), https://apps.fcc.gov/edocs_public/attachmatch/DOC-333190A1.pdf ("facilities-based, intermodal competition in the United States is thriving").

[286] Industry Access Services: Status as of June 30, 2016, Wireline Competition Bureau (April 2017), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-344499A1.pdf.

[287] *Id.*

[288] David N. Beede, *Competition Among U.S. Broadband Service Providers*, U.S. Dept. of Commerce, Economics and Statistics Administration (OCE Issue Brief 01-14, 2014).

[289] According to the FCC's Nineteenth Mobile Wireless Competition Report, "the weighted average HHI (weighted by population across the 172 EAs in the United States) for mobile wireless services at year-end 2015 was 3,111." *In the Matter of Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Nineteenth Report, 31 F.C.C. Rcd. 10534, 10550 para. 22 (2016). This is "highly concentrated" under DOJ and FTC guidelines. Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, at 19 (Aug. 19, 2010), http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf.

competition would be desirable. The state of the wireless marketplace, its importance to consumers and vulnerable populations, and the various non-competition-related rationales stated earlier all independently demonstrate the need for common carriage, Open Internet, and other consumer protections for wireless consumers, and for the small and independent creators that need to access wireless consumers. Nevertheless it is worth reminding the Commission that wireless and wireline broadband are distinct product markets.

Market definition is determined by consumer behavior, not abstract theorizing or a judge or policymaker's opinion about how similar certain products are. The Supreme Court has made this clear,[290] and the Department of Justice has codified it.[291] One simple way to determine whether two products are substitutes for each other (and thus are in the same product market) or complementary (and thus in distinct product markets) is whether significant numbers of consumers buy and use both–if products were simple substitutes for each other, then few would do so. In this case the data show that consumers who can afford both fixed and mobile broadband tend to buy both.[292] While some low-income consumers are priced out of fixed broadband and go mobile-only, this only shows that mobile services are more important to that demographic, not that the two products are found to be "substitutes."

The NPRM also asks how many more providers would have entered the market had traditional Title II regulation been the norm since the advent of broadband.[293] Broadband deployment would likely be more widespread had the Commission properly regulated broadband under Title II from the beginning, since universal service subsidies would have been available to

[290] *See United States v. EI du Pont de Nemours & Co.*, 351 U.S. 377, 394-95 (1956).
[291] Product Market Definition, U.S. Dept. of Justice, n. 10 (June 25, 2015).
[292] Monica Anderson, *Digital divide persists even as lower-income Americans make gains in tech adoption*, Pew Research Center (March 22, 2017).
[293] *2017 NPRM* 4447 para. 39.

providers who wished to serve otherwise unprofitable markets, and access to poles and other rights of way would at times have been simplified. Additionally, had the Commission chosen a different regulatory course years ago, line-sharing and similar regimes could have greatly enhanced the number of retail broadband providers able to serve customers. The Commission could also have greatly enhanced broadband competition by declining to allow major ISPs to merge, and by promoting spectrum policies that enable entry by smaller and unlicensed providers.

The NPRM again misstates the historical record when it writes that "the same regulatory environment" for access providers had been maintained "for approximately three decades."[294] Consumers accessed dial-up ISPs over Title II connections for many years, and the entire ISP industry would not have existed without at least two applications of Title II. First, the Commission's Carterfone decision[295] ensured that consumers could use the equipment of their choice with their home telephone connections, including dial-up modems. Second are Title II's protections generally, as well as the FCC's decisions to recognize that dial-up ISPs were ordinary businesses with a right to use the network and to forbid telecom carriers from charging them "interstate per-minute access charges."[296] With the advent of broadband, ISPs went from being an "edge service" like any other telephone user, such as your local pizza shop, to being an integrated part of the network. Past FCCs unfortunately chose to regulate these new access providers as though they were not access providers. This policy choice ensured that the retail

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[294] *Id*.

[295] *See Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420 (1968).

[296] *Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, End User Common Line Charges*, CC Docket Nos. 96-262, 94-1, 91-213, 95-72, First Report and Order, 12 FCC Rcd 15982, 16133, para. 344 (1997).

broadband market would be uncompetitive,[297] in addition to allowing for harmful discrimination. The 2015 Open Internet Order began to correct that mistake. The current FCC should heed the lessons of history by recognizing that open access networks that allow users to access the services of their choice best foster innovation and the public interest.

4. Eliminating Net Neutrality Rules Will Not Foster Entry Into the Market or Expansion by Small Broadband Providers

There is no evidence that small broadband providers are uniquely or significantly harmed by the current Title II regulations. In a letter addressed to Chairman Ajit Pai, more than 40 small broadband providers proclaimed, "[w]e have encountered no new additional barriers to investment or deployment as a result of the 2015 decision to reclassify broadband as a telecommunications service and have long supported network neutrality as a core principle for the deployment of networks for the American public to access the Internet."[298] While some other small ISPs have pointed to increased "uncertainty" or "costs," they generally also stated that they had no intention of violating the Open Internet rules themselves and intended to continue operating open networks.[299] It is thus difficult to see how many real costs the rules could have imposed—especially considering that small broadband providers are exempted from some of the administrative aspects of the 2015 Open Internet Order, particularly the transparency

[297] Susan M. Gately, Helen E. Golding, Lee L. Selwyn, & Colin B. Weir, *Regulation, Investment and Jobs: How Regulation Of Wholesale Markets Can Stimulate Private Sector Broadband Investment And Create Jobs* (2010) i, https://www.publicknowledge.org/pdf/eti_wholesale_study_20100211.pdf ("the ... shift to a 'competition unfriendly' regulatory regime – when the FCC dismantled many core protections that had been instituted so as to assure the availability and economic pricing of wholesale inputs – conditions became so unfavorable to investment by competitive carriers that entrants were compelled to dramatically scale back their capital spending and, in many cases, to withdraw from the market altogether.").

[298] Letter of Small Internet Service Providers to Chairman Ajit Pai (June 27, 2017).

[299] *Id*.

requirements.[300]

To the extent that yet-undocumented unique and specific problems arise for small broadband providers, the Commission should address those issues in a more targeted fashion, as opposed to upending a framework that applies to providers like Comcast and Verizon, who serve millions of Americans, are not small by any means, and already devote staff to reporting and compliance tasks. Using small providers as an excuse to eliminate the protections that customers of large providers depend on makes no sense.

D. ISPs Have an Incentive to Discriminate

Finally, while in general ISPs do not face sufficient competition to discipline their behavior and ensure that they provide the best possible service to consumers, the little competition they do face, along with other factors, demonstrates why the "single monopoly profit" argument, frequently advanced to justify anticompetitive conduct,[301] is not available. Under this theory, if an ISP wants to maximize its profits, the easiest thing it can do is charge its users more, and efforts to control adjacent markets or demand high payments from edge services would be, at best, revenue neutral. Thus, the theory holds, an ISP that harmed the overall quality of internet access by extracting fees from edge services would reduce demand for its broadband service, negating any revenue gains.

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[300] Jon Brodkin, *FCC exempts small ISPs from broadband truth-in-billing rules*, arsTechnica (Jan. 30, 2017), https://arstechnica.com/information-technology/2017/01/fcc-exempts-small-isps-from-broadband-truth-in-billing-rules/; Sara Kamal, *Small but Powerful: Despite Objections, Small ISPs Need Need Net Neutrality Too*, Public Knowledge (May 17, 2017), https://www.publicknowledge.org/news-blog/blogs/small-but-powerful-despite-objections-small-isps-need-net-neutrality-too.

[301] Jonathan B. Baker, *Taking the Error Out of 'Error Cost' Analysis: What's Wrong with Antitrust's Right*, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2333736 (2014) 18-20.

However, this argument, to the extent it is valid at all[302] (given that "close analysis of the theory by economists indicates that the conditions for this theory rarely if ever hold"[303]) is only available in in "unusual and extreme circumstances"[304] which rarely occur in the real world. First, the limited, imperfect competition that ISPs face in some markets (e.g., competition from DSL for cable or fiber),[305] and the cross-elasticity of demand (i.e., people may choose to use WiFi at a coffee shop or just a mobile phone instead of a fixed connection) prevents ISPs from exercising complete monopoly power. Not being textbook monopolies, they cannot behave as textbook monopolies. Second, the single monopoly profit theory does not say there is no incentive for vertical integration or leveraging by ISPs—only that any such leveraging should not reduce the quality of broadband for consumers. But this is a static view: an ISP might vertically integrate (or cut a deal with a preferred edge service), and customers might not care, at least not enough to drop their service. But consumers would nevertheless be harmed, without the discipline of competition to keep the vertically-integrated service at a high level of quality, and without competition-driven improvements to the product.

Thus, an ISP's profit-maximizing strategy is to seek revenue streams from third parties such as edge providers, and to extend its control into markets adjacent to broadband (such as online video). "The potential for competitive harm from exclusionary conduct by a dominant

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[302] Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 Harvard Law Review 399 (2009).

[303] Steven C. Salop and Daniel P. Culley, *Revising the US vertical merger guidelines: policy issues and an interim guide for practitioners*, 4 Journal of Antitrust Enforcement 1-41, 5 (2016).

[304] Baker at 19.

[305] And even that competition is typically based on top-line prices and speeds, since few people choose their broadband provider based on interconnection policies and network management practices

firm cannot be ruled out by appeal to economic theory."[306]

E. In Contrast to the Previous FCC, the NPRM Appears Determined to Catalog Only the Costs, and None of the Benefits, of the Existing Rules

In his statement, Chairman Pai stated that a cost-benefit analysis "simply wasn't done back in 2015."[307] But the 2015 Order did in fact weigh the burdens of the rules against the benefits they would create,[308] including incorporating by reference the analysis of the 2010 Order.[309] The 2015 Order even specifically carved out exceptions to its rules for smaller providers, owing to the possible compliance burdens it identified.[310] Rather, the NPRM implicitly faults the past FCC for allegedly not following the guidelines of OMB Circular A-4—while simultaneously proposing a "baseline" that would violate those guidelines[311] and seeking comment on ways it can diverge from them further.[312] (Presumably, the Commission plans to release a further notice soliciting comment on whatever cost/benefit framework it decides to adopt.)

More broadly, as Dwayne Winseck and Jefferson Pooley point out in response to critics of the 2015 Order Gerald R. Faulhaber, Hal J. Singer, and Augustus H. Urschel,

> no independent regulatory agencies except the one they identify (the Consumer Financial Protection Bureau [CFPB]), does the kind of cost-benefit analysis that they claim the FCC neglects. Indeed, there are 19 federal independent regulatory agencies, and none of them file the kinds of cost-benefit analysis that Faulhaber et al. call for, except the CFPB. Yet they seem to imply that somehow the CFPB stands in for them all. It does not.

Thus critics of the 2015 Order have merely identified the fact, which the 2015 FCC freely

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[306] Baker 20.
[307] *2017 NPRM* 4455-56 para. 61.
[308] *2015 Open Internet Order* 5643-44 para. 102.
[309] *Id.* at 5644 para. 102, n.226.
[310] *Id.* at 5678 para. 173.
[311] *2017 NPRM*, Dissenting Statement of Commissioner Mignon L. Clyburn, 73-74.
[312] *2017 NPRM* 4469 para. 107.

recognized, that the FCC, being an independent agency, "is not required to prepare a cost-benefit analysis."[313] Nevertheless, as Chairman Wheeler stated,

> Cost-benefit analysis is one of many valuable tools used in certain circumstances by regulatory agencies, including the FCC, to assist in the evaluation of a proposed regulatory course of action. Since President Obama issued Executive Orders 13563 and 13579 in 2011, the Commission has endeavored to act consistently with the cost-benefit analysis principles articulated in those orders in its rulemaking proceedings. This includes consideration of quantifiable, costs and benefits associated with a proposed regulatory approach, as well as careful consideration of those costs and benefits that are not as easily quantifiable or monetized. The agency will conduct the Open Internet rulemaking proceeding following the same principles and guidelines.[314]

The 2015 Order shows every hallmark of having been drafted according to these principles. By contrast, the current NPRM proposed a framework where unsubstantiated and contradictory industry assertions about costs and capital expenditures are treated as facts, while benefits of the existing rules are merely "theoretical."[315] This, coupled with the NPRM's refusal to use the actual status quo as a baseline, does not evidence an FCC inclined to an accurate assessment of either the current rules or its proposals.

However, assuming an eventual order or further notice will correct for the NPRM's deficiencies, the following observations are in order. First, the Commission seems to take alleged costs to ISPs very seriously while discounting benefits to edge services and consumers. But as the OMB notes, "[t]hose who bear the costs of a regulation and those who enjoy its benefits often are not the same people." [316] The same level of rigor is necessary on both sides of the equation

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[313] Congressional Review Act Abstract, *Protecting and Promoting the Open Internet*, WG Docket No. 14-28 (2015) (emphasis added).

[314] *See* Letter from Chairman Tom Wheeler to Hon. Marsha Blackburn (May 19, 2014), https://apps.fcc.gov/edocs_public/attachmatch/DOC-327470A1.pdf.

[315] *NPRM* 4470 para. 114.

[316] Office of Mgmt. & Budget, Exec. Office of the Presdient, Circular A-4, To the Heads of Executive Agencies and Establishements, *Analytical Approaches* (Sept. 17, 2013), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/#e.

and the fact that particular costs or benefits might be harder to quantify is no excuse for ignoring them.

Second, as the OMB notes, "[r]ulemaking may also be appropriate to protect privacy, permit more personal freedom or promote other democratic aspirations."[317] Thus the extent to which the current and proposed rules advance these purposes must be considered as part of a cost/benefit analysis.

Third, the proper baseline for analyzing benefits is the current rules. If the current rules benefit consumers and edge creators to a certain degree and the FCC's proposed changes benefit them less, then this must be counted as a cost of adopting the proposed new rules.

In general the "costs" of the current rules that seem most theoretically cognizable are the opportunity costs to ISPs that result from them not being permitted to do things the rules expressly forbid. For instance, the current rules forbid ISPs from collecting fees for paid prioritization. But the NPRM states that a rule against paid prioritization is probably not needed because "several large Internet service providers made it clear that that they did not engage in paid prioritization and had no plans to do so."[318] Similarly it suggests that a rule against blocking may not be needed because "many large Internet service providers voluntarily abided by the 2010 no-blocking rule in the absence of a regulatory obligation to do so."[319] In other words, when it comes to specific behaviors the current rules prohibit, ISPs have been generally adamant that they do not intend to engage in such behaviors and the their only objection is to Title II,[320]

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[317] Office of Mgmt. & Budget, Exec. Office of the Presdient, Circular A-4, To the Heads of Executive Agencies and Establishements, *The Need for Federal Regulatory Action* (Sept. 17, 2013), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/#e.

[318] *2017 NPRM* at 4462 para. 85.

[319] *2017 NPRM* at 4461 para. 80.

[320] *See Comcast Corp. v. Federal Communications Commission*, 600 F. 3rd 642 (D.C. Cir. 2010).

even though the Commission has forborne from most of Title II's most "intrusive" aspects, for example price regulation of uncompetitive markets. Thus, any accounting of the costs of the current rules to ISPs should not include opportunity costs from ISPs being forbidden from doing things they already claim they won't do, and instead should focus primarily on what are more legitimate real costs, e.g., what it might cost a major ISP to instruct its employees to release accurate and complete, as opposed to misleading and incomplete, information about the performance of its services.

VII. The Commission Must Consider the Consequences of Title I Classification to Consumer Protection, Universal Service, and Competition in the Broadband Marketplace

The Commission has long recognized that broadband is the essential communications service of the 21st century.[321] Americans rely on broadband for basic communications, education, employment, healthcare, news and information, and civic engagement.[322] Because broadband is so critical to everyday life, consumers expect adequate protections when accessing these networks. The Commission understood this and applied key statutes found only within Title II to protect customer privacy and ensure those with disabilities could access broadband networks.[323] Consumers also expect ubiquitous and affordable broadband connectivity. The FCC

[321] *See e.g., Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 F.C.C. Rcd. 1375. 1378 para. 2 (2015) ("*2015 Broadband Progress Report*").

[322] *See id*.

[323] *See 2015 Open Internet Order* 30 F.C.C. Rcd. at 5616-17 paras. 54, 55; *see also* 47 U.S.C. §§ 222, 255.

has consistently promoted policies that advance universal broadband service and deployment.[324] Title II classification allowed the Commission to directly apply its universal service programs to broadband-capable networks.[325] Indeed, without Title II it is unlikely that the Commission could continue offering subsidies for both broadband deployment and adoption from broadband-only providers. Finally, consumers want robust choices between broadband service providers. Therefore, the FCC applied Title II provisions to promote competition between broadband providers and offer consumers more choice.[326] Title II classification ensures consumers are protected, universal service advances, and there is growing competition in the broadband marketplace. If the Commission reverses course and classifies broadband under Title I, it must sufficiently explain how it will provide for protections that consumers not only enjoy but have come to expect in the broadband marketplace.

A. The Commission Must Address How Consumer Privacy and Disability Access on Broadband Networks Will Be Protected Without Title II

Consumers rely on a host of protections when they communicate with one another on telephone networks.[327] They expect to be adequately protected when accessing broadband networks as well. In its 2015 Open Internet Order, the Commission applied key consumer protection statutes found only within Title II.[328] Specifically, the Commission applied section 222 to ensure the privacy of customer information on broadband networks is protected and

[324] *See Connect America Fund et al*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket No. 10-90 et al, 26 F.C.C. Rcd. 17663 (2011) ("*Universal Service Transformation Order*").

[325] *See 2015 Open Internet Order* 30 F.C.C. Rcd. at 5617, para. 57; *see also* 47 U.S.C. § 254.

[326] *Id. at* 5617, para. 56; *see also* 47 U.S.C. § 224.

[327] *See e.g.* 47 C.F.R. §§ 64.1140, 64.2400, 64.2401 (The Commission has promulgated rules to protect consumers from predatory behavior such as cramming and slamming.)

[328] *2015 Open Internet Order* at 5616, para. 5.

section 253 to ensure consumers with disabilities have access to broadband networks. If the Commission reverts broadband back to Title I, it must address the gap it will leave in consumer protection.

1. The Commission's Authority To Protect Consumer Privacy on Communications Networks is Found in Title II

Section 222 of the Telecommunications Act of 1996 ("1996 Act") requires telecommunications carriers to protect customer proprietary network information ("CPNI").[329] The legislative history of section 222 makes clear that Congress intended to protect the privacy of consumers on telecommunications networks. The Conference Report reconciling the House and Senate versions of the 1996 Act outlined three fundamental principles of section 222: "(1) the right of consumers to know the specific information that is being collected about them; (2) the right of consumers to have proper notice that such information is being used for other purposes; (3) and the right of consumers to stop the reuse or sale of that information."[330] These principles indicate that Congress sought to ensure protecting consumer privacy was a primary goal of section 222.[331]

The plain language of section 222 further solidifies why the statute serves as the best framework to protect consumer privacy on communications networks. Section 222(a) begins with a general duty of all telecommunications carriers to protect the "proprietary information" of customers and other carriers.[332] The inclusion of the word "customer" in the language preserves

[329] *See generally* 47 U.S.C. § 222.

[330] *See* Telecommunications Act of 1996, S .Rep. No. 104-230, at 204 (1996) ("Conference Report").

[331] *See id*. at 205 ("In general, the new section 222 strives to balance both competitive and consumer privacy interests with respect to CPNI.").

[332] 47 U.S.C. § 222(a).

Congress' intention that carriers must protect their subscribers' information.[333] Further, section 222(c) restricts telecommunications carriers use of CPNI, a more specific class of proprietary information, without customer approval.[334] The statutory language under this subsection does not limit CPNI to telephone services; instead, it is expanded to include all telecommunications services.[335] This allows the Commission to take a technology-neutral approach in determining what constitutes CPNI. Indeed, the FCC has refined its criteria for CPNI as technology has evolved and consumers had a reasonable expectation their privacy would be protected on these communications networks.[336] Taking section 222(a) and 222(c) together has the effect of expanding the authority and flexibility of the FCC to create rules to protect the privacy of subscribers to telecommunications services.

2. The Commission Has Found Broadband Networks Have a Unique Position in the Internet Ecosystem

Based on the legislative history and statutory language, section 222 provides the appropriate framework to protect consumer privacy on broadband networks given their unique role in the internet ecosystem. In its 2016 Broadband Privacy Order, the Commission concluded that broadband service providers enjoy a unique window into sensitive customer data.[337]

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[333] *See* H.R. Rep. No. 104-204 at 91 (describing 47 U.S.C. 222(e)).

[334] *See* 47 U.S.C. § 222(c).

[335] *Id*.

[336] *See, e.g.*, *Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information; IP-Enabled Services*, Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 96-115, WC Docket No. 04-36, 22 F.C.C. Rcd. 6927, 6956-57 n.170 (2007) ("As we have in the past we limit our extension of the rules to interconnected VoIP service providers because we continue to believe that consumers have a reasonable expectation that such services are replacements for 'regular telephone' service.") ("*2007 CPNI Order*").

[337] *See Protecting the Privacy of Customers of Broadband and other Telecommunications Services*, Report and Order, WC Docket No. 16-106, 31 F.C.C. Rcd. 13911, 13920, para. 30 (2016) (stating that "the record is clear that [broadband service] providers' gatekeeper position

Broadband service providers have access to enormous quantities of internet data that their subscribers transmit. While Internet traffic splinters among providers at the edge, all data - sensitive, non-sensitive, and everything in between - must pass through the hands of a broadband service provider. This type of unfettered access allows a broadband service provider to paint a detailed composite portrait of a user's life from basic header information such as IP addresses, ports and timing.[338] Further, the Commission has consistently found that broadband providers hold a 'gatekeeper' position the internet ecosystem.[339] Their role as gatekeepers not only enhances their ability to access consumer information but also makes their relationship with their customers unique. Consumers pay a fee to access broadband networks and in return do not expect that their personal information will be used as an additional revenue stream.[340] The lack of competition in the broadband marketplace also means most consumers have limited choices between providers.[341] Therefore, most consumers cannot change providers if they are unhappy with their current providers' privacy practices. Overall, the Commission has found the nature of broadband networks to be similar to other telecommunications services—they "have the ability

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allows them to see every packet that a consumer sends and receives over the Internet while on the network, including, absent encryption, its contents.") ("*2016 Broadband Privacy Order*").

[338] *See, e.g.,* Tech. Analysis Branch, Office of the Privacy Comm'r of Can., *What an IP Address Can Reveal About You* (2013), at 4 (noting the wide range of information that may be discerned from an IP address).

[339] *See 2016 Broadband Privacy Order*, 31 F.C.C. Rcd. at 1319, para. 28 ("Based on our review of the record, we reaffirm our earlier finding that a broadband provider 'sits at a privileged place in the network, the bottleneck between the customer and rest of the internet' - a position that we have referred to as a gatekeeper.").

[340] *See id.* at 13923, para. 36, n.53.

[341] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and TImely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended*, 2016 Broadband Progress Report, GN Docket no. 15-191, 31 F.C.C. Rcd. 699, 702, para. 6 (2016) (finding that "only 38 percent of Americans have more than one choice of providers for fixed advanced telecommunications capability.") ("*2016 Broadband Progress Report*").

to collect information from consumers who are merely using the networks as conduits to move information from one place to another without change in the form or content."[342] Consumers expect adequate privacy protections when accessing broadband networks, and section 222 provides the Commission with the appropriate framework to do this.

3. The Commission's Proposal to Return Broadband Privacy Authority to the Federal Trade Commission Misconstrues the Roles of the Two Agencies in Protecting Consumer Privacy

In classifying broadband as a Title I information service, the Commission proposes to return authority to the Federal Trade Commission ("FTC") to police the practices of broadband service providers.[343] The Commission relies simply on the fact that the FTC has "decades of experience and expertise" as a consumer privacy agency.[344] This explanation is flawed for several reasons. First, although the FTC does have experience and expertise protecting consumer privacy, it is not the expert agency on communications networks. The FCC, on the other hand, has decades of experience protecting the privacy of consumers on communications networks. The Commission has used its authority under section 222 to protect CPNI on telephone networks for the past twenty years. Further, the Commission has updated its CPNI rules to reflect changes in communications technology. As a result, the Commission now has CPNI rules to protect consumer privacy on mobile phones and interconnected Voice over IP (VoIP).[345] In addition to section 222, Congress gave the FCC additional sources of authority to protect consumer privacy on communications networks. Under section 631 of the Cable Communications Policy Act of

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[342] *2016 Broadband Privacy Order*, 31 F.C.C. Rcd. 1317 para. 21; *see also* 47 U.S.C. 153(50).

[343] *See 2017 NPRM*, 32 F.C.C. Rcd. at 4456-57 paras. 66-67.

[344] *See id.* at 4457, para. 67.

[345] *See 2007 CPNI Order*, 22 F.C.C. Rcd. at 6956 para. 54.

1984, the Commission has the authority to protect the privacy of cable subscribers.[346] Title III of the Communications Act gives the FCC broad authority to regulate wireless services, which can include the authority to protect the privacy of mobile subscribers.[347] These authorities highlight the agencies decades of experience protecting consumer privacy on communications networks. The FCC also has a thorough understanding of how broadband networks operate through a number of broadband-oriented regulatory programs the agency has put in place.[348] By giving the FTC exclusive jurisdiction to protect consumer broadband privacy, the FCC would not only turn a blind eye to its own expertise on communications networks but would also rob consumers of the sole privacy cop on the beat with that expertise.

Second, the FCC's proposal fails to take into account the FTC's structure and its role in protecting consumer privacy. The FTC protects consumer privacy pursuant to its general consumer protection authority under section 5 of the Federal Trade Commission Act to bar unfair and deceptive acts or practices.[349] Because the FTC lacks both effective rulemaking authority and specific power from Congress to develop standards to protect consumer privacy specifically, the agency is constrained by the limits of section 5 to apply the same, general "unfair and

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[346] *See* Cable Communications Policy Act of 1984 § 631, 47 U.S.C. § 551.

[347] *See* 47 U.S.C. § 303(b).

[348] *See* FCC, *Connecting America: The National Broadband Plan* (Mar. 17, 2010), https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf ("*National Broadband Plan*"); *Connect America Fund et al*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket No. 10-90 et al, 26 F.C.C. Rcd. 17663 (2011) ("*Universal Service Transformation Order*"); *Lifeline and Link Up Reform and Modernization et al*, Third report and Order, Further Report and Order, and Order on Reconsideration, WC Docket Nos. 11-42, 09-197, 10-90, 31 F.C.C. Rcd. 3962 (2016) ("*Lifeline Modernization Order*").

[349] 15 U.S.C. § 45; *see also* Fed. Trade Comm'n, *Protecting Consumer Privacy in an Era of Rapid Change* (2012), https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-report-protecting-consumer-privacy-era-rapid-change-recommendations/120326privacyreport.pdf.

deceptive" standard to online privacy issues. Consequently, the FTC's enforcement actions usually involve broken privacy promises[350] or determining whether companies' are adhering to general industry practices rather than what practices would best protect consumers.[351] Consumers expect adequate privacy protections when accessing broadband networks. Unfortunately, enforcement actions without the ability to adopt bright line rules are not enough to protect consumer broadband privacy.

The FCC notes that its broadband privacy rules adopted pursuant the 2016 Broadband Privacy Order were repealed under the Congressional Review Act, preventing the agency from adopting substantially similar rules in the future.[352] Although this is the case, Title II still provides the Commission with the statutory framework to enforce broadband privacy protections. Consumers can file complaints before the FCC citing egregious behavior by their broadband service provider's use over their data in violation of section 222. Therefore, the Commission can bring enforcement actions against broadband service providers. Indeed, the FCC has used its enforcement authority in the past pursuant to section 222 when communications providers failed to protect their subscribers personal and sensitive information.[353] The FCC has also issued general guidance informing broadband service providers that they should take reasonable good faith steps to protect consumer privacy.[354] Commissioner

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[350] *See* FTC, Enforcing Privacy Promises, *available at* https://www.ftc.gov/news-events/media-resources/protecting-consumer-privacy/enforcing-privacy-promises.

[351] *See* Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 Collum. L. Rev. 583, 627-43 (2014).

[352] *See id.* at para. 66.

[353] *See, e.g., TerraCom, Inc. and YourTel America, Inc., Apparent Liability for Forfeiture*, Notice of Apparent Liability for Forfeiture, File No. EB-TCD-13-00009175, 29 F.C.C. Rcd. 13325 (2014).

[354] *See Enforcement Bureau Guidance: Broadband Providers Should Take reasonable Good Faith Steps To Protect Consumer Privacy*, Public Notice, 30 F.C.C. Rcd. 4849 (2015).

Clyburn has specifically called for the FCC to issue more detailed guidance outlining what privacy practices broadband service providers should adhere to under section 222.[355] Taken together, these regulatory tools equate to what the FTC would be able to do at best if it retained broadband privacy jurisdiction. However, the FCC still has the authority to promulgate new broadband privacy rules in the future—an authority the FTC clearly lacks.

B. The Commission's Authority To Ensure Consumers With Disabilities Can Access Broadband Networks is Found Within Title II

Section 255 ensures consumers with disabilities have equitable access to telecommunications networks.[356] With Title II classification, broadband providers must make their networks compatible for consumers with disabilities.[357] Indeed, the Commission has found and data continues to show that a gap in broadband access remains between consumers who have disabilities and those who do not.[358] The Commission must explain how it will ensure consumers with disabilities have access to broadband networks without Title II classification.

C. The Commission Must Address How Broadband-Only Providers Can Receive Universal Service Lifeline Support Without Title II

Consumers expect ubiquitous and affordable connectivity from their communications networks. Indeed, one of the Commission's key missions is to make "available … to all the people of the United States … a rapid, efficient, Nation-wide, and world-wide wire and radio

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[355] *See Protecting the Privacy of Customers of Broadband and Other Telecommunications Services*, Order, Statement of Commissioner Clyburn, WC Docket No. 16-106, CC Docket No. 96-115, FCC 17-82, at 13 (Commissioner Clyburn notes the FCC "even without rules could adopt enforcement guidance or a policy statement using the voluntary code of conduct which broadband providers seeking reconsideration were willing to agree.").

[356] 47 U.S.C. § 255.

[357] *See 2015 Open Internet Order*, 30 FCC Rd at 5617, para. 55.

[358] *See 2015 Broadband Progress Report*, 30 F.C.C. Rcd. at 1434, para. 99; *see also* American Association of People With Disabilities, Technology, *available at* http://www.aapd.com/our-focus/technology/ (stating that "54% of adults living with a disability use the internet, compared with 81% of adults without disabilities.").

communication service with adequate facilities at reasonable charges."[359] In its Universal Service Transformation Order, the Commission modernized its Universal Service Fund (USF) to provide support for broadband services under section 254 of the Communications Act.[360] The FCC directly applied section 254 as part of Title II classification to provide "both more legal certainty for the the Commission's prior decisions to offer universal service subsidies for deployment of broadband networks and adoption of broadband services and more flexibility going forward."[361] As a result, the FCC modernized its Lifeline program to provide low-income consumers access to affordable broadband.[362] The Commission proposes to continue supporting broadband in the Lifeline program after classifying the service to Title I. However, the FCC can only provide support to broadband-only providers under Title II.

1. Section 254 Grants The Commission With Legal Authority To Provide Universal Service Support For Broadband-Only Networks

Section 254 grants the Commission with legal authority to provide universal service support for broadband-only networks. The Commission has historically interpreted its authority under section 254 to provide USF support to both voice telephony services and the facilities over which they are offered.[363] This interpretation has allowed the agency to include USF support for broadband services. However, even with this interpretation, a carrier must be designated by the FCC or a state as an "eligible telecommunications carrier" to receive support.[364] Further, only

[359] 47 U.S.C. § 151.
[360] *See Universal Service Transformation Order*, 26 F.C.C. Rcd. at 17672 para. 17.
[361] *2015 Open Internet Order* 32 F.C.C. Rcd. at 5617 para. 57.
[362] *See generally Lifeline Modernization Order*, 31 F.C.C. Rcd. 3962 (2016).
[363] *See Universal Service Transformation Order*, 26 F.C.C. Rcd. at 17685 para. 64.
[364] *See* 47 U.S.C. § 254(e) ("only an eligible telecommunications carrier designated under Section 214(e) shall be eligible to receive Federal universal service support").

common carriers under Title II can be designated as eligible telecommunications carriers.[365] As the Tenth Circuit found prior to Title II classification of broadband, the Commission's statutory framework made it impossible for broadband-only providers to receive USF support.[366] The Commission's rules reflect this analysis and have traditionally required carriers to bundle their broadband service with voice in order to qualify for USF support.

The Commission's decision to classify broadband as a Title II telecommunications service allows the agency to provide USF support to broadband-only providers. The FCC made a conscious decision to apply section 254 in order to provide more legal certainty and strengthen its ability to support broadband.[367] Indeed, it is only with Title II classification that the Commission was able to modernize its Lifeline program and allow broadband-only providers to participate.[368] As discussed in the next section, the Commission proposes to continue providing broadband support for the Lifeline program but fails to explain how standalone broadband services would be eligible to participate. As broadband-only services become increasingly popular among consumers, the FCC must consider how it will fulfill its statutory mission of providing ubiquitous and affordable connectivity to all Americans.

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[365] *See* 47 U.S.C. § 214(e)(1) ("A common carrier designated as an eligible telecommunications carrier … shall be eligible to receive universal service support in accordance with section 254….").

[366] *See In Re: FCC 11-161*, No. 11-99000 at 51 (10th Cir. 2014) ("Consequently, there is no imminent possibility that broadband-only providers will receive USF support … since they cannot be designated as eligible telecommunications carriers.'").

[367] *See 2015 Open Internet Order* 31 F.C.C. Rcd. at 5617, 5817, paras. 57, 456.

[368] *See Lifeline Modernization Order*, 31 F.C.C. Rcd. at 3965, para. 8 (The Commission expanded the Lifeline program to "allow for broadband-only provision of service, flexibility in service areas, and streamlining of the relinquishment process.").

2. The Commission's Proposal To Maintain Support For Broadband in the Lifeline Program Does Not Consider What Effect This Has For Standalone Broadband Services

In classifying broadband as a Title I service, the Commission proposes to maintain support for broadband in the Lifeline program.[369] Specifically, the FCC relies on its interpretation of section 254 in the Universal Service Transformation Order and proposes to maintain Lifeline support for voice facilities-based services.[370] However, this proposal fails to take into account the effect on standalone broadband services, which are becoming increasingly popular among consumers. In its Lifeline Modernization Order, the Commission recognized that the rapid change in communications technology has lead to more consumers relying on broadband-only services.[371] Members of Congress have also acknowledged that Americans are increasingly 'cutting the cord' of their traditional voice service in favor of standalone broadband, and have urged the Commission to update its USF rules to reflect this change.[372]

Relying on Title II classification, the Commission established the Lifeline Broadband Provider ("LBP") designation process, creating a streamlined path for broadband-only providers as well as other carriers to participate in the Lifeline program.[373] Since the LBP designation process was established, several broadband-only carriers have applied to receive Lifeline support.[374] This indicates eligible LBPs are ready, willing, and able to provide Lifeline services.

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[369] *See 2017 NPRM*, 32 F.C.C. Rcd. at 4457, para. 68.

[370] *See id*. (The Commission proposes to require "Lifeline carriers to use Lifeline support 'for the provision, maintenance, and upgrading' of broadband services and facilities capable of providing supported services.")

[371] *See Lifeline Modernization Order*, 31 F.C.C. Rcd. at 3980, para. 49.

[372] *See* Letter from John Thune, Senator, et al to Tom Wheeler, Chairman, FCC, at 1 (May 11, 2015), https://apps.fcc.gov/edocs_public/attachmatch/DOC-333790A4.pdf.

[373] *See Lifeline Modernization Order*, 31 F.C.C. Rcd. at 3965, 4041, paras. 8, 221.

[374] *See* FCC, Lifeline Broadband Provider Petitions and Public Comment Periods, *available at* https://www.fcc.gov/lifeline-broadband-provider-petitions-public-comment-periods.

Without the LBP designation process, eligible providers would be unable to provide Lifeline services and Lifeline subscribers have fewer, and potentially less competitive choices for service providers.

Chairman Pai has said closing the digital divide is his top priority.[375] The Commission adopted the Lifeline Modernization Order under Title II to meet the needs of low-income consumers that could not afford broadband services—to help close the affordability gap that keeps so many Americans unconnected to 21st century communications services.[376] The record in the Commission's Lifeline modernization proceedings demonstrate why this program is an important tool for closing the digital divide.[377] The Commission must consider what effect Title I classification will have for standalone broadband services to participate in the Lifeline program.

D. The Commission Must Consider The Effect of Competition in the Broadband Marketplace Without Title II

Consumers expect robust choices between broadband service providers. As the Commission has consistently found, most consumers have very few options due to a lack of competition in the broadband marketplace.[378] As a way to promote competition between broadband service providers and give consumers more choices, the Commission applied section 224 of the Communications Act.[379] Section 224 of the Communications Act authorizes the

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[375] *See* Letter from Chairman Ajit Pai to Senator Tammy Baldwin (February 21, 2017), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0303/DOC-343756A3.pdf; Remarks of Ajit Pai, Chairman, Federal Communications Commission (Jan. 24, 2017) at 2, https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0124/DOC-343184A1.pdf.

[376] *See Lifeline Modernization Order*, 31 F.C.C. Rcd. 3963, paras. 2-3.

[377] *See, e.g.*, Comments of the Greenlining Institute on the Request for Reconsideration Concerning Lifeline Broadband Providers, WC Docket Nos. 11-42, 09-197, at 6 (March 16, 2017); Reply Comments of Voices for Internet Freedom Members, WC Docket Nos. 11-42, 09-197, at 3-5 (March 16, 2017).

[378] *See 2016 Broadband Progress Report* 31 F.C.C. Rcd. at 702, para. 6.

[379] *See 2015 Open Internet Order* 32 F.C.C. Rcd. at 5617, para. 56.

Commission to regulate pole attachments.[380] Broadband service providers rely on utility-owned poles to attach a variety of wired and wireless broadband technologies such as cable, fiber, and antennas. As the Commission notes in its National Broadband Plan, obtaining leases and permits to attach infrastructure to poles can be expensive, particularly in rural areas where there are more poles per mile.[381] Further, rental rates paid by competitive telecommunications companies vary widely, which can have an impact on decisions to deploy infrastructure.[382] Over the years, the Commission has updated its pole attachment rules. With Title II classification, the Commission can promulgate rules under section 224 to require legacy telecommunications carriers to provide non-legacy broadband service providers nondiscriminatory access to poles and other rights of way owned by utilities.[383]

By increasing access to broadband infrastructure, section 224 also allows the Commission to promote competition in the broadband marketplace. For example, new entrants such as Google Fiber who offer standalone broadband services are now afforded access to utility infrastructure.[384] Further, granting small broadband service providers nondiscriminatory access to utility poles allows them to better compete with incumbent carriers.[385] The Commission has in fact recently proposed to use its authority under section 224 to reduce pole attachment costs and

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[380] *See* 47 U.S.C. 224(b).

[381] *See National Broadband Plan* at 110.

[382] *See id*.

[383] *See* 47 U.S.C. 224(f).

[384] *See* Letter from Austin Schlick, Director of Communications Law, to Marlene Dortch, Secretary, FCC, GN Docket No. 14-28 at 2-3 (filed Dec. 30, 2014).

[385] *See* Letter from Stephen Coran, Counsel for Wireless Internet Service Providers Association, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-28 at 13-14 (filed Feb. 3, 2015) ("Preservation of a system that gives only well-heeled incumbents a statutory right of access to utility poles would, in a Title II would, maintain an unfair business environment and would serve as yet another market entry barrier for small broadband providers and new entrants.").

speed access to utility poles in order to promote broadband deployment and competition.[386] Further, Chairman Pai acknowledges that "unreasonably high costs and excessive delays to access poles … can make it extremely difficult to deploy infrastructure."[387] The Commission clearly acknowledges that pole attachments can serve as a barrier to broadband deployment and is willing to use its authority under Title II to increase competition in the broadband marketplace.

If the Commission reverts broadband back to Title I, it must consider what effect this will have on small broadband service provider and new entrants' ability to compete with incumbent carriers and ultimately offer consumers more choices.

VIII. Strong Net Neutrality Rules Are Necessary To Protect And Promote The Value Of An Open Internet

A. The Current Rules Are Essential To The Continued Ability To Access A Free And Open Internet For All Consumers And Have Resulted In Clear Benefits To The Internet Ecosystem

The current rules prevent behavior that threatens the virtuous cycle of innovation and investment that the Commission intends to protect under its obligation to promote broadband deployment. The Commission is required "to promote the policies of [the Telecommunications] Act favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest, convenience, and necessity."[388]

Absent clear instruction from the FCC, broadband providers will interfere with consumers' ability to get online and access the content of their choosing on a free and open platform. Further, consumers will not reap the benefits that the rules are designed to provide.

Since the 2015 Open Internet Order has gone into effect, the benefits have been clear:

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[386] *See Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking, Notice of Inquiry, and Request for Comment, WC Docket No. 17-84, 32 F.C.C. Rcd. 3266, 3267 para. 3.

[387] *Id.* at 62

[388] 47 U.S.C. § 257(b).

cloud-based service providers and small startups have thrived in an open Internet with low barriers to entry, broadband providers have benefitted as consumer demand for service has increased, and most importantly, consumers have reaped the benefits of being able to access any and all content of their choosing without having to pay premium fees on top of their subscriptions.[389]

1. The Possibility that Providers Could Offer a "Curated Internet Experience" Does Not Devalue the Existing Rules

The NPRM questions the utility of the rules by claiming "that an ISP can avoid Title II classification simply by blocking enough content."[390] But this simply means that an ISP can avoid Title II classification by changing its business model away from being an ISP and becoming something else entirely.

The Title II Order defines a broadband internet access service (BIAS) provider as "A mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints…This term also encompasses any service that the Commission finds to be providing a functional equivalent of the service described in the previous sentence, or that is used to evade the protections set forth in this Part."[391] Supporters of net neutrality have always contended that there are IP-based services, such as IPTV, that do not meet the definition of BIAS, and to which Open Internet rules do not apply. The question is how many sites an ISP must block to somehow fall out of the BIAS definition and become some other service—and this would hinge on what it means for a service to no longer be a "functional equivalent" of BIAS, or to no longer offer access to "substantially all" internet endpoints. While with all line-drawing exercises there may be grey areas and ambiguous

[389] Internet Association, Principles to Preserve & Protect An Open Internet 6 (2007).
[390] *2017 NPRM* at 4460-61 para. 79.
[391] *2015 Open Internet Order* at 5609-10, para. 25.

cases, merely blocking access to a few sites would not be enough, and if an ISP attempted to "simply…block[] enough content" to the extent that it no longer offered access to "substantially all" of the internet, it would become a service more like a BBS or CompuServe than an ISP as we know it. The Open Internet rules do many things, but they do not contain a provision requiring ISPs to continue operating. As Judges Srinivasan and Tatel have pointed out, marketplace realities, as well as the fact that non-common carriers can be more liable for the content they transmit,[392] are likely enough to prevent that outcome.

2. General Purpose Competition and Consumer Protection Laws Complement, But Do Not Substitute For, the FCC's Open Internet Rules

General-purpose legal tools such as antitrust and the FTC Act can and should work together with clear Open Internet rules to protect broadband consumers and protect competition. But they serve different purposes, and neither should substitute for the other.

Competition and consumer protection law applies to the entire economy. It is necessarily drafted in broad terms, and applying these broad terms to the facts of a specific case requires detailed work by enforcement agencies.[393] On top of that, enforcement agencies have limited resources, and must carefully select the cases they bring.

However, in certain established industries (such as broadband internet access), the same

[392] As the judges write, "Additionally, such a provider, by offering filtered rather than indiscriminate access, might fear relinquishing statutory protections against copyright liability afforded to ISPs that act strictly as conduits to internet content." See 17 U.S.C. § 512; *Recording Indus. Ass'n of Am., Inc. v. Verizon Internet Servs., Inc.*, 351 F.3d 1229, 1233, 1237 (D.C. Cir. 2003)." Interestingly, if not for the statutory protection offered to all interactive computer services by Section 230, non-common carrier ISPs would likely be liable as speakers or publishers of the content they carry, while common carriers would continue to enjoy common law immunity.

[393] Additionally, as Public Knowledge noted in its reply comments in 2014, antitrust law may face certain difficulties in addressing some of the behaviors the Open Internet rules seek to prohibit. See Reply Comments of Public Knowledge and Benton Foundation, GN Docket No. 14-28 (filed September 15, 2014), at 9-14.

kinds of harms frequently recur. Industries like this may be very complex from an economic, technological, and legal perspective. In these areas, instead of relying on general-purpose law enforcement to protect the public interest, it makes sense to specifically codify what kinds of behaviors are impermissible, and which are expected, and to create more straightforward compliance and enforcement processes, instead of relying on occasional case-by-case enforcement of broad principles of law. In other words, certain industries tend to be regulated by expert agencies for a reason. Suggesting, for instance, that the FTC can just step in for the FCC when it comes to broadband consumer protection is similar to suggesting that the FTC Act's prohibition on "unfair or deceptive acts or practices" could substitute for the FAA's airline safety rules, or that the FBI should conduct restaurant safety inspections.

Freeing general-purpose enforcement agencies from routine policing of known recurring and systematic harms not only frees them to do other work, but better protects consumers in the regulated industries, as well. Expert agencies can bring a greater wealth of knowledge and experience to specific domains that allows them to craft more targeted remedies than what general-purpose competition and consumer law may allow, can exercise a greater degree of vigilance, can establish complaint and compliance procedures, and other measures. At the same time, to the extent there are gaps in their rules, or new kinds of consumer harms that cut across different industries, they can rely on or work with general-purpose agencies to ensure that consumers continue to be protected regardless. In short, having both specific regulatory agencies and general-purpose competition and consumer protection law is the ideal way to protect the public interest thoroughly and efficiently. (A similar argument pertains to the past FCC's enactment of both bright-line Open Internet rules, and the internet conduct standard; the bright-line rules allow the Commission to protect against behaviors that are almost universally harmful,

while retaining the ability to address more novel or fact-specific issues on a case-by-case basis.)

Additionally, antitrust and competition law largely concern themselves with measurable, economic harms. The FCC by contrast is charged by Congress to promote among other things the public interest, diversity, and wide availability of communications systems. The Open Internet rules (and other rules that depend on Title II) or not just designed to ensure that consumers can access a competitive market of online services but to protect individual consumer privacy and autonomy. Goals like this go beyond the purposes of pure antitrust and consumer protection law, and provide another reason why the FCC's work complements that of other agencies.

For these reasons, the Commission should leave its current rules in place, while exploring ways that the FCC can continue to work with and complement the important work of the FTC, state attorneys general, and other agencies and officials.

B. The No Blocking Rule Is Necessary To Protect Consumers From The Harm Caused By Broadband Providers

The Commission has found time and time again that the "freedom to send and receive lawful content and to use and provide applications and services without fear of blocking is essential to the Internet's openness" and reiterated this fact in its 2015 Open Internet Order.[394] "A broad cross-section of broadband providers, edge providers, public interest organizations, and individuals support this approach."[395]

1. Broadband Providers Have Economic And Political Incentives To Block Competitors' Content And Are Engaging In Such Practices

Economic Incentives. Large broadband providers have an economic incentive to block

[394] *2015 Open Internet Order* at 5647-48, para. 111; *2014 Open Internet NPRM* at 5593, para. 89; *2010 Open Internet Order* at 17941-42, para. 62.

[395] *2015 Open Internet Order* at 5648, para. 112, n. 247.

competitors' content, which only amplifies the need to protect consumers' ability to access lawful content, applications, and services. As the broadband market becomes more consolidated, there is "an even greater need for explicit protections against the blocking of lawful content online."[396]

Blocking is not just a theoretical harm. Carriers have shown they are willing, when they can, to prevent customers from accessing competing services: for instance, Verizon once blocked many of its customers from using Google Wallet, which competed with its own payment solution.[397] And when the iPhone was an AT&T exclusive, AT&T had Apple block VOIP apps from its app store.[398] Another instance of blocking again involved AT&T and Apple—this time, when AT&T used its control over certain carrier-specific settings on iPhones to prevent FaceTime from working over a mobile connection.[399] In both of these cases, the precise mechanism of blocking (whether a violation of Open Internet, C-Block rules, or simply a business arrangement between carriers and platform owners) matters less than the incentive to block, and the effect on consumers. These instances show that although carriers may pledge not to block, e.g., access to union websites or news, "blocking" can take many forms and deciding what is blocking, and what isn't, should not be left to the carriers themselves.

International Examples of Blocking. Chile was the first country to adopt enforceable net

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[396] Comments of the Open Technology Institute at New America Foundation, GN Docket No. 14-28 (filed March 23, 2014), at 11.

[397] David Goldmand, *Verizon blocks Google Wallet*, CNN Money (Dec. 6, 2011), http://money.cnn.com/2011/12/06/technology/verizon_blocks_google_wallet/index.htm.

[398] Tony Bradley, *AT&T adn Apple Admit Deal to Block VoIP on iPhone*, PCWorld (Aug. 24, 2009), http://www.pcworld.com/article/170661/apple_att_fight_voip_on_iphone.html.

[399] John Bergmayer, *Holding AT&T to Account for Blocking FaceTime on iPhones and iPads*, Public Knowledge (Sept. 18, 2012), https://www.publicknowledge.org/news-blog/blogs/holding-att-to-account-for-blocking-facetime-on-iphones-and-ipads.

neutrality rules in response to ISPs blocking certain ports. Sparked by major ISPs acting contrary to the principle of net neutrality, Neutralidad Sí (a citizen-organized group) led a social media campaign using Facebook, Twitter, and other forums, to get the attention of those in power to change the rules. "This speaks to the potential of not only grassroots organization, but the strength of the public voice. It is considered a major feat for net neutrality advocates worldwide."[400] It is also worth noting that Chile has a "highly competitive telecommunications market" and compared to other nations around the world, "Chile has seen a significant amount of investment in the telecommunications sector."[401] With an open Internet comes incentive to invest further.

The Netherlands followed suit and was the second country to adopt strong net neutrality rules after the Netherlands' primary service provider, KPN, crossed a line. KPN was engaged in similar behavior in 2011 with regards to mobile data, and charged consumers additional fees in order to access Skype and WhatsApp instead of KPN's own messaging and voice services.[402] To safeguard against KPN's incentives to behave anti-competitively, strong rules were implemented in 2012.

Countries like Vietnam and Saudi Arabia have cracked down on access to mobile apps like Skype, WhatsApp and Viber as they pose a competitive threat to incumbent telecommunications firms in the area and proposed bans in the past to block their use.[403] Apps

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[400] Open Media, An Action Plan for a Connected Canada, https://castinganopennet.ca/plan/international-comparisons/chile.

[401] *Id.*

[402] Iljitsch van Beijnum, *Netherlands becomes world's second "net neutrality" country*, Ars Technica (May 10, 2012), https://arstechnica.com/tech-policy/2012/05/netherlands-becomes-worlds-second-net-neutrality-country/.

[403] Vivian Salama, *Saudi Arabia: The Internet's Enemy Cracks Down on Skype, Whatsapp, and Viber*, Daily Beast (March 29, 2013), http://www.thedailybeast.com/saudi-arabia-

like these are the primary way that consumers stay in touch with their friends and families both locally and abroad and such bans would have astronomically negative effects.

Political and Social Incentives. As consumers rely more heavily on the Internet as their source of news and information,[404] the potential political and economic gains from blocking access to sources of information increase, and will continue to increase. In a consolidated broadband marketplace dominated by just a handful of ISPs, only a few points of control can restrict the information available to wide swathes of the population. Politicians, pressure groups, and even other companies may pressure ISPs to limiting consumer access to news sites or prevent them from using some online services. The Commission's rules must therefore take account of this dynamic, and not rely too heavily on what broadband providers promise today. Incentives matter more than intentions.

Just look to history. One man, Daniel Lord, was able to change the landscape of Hollywood film by taking advantage of an extremely consolidated market. In the 1930s, Lord started a crusade against the "filth" he was seeing in Hollywood films and drafted a "Production Code" that the industry was pressured to abide by.[405] However, the purpose of the Production Code was not just to restrict bad content from films, but to decide what content could be

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the-internets-enemy-cracks-down-on-skype-whatsapp-and-viber; Reuters, *Vietnam Examines Policy on Chat Apps, Ban Possible*, VOA (Aug. 20, 2013), https://www.voanews.com/a/reu-vietnam-chat-apps-media-viber-whatsapp/1733710.html.

[404] The Pew Research Center released a report in late 2013 showing key trends in the way consumers are accessing and interacting with the Internet and news outlets. Andrea Caumont, *12 trends shaping digital news*, Pew Research Center (Oct. 16, 2013), http://www.pewresearch.org/fact-tank/2013/10/16/12-trends-shaping-digital-news/.

[405] A combination of pressure from the Church, threats from the incoming Roosevelt administration to get involved, and a series of academic studies suggested that films were dangerous to children contributed to the effectiveness of the Production Code. Tim Wu, The Master Switch: The Rise and Fall of Information Empires 119 (2010).

played—it purported "traditional [Catholic] ideals" and it utilized prior restraint to do so.[406] "There was no place for the expression of remotely subversive views or anything that questioned the status quo."[407]

Just like that, an open and creative medium[408] was severely curtailed—not through legal action, not through a new statute, and not due to the convictions of the studios, but solely from outside pressure. "The pre-Code era didn't fade, it was ended in full bloom and with the finality of an axe coming down"—a result that can be expected when a market is as consolidated as Hollywood was at the time. With only a handful of big studios dominating the landscape, it resembles what the broadband market looks like today.

2. Public Outcry Is Not Sufficient Incentive For Broadband Providers To Change Their Harmful Conduct Towards Consumers

Opponents of the 2015 Open Internet Order claim that a ban on blocking is not necessary because if blocking lawful content was truly a problem, "then public outcry by the affected subscribers should likely be sufficient to convince the ISP to change its practices rather than bear the brunt of public backlash, in hopes of pleasing its customers (and its investors)."[409]

But we have seen repeatedly that companies like Comcast do what their bottom lines dictates, not what their customers or the public at large demand. In fact, Comcast's customer service is so bad that it has its own Wikipedia page—"Criticism of Comcast"[410]—and has been named the company with the worst customer service in the country by countless publications and

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[406] *Id.* at 117.

[407] *Id.* at 124.

[408] The "marketplace of ideas" provides the ability to share ideas in an open market without having to worry about the market being exclusive to entry or expensive to get into - what was once a concept in Hollywood is the same concept that makes the open Internet what it is.

[409] Comments of TechFreedom, GN Docket No. 14-28 (filed July 17, 2014), at 15-16.

[410] Wikipedia, Criticism of Comcast, https://en.wikipedia.org/wiki/Criticism_of_Comcast.

polls[411] year after year. Comcast remains one of the most dominant players in the broadband market without changing its business practices, because its incentives are not aligned with the good of the public it serves.

3. If Broadband Providers Are Willing To Abide By The 2010 Principles Without Being Legally Obligated, Then The Rules Are No Burden

Regardless, if we take ISPs at their word that they do not intend to block access to content or services, then it follows that the current rule against blocking does not pose any special burden or change their behavior in any way. The current rule then simply holds broadband providers to their word, or perhaps protects against a rogue ISP who does not abide by this supposed industry consensus. (In this context it is worth observing that the current rules still give broadband providers the ability to engage in reasonable network management and to block content that harms the network, such as DDOS traffic.)

All broadband providers should be held to the same rules. While they many lack the same degree of monopsony power, many small broadband providers are still monopolies are in the areas they serve and possess gatekeeper power over their customers.[412] In any case, small broadband providers sometimes band together to achieve otherwise-unavailable economies of

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[411] Daniel Frankel, *Comcast still ranks last in customer 'experience' survey focused on top pay-TV companies*, Fierce Cable (May 25, 2016), http://www.fiercecable.com/cable/comcast-still-ranks-last-customer-experience-survey-focused-top-pay-tv-companies; Stephanie Mlot, Comcast is America's Most Hated Company, PC (Jan. 12, 2017), http://www.pcmag.com/news/350979/comcast-is-americas-most-hated-company; Caroline Mayer, Best And Worst Customer Service In America, Forbes (July 23, 2014), https://www.forbes.com/sites/nextavenue/2014/07/23/best-and-worst-customer-service-in-america/#591ae0f475e7.

[412] Jon Brodkin, *Title II hasn't hurt network investment, according to the ISPs themselves*, Ars Technica (May 16, 2017), https://arstechnica.com/information-technology/2017/05/title-ii-hasnt-hurt-network-investment-according-to-the-isps-themselves/.

scale.[413] Similar dynamics could affect the shaping, blocking, and throttling of broadband content in the future, giving the aggregate of small providers power more like that of major cable companies. Finally, to the extent that small providers also claim to have no interest in blocking access to content, it is unclear what special burdens the rule could subject them to.

C. The No Throttling Rule Is Necessary To Give Full Effect To The No Blocking Rule And Further Protect Consumers From Degraded Content

The "No Blocking" rule will not be as effective without a "No Throttling" rule because broadband providers may engage in conduct that harms the open Internet but falls short of outright blocking. In fact, broadband providers are more likely to engage in this type of behavior as to fly below the FCC's radar. There is a need to protect against broadband providers degrading content that might compete with their own affiliated content.

As with blocking, throttling can take many forms. Comcast of course instigated an early legal battle over net neutrality by degrading its customers' ability to use BitTorrent through the use of forged packets.[414] By demanding high fees from some internet transit companies, ISPs like Comcast and Verizon exercised their gatekeeper power over edge services and degraded their customers' ability to access online video.[415] Some wireless ISPs have throttled the bandwidth

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[413] For example, "[t]he National Cable Television Cooperative (NCTC) creates unparalleled value for our 800+ independent cable/broadband operator members and key service and equipment supplier partners." *About NCTC*, https://www.nctconline.org/index.php/about-nctc.

[414] Declan McCullagh, *FCC formally rules Comcast throttling of BitTorrent was illegal*, Cnet (Aug. 20, 2008), https://www.cnet.com/news/fcc-formally-rules-comcasts-throttling-of-bittorrent-was-illegal/.

[415] See, e.g. Steven Musil, Netflix reaches streaming traffic agreement with Comcast, CNet (Feb. 23, 2014), https://www.cnet.com/news/netflix-reaches-streaming-traffic-agreement-with-comcast/; Andrew Webster, *Major ISPs accused of deliberately throttling traffic*, The Verge (May 6, 2014), https://www.theverge.com/2014/5/6/5686780/major-isps-accused-of-deliberately-throttling-traffic.

that is available to online video services—arguing that by labeling this throttling "optimization," it complies with the no-throttling rule.[416] A bright-line no-throttling rule can address both instances when ISPs are plainly throttling and those where they find creative new ways to slow down rival services.

D. The Ban On Paid Prioritization Is Necessary To Protect Consumers From Anti-Competitive Practices By Large Broadband Providers Who Have Both The Incentive And The Means To Distort The Market

A ban on prioritization naturally goes along with a ban on throttling, since to prioritize one service is to degrade the others. Just as it has the incentive to throttle certain applications or content, an ISP may want to collect fees from edge services for prioritization, or to prioritize its own vertically-integrated content or service. Not only do they have the incentive, but they also had the intent—Verizon has admitted under oath that, "but for these rules, we would be exploring those commercial arrangements."[417] Indeed, in some ways the risk calculation around prioritization vs. throttling is different, because while it is hard to envision a service asking for itself to be throttled (and it may be legally risky for it to ask that its competitors be throttled), a large edge service may try to use its market power or financial resources to prioritize itself at the ISP level over its competitors. A ban on paid prioritization thus not only prevents ISPs from exercising their gatekeeper power to accept or demand fees for prioritization, it prevents large edge services from crowding out smaller competitors with fewer resources. It thus effectuates the

[416] Jon Brodkin, *T-Mobile and YouTube compromise on video throttling and zero-rating*, Ars Technica (Mar. 17, 2016), https://arstechnica.com/business/2016/03/t-mobile-and-youtube-compromise-on-video-throttling-and-zero-rating ("Binge On throttles video streams and downloads to about 1.5Mbps, forcing the video services to deliver lower quality, typically about 480p.").

[417] *Verizon* Oral Arg. Tr. at 31 (D.C. Cir. Case No. 11-1355), https://www.cadc.uscourts.gov/recordings/recordings2014.nsf/DCD90B260B5A7E7D85257BE1005C8AFE/$file/11-1355.mp3.

"virtuous cycle," and the NPRM's proposal to unwind these rules would undermine it.

By banning paid prioritization, the FCC in 2015 did an enormous service to the digital economy. Prior to the FCC's adoption of these rules, venture capitalists observed that because the possibility of paid prioritization, they planned to "'stay away from' startups working on video and media businesses"[418] and noted that a proposal to allow some forms of paid prioritization added "another impediment to the already challenging fund-raising environment for digital media startups."[419]

The trend in broadband access is toward faster and more capable networks. Indeed, at times network performance can outstrip the ability of applications to take advantage of it—creating a needed "buffer" which permits users to use multiple applications simultaneously and provides headroom for future applications. In short, the trend in broadband is towards abundance. Perversely, though, because paid prioritization is a form of monetizing scarcity (along with other measures like data caps on fixed networks), it disincentivizes network investment and even creates an incentive to artificially limit network performance. Because paying for prioritization is only rational if it offers significant performance improvements, allowing ISPs to charge some edge providers for prioritized service ensures that slow lanes will remain slow.

The rise of vertical integration between ISPs, content (video programming in particular)

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[418] David Talbot, *Talk of an Internet Fast Lane Is Already Hurting Some Startups*, MIT Tech. Rev. (May 7, 2014), http://www.technologyreview.com/news/527006/talk-of-an-internet-fast-lane- is-already-hurting-some-startups/.

[419] Alex Wilhem, Despite Furor, *Proposed Net Neutrality Changes Appear Headed For A Vote*, TechCrunch (May 9, 2014), http://techcrunch.com/2014/05/09/despite- furor-proposed-net-neutrality-changes-appear-headed-for-a-vote/.

and online services enhances the risk of prioritization.[420] Comcast now owns NBCUniversal, Verizon now owns AOL, Flickr, and Tumblr, and AT&T owns the popular online video service DirecTV Now and is attempting to purchase Time Warner. Each of these acquisitions has increased the incentive of each respective ISP to engage in unlawful prioritization. (For context, the current rules prohibit prioritization that benefits an "affiliated entity" as well as prioritization in exchange for "consideration (monetary or otherwise) from a third party."[421] Thus the sometimes-heard objection that the current rules encourage vertical integration is false.)

Finally, prohibiting paid prioritization helps to foster broadband network investment by setting clear boundaries of acceptable and unacceptable behavior and thus provides business certainty. While broadband providers claim that their qualms with the 2015 Open Internet Order are in large part due to the "uncertainty" of the rules, this criticism at least cannot apply to the ban on paid prioritization.

1. Paid Prioritization Could Fundamentally Alter The Internet By Introducing Artificial Barriers To Entry And Distorting The Market, Which Will Harm Competition, Discourage Innovation, And Harm Consumers

The "virtuous cycle" is based on "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."[422] This cycle depends on edge providers being able to easily enter the market, driving end-user demand and increasing innovation.[423] Absent a ban on paid prioritization, edge providers will not be able

[420] Comments of Public Knowledge and Common Cause, GN Docket 14-28 (filed March 21, 2014), at 13.

[421] *2015 Open Internet Order* at 5653 para. 125.

[422] *2010 Open Internet Order* at 17910-11, para. 14.

[423] *2010 Open Internet Order* at 17910-11, para. 14.

to freely enter the market in the same way—instead, they will have to use their scarce resources simply to have access to the "fast lanes" to remain competitive against incumbent businesses.

An open Internet benefits the entire Internet ecosystem—edge providers and startup companies who continue to innovate and create knowing that their services will reach consumers, consumers who have access to such a wide range of services, and ultimately, broadband providers who benefit from increased demand of their services.[424]

Paid Prioritization would disadvantage small businesses, independent creators, and startups. Without the ban on paid prioritization, it is likely that broadband providers would partner with one, or a limited few, edge services to provide services to their consumers that are preferred over others.[425] Whether in the form of direct payment for prioritization or another form of equity exchange, edge services in these deals with broadband providers will be in a position to charge higher prices for their services.[426] This sort of agreement would not be nearly as profitable for broadband providers to engage in with small edge services with smaller customer bases and smaller profit margins.

In a world with discriminatory broadband access, smaller and new competitors with less capital would be the least likely to be able to afford to pay for priority treatment online. (In fact, some of the most beneficial content online is non-commercial in nature and would likely never be able to afford to upgrade their quality of service to compete with large edge services.) This will put them at a significant disadvantage against their more well-funded competitors. Consumers will "choose" the large incumbent companies, leaving smaller businesses in the dust,

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[424] Internet Association, *Principles to Preserve & Protect An Open Internet*, at 4 (2017).

[425] Jon M. Peha, *The Benefits and Risks of Mandating Network Neutrality, and the Quest for a Balanced Policy*, 34th Telecommunications Policy Research Conference, at 655 (2006), http://repository.cmu.edu/cgi/viewcontent.cgi?article=1021&context=epp.

[426] *Id.* at 654-55.

and worsening the already challenging "winner-take-all" online economy.

This is why more than 1,000 startups, innovators, and entrepreneurs from all 50 states wrote a letter addressed to FCC Chairman Ajit Pai asking him to protect net neutrality for their continued success. Absent strong net neutrality protections, stronger broadband providers could take "actions [that] directly impede an entrepreneur's ability to start a business, immediately reach a worldwide customer base, and disrupt an entire industry."[427]

User-generated video and independent filmmakers that lack the resources of major film studios to pay priority rate for dissemination of content would be disadvantaged. Absent a ban on paid prioritization, user-generated content (or the platforms it is hosted on) may not be able to pay the same premium rates as large content providers to get their content online and accessible to consumers at the same speeds. This would have a detrimental effect on content creation which would not only hurt content creators but also the consumers who will have lost the opportunity to view and experience said content.

Just this month, over 100 online video creators joined in a letter to Chairman Ajit Pai explaining the importance of strong net neutrality rules. "Content from all is served equally and this ensures an equal opportunity for success to anyone wishing to enter the market. Independent creators such as ourselves would be greatly disadvantaged by the removal of Title II protections."[428]

Similarly, independent filmmakers would suffer without net neutrality protections. A strong ban on paid prioritization is crucial "[i]n the new digital ecosystem where filmmakers are

[427] Startups for Net Neutrality, Letter to Chairman Ajit Pai, Engine (April 26,2017), http://www.engine.is/startups-for-net-neutrality/.

[428] *Id.*

reliant on the internet to get their content seen."[429]

User-generated content and independent creators rely on the open and free Internet as their means of sharing their work with the world. Absent a ban on paid prioritization, this would be impossible.

Fees incurred by edge providers will be passed onto consumers and/or subscribers. Without a ban on paid prioritization, broadband providers will freely charge edge providers higher fees and premiums to reach their consumers. To make up for this additional cost, edge providers will have to increase the prices they charge consumers. To optimize these prioritized networks ("fast lanes"), broadband providers will have to also increase the prices they charge consumers. And with fewer and fewer players in the market, consumers will have no choice but to pay these higher fees in order to access the same content they were accessing for less before. Without a ban on paid prioritization, consumers will have to pay more to get on the Internet and then will have to pay more to view content once they're online. Meanwhile, large broadband providers will continue to profit on their anti-competitive behavior at the cost of consumer choice.

2. Paid Prioritization Will Harm Free Expression

Most importantly, the Internet is a platform for political participation, social engagement, and cultural creation.[430] Particularly when it comes to the political landscape, the Internet allows

[429] Justin Morrow, *What the Latest Net Neutrality Victory Means for Indie Filmmakers*, *No Film School* (June 18, 2016), http://nofilmschool.com/2016/06/what-latest-net-neutrality-victory-means-filmmakers.

[430] *See* Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 Minn. L. Rev. 917, 1004-1022 (2005).

people to engage in civic and political discourse via video sharing sites and blogs.[431] Such political engagement not only benefits the consumers directly engaged, but also has spillover benefits for those that may not engage in a discussion but still read or watch it.[432]

Broadband providers will be able to decide for consumers what information they can access on the Internet, threatening democratic discourse. The term freedom of expression encompasses any act of seeking, receiving and imparting information or ideas, regardless of the medium used. "[I]f broadband providers can discriminate among content, they can effectively pick winners and losers, interfering with the public's ability to freely educate itself about political, cultural, and social issues – education that is critical to our democracy."[433] It should be the consumers that choose what they read about, not broadband providers. And it should be the consumers that decide what the most important news is, not broadband providers.

Paid prioritization would especially harm low-income communities and communities of color who cannot afford to be heard on traditional media outlets. An open Internet ensures that every voice has an opportunity to be heard and protects the free flow of information from diverse sources. The Internet has provided an alternative means of representation to underrepresented demographics, including rural, low-income and minority communities. These groups have historically had less access and disproportionately low and inaccurate representation in all forms of media.[434] An open and free Internet created an opportunity to change that for everyone,

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[431] Comments of Public Interest Commenters, GN Docket No. 09-191 (filed January 14, 2010), at 25.

[432] *See* Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 Minn. L. Rev. 917, 1018 (2005).

[433] 2015 Open Internet Order at 5653-54 para. 126, n. 292.

[434] Why Net Neutrality Matters: Protecting Consumers and Competition Through Meaningful Open Internet Rules: Hearing Before the Comm. on the Judiciary (2014) (testimony of Ruth Livier).

especially these particular communities. Without clear net neutrality rules, there is a great threat to many populations to whom an open and free Internet has been the most beneficial. It is critical to preserve the Internet as an open platform where individuals and communities can speak on their own behalf to wider communities without the same barriers to entry that traditional media outlets present.

There are unique and particular harms for non-commercial edge providers. Without a ban on paid prioritization, it is not only consumer edge providers that will suffer from the anti-competitive practices of broadband providers. Non-commercial edge providers may have to either buy into the fast lanes, which will prove to be extremely difficult given their financial constraints, or they will be banished to the "slow lanes" of the Internet, dooming them to an eventual destruction if they aren't willing to implement fees to access their content. The end result of either is harm to the consumer.

3. Paid Prioritization Creates Disincentives To Broadband Deployment And Allows For Redlining Of Rural Towns

Absent a ban on paid prioritization, large broadband providers will have the opportunity to act in ways that could ultimately inhibit the speed and extent of future of broadband deployment. As the market currently stands, broadband providers generally have an incentive to deploy broadband networks as far and as wide as they can to reach as many consumers as possible and increase their profit margin.

However, if paid prioritization is allowed, broadband providers will be able to increase their profit margins by simply charging consumers more money for access to "fast lanes" on the Internet. Additionally, broadband providers will actually have an incentive not to maintain a high-quality "standard lane" because if their only alternative is a barely usable connection, consumers will "choose" to pay more for prioritized networks.

Paid prioritization would allow broadband providers to charge edge providers additional fees to reach their subscribers, especially those in more remote geographic locations. But after weighing the potential profits with the cost to reach remote consumers, edge providers may simply elect not to pay to reach said consumers, leading to what is known as redlining. This is bad enough on its own, but if the FCC allows for paid prioritization, ISPs will also engage in conduct known as "virtual redlining"—conduct that leaves consumers in certain areas with access, but at significantly slower speeds.[435] Edge providers will pay more to ISPs to prioritize their content to certain customers but not to all of them. That would mean that rural communities and largely minority communities will be left behind in two ways—first, by ISPs that are reluctant to invest in broadband infrastructure deployment to those areas; and again, by edge providers that won't be willing to spend money to deliver their content to those same customers at prioritized speeds.[436]

Paid prioritization creates a perverse incentive because "underinvestment in infrastructure is more appealing if the result is increased sales of a prioritized offering balancing out any loss in direct subscribers."[437] This bifurcated network will reduce incentive for investment in network build-out and instead incentivize its deterioration.

4. Allowing Paid Prioritization Does Not Have Significant Pro-Competitive Benefits

Paid Prioritization will not lead to increased broadband deployment and investment.

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[435] Comments of Public Knowledge and Common Cause, GN Docket 14-28 (filed March 21, 2014), at 37.

[436] Five Minutes with Feld, *Net Neutrality and Virtual Redlining*, YouTube (May 16, 2014), https://www.youtube.com/watch?v=14BXzgPrz3M; Harold Feld, *The Tiered Internet and "Virtual Redlining"*, Wetmachine (June 12, 2006), http://www.wetmachine.com/tales-of-the-sausage-factory/the-tiered-internet-and-virtual-redlining/.

[437] Reply Comments of Mozilla, GN Docket 14-28 (filed September 15, 2014), at 16.

While large broadband providers claim that their ability to charge edge providers for better access ultimately benefits the entire industry because it will fund future network build-out and investment in infrastructure, this is simply not reflected in broadband providers' behavior. Broadband providers are already extremely profitable but have not proportionally reinvested in the network. What makes us think that this will change in the future? Without concrete evidence that their claim is true, it is extremely dangerous to give broadband providers more room to harm consumers by taking away consumer choice.

Paid prioritization is not necessary for real-time or interactive services. Paid prioritization is not needed to ensure that real-time or interactive services, like telehealth, are successful. In fact, the opposite is true. This new concept of tiered pricing based on the type of content being delivered would disrupt the Internet as we know it and would harm doctors, patients, and smaller startup Internet companies working diligently to upgrade our nation's digital healthcare infrastructure. To ensure America's healthcare technology infrastructure can continue to grow and flourish for the rich and poor alike, it is imperative that broadband providers are not allowed to create tiers of speeds in this manner.[438]

Additionally, "[r]ural and underserved communities with fewer choices of ISPs will likely receive diminished care, at slower speeds and higher cost."[439] Without a ban on paid prioritization, broadband providers are likely to seek an increased source of income by charging

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[438] Matthew Douglass, *A Digital Healthcare Argument For Net Neutrality*, TechCrunch (Nov. 29, 2014), https://techcrunch.com/2014/11/29/a-digital-healthcare-argument-for-net-neutrality/.

[439] Beatriz Mallory, *What happens to telemedicine if we lose net neutrality?*, HealthcareDIVE (May 31, 2017), http://www.healthcaredive.com/news/what-happens-to-telemedicine-if-we-lose-net-neutrality/443908/.

healthcare providers premium fees.[440] These fees would be passed onto consumers would simply add a barrier of access for patients who need this kind of service the most.[441] It is due to strong net neutrality rules that services like telehealth and telemedicine continue to be so useful to consumers without unduly burdening consumers with heavy fees.

The existence of alternative traffic delivery arrangements is not equivalent to paid prioritization by broadband providers. Alternative traffic delivery arrangements, like paid peering agreements, are different than paid prioritization and, as such, the same rules should not apply to both. Arguments that analogize bans on paid prioritization to bans on CDNs or paid peering are simply fallacious.

Paid peering and CDN agreements allow content providers, especially streaming services, to pay content delivery networks to host their data on local networks and then deliver the data to broadband providers for better performance.[442] This enhances existing infrastructure as the interconnection deals create additive gains to network capacity and efficiency, unlike the zero-sum game of paid prioritization."[443] While by charging arbitrarily high rates for paid peering or denying access to CDNs can be discriminatory, it is important to distinguish arrangements that improve the physical infrastructure of the network from paid prioritization, which is nothing more than monetizing scarcity.

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[440]Beatriz Mallory, *What happens to telemedicine if we lose net neutrality?*, *HealthcareDIVE* (May 31, 2017), http://www.healthcaredive.com/news/what-happens-to-telemedicine-if-we-lose-net-neutrality/443908/.

[441] *Id.*

[442]Kyle Russell, *Here's Why You Should Be Thrilled Netflix Is Paying Comcast For Content Delivery*, Business Insider (Feb, 25, 2014), http://www.businessinsider.com/paid-peering-explained-2014-2.

[443] Raphael Leung, *Paid Peering, Paid Prioritization, and the Nuance of the Net Neutrality Debate*, Benton (July 28, 2014), https://www.benton.org/node/197702.

E. There Is a Continued Need For The General Conduct Rule

The General Conduct Rule is necessary to evaluate current and future broadband Internet access provider policies or practices that are not explicitly covered by the three bright-line rules. It benefits consumers by protecting against any future conduct that broadband providers may engage in to skirt around the current rules that the FCC has put in place. By placing the core principles of the General Conduct Rule at center, consumer rights are protected—particularly free expression, to ensure that the Internet "offer[s] a forum for true diversity of political discourse, unique opportunities for cultural development, and myriad avenues for intellectual activity."[444]

At the same time, the General Conduct Rule is flexible enough to ensure that innovation is not unduly curtailed, and allows for ISPs to develop new services. While it prevents ISPs from inventing new ways to evade the bright-line rules or otherwise harm consumers, it does not prevent ISPs from experimenting with new services, billing plans, or other features that are reasonable and non-discriminatory.

1. The General Conduct Rule Is Not Unpredictable Or Vague

The NPRM asked the public how the FCC can "ensure that the rule it adopts sufficiently protects against harms to the open Internet"[445] putting broadband providers on notice that the Commission was interested in ensuring that the rules it set out protected consumers from both current and "future practices that cause the type of harms our rules are intended to address."[446]

The D.C. Circuit addressed this in its most recent decision on net neutrality. The General Conduct Rule reflects a core non-discriminatory principle that are well understood and has a long

[444] 47 U.S.C. § 230(a)(3).
[445] *2014 NPRM* at 5604, para. 121.
[446] *2015 Open Internet Order* at 5659, para. 135.

history in communication law and the 2015 Open Internet Order provides extensive guidance as to how it would be applied. Under the 2015 Open Internet Order, explanations of each factor in combination with the option to obtain an Advisory Opinion puts broadband providers on more than sufficient notice of what conduct they are and are not permitted to engage in. In fact, in the the Commission pointed out that they it was "providing at least as much guidance, if not more, as [it] did in 2010 for the application of the no unreasonable discrimination rule."[447] The FCC is "mindful that vague or unclear regulatory requirements could stymie rather than encourage innovation,"[448] and because of this, the Commission lays out a non-exhaustive list of factors in which it will consider when evaluating a company's practices under the General Conduct Rule. Additionally, the Commission offers the option to obtain an advisory opinion from the Enforcement Bureau before a company begins engaging in conduct it is unsure about.[449]

The D.C. Circuit ruled that the General Conduct Rule is not impermissibly vague. A regulation will be invalidated based on vagueness "only if the enactment is impermissibly vague in all of its applications."[450] The vagueness doctrine addresses two concerns: (1) that regulated parties should know what is required of them so they may act accordingly; and (2) precision and guidance are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way. The D.C. Circuit found that the 2015 Open Internet Order not only set forth a list of factors, but also included a description of how each factor would be "interpreted and applied," as well as specifically identifying the kind of conduct that would violate the Rule.[451] Further, the General Conduct Rule was adopted to complement the current bright-line rules and fill in the gaps left by

[447] 2015 Open Internet Order at 5661, para. 138.
[448] 2015 Open Internet Order at 5661, para. 138.
[449] 2015 Open Internet Order at 5706, para. 229-230.
[450] *Village v. Humanitarian Law Project*, 561 U.S. 489, 495 (1982).
[451] *USTelecom* at 736.

future ISP conduct. This knowledge further refutes the "vagueness" argument and provides the requisite notice, precision, and guidance required of a regulation.

The degree of vagueness accepted in a given statutory provision varies based on "the nature of the enactment."[452] In cases involving business conduct and merely civil penalties, "regulations will be found to satisfy due process so long as they are sufficiently specific that a reasonably prudent person, familiar with the conditions the regulations are meant to address and the objectives the regulations are meant to achieve, would have fair warning of what the regulations require."[453] Because the adopted rule uses articulated and consistent factors, a reasonably prudent person would certainly have fair warning of what the General Conduct Rule requires.

Further, a regulation is not deemed to be impermissibly vague because it is "marked by flexibility and reasonable breadth, rather than meticulous specificity."[454] Instead, the FCC is mindful that if it makes the regulations too specific, then companies will find loopholes and ways around the regulations to escape regulation—a concern that is especially present when dealing broadband technology and the internet and the speed at which it evolves and constantly changes.

Finally, the advisory opinion procedure offers guidance to broadband providers and allows them to seek advice from the Commission, providing relief from any remaining uncertainty.[455] Further, the possibility that the Enforcement Bureau could change its mind merely

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[452] *Village of Hoffman Estates v. Flipside, Hoffman Estates, Inc.*, 455 U.S. 489, 498 (1982). Requirements on statutes that limit Constitutional rights allow the least degree of vagueness. *DiCola v. FDA*, 77 F.3d 504, 508 (D.C. Cir. 1996).

[453] *Freeman United Coal Mining Co. v. Federal Mine Safety & Health Review Commission*, 108 F.3d 358, 362 (D.C. Cir. 1997).

[454] *Grayned v. City of Rockford*, 408 U.S. 104, 110 (1972).

[455] *DiCola v. FDA*, at 509; *Hoffman v. Flipside*, at 498.

reflects flexibility similar to that in the Department of Justice Antitrust Division's business review letter procedure, allowing the Commission to adapt after seeing "the actual effects of the conduct."[456]

2. Zero-Rating Is An Example Of How An Alleged Unpredictability And Threat Of Enforcement Did Not Actually Have the Claimed Deterrent Effect On Broadband Providers

The Commission's assessment of zero-rating plans was not unpredictable. In the 2015 Open Internet Order, the Commission recognized that zero-rating programs were both an emerging practice and varied so widely that the Commission did not find them well suited to a particular set of rules governing. Instead, the Commission resolved to "look at and assess such practices under the no-unreasonable interference/disadvantage standard, based on the facts of each individual case, and take action as necessary."[457] As such, zero-rating plans are to be evaluated under the General Conduct Rule, which, as previously discussed, is neither vague, ambiguous or unpredictable.

Any alleged unpredictability did not actually deter broadband providers from testing the outer limits of the rule. Broadband providers have claimed that uncertainty arising from possible enforcement action against zero-rating would deter them from creating and implementing zero-rating programs. But this is simply untrue. Providers tested the boundaries of zero-rating conduct since the 2015 Open Internet Order was released. For example, Comcast has XFinity Stream TV; AT&T has DirecTV Now; Verizon has Free Bee Data 360, Fios, and Go90; T-Mobile has BingeOn and ONE Video. Thus, there is no evidence to indicate that any of the large broadband providers have been holding back due to the "uncertainty" of the General Conduct Standard.

[456] *USTelecom*, 825 F.3d at 738.
[457] *2015 Open Internet Order* ¶ 152.

CONCLUSION

For the above stated reasons, the Commission should leave in place the classification of broadband internet access as a Title II telecommunications service and keep in place the existing rules that prevent ISPs from blocking and discriminating online.

Respectfully submitted,

/s/ Ryan Clough
Ryan Clough
John Bergmayer
Phillip Berenbroick
Sara Kamal
Yosef Getachew

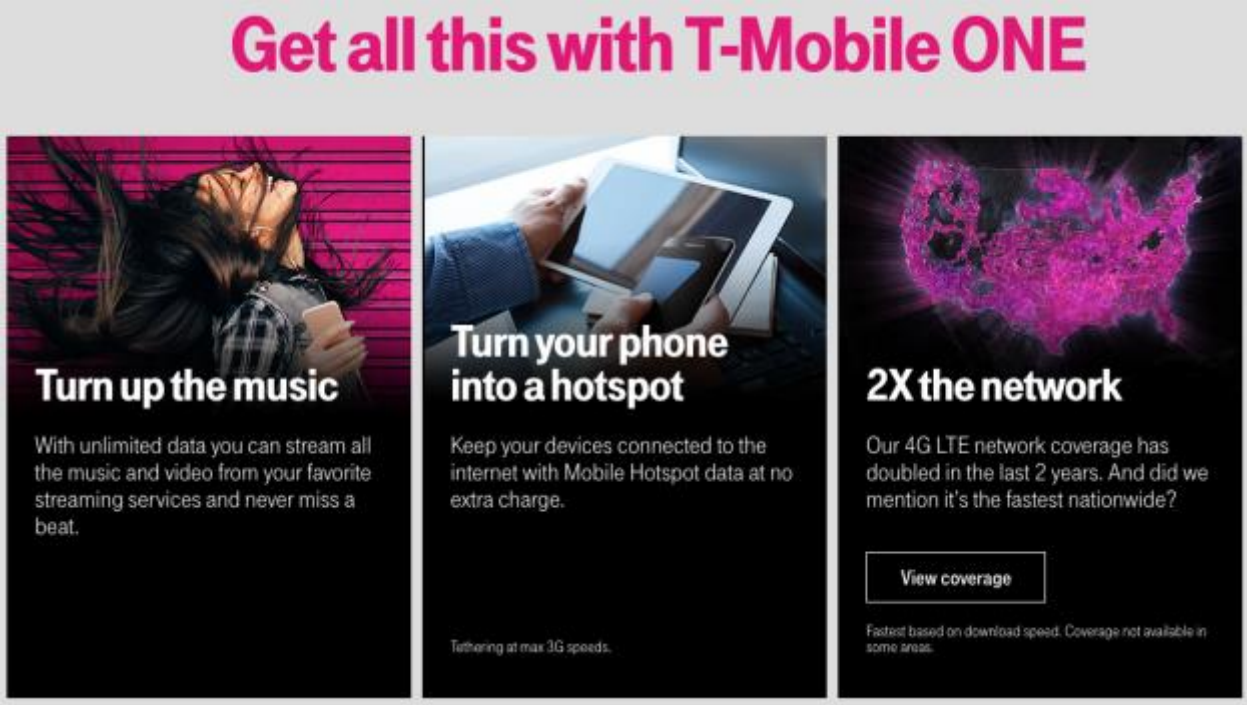
Public Knowledge
1818 N Street NW
Suite 410
Washington, DC 20036
(202) 861-0020

Todd O'Boyle

Common Cause
805 15th Street NW
Suite 800
Washington, DC 20007
(202) 833-1200

July 17, 2017

APPENDIX A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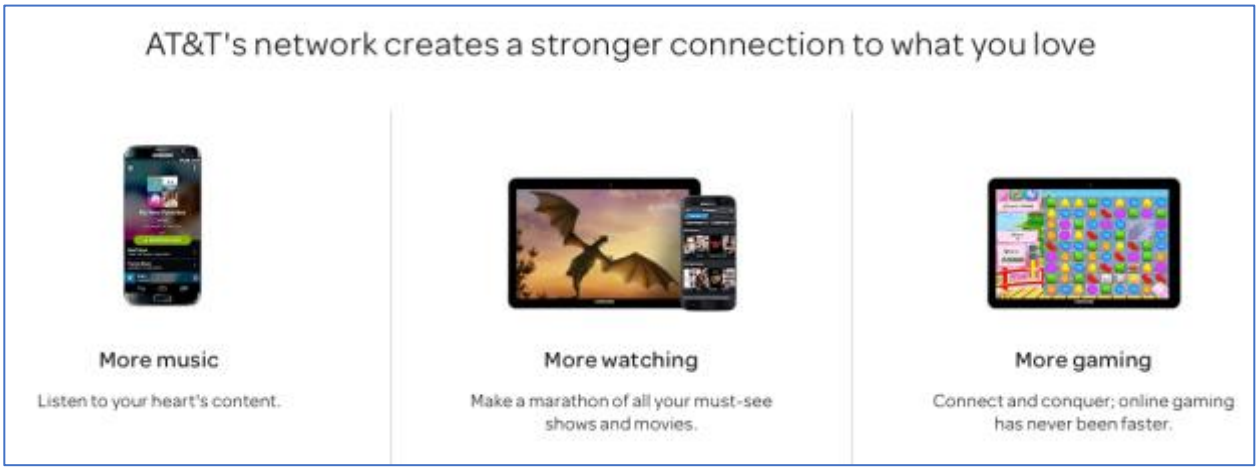
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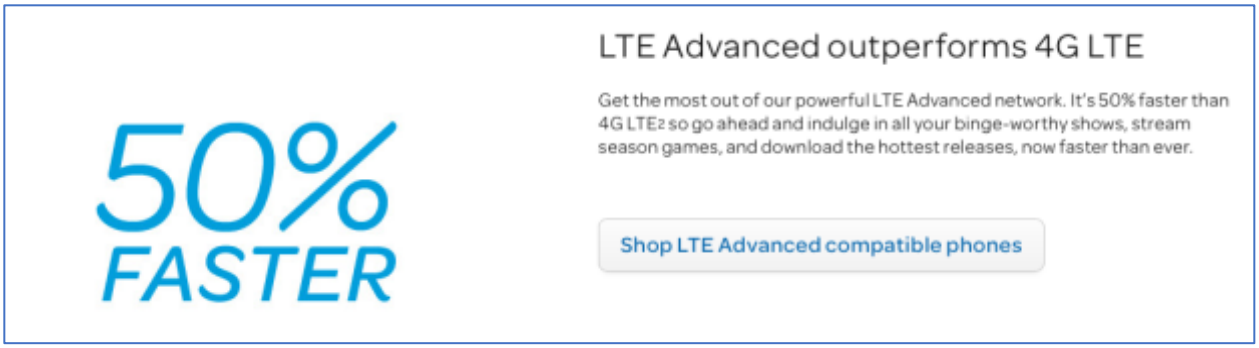
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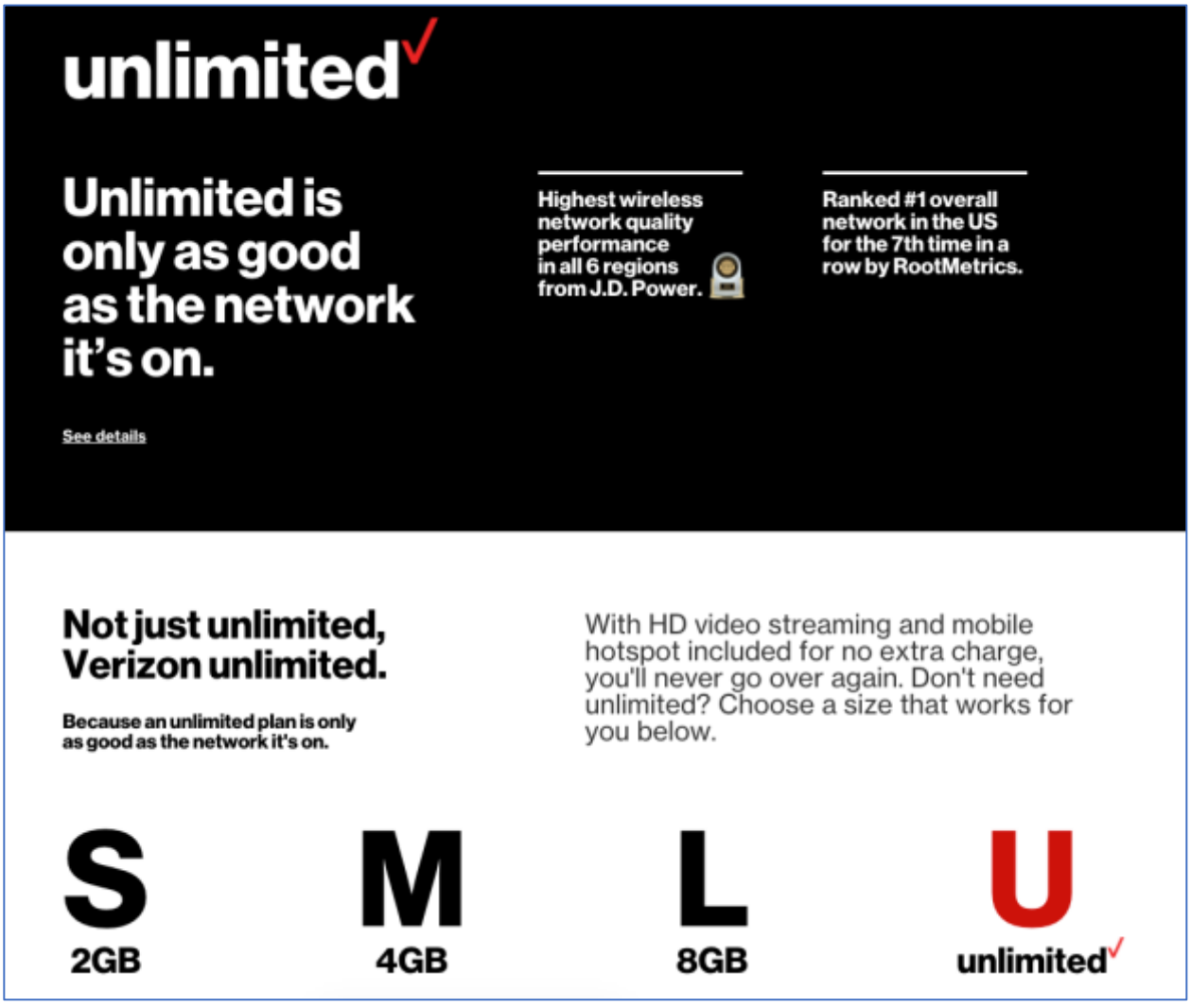
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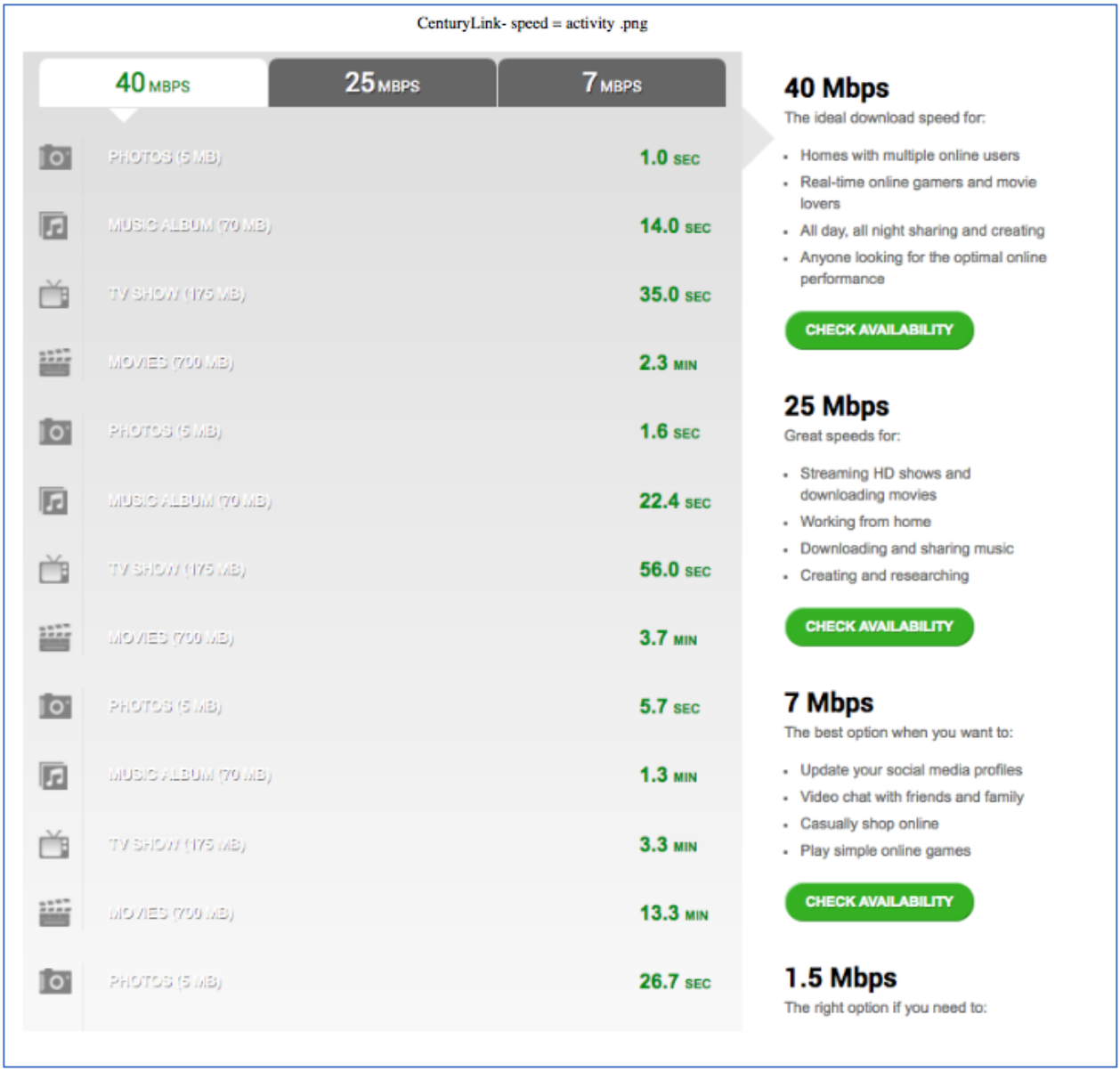

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Internet Speed	**Up to 5 Mbps download** speeds **Up to 1 Mbps upload** speeds	**Up to 15 Mbps download** speeds **Up to 2 Mbps upload** speeds	**Up to 100 Mbps download** speeds **Up to 10 Mbps upload** speeds	**Up to 300 Mbps download** speeds **Up to 30 Mbps upload** speeds
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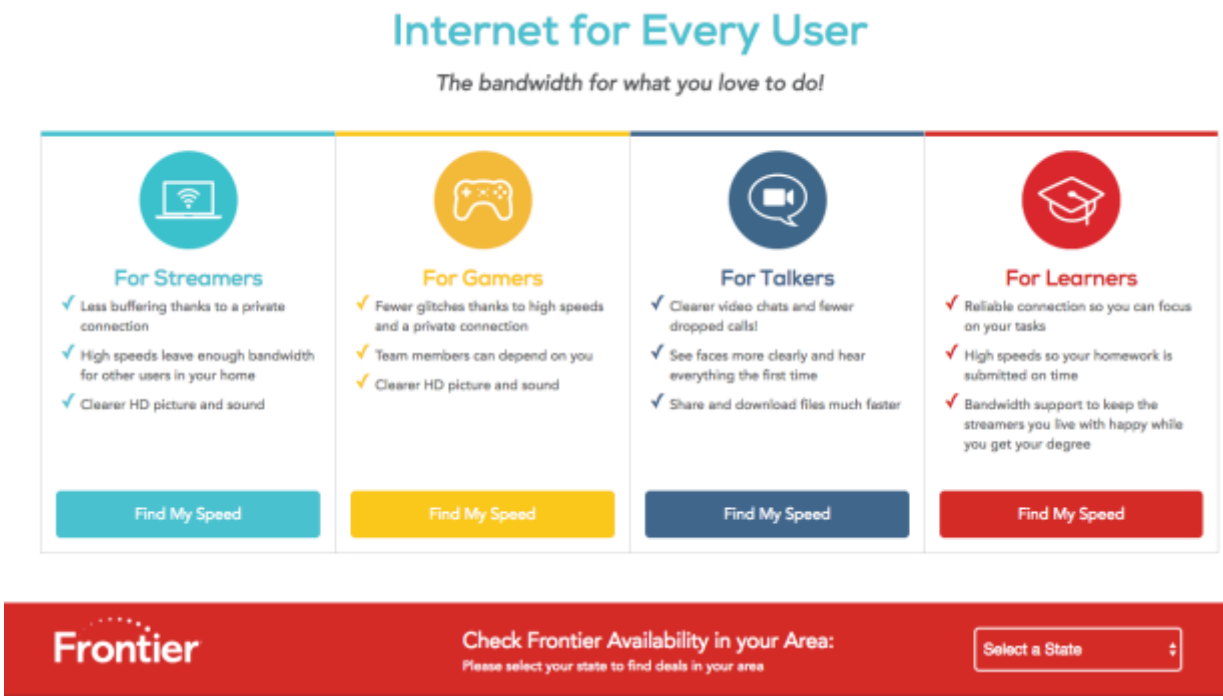
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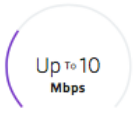

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- Surfing the Web
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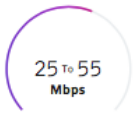

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- Stream, download shows
- Download music/photos

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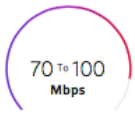

- Multi-device streaming
- Download shows quickly
- Download large files

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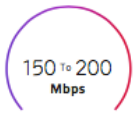
9-11 DEVICES AT A TIME



- Download shows in seconds
- Multi-device HD streaming
- Good for multiplayer gaming

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APPENDIX B

- ISP Windstream asserts that it is merely a conduit for Internet service and is therefore covered by the safe harbor in § 512(a). Pl.'s Am. Compl. at 17, *Windstream v. BMG*, 16 Civ. 5015 (S.D. N.Y Apr. 17, 2017). In 2016, Windstream brought a suit for declaratory judgment when faced with claims of copyright infringement. In its amended complaint the ISP repeatedly asserted that it was "a mere conduit for the transmission of Internet services." *Id* at 7, 15, 16, 17, 21. Further, the ISP contended that as "a pipeline to the Internet, Windstream does not monitor or otherwise control the manner in which its subscribers utilize their Windstream Internet connection and does not initiate, control, select or modify the material or content transmitted by Windstream subscribers over Windstream's network." *Id.* at 7. Windstream also claimed the protection of the §512(a) safe harbor: "Windstream, as a mere conduit for the transmission of Internet services, is the type of ISP contemplated by 17 U.S.C. § 512(a) and is, therefore, not subject to the § 512(c) take-down notice provisions of the DMCA, including any Notices issued by Defendants." *Id.* at 17.

- ISP Cox argues that it is a conduit service provider protected by the § 512(a) safe harbor. Def.'s Mem. Opp'ing Pl.'s Mot. Part. Summ. J. at 1, *BMG v. Cox* 149 F.Supp.3d 634 (E.D Va. 2015) (No. 1:14-cv-1611). In 2015, Cox was sued for copyright infringement and the ISP argued in its memorandum opposing plaintiff's motion for partial summary judgment that it was a conduit service provider and therefore entitled to the protections of § 512(a): "Cox is a 'conduit' service provider, namely one that provides connections and transmits data for customers over the Internet. Conduits have the most flexible DMCA safe harbor, Section 512(a)." *Id.*

- The University of North Carolina at Chapel Hill and North Carolina State University, in their capacity as ISPs for their students, also defended against subpoenas issued by the RIAA in 2003. The ISPs argued that their role was that of conduits under § 512(a). Mem. of Law in Supp. Of UNC-CH and NCSU's Objection to Quash Subpoenas and Resp. to RIAA's Opp'n to John and Jane Doe's Mot. to Quash. at 4, *RIAA v. Univ. of N.C. at Chapel Hill and N.C. State Univ.*, Nos. 03MC138 and 03MC139, (M.D N.C Feb. 3, 2004). The Universities asserted that even if the schools, acting as ISPs, allowed students the opportunity to create homepages they were still acting as conduits under the definitions of § 512(a):

  > First, it is not uncommon in the communication industry for ISPs to allow individuals to set up or create their own web pages. More importantly, UNC-CH and NCSU believe that they are mere conduits with regard to the allegedly infringing material at issue here. There has been no evidence presented that other computing services provided to students are involved in any of the content or conduct of which RIAA complains. Therefore, UNC-CH and NCSU believe that their role falls within 17 USC 512(a), not 17 USC 512(c).

  Id.

- Charter asserted that when it acts as a conduit it is governed by § 512(a). Appellant's opening Br. at 15, *Recording Industry Ass'n of America, Inc. v. Charter Comm.*, No. 03-3802 (8th Cir. Jan. 15, 2004). In 2004, Charter challenged the authority of the RIAA to serve subpoenas for the ISP's subscriber information. Charter argued that when serving as a conduit its transmissions were governed by §512(a):

  > However, when an ISP such as Charter is engaged solely as a conduit for the transmission of material by others, as occurs with subscribers using P2P file sharing software to exchange files stored on their personal computers, the provisions governing the legal consequences are contained in § 512(a), not (c).

  Id.

- In *Recording Industry Ass'n of America, Inc. v. Verizon I*, Verizon argued that it was a service provider merely performing a conduit function under § 512(a). In 2002 and 2003, ISP Verizon contested subpoenas served in the course of a copyright suit by the Recording Industry Association of America (RIAA),which sought the identity of several of Verizon's subscribers who the organization accused of infringing their copyrights. The ISP challenged the subpoenas and asserted they were improperly issued:

  > Verizon refused to reveal its subscribers' identities to RIAA. In the first proceeding, RIAA filed a motion to enforce the subpoena, and Verizon objected on the ground that Section 512(h) does not apply to situations in which a service provider is merely performing a conduit function as described under Section 512(a).

  Pet. for Cert. at 10, *Recording Industry Ass'n of America, Inc. v. Verizon I*, No. 03-1579. (D.C Cir. Jun. 25, 2004).

- In 2012, in a consolidated action comprising Pacific Century International's suit against unknown Internet subscribers, ISPs Comcast and Suddenlink challenged the subpoenas served on them. The ISPs cited § 512(a) for the assertion that they were not liable for their subscribers' infringement. Opp'n to Consolidated Mot. to Compel Compliance with Subpoenas at 1, *Pacific Century Int. Ltd. v. Does1-37*, Nos. 12 C 1057, 12 C 1080, 12 C 1083, 12 C 1085, 12 C 1086, 12 C 1088, (N.D Ill. Mar. 9, 2012). In their opposition to the consolidated motion to compel compliance with the subpoenas, the two ISPs asserted that: "Comcast and Suddenlink are third parties that are, among other things, Internet service providers ('ISPs'), and are not liable for subscribers' alleged actions that may infringe any copyright. 17 U.S.C. §512(a)." *Id.*

- In 2012, in a copyright infringement suit brought by AF Holdings against copyright infringers whose identity was unknown, the rights holder of the allegedly infringed content served ISP Comcast with subpoenas for their subscriber information. Comcast cited § 512(a) to justify its assertion that it was not liable for the actions of its subscribers here. Mem. in Opp'n to Pl.'s Mot. to Compel Compliance with the Subpoena at 1, *AF Holdings v. Does*, No. 1:12-CV-00048-BAH (D.D.C Mar. 5, 2012). Comcast filed a memorandum of law in

opposition to plaintiff's motion to compel compliance with the subpoena and asserted that: "Comcast is a non-party that is, among other things, an Internet service provider ('ISP'), and is not liable for subscribers' 'Bit Torrent protocol' transfers that may infringe any copyright. 17 U.S.C. § 512(a)." *Id.*

- Currently ISP Grande Communications is in the middle of a copyright infringement suit. While the ISP has not explicitly claimed the safe harbor of § 512(a), it has used language emphasizing its role as merely providing connections for their subscribers. Def.'s Mot. to Dismiss Pl.'s Compl. at 1, *UMG et al. v. Grande*, No. 1:17-cv-00365-L, *docketed* (W.D Tex. Apr. 21, 2017). In their motion to dismiss plaintiff's complaint from June of 2017, Grande explained that: "Despite the fact that Grande provides only wires and connectivity, and does not participate in or profit from alleged copyright infringement taking place on its network, Plaintiffs accuse Grande of numerous specific acts of copyright infringement." *Id*. Grande further asserted that: "Like any mainstream Internet provider, Grande's high-speed Internet service merely provides Internet connectivity. Plaintiffs do not allege that Grande monitors or otherwise controls the manner in which its subscribers utilize the Internet." *Id.* at 3.