

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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

COMMENTS OF COMCAST CORPORATION

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Comcast Corporation (“Comcast”) respectfully submits these comments in response to the Notice of Proposed Rulemaking (“NPRM”) adopted on May 18, 2017 in the above-captioned proceeding.¹ Comcast has been a longstanding and consistent supporter of the Commission’s policy of ensuring that the Internet remains free and open to all. Indeed, regardless of the legal and political landscape, Comcast has repeatedly reiterated its commitment to the core tenets of the open Internet. At the same time, in protecting Internet openness going forward, the Commission should avoid subjecting the broadband industry to onerous utility-style regulation under Title II of the Communications Act of 1934, as amended (the “Act”). Such regulation is entirely unnecessary and imposes substantial costs that undermine investment and innovation in the broadband ecosystem and undercut efforts to bridge the digital divide in this country.

Importantly, eliminating the needless burdens of Title II does not require forgoing enforceable open Internet protections. Comcast accordingly supports the Commission’s efforts to reinstate a light-touch regulatory framework for broadband Internet access that is pro-consumer, pro-investment, and pro-innovation, and to determine the best path forward for

¹ *Restoring Internet Freedom*, Notice of Proposed Rulemaking, 32 FCC Rcd. 4434 ¶ 1 (2017) (“NPRM”).

maintaining sensible open Internet protections without reliance on Title II, with all of its negative consequences for investment and innovation.

INTRODUCTION AND SUMMARY

Comcast has long supported strong, legally enforceable, and permanent net neutrality protections that help to ensure a free and open Internet. As Comcast’s Chairman and CEO Brian Roberts made crystal clear in a recent statement, Comcast “continue[s] to strongly support a free and Open Internet and the preservation of modern, strong, and legally enforceable net neutrality protections.”² Comcast’s business practices reflect that commitment and ensure those protections for its customers, and will continue to do so no matter how the Commission ultimately proceeds. Put simply, Comcast does not “block, throttle, or discriminate against lawful content delivered over the Internet,” and Comcast is “committed to continuing to manage [its] business and network with the goal of providing the best possible consumer experience.”³

This pledge is one Comcast has repeatedly affirmed at all levels. David L. Cohen, Comcast’s Senior Executive Vice President and Chief Diversity Officer, has emphasized that “we have and will continue to support strong, legally enforceable net neutrality protections that ensure a free and Open Internet for our customers, with consumers able to access any and all the lawful content they want at any time.”⁴ Similarly, as Dave Watson, President and CEO of

² Brian L. Roberts, *Comcast Statement Supporting a Free and Open Internet*, Comcast Voices Blog (Apr. 26, 2017), <http://corporate.comcast.com/comcast-voices/comcast-statement-supporting-a-free-and-open-internet> (“Roberts Blog Post”).

³ *Id.*

⁴ See David L. Cohen, *Comcast Supports Net Neutrality and Reversal of Title II Classification. Title II is Not Net Neutrality*, Comcast Voices Blog (Apr. 26, 2017), <http://corporate.comcast.com/comcast-voices/comcast-supports-net-neutrality-and-reversal-of-title-ii-classification-title-ii-is-not-net-neutrality> (“Cohen Apr. 26 Blog Post”); see also David L. Cohen, *FCC Begins Rulemaking Process to Protect an Open Internet*, Comcast Voices Blog

Comcast Cable, has underscored, “[w]e do not block, slow down, or discriminate against lawful content,” and “we believe in full transparency” so that “customers [will] know” what Comcast’s policies are.⁵ “This is how we run our Internet business,”⁶ he explained. “Our network and business practices are in complete alignment with these protections,” and “[t]hat will remain true, even if the FCC reverses public utility regulation of our broadband network.”⁷

That is why Comcast recently joined nearly two dozen other ISPs in a statement “firmly” reiterating a “commitment” to “an open internet that gives [consumers] the freedom to be in charge of [their] online experience,” and pledging never to “block, throttle, or otherwise impair” consumers’ online activity.⁸

At the same time, as Comcast has explained before⁹—and as both the U.S. Supreme Court¹⁰ and the D.C. Circuit have held¹¹—creating a federal framework for protecting and promoting an open Internet does *not* require classifying BIAS as a common carrier

(May 18, 2017), <http://corporate.comcast.com/comcast-voices/fcc-begins-rulemaking-process-to-protect-an-open-internet> (“Cohen May 18 Blog Post”).

⁵ Dave Watson, *Comcast Customers Will Enjoy Strong Net Neutrality Protections—Today and in the Future*, Comcast Voices Blog (Apr. 26, 2017), <http://corporate.comcast.com/comcast-voices/comcast-customers-will-enjoy-strong-net-neutrality-protections-today-and-in-the-future> (emphasis omitted) (“Watson Blog Post”).

⁶ *Id.*

⁷ *Id.*

⁸ See NCTA, *Reaffirming Our Commitment to an Open Internet*, Platform (May 17, 2017), <https://www.ncta.com/platform/public-policy/reaffirming-our-commitment-to-an-open-internet/> (“May 2017 Joint ISP Commitment”).

⁹ See Comments of Comcast Corp., GN Docket Nos. 14-28, 10-127, at 13-26 (July 15, 2014) (“Comcast 2014 Open Internet Comments”).

¹⁰ See *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967 (2005) (“*Brand X*”).

¹¹ See *Verizon v. FCC*, 740 F.3d 623, 637 (D.C. Cir. 2014); *U.S. Telecom Ass’n v. FCC*, 825 F.3d 674, 689 (D.C. Cir. 2016) (“*USTelecom*”), *reh’g en banc denied*, 855 F.3d 381 (D.C. Cir. 2017) (“*USTelecom Rehearing Denial*”).

“telecommunications service” under Title II of the Act and imposing utility-style regulation on the industry. Yet that was the flawed justification offered by prior Commission leadership for the *Title II Order* (a seriously misguided argument that has now been taken up by opponents of the NPRM), which reversed longstanding and judicially validated Commission precedent classifying BIAS as an “information service” and imposing light-touch regulations.¹² Indeed, even though the Commission initially recognized in its 2014 NPRM that the D.C. Circuit’s *Verizon* decision provided the Commission a court-approved “blueprint” for promulgating open Internet rules *without* imposing the onerous Title II framework on BIAS providers,¹³ the Wheeler-led Commission suddenly reversed course in the *Title II Order* and said it “did not believe it could do so”—not on the basis of the record, but rather in the wake of a conclusory video from President Obama.¹⁴

As the NPRM correctly recognizes, that Title II classification decision represented an unfortunate, unnecessary, and profoundly unwise wrong-turn for the broadband economy and consumers more broadly. Comcast, therefore, strongly supports the NPRM’s proposal to undo that harmful ruling and reinstate the Commission’s longstanding “information service” classification for BIAS—a classification that has been consistently reaffirmed under the

¹² See, e.g., *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd. 5601 ¶ 307 (2015) (“*Title II Order*”) (“[I]n light of *Verizon*, absent a classification of broadband providers as providing a ‘telecommunications service,’ the Commission may only rely on section 706 to put in place open Internet protections that steer clear of what the court described as common carriage *per se* regulation.”).

¹³ See *Protecting and Promoting the Open Internet*, Notice of Proposed Rulemaking, 29 FCC Rcd. 5561 ¶ 4 (2014).

¹⁴ *USTelecom*, 825 F.3d at 707.

Clinton,¹⁵ Bush,¹⁶ and early Obama administrations,¹⁷ and that gave rise to the light-touch regulatory approach that helped drive the Internet’s incredible growth and dynamism. As Chairman Pai recently put it, this bipartisan, light-touch approach “wasn’t controversial”—it was the “consensus” for two decades and it paved the way for “the private sector [to] invest[] in networks to the tune of \$1.5 trillion.”¹⁸ The following chart illustrates how the Internet ecosystem prospered and flourished under this longstanding bipartisan approach that preceded the *Title II Order*:

Table 1: Innovation and Investment Under Title I: By the Numbers¹⁹

	<u>2005</u>	<u>2010</u>	<u>2015</u>
Fixed and mobile Internet connections	50.2 million	168.9 million	355.2 million
Homes passed by cable high-speed data service	103+ million	128.8 million	137.4 million
Percentage of Americans with access to fixed broadband at 25/3 Mbps	N/A	72%	90%
Median actual fixed download speed of broadband connections	N/A	10.4 Mbps	41.2 Mbps

¹⁵ See *Federal-State Joint Board on Universal Service*, Report to Congress, 13 FCC Rcd. 11501 ¶ 73 (1998) (“*1998 Report to Congress*”) (explaining that “Internet access services are appropriately classed” as information services because Internet access providers “do not offer a pure transmission path”).

¹⁶ 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*, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd. 4798 ¶ 38 (2002) (“*Cable Modem Declaratory Ruling*”) (confirming that “Internet access service . . . constitute[s] an information service”).

¹⁷ See *Verizon*, 740 F.3d at 650 (noting that the *2010 Open Internet Order* did not disturb the Commission’s classification of BIAS providers as “providers of ‘information services’”).

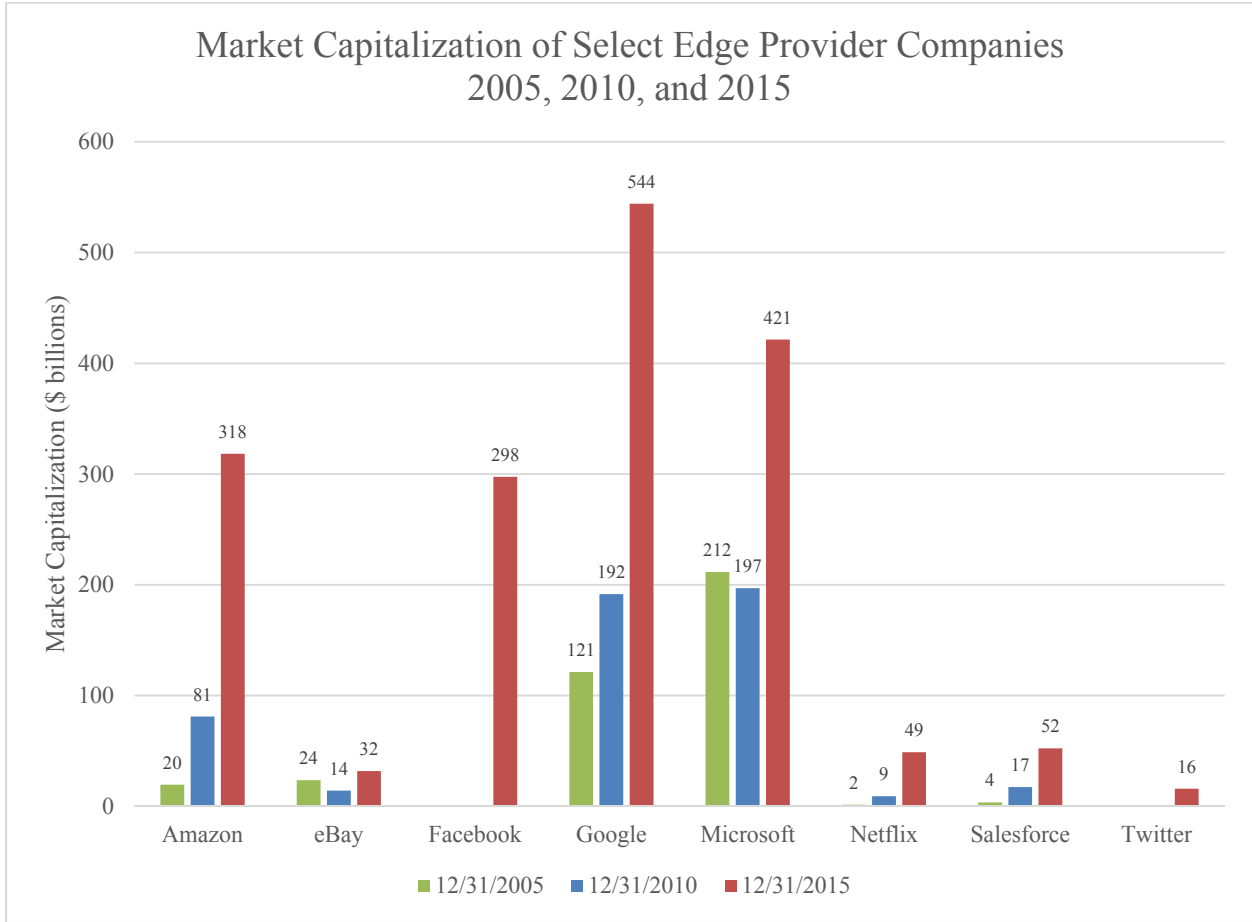
¹⁸ Oral Statement of Chairman Pai, WC Docket No. 17-108, at 1 (May 18, 2017) (“Pai May 18 Statement”); see also Letter from Senator John Kerry et al. to William E. Kennard, Chairman, FCC, at 1 (Mar. 20, 1998), <https://ecfsapi.fcc.gov/file/2038710001.pdf> (reflecting bipartisan consensus that “traditional telephone regulation” should not be expanded to the “Internet”).

¹⁹ A complete version of this table with full citations for these figures is attached hereto as Appendix A. Figures provided in the table are based on available data for the stated year or within one year of the stated year due to data limitations, as noted in Appendix A.

Percentage of fixed Internet connections with speeds greater than or equal to 10 Mbps	4.7%	40.9%	78.1%
Percentage of fixed Internet connections with speeds greater than or equal to 25 Mbps	0.1%	1.5%	53.5%
Percentage of American adults who use the Internet	68%	76%	84%
OVD paid subscribers (U.S.)	0	24.4 million	88.7 million
Hours per week spent watching streamed on-demand content	N/A	2.9 hours	6 hours
Online video as a percentage of Internet traffic	12%	40%	63%
Internet transit prices per Mbps (U.S.)	\$75	\$5	\$0.63
Broadband providers' annual capital expenditure	\$62 billion	\$68 billion	\$76 billion
Combined market capitalization of select edge provider companies	\$381 billion	\$511 billion	\$1.73 trillion

Over the same period, edge providers have experienced explosive growth, with virtually every online content provider seeing massive increases in market capitalization while the Commission maintained a light regulatory touch under its prior Title I classification of BIAS. The following chart, which breaks out the last row of the table above, shows the steep rise in market capitalization for several major edge providers between 2005 and 2015—increases that occurred almost wholly within a Title I era:

Table 2: Market Capitalization of Select Edge Provider Companies: 2015, 2010, and 2015



As explained below, the Commission plainly has the legal authority to reinstate an information service classification for BIAS. The Supreme Court has already ruled that such a classification reflects a reasonable interpretation of the Act,²⁰ and the D.C. Circuit unequivocally reaffirmed that proposition in *USTelecom*.²¹ And there is voluminous evidence regarding the factual particulars of the service that continue to support that conclusion. Not only does BIAS still offer end users the capability to interact with information online *in each and every one of the*

²⁰ See generally *Brand X*.

²¹ *USTelecom*, 825 F.3d at 704 (explaining that the argument that “broadband is unambiguously a telecommunications service . . . clearly fails in light of *Brand X*, which held that classification of broadband as an information service was permissible”).

ways set forth in the Act’s “information service” definition, it also does so through a variety of functionally integrated information-processing components—such as Domain Name Service (“DNS”) functionalities; spam, malware, and other consumer protection security features; caching; email; storage; and other capabilities—that are part and parcel of the “offer” of broadband service and that confirm the correctness of the information service classification.

Moreover, eliminating the Title II classification not only is legally sound in light of the technical attributes of BIAS, but it also represents the correct policy outcome. As numerous economists and industry observers have found—and as a wide array of ISPs have confirmed—the unnecessary overhang of Title II common carrier regulation has discouraged investment and innovation in the broadband arena and threatens to cause far greater harm if left in place for the long term. Chairman Pai was correct to point out that “[i]nnovative providers hoping to offer their customers new, even free services ha[ve] to fear a Washington bureaucracy that might disapprove and take enforcement action against them.”²² Indeed, “[w]ith the possibility of broadband rate regulation looming on the horizon, companies investing in next-generation networks hesitate[] to build or expand networks, unsure of whether the government w[ill] let them compete in the free market.”²³ These concerns already are borne out in the current record—as well as in the record developed in the Commission’s prior proceeding on these issues²⁴—and clearly point to a Title I classification as the best policy result.

²² See Pai May 18 Statement at 1.

²³ *Id.*

²⁴ See Appendix B (summarizing numerous studies submitted by noted economists in the prior record warning of the dangers of subjecting such a dynamic industry to common carrier mandates). The Commission should incorporate into this proceeding the record developed during the prior proceeding, given the voluminous submissions there are on matters that may be relevant to the Commission’s analysis going forward.

Comcast adds to this burgeoning evidence against Title II by attaching to these comments in Appendix C a new economic analysis by Dr. Christian M. Dippon that examines the data over the past two years and finds that “[t]he economic evidence clearly demonstrates that Title II causes more harm to the public interest than any good that might come from using this regulatory framework.”²⁵ In particular, among other things, Dr. Dippon concludes that:

- The “enormous regulatory uncertainty” created by the application of Title II to BIAS “negatively affects investment, innovation, Internet subscriptions, and U.S. employment statistics.”
- “The harm to the public interest from retaining the application of Title II to BIAS providers is significant and quantifiable. Estimates of \$35 billion per year in lost investment and, cumulatively, lost jobs nationwide that may have reached 700,000 since the FCC’s reclassification of BIAS providers are reasonable.”
- “[B]roadband subscribership might already be as much as 1.5 percent lower than it would otherwise be . . . without the regulatory uncertainty engendered by Title II reclassification.”
- “No regulatory regime can obviate all regulatory uncertainty. However, the particular light-touch regime that got us the amazing 19 years of progress when the FCC treated Internet services as information services not telecommunications services seems appropriate. Whatever regulatory uncertainty is present in that regime, it certainly did little to stop the development of the Internet.”
- “Our bottom line is that the FCC can achieve its goals for an open Internet without importing the archaic principles and onerous restrictions embedded in Title II that stifle investment and innovation and cause job losses.”

Comcast also appreciates the NPRM’s open-minded review of the options for ensuring Internet openness going forward. Without question, the best long-term approach to ending the continual game of regulatory “ping pong” that has beset the Internet ecosystem is for Congress to enact bipartisan legislation permanently codifying key open Internet protections—in a way that ensures that consumers are protected while promoting continued investment and innovation in broadband. Communications policy leaders in both the House and the Senate have emphasized

²⁵ Appendix C at ii.

that “it’s now time for Republicans and Democrats, internet service providers, edge providers and the internet community as a whole to come together and work toward a legislative solution,” and Comcast wholeheartedly agrees.²⁶ Moreover, both Chairman Pai and Commissioner O’Rielly have said they would welcome legislation that settles questions about the regulatory treatment of BIAS providers once and for all.²⁷

But, until Congress acts, the Commission’s efforts to strike the appropriate balance in this proceeding by protecting the open Internet while eliminating the significant harmful effects of Title II regulation are both prudent and welcome. As explained below, a Title I classification is entirely compatible with strong Internet openness protections, regardless of whether the Commission chooses to codify net neutrality principles by adopting new bright-line enforceable rules or to provide for federal enforcement of industry commitments. However the Commission opts to proceed though, it is critical that it tailor any federal regime for ensuring Internet openness in a manner that most effectively fosters broadband innovation and investment. That means doing away with the ill-conceived “general conduct standard”—a brand new rule that had never been part of past formulations of net neutrality rules until the prior Commission divined it from Title II. This new standard created significant uncertainty for edge providers and ISPs alike, ultimately to the detriment of consumers.

²⁶ See Cohen Apr. 26 Blog Post (quoting joint statement of Senators John Thune and Roger Wicker and Representatives Greg Walden and Marsha Blackburn).

²⁷ See, e.g., John Eggerton, *FCC’s Pai Backs Congressional Clarification on Internet Authority*, Broad. & Cable, Apr. 28, 2017, <http://www.broadcastingcable.com/news/washington/fccs-pai-backs-congressional-clarification-internet-authority/165377> (quoting Chairman Pai as noting that “the best solution would be for Congress to tell us what the rules of the road [should] be”); Michael O’Rielly, Commissioner, FCC, Remarks at FreedomWorks and Small Business & Entrepreneurial Council Event, at 3 (Apr. 26, 2017), https://apps.fcc.gov/edocs_public/attachmatch/DOC-344594A1.pdf (“The only way to bring resolution to the net neutrality debate once and for all is for Congress to consider and enact legislation on the subject matter, as it deems appropriate.”).

The Commission also should return to a market-based approach to Internet interconnection and eliminate the prospect of regulating specialized services. As Title II regulation falls away, the Commission should not subject Internet traffic-exchange arrangements to ongoing regulatory oversight, particularly given the competitive nature of the marketplace. Likewise, reverting back to the treatment of specialized services in the *2010 Open Internet Order* where these services are unregulated—but where the Commission continues to monitor the development of such services—would be consistent with the light-touch regulatory approach the Commission seeks to adopt, and would reinforce the key public policy goal to drive greater broadband investment, innovation, and deployment.

Finally, whatever approach the Commission ultimately takes to reestablishing open Internet protections without Title II, it should reaffirm that BIAS is an inherently interstate service and, thus, subject to *exclusive federal* regulation. And the Commission should ensure regulatory parity among ISPs and avoid arbitrary technology-based distinctions that distort competition and ultimately harm consumers. Such measures will not eliminate the need for legislation to bring long-term stability and certainty, but they will restore an appropriate light-touch framework that serves the public interest.

I. THE COMMISSION CAN AND SHOULD RESTORE ITS PRIOR CLASSIFICATION OF BIAS AS AN INFORMATION SERVICE.

The Commission should begin by reinstating the longstanding classification of BIAS as an information service—and thereby restore the light-touch regulatory framework that, before the *Title II Order*'s swerve in 2015, reflected the Commission's bipartisan consensus approach to broadband regulation. Such a classification is plainly a reasonable interpretation of the Act, will eliminate the unnecessary and harmful regulatory overhang of Title II, and accords with judicial precedent and the Administrative Procedure Act ("APA").

A. The Commission Has Clear Authority To Classify BIAS as an Information Service and Should Do So Based on the Factual Particulars of the Service.

The Commission can readily and reasonably conclude that BIAS is an "information service" as defined in Section 3 of the Act. Indeed, that is the *best* classification of BIAS under the Act, as ample evidence confirms. And the classification of BIAS as an information service precludes its classification as a telecommunications service.

1. *BIAS Offers All of the Statutory Capabilities That Define an Information Service.*

The statute defines "information service" as the "offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications."²⁸ As the NPRM notes, BIAS satisfies *each aspect* of this definition.²⁹ It plainly "offer[s]" consumers the "capability" to "acquir[e]" and "retriev[e]" information from websites and other sources of online content; indeed, that is the principal reason why most consumers purchase Internet access services.³⁰ The acquisition and retrieval of

²⁸ 47 U.S.C. § 153(24).

²⁹ NPRM ¶ 27.

³⁰ See, e.g., *1998 Report to Congress* ¶ 76 (noting that Internet users are "retriev[ing]" information when they obtain "files from the World Wide Web, and browse their contents");

information involved in the provision of BIAS also occurs at a deeper network level; for instance, Internet routers, which determine whether and how packets are to be processed, forwarded, or dropped, “acquir[e]” information when they receive “packets, routing updates, Quality of Service parameters, end-point location, and load balancing information,” and “retriev[e]” information such as “software updates,” “DNS updates,” and “network management information.”³¹

BIAS also offers the capability to “stor[e]” information, for instance, by enabling users to back up personal files to the cloud, or through automated network processes that save “user IDs and passwords, configuration parameters[,] and log files.”³² Consumers use BIAS to “generate[.]” and “mak[e] available” information by creating and uploading new content, such as by emailing pictures and videos to friends and family or uploading them to “social media websites like Facebook.”³³ Finally, users can “transform[.]” and “process[.]” information because BIAS enables the manipulation of online content, and users may “utiliz[e]” information by interacting with stored data—including not only the user’s own data stored on remote servers, but also data made available by any other person or entity connected to the Internet, ranging from individual bloggers to major edge providers.

USTelecom Rehearing Denial, 855 F.3d at 395 (Brown, J., dissenting) (“Judge Brown Dissent”) (observing that information acquisition and retrieval is likewise “what users do with email” service offered by their ISP).

³¹ Letter from Richard Bennett, Consultant, to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 14-28, 10-127, at 10-11 (Dec. 30, 2014) (“Bennett Letter”).

³² *Id.* at 10.

³³ Judge Brown Dissent, 855 F.3d at 395.

Several of these functionalities were at the core of the Supreme Court’s *Brand X* decision upholding the Commission’s information service classification of BIAS.³⁴ To be sure, edge providers likewise perform functions to facilitate these activities, but they *all* depend on the combination of information-processing and transmission that ISPs make available through BIAS. When a consumer uploads new content to Facebook, for instance, it is not only Facebook that provides the information-processing functionality necessary for such activity; it is also the BIAS provider whose information-processing capabilities enable consumers to connect and interact with Facebook’s servers in the first place.

Indeed, BIAS providers can offer the functions noted above *only* because they inextricably combine “computer processing, information provision, and other computer-mediated offerings with data transport.”³⁵ As the record developed in the previous proceeding already reflects, BIAS continues to be offered to consumers as a comprehensive and integrated service offering, including core customer-facing, information-service capabilities such as web browsing and email, but importantly also less visible but vital capabilities such as Domain Name System (“DNS”), caching, and Dynamic Host Configuration Protocol (“DHCP”) functionality, as well as security features including spam filtering, malware monitoring and remediation, and distributed denial-of-service (“DDoS”) protection. And the *Brand X* Court specifically pointed to such functionally integrated information-processing components of BIAS when upholding the

³⁴ 545 U.S. at 987-89 (explaining that cable broadband service is a single, integrated information service because “it provides consumers with a comprehensive capability for manipulating information using the Internet”); *id.* at 987 (observing that BIAS “enables users, for example, to browse the World Wide Web, to transfer files from file archives on the Internet via the ‘File Transfer Protocol,’ and to access e-mail and Usenet newsgroups”).

³⁵ 1998 Report to Congress ¶ 73; see also *Cable Modem Declaratory Ruling* ¶¶ 25, 38.

Commission’s prior information service classification.³⁶ These unchanged factual particulars plainly support an information service classification today.

DNS, for instance, continues to be an information-processing feature that is functionally integrated with BIAS.³⁷ This component of BIAS is “an increasingly sophisticated distributed function that translates domain names into IP addresses,”³⁸ and today, as was the case at the time of *Brand X*, a user generally “cannot reach a third-party’s Web site without DNS.”³⁹ Notably, a D.C. Circuit opinion issued *after* the *USTelecom* decision describes DNS in similarly essential terms, explaining that “much of the DNS’s value lies in its ability to enable an end-user . . . to access a desired IP address and, more importantly, its corresponding web page.”⁴⁰ As that decision explained, without DNS, websites are “effectively invisible.”⁴¹

³⁶ See 545 U.S. at 998-1000; *cf. Universal Service Contribution Methodology; Request for Review of a Decision of the Universal Service Administrator by Cisco WebEx LLC*, Order, 31 FCC Rcd. 13220 ¶¶ 21-22 (WCB 2016) (concluding that Cisco’s WebEx service, which bundled together an audio transmission functionality called PSTN Minutes and a desktop and document sharing application that provided “information processing capabilities” necessary to a “seamless” collaboration experience, was properly classified as a functionally integrated information service); *Charter Advanced Servs. (MN), LLC v. Lange*, No. 15-3935, 2017 WL 1901414, at *4 (D. Minn. May 8, 2017) (ruling that, because Charter’s Spectrum Voice service “engages in net protocol conversion” when it “convert[s] voice transmission data between IP and TDM as needed to hand a call off to a PSTN network,” it is properly classified as an information service).

³⁷ See, e.g., Letter from Christopher S. Yoo, Professor, University of Pennsylvania Law School, to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 14-28, 09-191, 10-127, at 2-3 (Dec. 22, 2014).

³⁸ Bennett Letter at 8.

³⁹ 545 U.S. at 999 (“A user cannot reach a third-party’s Web site without DNS.”).

⁴⁰ *Weinstein v. Islamic Republic of Iran*, 831 F.3d 470, 473 (D.C. Cir. 2016).

⁴¹ *Id.* at 476; see also *id.* at 475-76 (“DNS . . . effectively enables an end-user to access most existing Internet web pages.”).

While DNS’s ability to convert domain names to IP addresses is its “best-known function,” it also “does much more.”⁴² Specifically, DNS helps “validate[] the correctness of the domain name to IP address mapping,” “protects users from man in the middle [] attacks,” and directs traffic from “Content Delivery Network users to the nearest and/or fastest location.”⁴³ And ISPs more recently have put DNS to additional uses. “DNS Assist,” for example, “suggests to Internet access customers the sites they may want to reach” without their having entered a complete web address.⁴⁴ Further, while perhaps not *all* users obtain DNS via their BIAS provider, the Commission correctly notes in the NPRM that “many broadband Internet users” do,⁴⁵ and there is no question in any event that BIAS providers *offer* these capabilities, which is all that the statute requires.

Caching also remains as much a functionally integrated part of BIAS as it was when the Supreme Court decided *Brand X*. As the Commission has long recognized, caching—or “the storing of copies of content at locations in the network closer to subscribers than their original sources”⁴⁶—enables ISPs to “provide more rapid retrieval of information,”⁴⁷ resulting in both improved service delivery to customers and greater bandwidth efficiency. The *Brand X* Court recognized over a decade ago that this functionality is a key feature of mass-market BIAS

⁴² Bennett Letter at 8.

⁴³ *Id.*

⁴⁴ Letter from Christopher M. Heimann, Attorney, AT&T to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 14-28, 10-127, at 6 (filed Feb. 2, 2015).

⁴⁵ NPRM ¶ 28; *see also Weinstein*, 831 F.3d at 475; *cf. Cable Modem Declaratory Ruling* ¶ 37 (“Internet Access service *generally* includes using the DNS.”).

⁴⁶ *Cable Modem Declaratory Ruling* ¶ 17 n.76.

⁴⁷ *Id.*

offerings.⁴⁸ And, once again, in an opinion issued after *USTelecom*, the D.C. Circuit recently recognized that caching remains a critical component of BIAS today.⁴⁹

Several other information-processing features that were less well-known in the *Brand X* era also are similarly integrated into the BIAS offering and support reclassification. Take DHCP, for instance. Whereas DNS helps users easily navigate to millions of IP addresses, DHCP is a protocol that enables the sending of basic configuration information to a remote host, and is used by ISPs to assign IP addresses dynamically to subscribers' devices when they connect to the Internet.⁵⁰ Without this process, subscribers would be unable to connect to other IP-based servers.⁵¹ As noted above, ISPs also offer DDoS protection as an integrated component of BIAS—a functionality that protects against attacks that can “cause an increase in spam or can compromise users' information.”⁵² “Mitigating these attacks requires ISPs to engage in a multi-pronged strategy,” which includes “monitor[ing] networks for suspicious traffic and attacks,” “block[ing] (or redirect[ing]) attack traffic when it is found,” and “notify[ing] other ISPs of infected computer[s] on the other ISP network.”⁵³ Indeed, BIAS providers have developed and

⁴⁸ *Brand X*, 545 U.S. at 999-1000.

⁴⁹ See *Weinstein*, 831 F.3d at 474 (“[O]nce an end-user has visited [a website], his caching server remembers the web page location for subsequent visits” and this feature is ordinarily “operated by the end-user’s Internet service provider.”).

⁵⁰ Bennett Letter at 4.

⁵¹ *Id.*

⁵² See Broadband Internet Technical Advisory Group, *Port Blocking: A Broadband Internet Technical Advisory Group Technical Working Group Report*, GN Docket No. 14-28, at 18 (Oct. 30, 2014).

⁵³ Bennett Letter at 7.

improved their DDoS prevention mechanisms at the express urging of the Commission.⁵⁴

Moreover, BIAS continues to include a number of consumer-facing information-processing features, including parental controls, firewalls, and various other capabilities.⁵⁵ To use the *Brand X* majority’s analogy, separating many of these features from BIAS would be like stripping the engine from an automobile.⁵⁶

The fact that some broadband customers rely on third parties for some of these functions (much like it is possible to swap out a factory-standard engine in an automobile for a custom replacement built by a third party) has no bearing on the classification analysis. For one thing, customer reliance on third-party applications is nothing new; it was specifically noted in prior orders classifying BIAS as an information service and acknowledged by the Supreme Court in *Brand X*.⁵⁷ More fundamentally, as the Commission has explained and as the Supreme Court recognized, focusing on the availability of third-party applications ignores the central question of what BIAS providers “offer.”⁵⁸ Accordingly, the NPRM is correct to question the “relevance” of the availability of third-party applications that replicate these aspects of BIAS.⁵⁹ The

⁵⁴ See Communications Security, Reliability and Interoperability Council, FCC, *Working Group 5: Remediation of Server-Based DDoS Attacks* 12 (June 18, 2014), http://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG-5_Status_061814.pdf.

⁵⁵ See, e.g., XFINITY Parental Controls, Web Page Blocking, <http://parents.xfinity.com/internet/web-page-blocking.html> (last visited July 16, 2017) (offering families the ability to prevent children from visiting inappropriate websites).

⁵⁶ *Brand X*, 545 U.S. at 990.

⁵⁷ See *id.* at 998-99.

⁵⁸ See *Cable Modem Declaratory Ruling* ¶¶ 25, 38; *NPRM* ¶ 28; see also *Brand X*, 545 U.S. at 998-99 (rejecting argument that the availability of third-party information-processing functionalities undercuts an information service classification for BIAS).

⁵⁹ *NPRM* ¶ 28.

information service definition “speaks to the ‘*capability*’ to perform certain functions,”⁶⁰ and thus, under the plain meaning of that term, requires only that the service “hav[e]” the “needed attributes required to perform or accomplish” the relevant functions.⁶¹ Whether a particular end user actually uses his BIAS provider’s DNS component or email service, for example, or instead subscribes to a third-party equivalent application, has no bearing on whether BIAS has the necessary “capability.” And in any event, although BIAS possesses *every* statutorily enumerated “capability,” the statute requires only that BIAS contain *one* in order to trigger the information service designation.⁶²

The Commission should also make clear that the aforementioned BIAS components do not fall within the “telecommunications management” carve-out from the definition of “information service.” These components enable and enhance consumers’ access to and use of information online; after all, as noted above, most of the Internet would be “invisible” without some of them.⁶³ They do not merely “manage” a telecommunications service. This understanding was embraced by the Commission and the Department of Justice in *Brand X* before the agency’s abrupt and unjustified turnaround in 2015.⁶⁴ Moreover, the *USTelecom*

⁶⁰ *Id.* (emphasis added).

⁶¹ See *Webster’s Third New International Dictionary* (1993 ed.), “Capability” (defining “capability” as the “state of being capable”); *id.*, “Capable” (defining “capable” as “having” the “needed attributes to perform or accomplish”).

⁶² 47 U.S.C. § 153(24). The NPRM asks whether the statutory analysis would change if a particular BIAS offering “does not afford one of the listed capabilities,” *NPRM* ¶ 27, but, because the statute uses the disjunctive “or” when listing the relevant capabilities, there is no requirement that BIAS offer the capability for *each* item in order to qualify as an information service, see, e.g., *United States v. Smith*, 35 F.3d 344, 346 (8th Cir. 1994) (“ordinary usage of the word ‘or’ is disjunctive”).

⁶³ *Weinstein*, 831 F.3d at 476.

⁶⁴ See Reply Brief for the Federal Petitioners at 6 n.2, *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 S. Ct. 967 (2005) (No. 04-277), 2005 WL 640965, at *5 n.2 (noting that

decision acknowledged that DNS and caching are information services when offered by third parties—even as it failed to appreciate the incoherence of treating the same functionalities as “telecommunications management” tools when offered by ISPs.⁶⁵

2. *The Appropriate Classification of BIAS as an Information Service Precludes Classification as a Telecommunications Service.*

Moreover, because BIAS is an information service, it *cannot* also be a telecommunications service. As the NPRM points out, the Commission has long “concluded that Congress formally codified information services and telecommunications services as two, mutually exclusive types of service in the Telecommunications Act.”⁶⁶ The mutual exclusivity of these categories is evident from the text of the statute itself. As the Commission explained in its *1998 Report to Congress*, “[w]hen an entity offers subscribers the ‘capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making available information via telecommunications,’ it does not *provide* telecommunications; it is *using* telecommunications.”⁶⁷ Moreover, the legislative history of the Telecommunications Act of 1996 “make[s] explicit the intention of the drafters of both the House and Senate bills that the two categories be separate and distinct, and that information service providers not be subject to

DNS and caching “do[] not fall within the statutory exclusion” for telecommunications management and are “*not* used ‘for the management, control, or operation of a telecommunications network’ but instead provide information-processing capabilities . . . used to facilitate the information retrieval capabilities that are inherent in Internet access”).

⁶⁵ 825 F.3d at 706.

⁶⁶ NPRM ¶ 40.

⁶⁷ *1998 Report to Congress* ¶ 41 (emphases added) (citation omitted).

telecommunications regulation.”⁶⁸ The Commission has consistently reaffirmed that understanding,⁶⁹ and should do so again here.

Indeed, the “telecommunications service” classification is a poor fit for BIAS. As the NPRM correctly points out, BIAS is not an offer of pure “telecommunications” capability because, among other things, users do not specify the points “between and among which information is sent online.”⁷⁰ The Act defines “telecommunications service” as a simple “offering of telecommunications for a fee directly to the public,”⁷¹ and defines “telecommunications” as “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.”⁷² As a factual matter, these definitions simply do not describe BIAS. With BIAS, “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.”⁷³ Even when an end user seeks to access a specific website, he or she is not “specify[ing]” an endpoint for transmission, as caching servers at *other* points often “store and serve popular information to reduce network loads,”⁷⁴ and it is *those* points from which end users will often receive their requested information. Moreover, unlike telephony, which at bottom “is an interaction between persons using telephone handsets that are essential elements of the telephone network,” the

⁶⁸ *Id.* ¶ 43 (citing legislative history).

⁶⁹ *See id.* (referring to the two as “mutually exclusive categories”); *Title II Order* ¶ 385 (the terms are “best construed as mutually exclusive”).

⁷⁰ *NPRM* ¶ 29.

⁷¹ 47 U.S.C. § 153(53).

⁷² *Id.* § 153(50).

⁷³ *NPRM* ¶ 29.

⁷⁴ *Id.*

provision of BIAS requires “continual interaction between computers and the transmission network as well as between computers and each other”⁷⁵—a level of computer-based mediation that belies the notion that BIAS merely involves pure transmission entirely subject to end-user control.⁷⁶

Moreover, the *Title II Order* read out of the statute the requirement that the transmission be “without change in the form or content of the information as sent and received.”⁷⁷ As the NPRM correctly acknowledges, “Internet service providers routinely change the form or content of the information sent over their networks—for example, by using firewalls to block harmful content or using protocol processing to interweave IPv4 with IPv6 networks.”⁷⁸ Additionally, the nature of Internet transmissions necessarily entails a “change in the form” of the information. As the *USTelecom* court itself pointed out, “when an end user wishes to check last night’s baseball scores on ESPN.com, . . . ESPN’s computer breaks the scores into packets of information.”⁷⁹ These packets are “dispersed across the various networks, interconnection nodes, and other resources that make up the Internet’s physical infrastructure” before reaching “the same destination where they are eventually reconfigured.”⁸⁰ This fundamental attribute of

⁷⁵ Bennett Letter at 2.

⁷⁶ *See id.*

⁷⁷ *See NPRM* ¶¶ 29-30 (asking how to interpret the relevant statutory definitions to avoid surplusage).

⁷⁸ *Id.* ¶ 30.

⁷⁹ 825 F.3d at 690.

⁸⁰ *Register.com, Inc. v. Verio, Inc.*, 356 F.3d 393, 410 n.11 (2d Cir. 2004); *see also* Information Sciences Inst., Univ. of S. Cal., *Internet Protocol: DARPA Internet Program Protocol Specification* (Sept. 1981) (“IETF RFC 791”), <https://tools.ietf.org/html/rfc791#ref-6> (describing this process in the same way); *see also* *Advanced Media Networks LLC v. Gogo LLC*, No. 11-474, 2013 WL 12123237, at *8 (C.D. Cal. June 14, 2013) (describing how RFC 791 remains the authoritative TCP/IP document).

Internet communications—the dissolution, dispersal, and recombination of the IP packets that make up the information requested by the end user—necessarily entails changes to the information’s “form.”⁸¹

Nor is it reasonable to infer from BIAS providers’ marketing materials that the service being offered is limited to pure transmission of unaltered information. First, as a legal matter, the NPRM correctly notes that this inquiry may not even be “relevan[t],” as nothing in the Act suggests that a BIAS provider’s advertisements have any bearing on the *regulatory* classification of the service.⁸² In fact, many of the information components of BIAS are now taken for granted as being included—and expected to be included—in the offered service, so there is no reason to advertise them. For example, ISP customers know that their BIAS comes with e-mail, storage, a website home page and web browsing, spam filtering, security features, and other information processing functionality. These have been core components of BIAS for many years.⁸³

But even assuming *arguendo* that such marketing materials are somehow relevant, the practice of advertising broadband speeds is certainly nothing new, as then-Commissioner Pai and Commissioner O’Rielly acknowledged in their statements dissenting from the *Title II Order*.⁸⁴ Comcast, like virtually every other ISP, has long included speed information as part of its

⁸¹ Cf. Bennett Letter at 2 (noting that “telephony” is “the only information exchange that promises to send and receive information between end points without alteration of the information’s form or content”).

⁸² NPRM ¶ 36. The inquiry into changes in marketing practices also may be beside the point, given the D.C. Circuit’s conclusion that “changed factual circumstances were not critical” to upholding the *Title II Order*. *USTelecom*, 825 F.3d at 709.

⁸³ See, e.g., *Cable Modem Declaratory Ruling* ¶ 17 (describing the inclusion of many of these functionalities in BIAS more than 15 years ago).

⁸⁴ *Title II Order*, 30 FCC Rcd. at 5957-58 (Pai Dissent); *id.* at 5991 (O’Rielly Dissent).

broadband advertisements—even *well before* the *Brand X* decision.⁸⁵ Even Justice Scalia remarked in his dissent in *Brand X* that broadband providers “advertise[] quick delivery as one of [their] advantages over competitors.”⁸⁶ In any event, BIAS providers routinely include more than just “speed” claims in their advertisements.⁸⁷ And “there is little reason to think consumers might want a fast or reliable ‘transmission . . . of information’ but not a fast or reliable ‘capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information.’”⁸⁸

3. *Other Statutory Provisions Support a Title I Classification.*

While an examination of the factual particulars of BIAS in light of the relevant statutory definitions strongly supports an information service classification, other provisions of the Act confirm that such a classification is a better fit than a telecommunications service classification. For example, as Chairman Pai has noted, Congress “directly addressed the question of whether an ISP offer[s] an information service” when it enacted Section 230 of the Act, and “answered with a resounding ‘Yes.’”⁸⁹ Section 230(f)(2) provides that the term “any information service”

⁸⁵ See, e.g., Press Release, Comcast Corp., Comcast Announces Official Name Change of Suburban Cable and Garden State Cable Through Customer Welcome Campaign (May 9, 2000), <http://corporate.comcast.com/news-information/news-feed/comcast-announces-official-name-change-of-suburban-cable-and-garden-state-cable-to-comcast-cable-through-customer-welcome-campaign> (advertising “speeds 100 times faster” than a standard dial-up connection).

⁸⁶ 545 U.S. at 1007 n.1; see also *Title II Order*, 30 FCC Rcd. at 5957-58 (Pai Dissent) (making clear that BIAS advertising has not changed since the *Brand X* decision); *id.* at 5991 (O’Rielly Dissent) (same).

⁸⁷ See *NPRM* ¶ 36; see also XFINITY Internet, <https://www.xfinity.com/learn/internet-service> (last visited July 16, 2017) (advertising other key attributes of BIAS, including online security features).

⁸⁸ *NPRM* ¶ 36.

⁸⁹ *Title II Order*, 30 FCC Rcd. at 5953 (Pai Dissent).

“include[s] specifically a service or system that provides access to the Internet.”⁹⁰ And although the *USTelecom* court ruled that this provision did not *preclude* an alternative telecommunications service classification,⁹¹ Section 230(f)(2) still plainly bolsters an information service classification.

Section 231(e)(4) does so as well, by stating that the term “Internet access service” does “not include telecommunications services.”⁹² It is hard to imagine clearer statutory language.⁹³ Also, as the NPRM points out, Section 231 “defines Internet access service as one offering many capabilities (like an information service),” including the ability “to access content, information, electronic mail, or other services offered over the Internet.”⁹⁴ Finally, the Commission also correctly notes that the need to forbear from so much of Title II in the *Title II Order* should have been a red flag that it was “tak[ing] a wrong interpretive turn,”⁹⁵ and provides yet another basis for embracing an information service classification here.

B. Classifying BIAS as an Information Service Will Advance Core Commission Policy Objectives.

As a policy matter, classification of BIAS as a Title I information service is the surest way to promote increased investment in broadband and to foster the “virtuous circle” of innovation, demand for Internet-based content and applications, and deployment of broadband

⁹⁰ 47 U.S.C. § 230(f)(2).

⁹¹ 825 F.3d at 703.

⁹² 47 U.S.C. § 231(e)(4); *see also* Internet Tax Freedom Act, Pub. L. No. 105-277, § 1101(e)(3)(D), 112 Stat. 2681 (1998) (codified at 47 U.S.C. § 151 note) (providing that “Internet access service” “does not include telecommunications services”).

⁹³ *See* Judge Brown Dissent, 855 F.3d at 405 (noting “even *Chevron* deference” could not support a contrary interpretation of this provision).

⁹⁴ *NPRM* ¶ 32 (quoting 47 U.S.C. § 231(e)(4)).

⁹⁵ *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427, 2446 (2014).

infrastructure. Prior to 2015, the Commission’s longstanding classification of BIAS as an information service gave rise to a light-touch regulatory approach for the entire Internet ecosystem that enjoyed bipartisan support and helped drive the Internet’s widespread deployment and unprecedented dynamism. “This success wasn’t an accident,” as Chairman Pai has pointed out.⁹⁶ ISPs have invested \$1.5 *trillion* since 1996 to build competing wired and mobile broadband networks⁹⁷—investment that expanded broadband deployment to 98 percent of Americans and drove up maximum broadband speeds by 3,200 percent since 2005.⁹⁸ Upon this foundation, businesses like Google, Facebook, Amazon, and Netflix “developed in ways that the policy makers could not have fathomed even a decade ago.”⁹⁹ Indeed, time and time again, the industry has seen how action by the Commission eschewing common carrier regulation directly leads to greater dynamism in the marketplace.¹⁰⁰

The Commission’s adoption of a telecommunications service classification in 2015 created an unnecessary overhang of Title II common carrier regulation that not only has demonstrably slowed broadband investment and innovation in the past two years, but also

⁹⁶ *NPRM*, 32 FCC Rcd. at 4492 (statement of Chairman Pai).

⁹⁷ *See id.* ¶¶ 1-2 (citing USTelecom, Broadband Investment, <http://www.ustelecom.org/broadband-industry/broadband-industry-stats/investment>).

⁹⁸ *See* NCTA, *Preview the State of America’s Broadband Ahead of President Obama’s Visit to Iowa* (Jan. 15, 2015), <https://www.ncta.com/platform/broadband-internet/preview-the-state-of-americas-broadband-ahead-of-president-obamas-visit-to-iowa/>.

⁹⁹ *NPRM* ¶ 2.

¹⁰⁰ *See, e.g.,* Anna-Maria Kovacs, *Regulation in Financial Translation: Investment Implications of the FCC’s Open Internet Proceeding*, at 21 (Oct. 2014), <https://cbpp.georgetown.edu/sites/cbpp.georgetown.edu/files/Kovacs-investment-implications-FCCs-open-internet-proceeding.pdf> (“It was only after the courts affirmed the FCC’s 2005 *Triennial Review Remand Order (TRRO)*, which greatly reduced the ILEC’s unbundling obligations, especially with respect to fiber, hybrid-fiber, and packetized switching, and UNEP, that ILEC investment finally began to grow again.”).

threatens to cause irreparable damage to the growth and dynamism of the Internet going forward.¹⁰¹ As the NPRM points out, “[t]he Commission’s *Title II Order* has put at risk online investment and innovation, threatening the very open Internet it purported to preserve,” as “[i]nvestment in broadband networks [has] declined” and “Internet service providers have pulled back on plans to deploy new and upgraded infrastructure and services to consumers.”¹⁰² Comcast’s President and CEO Brian Roberts noted the same dynamic earlier this year, explaining that regulatory certainty “helps you have the confidence to make long-term plans, . . . whether it’s fiber [deployment] or other investments in in-home equipment . . . [or other] business opportunities,” whereas “the more uncertainty [there is], the less encouraging it is to want to invest.”¹⁰³

1. *The Application of Title II to BIAS Undermines Broadband Investment.*

The risks of imposing public-utility regulation on the dynamic broadband industry are well-documented. As reflected in the attached Appendix B, the record developed in the prior proceeding (which the Commission should incorporate into this proceeding) contains numerous studies by noted economists warning of the dangers of subjecting such a dynamic industry to antiquated and overbroad common carrier mandates, and pointing to natural experiments in other contexts (such as the chronic underinvestment in our nation’s transportation infrastructure, as

¹⁰¹ *USTelecom*, 825 F.3d at 754-55 (Williams, J., dissenting) (noting that the overhang of Title II “increases uncertainty in policy, which both reason and the most recent rigorous econometric evidence suggest reduce investment” (citing Scott R. Baker et al., *Measuring Economic Policy Uncertainty*, 131 QUARTERLY J. ECON. 1593 (2016))).

¹⁰² NPRM ¶ 4.

¹⁰³ Transcript of Comcast Corp. 4Q16 Earnings Call, Tr. at 13 (Jan. 26, 2017), http://files.shareholder.com/downloads/CMCSA/4770110709x0x925407/7B7B0C42-6E3B-4FA0-9510-AF4032FC0706/Comcast_4Q16_Earnings_Transcript.pdf (statement of Brian L. Roberts, Chairman and CEO, Comcast Corporation).

well as in the legacy telephone networks subject to Title II) that illustrate the lasting harms of such an approach.¹⁰⁴

A new economic study by Dr. Dippon, attached hereto as Appendix C, bears out these concerns.¹⁰⁵ Notably, Dr. Dippon already had warned prior Commission leadership about the dangers of Title II on multiple occasions. In a paper filed in September 2014, Dr. Dippon (along with Jonathan Falk) found that the application of Title II to BIAS would “seriously disrupt the Internet ecosystem” as “ISPs would not have the proper incentives to provide additional network capacity”—which, in turn, “would forestall innovation” and cause “[c]osts for most, if not all, ecosystem participants [to] increase because the regulatory process, not market forces, would define market success.”¹⁰⁶ In a follow-up paper submitted shortly after the adoption of the *Title II Order*, Dr. Dippon and Mr. Falk determined that their earlier paper had actually “*understated* the effects this Order has” on the Internet ecosystem, as the Commission’s application of Title II “goes far beyond the implementation of so-called *net neutrality* provisions” and “implements a far-reaching regulatory scheme” that threatened to upend the dynamic broadband marketplace.¹⁰⁷ Dr. Dippon’s latest paper examines the data over the past two years and finds that “[t]he economic evidence clearly demonstrates that Title II causes more harm to the public interest than any good that might come from using this regulatory framework.”¹⁰⁸

¹⁰⁴ See Appendix B.

¹⁰⁵ See Dr. Christian Dippon, NERA, *Public Interest Repercussions in Repealing Utility-Style Regulation and Reapplying Light-Touch Regulation to Internet Services* (July 17, 2017), attached hereto as Appendix C.

¹⁰⁶ Dr. Christian Dippon & Jonathan Falk, NERA, *Economic Repercussions of Applying Title II to Internet Services* ii, GN Docket No. 14-28 (Sept. 9, 2014) (“Dippon/Falk 2014 Paper”).

¹⁰⁷ Dr. Christian Dippon & Jonathan Falk, NERA, *The Net Neutrality Order: It’s Worse Than We Thought 2*, GN Docket No. 14-28 (Mar. 16, 2015) (emphasis in original).

¹⁰⁸ Appendix C at ii.

In particular, Dr. Dippon’s paper demonstrates that the “enormous regulatory uncertainty” created by the application of Title II to BIAS “negatively affects investment, innovation, Internet subscriptions, and U.S. employment statistics.”¹⁰⁹ On the topic of broadband investment since reclassification, Dr. Dippon finds that “[e]stimates of \$35 billion per year in lost investment”—derived by comparing actual investment figures to those that likely would have prevailed “in a world of growing investments *but for* the threat of Title II”—“are reasonable.”¹¹⁰ This “significant investment gap,” Dr. Dippon explains, “can only be attributed to the Title II reclassification process,”¹¹¹ as prior efforts to implement open Internet protections “in the *absence* of Title II regulation” led to no discernable slowdown in investment.¹¹²

Other recent economic studies evaluating Title II’s effect on the broadband ecosystem provide further confirmation of these harms. For instance, one recent study indicates that “capital expenditure from the nation’s twelve largest Internet service providers has fallen by \$3.6 billion, a 5.6% decline relative to 2014 levels.”¹¹³ CTIA has similarly found that capital expenditures have declined for wireless providers by 17.4% since 2014.¹¹⁴ And a study by Dr. George S. Ford found that even the *threat* of Title II reclassification between 2011 and 2015 “reduced telecommunications investment by 20% (or more), or about \$32 to \$40 billion

¹⁰⁹ *Id.* at iii.

¹¹⁰ *Id.* at iv.

¹¹¹ *Id.* at 27.

¹¹² *Id.* at 33 (emphasis added).

¹¹³ NPRM ¶ 45 (citing Hal Singer, *2016 Broadband Capex Survey: Tracking Investment in the Title II Era* (Mar. 1, 2016)), <https://haljsinger.wordpress.com/2017/03/01/2016-broadband-capex-survey-tracking-investment-in-the-title-ii-era>).

¹¹⁴ CTIA, *Annual Year-End 2016 Top-Line Survey Results 5*, <https://www.ctia.org/docs/default-source/default-document-library/annual-year-end-2016-top-line-survey-results.pdf?sfvrsn=2> (reflecting a 17.4 percent capex decline for wireless providers between 2014 and 2016).

annually.”¹¹⁵ That reduction amounts to “about \$150-\$200 billion in total over the five-year period,” or the equivalent of “an entire *year*’s worth of telecommunications investment.”¹¹⁶ As Chairman Pai has noted, such a decline is “extremely unusual” and represents “the first time that such investment has declined outside of a recession in the Internet era.”¹¹⁷ Indeed, a new study by Dr. Ford confirms that the declines in capital spending in 2016 following the *Title II Order* were “abnormally large for the sector,” and “the evidence clearly shows something is afoot in the broadband business.”¹¹⁸

While Free Press and others have put out so-called “studies” that purport to show an *increase* in capital investment by ISPs since the adoption of the *Title II Order*,¹¹⁹ their analysis suffers from fundamental flaws. Notably, the Information Technology & Innovation Foundation (“ITIF”) published a piece comparing Free Press’s and Dr. Singer’s studies, and determined that a lack of rigor in Free Press’s report led to significant analytical errors and inaccuracies in its conclusions.¹²⁰ ITIF found that Free Press, unlike Dr. Singer, failed to “control[] for three of the

¹¹⁵ George S. Ford, *Net Neutrality, Reclassification and Investment: A Counterfactual Analysis* 10 (Apr. 25, 2017), <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf> (“Ford Apr. 25 Paper”); cf. *Preserving the Open Internet, Broadband Industry Practices*, Report and Order, 25 FCC Rcd. 17905, 18085 (2010) 182 (Baker Dissent) (“[I]t was not until the Title II debate this [2010] Spring that this uncertainty triggered considerable real world consequences.”).

¹¹⁶ Ford Apr. 25 Paper at 2, 10.

¹¹⁷ *NPRM*, 32 FCC Rcd. at 4493 (statement of Chairman Pai).

¹¹⁸ George S. Ford, *Reclassification and Investment: A Statistical Look at the 2016 Data* 1 (July 13, 2017), <http://www.phoenix-center.org/perspectives/Perspective17-08Final.pdf>.

¹¹⁹ See, e.g., 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>; Internet Ass’n, *Preliminary Net Neutrality Investment Findings* (May 2017), <https://internetassociation.org/wp-content/uploads/2017/05/InternetAssociation-NetNeutrality-Facts.pdf>.

¹²⁰ See Doug Brake, ITIF, *Broadband Myth Series, Part 1: What Financial Data Shows About the Impact of Title II on ISP Investment* (June 2, 2017),

most obvious external factors that have nothing to do with Title II”: “(1) the mid-period change in how Sprint treats handsets for accounting purposes . . . , (2) AT&T’s investment in Mexico . . . , and (3) AT&T’s investment in DirecTV.”¹²¹ Once Free Press’s figures are adjusted based on these factors, “the differences between Free Press and Singer become much more narrow,” indicating that broadband investment indeed has been dampened in the wake of the *Title II Order*, as most economists that have examined the issue have found. Another more recent paper by Dr. Ford found many of the same analytical defects in the reports from Free Press and their allies, and concluded that these reports “present a highly distorted view” of the available evidence on investment.¹²² Dr. Ford even noted several instances where Free Press “selectively edit[ed]” ISPs’ statements to investors in a misleading manner in order to perpetuate its “false narrative on Internet regulation and investment.”¹²³

Moreover, Free Press and others also ignore ISPs’ capital *intensity* ratios—which measure capital expenditures as a share of revenue, and are often a better metric to evaluate capital investment and trends. Comcast’s David L. Cohen recently explained Title II’s impact on Comcast as follows:

Capital expenditure investments are complicated; . . . we have to respond to competition and we have to make sure our networks operate or else we will blow up our whole business, but the notion that the [Title II] regulatory structure here

<https://itif.org/publications/2017/06/02/broadband-myth-series-part-1-what-financial-data-shows-about-impact-title-ii>.

¹²¹ *Id.*

¹²² George S. Ford, *Below the Belt: A Review of Free Press and the Internet Association’s Investment Claims* 2 (June 20, 2017), <http://www.phoenix-center.org/perspectives/Perspective17-06Final.pdf>.

¹²³ *Id.* at 2-5. Notably, Dr. Ford is particularly critical of the efforts of Free Press to mischaracterize the public statements of Comcast executives on these issues, and notes that those parties appear to have intentionally ignored statements by Comcast’s Brian Roberts clearly indicating that “the regulatory overhang of Title II raises uncertainty and curbs investment incentives.” *Id.* at 4.

has not impacted our decision making is just dead wrong. It impacts it every single day, and I have seen it dozens and dozens of times. . . . If you are going to look at anything in publicly-reported numbers, you should be looking at capital intensity because that is how you measure what a business might really want to be spending on capital expenditures.¹²⁴

Based on public numbers, but making an assessment based on capital intensity as opposed to the actual capital spend, “the leveling off and even reduction of capital intensity since the adoption of Title II suggests that Comcast’s capital spend alone is going to decrease more than \$2.5 billion over a three year period” compared to what it would otherwise have been.¹²⁵ This data further undermines Free Press’s absurd claim that the imposition of common carrier regulation has been or will be a boon to broadband investment.

Along similar lines, Raymond James financial analyst Frank Louthan has noted that defenders of the 2015 Title II classification decision (like Free Press) “fail[] to understand that network investment of, say \$X billion per year that remains at or near that level going forward represents, essentially, a cut to investment.”¹²⁶ As Louthan explains, “[t]his is because absent these rules, new models could emerge that would save consumers and businesses money while providing the network returns required to justify further network expansion and investment and a better experience for all.”¹²⁷ Louthan concludes that, whereas Title II defenders “falsely claim” that flat investment figures somehow indicate that “nothing was harmed,” “[t]he real investment

¹²⁴ Free State Found., Telecommunications Policy Conference at 38:20 (May 31, 2017), <https://www.c-span.org/video/?429299-3/telecommunications-policy-conference-part-2> (statement of David L. Cohen, Senior Executive VP and Chief Diversity Officer, Comcast Corporation).

¹²⁵ *See id.* at 40:38.

¹²⁶ *See* Frank Louthan, Raymond James, *Title II Late; The Damage Assessment for Telecom Begins* 1 (Feb. 27, 2015).

¹²⁷ *Id.*

number should be 10%-20% higher than the base of \$X billion and grow from there.”¹²⁸ Dr. Dippon makes the same observation. “Internet infrastructure spending will always grow with traffic volumes,” he explains.¹²⁹ “The relevant standard for continued investment is not the difference from last year’s investment but what this year’s investment would have been were it not for Title II reclassification.”¹³⁰ And applying that standard, the data show “a significant investment gap,” as noted above.¹³¹

This decline in the pace of broadband investment already has had a negative impact on broadband networks in this country. For example, another study by Dr. Ford found “a statistically significant decline in the rate of average broadband speed increases for the U.S.” in the wake of the *Title II Order*.¹³² While Public Knowledge’s Harold Feld has asserted that the “virtuous circle” is “totally working” in light of announced speed increases by BIAS providers over the past two years,¹³³ Dr. Ford undertook a careful empirical analysis of broadband speeds and determined that, “but for” the Commission’s Title II classification of BIAS, “U.S. broadband

¹²⁸ *Id.* The lessons from the European context confirm this intuition. There, the imposition of common-carrier-style regulation on ISPs has resulted in broadband investment levels that, as of 2014, were less than half of the level of broadband investment in the United States on a per household basis. See Christopher S. Yoo, *U.S. vs. European Broadband Deployment: What Do the Data Say?* 1 (June 2014), <https://www.law.upenn.edu/live/files/3353-us-vs-european-broadband-deployment-summary>.

¹²⁹ Appendix C at 27.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² George S. Ford, *Broadband Speeds Post-Reclassification: An Empirical Approach* 1 (June 27, 2017), <http://www.phoenix-center.org/perspectives/Perspective17-07Final.pdf> (“Ford June 27 Paper”).

¹³³ See Harold Feld, *NCTA Agrees Title II Virtuous Cycle Totally Working; Or, Pai’s Economics v. the Actual Real World*, WetMachine Blog (June 12, 2017), <http://www.wetmachine.com/tales-of-the-sausage-factory/ncta-agrees-title-ii-virtuous-cycle-totally-working-or-pais-economics-v-the-actual-real-world/>.

speeds would have been about 10% higher—or about 1.5 Mbps faster—on average.”¹³⁴ Dr. Ford thus concluded that, contrary to the assertions of Title II advocates, the Commission’s *Title II Order* has “broken the virtuous circle” rather than promoted it.¹³⁵

2. *The Title II Classification Also Thwarts Innovation and Causes Other Harms in Comparison to a Title I Classification.*

The effect of Title II on innovation has been just as pronounced. As Brian Roberts has explained, “We’ve said for a long time that we think [Title II] puts a damper on [our] ability to invest and react to change.”¹³⁶ Indeed, as Justice Breyer explained over thirty years ago in his seminal treatise on regulation, harm to innovation is an *inevitable* outcome of common carrier regulation.¹³⁷ Federally imposed, common-carrier-style standards of service impose “barriers to entry,” and indeed the “added cost of compliance with [such] standard[s] *automatically* raises barriers.”¹³⁸ The *Title II Order* has been the poster child for these sorts of harms.

Not only did Title II introduce the threat of price regulation and open access obligations, but the previous Commission expressly declined to forbear from application of Sections 201 and 202, which impose broad requirements that all “charges” and “practices” be “just and reasonable” and not “unreasonabl[y] discriminat[ory]”¹³⁹ and thus enable the Commission to

¹³⁴ Ford June 27 Paper at 1; *see also id.* at 2-9 (detailing statistical analysis of broadband speeds based on publicly available data).

¹³⁵ *Id.* at 1-2.

¹³⁶ Comcast Corp., Q1 2017 Comcast Corp. Earnings Call, Tr. at 12 (Apr. 27, 2017), http://files.shareholder.com/downloads/CMCSA/4770110709x0x939776/9E61E036-413A-4E2C-BF76-ACCE38F457FA/Comcast_1Q17_Earnings_Call_Transcript.pdf (response of Comcast Chairman and CEO, Brian L. Roberts to question from Frank Louthan, Raymond James).

¹³⁷ STEPHEN BREYER, REGULATION AND ITS REFORM 115-16 (1984) (emphasis added).

¹³⁸ *Id.* at 115.

¹³⁹ 47 U.S.C. §§ 201(b), 202(a). Indeed, one analyst underscored the business risk to the industry of the uncertain application of Title II: “Given the implementation of Title II, which in our

engage in *ex post* review of the rates and practices of broadband providers.¹⁴⁰ Moreover, the Commission adopted a brand new rule, the so-called “general conduct standard,” to effectuate this use of Sections 201 and 202 to second-guess a provider’s practices.¹⁴¹ The rule broadly prohibits BIAS providers from “unreasonably interfer[ing] with or unreasonably disadvantage[ing]” end users’ access to edge providers or edge providers’ access to end users,¹⁴² and involves a case-by-case analysis based on a non-exhaustive list of at least seven factors.¹⁴³ The Commission likewise refused to forbear from Section 207 of the Act,¹⁴⁴ thus leaving intact the threat of class actions and other lawsuits targeting broadband providers’ rates and practices.

One need look no further than the investigations conducted by prior Commission leadership into nascent streaming services like T-Mobile’s BingeOn, Verizon’s FreeBee, and AT&T’s Sponsored Data, as well as IP cable services such as Comcast’s Stream TV, to appreciate the serious chilling effect on innovation caused by the Commission’s effort to apply Sections 201 and 202 to BIAS providers through its general conduct standard (addressed further below). As Dr. Dippon explains, “[s]uch protracted and standardless reviews with their uncertain outcomes are not conducive” to the innovation process, which “requires significant financial resources and long lead times that are economically costly to reverse.”¹⁴⁵ The

opinion is one of the major risk factors for the distribution industry as a whole, we do believe cable stocks deserve a discount on account of this factor. While the present structure of regulation forebears on pricing controls, we do not believe th[ere] is a lot of visibility on what this actually means longer term.” Kannan Venkateshwar, Barclays, *Comcast: Time for a Re-Rating* 14 (May 20, 2015).

¹⁴⁰ See *Title II Order* ¶ 451.

¹⁴¹ See *id.* ¶ 137.

¹⁴² *Id.* ¶ 136 (internal quotation marks omitted); see also 47 C.F.R. § 8.11.

¹⁴³ See *Title II Order* ¶¶ 139-145.

¹⁴⁴ *Id.* ¶ 453.

¹⁴⁵ Appendix C at 34-35.

Commission’s initiation of such enforcement investigations after proposing a \$100 million fine against AT&T based on *post hoc* second guessing of its broadband disclosures underscores the threat providers face if they guess wrong about the Commission’s application of the expansive and virtually unbounded authority it asserted in the *Title II Order*.¹⁴⁶

This uncertainty, coupled with the risk of nine-figure sanctions for inaccurate guesswork, has had a significant negative impact on product development, deployment, and time to market. Ever since the *Title II Order*’s adoption, Comcast (and likely every other ISP) has had to conduct extensive legal and regulatory review on a vast array of product proposals to assess potential risks posed by the telecommunications service classification of BIAS—risks that again now include the prospect of class-action complaints in federal court under Section 207 (in addition to FCC complaints under Section 208). Making matters worse, the new and untested application of Title II’s “reasonableness” standards and the Commission’s vague and unbounded general conduct standard to BIAS have injected significant uncertainty into these assessments. On top of its usual regulatory review, Comcast has been forced to consider, for example, whether a practice that might provide end users with attractive new capabilities will be so burdened with regulatory rules and obligations as to undermine its viability; whether providing a new innovative Internet-based service might subject Comcast to the *obligation* to provide that same service to any entity,

¹⁴⁶ See *AT&T Mobility, LLC*, Notice of Apparent Liability for Forfeiture and Order, 30 FCC Rcd. 6613 ¶¶ 1-2 (2015). This dynamic was made worse by the widely held perception that the Enforcement Bureau under previous Commission leadership was unpredictable and pursuing a somewhat arbitrary agenda. See, e.g., Testimony of Commissioner Ajit Pai, FCC, Before the Subcommittee on Communications and Technology of the United States House of Representatives Committee on Energy and Commerce, at 3 (Nov. 17, 2015), https://apps.fcc.gov/edocs_public/attachmatch/DOC-336418A1.pdf (“To be blunt, the FCC’s enforcement process has gone off the rails. Instead of dispensing justice by applying the law to the facts, the Commission has focused on issuing headline-grabbing fines, regardless of the legality of its actions.”).

which deters even experimenting with a new business model or service; and whether all of the company's long-range planning must account for the possibility of destabilizing rate regulation.

These reviews are fraught with uncertainty, take time and resources, and inevitably at the very least hampered product launches. And even where the legal and regulatory risks should be minimal—as is the case for a cable operator that simply wants to offer an in-home-only, IP-based transmission of its cable service, delivered exclusively over its cable systems and not provided or available over the Internet, which Comcast decided to trial in December 2015—the Title II overhang resulted in a year-long Bureau investigation that significantly burdened Comcast's launch of the service. In short, absent any evidence of harm under the previous, consensus-based and highly successful light-touch regulatory approach that existed for decades, each product that conceivably could touch on Internet service has to be evaluated for Title II risks and then designed or redesigned to minimize those risks.¹⁴⁷ Such a process would be inconceivable for product development teams at Facebook, Amazon, or Google (or any edge provider, for that matter), and yet has become *de rigueur* for ISPs in the Title II world.

The record in the present proceeding already contains substantial evidence illustrating how this Sword of Damocles hanging over every service-related decision naturally and inevitably chills ISPs' incentive to innovate. As a group of municipal ISPs explained in a letter to Chairman Pai, the Title II obligations imposed in 2015 are “so difficult to fathom” that they are forced to incur “substantial costs” in analyzing the potential application of these vague standards to potential service offerings and in seeking to “minimize any risk that [they] will be

¹⁴⁷ One of the considerations that has to go into each evaluation is the risk that a competitor or some other person will mischaracterize a new, innovative product, service, or practice and either sue in court or try to provoke the Commission to launch an investigation.

judged after-the-fact to be out of compliance.”¹⁴⁸ Even after this costly risk assessment, the municipal ISPs explained that they “often delay or hold off from rolling out a new feature or service” in light of the highly uncertain nature of risks involved.¹⁴⁹ And “[a]s a result,” their “customers lose out on having access to innovations and new capabilities.”¹⁵⁰ Other ISPs—including small and rural providers—have expressed the same concern, characterizing Sections 201 and 202 and the general conduct standard as “vague and open-ended ‘catch-all[s]’” that “can be subject to differing and inconsistent interpretations” and that “potentially subject[] innovative and legitimate business practices to consumer complaints, FCC investigations and, perhaps, rate regulation.”¹⁵¹ Indeed, to the extent that edge providers are exploring partnering with ISPs to roll out innovative new service offerings, the significant uncertainty surrounding these ambiguous standards chills that activity as well.

These experiences and chilling effects are shared by ISPs and other participants in the Internet ecosystem across the country, and have already had, in the aggregate, a significant impact on the nation’s ability to innovate on par with other nations. As the American Enterprise Institute’s Mark Jamison has noted, the United States for years sat atop an international academic ranking of innovativeness published annually by Cornell University, INSEAD, and the World Intellectual Property Organization. The United States then fell to fifth in 2015—at a time that

¹⁴⁸ Letter from 19 Municipal ISPs to Chairman Ajit Pai, WC Docket No. 17-108, at 2 (May 11, 2017) (“Municipal ISPs’ Letter”).

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ Letter from 70 Small Wireless ISPs to Chairman Ajit Pai *et al.*, WC Docket No. 17-108, at 2 (May 9, 2017).

coincided with announcements by U.S. ISPs that had “been delaying new services because of the FCC’s regulatory uncertainty.”¹⁵²

Several other studies have documented the ways in which the overhang of Title II regulation is undercutting ISPs’ ability to offer low-cost broadband plans, limiting new forms of competition, costing jobs, and slowing adoption. For example, the Hudson Institute published a report explaining that, although “services offering varying tiers of service differentiated by quality, access, or speed have long been a mainstay in economic markets, to the benefit of countless low income individuals,” the application of Title II to BIAS has begun to impede this healthy market activity, including by subjecting “free data” plans to regulatory scrutiny.¹⁵³ Moreover, Dr. Dippon and Mr. Falk projected that, by “slow[ing] the development of new broadband services,” Title II threatens to cause “billions of dollars in lost social benefits” and “cost the economy thousands of jobs”¹⁵⁴—more than 700,000 jobs according to Dr. Dippon’s latest estimate.¹⁵⁵ By contrast, opening the door to more competition and more innovation through a Title I classification could create “as many as eight million additional jobs” as broadband deployment and adoption becomes more widespread.¹⁵⁶ Dr. Dippon’s economic models also indicate that “broadband subscribership might already be as much as 1.5 percent

¹⁵² Mark Jamison, *Net Neutrality Is Choking Innovation*, Tech Policy Daily, Dec. 8, 2015, <http://www.techpolicydaily.com/internet/net-neutrality-is-choking-innovation/>.

¹⁵³ Kirk R. Arner, *Title II in Regulatory and Economic Context: Why the FCC’s Recent “Net Neutrality” Moves will Harm, Not Help, America’s Internet Future*, Hudson Institute Center for the Economics of the Internet 25, 31 (Aug. 11, 2016), <https://s3.amazonaws.com/media.hudson.org/files/publications/arnertitleiiinregulatoryandeconomiccontext.pdf>.

¹⁵⁴ Dippon/Falk 2014 Paper at 31-32.

¹⁵⁵ See Appendix C at 40-41.

¹⁵⁶ See *id.* at 40.

lower than it would otherwise be . . . without the regulatory uncertainty engendered by Title II reclassification.”¹⁵⁷

And yet, for all these harms, Title II is simply not necessary to achieve the stated goal of the Commission’s 2015 reclassification ruling: protecting the open Internet. For one thing, the plain fact that broadband providers remained faithful to consensus open Internet principles throughout the many years that BIAS was classified as an information service—and have pledged to maintain the same consumer-friendly practices regardless of how BIAS is classified¹⁵⁸—belies any notion that Title II is somehow necessary to safeguard those principles. Indeed, as discussed further in Section II below, there is no reason to conclude that there is any problem with Internet openness that needs solving through Title II or otherwise, given the dearth of evidence as to any harm to Internet openness caused by ISPs.¹⁵⁹ As Chairman Pai put it, the so-called “examples” cited by Title II proponents are “all anecdote, hypothesis, and hysteria,” and “aren’t enough to tell a coherent story about net neutrality.”¹⁶⁰ Nevertheless, Comcast supports maintaining a regulatory backstop. Legislation represents the most promising way to ensure a lasting and certain framework for protecting Internet openness without Title II—though

¹⁵⁷ *See id.* at 41.

¹⁵⁸ *See* Watson Blog Post (explaining that Comcast’s “network and business practices,” for instance “are in complete alignment with [open Internet] protections” and that this “will remain true, even if the FCC reverses public utility regulation of [Comcast’s] broadband network”); *see also, e.g.*, Letter from 22 Small Wireline ISPs to Chairman Ajit Pai, WC Docket No. 16-106, GN Docket No. 14-28, at 2 (Apr. 25, 2017) (“[S]hould the Commission revisit its classification decision and revise or even repeal its 2015 Open Internet rules, we would continue to provide an open Internet experience for our customers—and could do so without suffering the costs of utility-style regulation.”).

¹⁵⁹ *See* discussion *infra* at 50-51.

¹⁶⁰ *Title II Order*, 30 FCC Rcd. at 5933 (Pai Dissent).

until Congress acts, the Commission has multiple paths available for protecting Internet openness under a Title I classification in the near term, as discussed in Section II below.

Absent congressional action, eliminating the risk and uncertainty associated with Title II and reinstating a Title I classification is the best way to restore the light-touch regulatory approach that historically has driven investment and innovation so effectively and served consumers so well. That approach has broad public support; polls conducted after the Commission’s announcement of its intention to revisit its Title II classification of BIAS found that 78 percent of the public support either “light touch” regulation of BIAS or no regulation at all, whereas *only 12 percent* support common carrier regulation of BIAS.¹⁶¹ Moreover, the millions of consumer comments supporting the elimination of Title II that have already been filed in this proceeding confirm the broad public support for the approach of the NPRM.¹⁶² And greater investment in broadband networks will lead to faster speeds, facilitate continued reductions in per-Megabit pricing and increases in quality, and help close the digital divide in this country by spurring greater deployment in unserved and underserved areas.¹⁶³ The

¹⁶¹ See Morning Consult, *NCTA Polling Recap 3* (May 2017), http://www.ncta.com/sites/prod/files/morning_consult_poll_toplines_1.pdf.

¹⁶² John Eggerton, *Analysis: Majority of FCC Comments Favor Repealing Title II Rules*, Multichannel News, June 26, 2017, <http://www.multichannel.com/news/fcc/analysis-majority-fcc-comments-favor-repealing-net-rules/413681> (reporting that of the nearly 5 million comments filed in the open Internet docket as of June 20, 2017, “a majority (65%) favor repealing the Title II-based Open Internet order”); Press Release, Consumer Action for a Strong Economy, CASE Analysis: Net Neutrality Comments Favor Repeal of 2015 Order (June 25, 2017), <http://caseforconsumers.org/2017/06/25/case-analysis-net-neutrality-comments-favor-repeal-of-2015-order/> (analyzing the open Internet comments filed in the open Internet docket and determining that 65 percent of the comments filed support repealing the Title II Order).

¹⁶³ See, e.g., Municipal ISPs’ Letter at 1 (“By returning to light-touch regulation of broadband service, the Commission will give Muni ISPs incentives to invest in enhancing our networks and our deployment of innovative services at affordable prices while still ensuring consumers have unfettered access to the Internet.”); see also *NPRM* ¶ 49 (“We note that increased investment is likely to lead to a faster closing of the digital divide for rural and low-income consumers.”);

Commission should accordingly restore the information-service classification of BIAS that for many years spurred a high degree of investment and innovation, relying on the predictive judgment that safeguarding open Internet protections without the destructive aspects of Title II regulation is the best way to promote continued broadband deployment and adoption. As described further below in Section I.C., substantial judicial precedent—including the D.C. Circuit’s decision in *USTelecom*—supports this approach.

Finally, reinstating a Title I classification for broadband also will have the ancillary benefit of returning authority over the online privacy and data security practices of ISPs to the FTC. By reclassifying BIAS as a common carriage telecommunications service in 2015, the Commission stripped the FTC of its authority to address broadband providers’ privacy and data security practices by operation of the common carrier exemption in Section 5 of the FTC Act.¹⁶⁴ Congress thereafter passed a resolution disapproving of the prior Commission’s poorly conceived attempt at broadband privacy regulation when it used the Congressional Review Act¹⁶⁵ to invalidate the rules adopted in 2016.¹⁶⁶ Undoing Title II reclassification will restore jurisdiction to the agency with the most experience and expertise in these areas (the FTC), better

NPRM, 30 FCC Rcd. at 4493 (statement of Chairman Pai) (noting that promoting investment in broadband infrastructure by all ISPs is “critical to closing the digital divide by building out in lower-income rural and urban areas—areas that too often don’t see investment or are the first to see investment dry up”).

¹⁶⁴ 15 U.S.C. § 45(a)(2).

¹⁶⁵ 5 U.S.C. § 801(b).

¹⁶⁶ *See* Protecting the Privacy of Customers of Broadband and Other Telecommunications Services, Pub. L. No. 115-22, 131 Stat. 88 (2017) (enacting S.J. Res. 34, 115th Cong.); *see also* 163 Cong. Rec. S1954 (Mar. 23, 2017) (statement of Sen. Cornyn) (“The FCC privacy rules are just another example of burdensome rules that hurt more than they help and serve as another example of the government’s picking winners and losers. They unnecessarily target internet service providers and, ultimately, make our internet ecosystem less efficient by adding more redtape.”).

reflect congressional intent, and create an equal and level playing field in Internet privacy.¹⁶⁷ Notably, Howard Shelanski, the Administrator of the White House Office of Information and Regulatory Affairs from 2013 to 2017 and the Commission’s Chief Economist from 1999 to 2000, said pointedly in recent remarks that the FTC has “much more experience” and “institutional competence” than the Commission in the privacy context.¹⁶⁸ In this regard—and particularly because “having [multiple] privacy cops on the beat will create confusion within the internet ecosystem and will end up harming consumers”¹⁶⁹—the Commission should make clear that the FTC has jurisdiction over BIAS privacy and data security practices *regardless* of technology (cable, wireless, or wireline).

3. *Evaluation of the Relevant Costs and Benefits Strongly Supports Returning to a Title I Classification.*

Comcast agrees with the Commission on the importance of weighing the relevant costs and benefits in determining the proper policy approach in this arena. As Chairman Pai has noted, an objective economic evaluation of costs and benefits “simply wasn’t done back in 2015,” whereas in this proceeding, the Commission will properly focus on “carefully review[ing] the evidence on investment and other variables” rather than “hyperbolic statements” and “140-character commentary.”¹⁷⁰ Commissioner O’Rielly likewise has correctly observed that conducting a credible analysis of costs and benefits will be “a critical improvement” over the

¹⁶⁷ 163 Cong. Rec. at H2492 (Mar. 28, 2017) (statement of Rep. Walden) (noting that the FCC’s rules only apply to “one part of the internet” and conflict with “the FTC’s proven case-by-case approach to privacy enforcement that . . . has protected consumers, while simultaneously allowing ISPs to innovate”).

¹⁶⁸ Free State Found. Telecommunications Policy Conference at 37:52-39:12 (May 31, 2017), <https://www.c-span.org/video/?429299-2/telecommunications-policy-conference-part-1> (statement of Howard Shelanski).

¹⁶⁹ 163 Cong. Rec. at H2489 (Mar. 28, 2017) (statement of Rep. Blackburn).

¹⁷⁰ *NPRM*, 30 FCC Rcd. at 4494 (statement of Chairman Pai).

process that led to the *Title II Order*, as “commenters will need to provide evidence to support their arguments that rules are, or are not, needed,” and the Commission will be able to “ground its decision in facts rather than hypotheticals.”¹⁷¹

As Comcast has detailed above, and as Dr. Dippon’s attached economic analysis underscores, the regulatory overhang of Title II regulation has led to significant costs for consumers, ISPs, and the economy as a whole.¹⁷² These costs include declines in broadband network investment, which, according to economists’ estimates, range from several billion dollars per year on the low end to as much as \$35 billion (and potentially even more) on the high end.¹⁷³ Additional costs flow from the chilling effect that Title II has on innovation—including substantial costs associated with increased scrutiny of innovative services and potential delays in, or abandonment of, deployment.¹⁷⁴ The potential for private, class-action lawsuits brought pursuant to Section 207 magnifies the risks and costs of developing and deploying new services. The Commission also should assess the opportunity costs that arise as BIAS providers are forced to reallocate resources to cope with compliance and risk evaluation needs produced by the uncertainty associated with Title II. And the Commission should assess the opportunity costs to edge providers as well; the significant uncertainty surrounding the vague “reasonableness” requirements in Sections 201 and 202 and the general conduct standard chills their willingness to explore innovative arrangements with BIAS providers as well, and ultimately limits their ability to differentiate their edge services to attract customers.

¹⁷¹ *Id.* at 4508 (statement of Commissioner O’Rielly).

¹⁷² *See also USTelecom Rehearing Denial*, 855 F.3d at 423 (Kavanaugh, J., dissenting) (noting that “the portion of the economy affected” by the imposition of Title II on BIAS, “as well as the impact on investment in infrastructure, content, and business,” is “staggering”).

¹⁷³ *See* discussion *supra* Section I.B.1.

¹⁷⁴ *See* discussion *supra* Section I.B.2.

In addition to these significant costs imposed on participants in the Internet ecosystem, the Commission also should consider the many costs to *consumers* that are traceable to the imposition of Title II on broadband services. As explained above, the record reflects that the tremendous uncertainty engendered by the Commission’s general conduct standard has caused ISPs and edge providers of all sizes to forgo or delay innovative service offerings that consumers would have enjoyed (or enjoyed sooner) but for the imposition of Title II. The Commission also should look to ancillary costs such as employment losses produced by the *Title II Order* or the employment gains that the rescission thereof will create—both of which economists have already estimated, as noted above.¹⁷⁵

Conversely, the asserted benefits associated with retaining a Title II classification—and the purported costs posed by returning to a Title I classification—are illusory. The classification of BIAS as a Title II service was unnecessary to address open Internet issues at the time it was imposed and remains unnecessary today. Indeed, when examined, the assertions of parties like Free Press regarding supposed “violations” of open Internet principles in the past actually highlight the *dearth* of such conduct—as well as the market-correction of most of that conduct, *without* Commission oversight—over the nearly 20 years leading up to the 2015 reclassification decision.¹⁷⁶ Moreover, Comcast—like virtually all major ISPs—has committed not to block, throttle, or engage in anticompetitive paid prioritization. And as shown below, the Commission

¹⁷⁵ See discussion *supra* at 39-40.

¹⁷⁶ See Timothy Karr, Free Press, *Net Neutrality Violations: A Brief History* (Apr. 25, 2017), <https://www.freepress.net/blog/2017/04/25/net-neutrality-violations-brief-history>; see also *Verizon*, 740 F.3d at 664-65 (Silberman, J., dissenting) (“That the Commission was able to locate only four potential examples of such conduct is, frankly, astonishing.”); *USTelecom*, 825 F.3d at 761 (Williams, J., dissenting) (“Judge Silberman’s observations about the episodes marshalled to support the precursor order . . . seem as applicable today as then.”); see also *Title II Order*, 30 FCC Rcd. at 5933 (Pai Dissent) (“The evidence of these continuing threats? There is none; it’s all anecdote, hypothesis, and hysteria.”).

has other options available for ensuring strong and enforceable open Internet protections without relying on an ill-fitting common carrier regulatory framework designed for telephone companies in the 1930s.¹⁷⁷ Tellingly, defenders of Title II cannot point to a single example of conduct that would undermine an open Internet that could be addressed *only* under Title II.

By contrast, restoring the Title I classification of BIAS will have the substantial benefit of eliminating the chilling uncertainty and risk caused by the Commission's *Title II Order*. Doing so also will return the Internet ecosystem to the proven regulatory framework that has spurred the innovation and investment from which consumers and the economy as a whole have benefited. In sum, appropriate consideration of the relevant costs as compared to the actual benefits makes it impossible to justify imposing Title II regulation in this context, particularly given that a light-touch regulatory framework for BIAS would be just as effective in protecting openness and would avoid the substantial costs and harms associated with Title II.

C. The Commission's 2015 Title II Reclassification Decision Does Not Preclude It from Restoring Its Prior Title I Classification for BIAS.

Finally, nothing about the Commission's 2015 swerve to a telecommunications service classification for BIAS prevents it from now restoring its prior, longstanding classification of BIAS as an information service. As noted above, the Supreme Court has definitively concluded that classifying BIAS as an information service is a reasonable interpretation of the Act.¹⁷⁸ And

¹⁷⁷ See discussion *infra* Sections II.B & II.C.

¹⁷⁸ See *Brand X*, 545 U.S. at 987-89. Indeed, if the Supreme Court reviews the *USTelecom* decision, it might well determine that the ambiguity the *Brand X* Court identified was limited to whether the last-mile component of BIAS, downstream from all data processing, should be broken out and analyzed separately as "pure" transmission, and could therefore conclude that the entire consumer-to-edge-provider service offered by BIAS providers is unambiguously an information service. See Judge Brown Dissent, 855 F.3d at 399 ("No member of the *Brand X* Court disputed that what occurred at the Internet Service Providers' computer-processing facilities constituted an 'information service.'").

while a divided panel of the *USTelecom* court upheld the Commission’s telecommunications service classification as *another* reasonable construction of the Act—a ruling with which Comcast strongly disagrees, and which is still not final—even that decision plainly does not *compel* a telecommunications service classification going forward.

Critically, the D.C. Circuit in *USTelecom* did not hold that Title II is now the *only* permissible classification of BIAS, nor could it in light of *Brand X*. Indeed, in rejecting a challenge by other petitioners who maintained that broadband today “is unambiguously a telecommunications service because it functions primarily as a transmission service,” the court explained that this argument “clearly fails in light of *Brand X*, which held that classification of broadband as an information service was permissible.”¹⁷⁹ The Commission’s ability to revert to an information service classification was then repeatedly recognized by the two judges who constituted the panel majority in *USTelecom* in their recent separate opinion concurring with the denial of rehearing *en banc*: Judges Tatel and Srinivasan emphasized that the Supreme Court “made clear” in *Brand X* “over and over” that “the Act left the [classification] matter to the agency’s discretion,” and that “the FCC *could* elect to treat broadband ISPs as common carriers . . . but the agency did not *have* to do so.”¹⁸⁰ Moreover, the *USTelecom* court did not affirm the Commission’s latest policy choice as compelled by or even predicated on fundamentally changed circumstances (as compared to those applicable when the Commission classified BIAS as an information service). Rather, the panel in *USTelecom* simply deferred to

¹⁷⁹ 825 F.3d at 704.

¹⁸⁰ *See, e.g., USTelecom Rehearing Denial*, 855 F.3d at 384 (Srinivasan, J. and Tatel, J., concurring) (emphasis in original); *id.* at 386 (“As between the two possible classifications, ‘the Commission’s choice of one of them is entitled to deference.’” (quoting *Brand X*, 545 U.S. at 989)).

the Commission’s Title II classification as reflecting *one* reasonable reading of ambiguous statutory text.¹⁸¹ *USTelecom*, therefore, presents no obstacle to reclassification.

Restoring an information service classification for BIAS also would comport with the APA. Indeed, the record developed in the proceeding that led to the *Title II Order* makes clear that restoring an information service classification for BIAS would easily survive “arbitrary and capricious” review under the APA. That record *alone* amply supports the conclusion that the information-processing aspects of BIAS are integrated with the broadband transmission functionality, and the analysis above, along with the comments and other submissions already filed (and to be filed) in this renewed proceeding further demonstrate the reasonableness of the information service classification (which, again, the Supreme Court already has confirmed).

Moreover, the panel decision in *USTelecom* makes clear that the Commission can rely on policy considerations in construing the ambiguous statutory definitions at issue.¹⁸² As the Commission correctly recognizes,¹⁸³ the Commission must “evaluate its policies over time to ascertain whether they work,”¹⁸⁴ and when its former policy predictions “prove erroneous” it

¹⁸¹ 825 F.3d at 704-06.

¹⁸² *See id.* at 707 (noting that the Commission reclassified BIAS under Title II because it believed doing so was “necessary to establish three bright-line rules, the anti-blocking, anti-throttling, and anti-paid-prioritization rules,” and that this justification “represents a perfectly ‘good reason’ for the Commission’s change in position”); *see also Motor Vehicle Mfrs. Ass’n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 59 (1983) (Rehnquist, J., concurring in part and dissenting in part) (“A change in administration . . . is a perfectly reasonable basis for an . . . agency’s reappraisal of the costs and benefits of its programs and regulations.”); *Brand X*, 545 U.S. at 981 (holding that an agency “must consider varying interpretations and the wisdom of its policy on a continuing basis . . . for example, in response to . . . a change in administrations”); *Nat’l Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1043 (D.C. Cir. 2012) (noting that “inauguration of a new President . . . [was] a perfectly reasonable basis” for EPA’s new rule).

¹⁸³ *See NPRM* ¶ 53.

¹⁸⁴ *Am. Family Ass’n v. FCC*, 365 F.3d 1156, 1166 (D.C. Cir. 2004).

must “reconsider” the actions those predictions appeared to support.¹⁸⁵ As discussed above (*see supra* Section I.B.), the Commission should find that clear evidence contradicts prior leadership’s predictions about the impact of Title II, and that the paramount interests in encouraging greater investment and innovation support an information service classification.

In light of these important policy justifications, the standard articulated in the Supreme Court’s *FCC v. Fox Television Stations, Inc.*¹⁸⁶ and *Perez v. Mortgage Bankers Association*¹⁸⁷ is likewise no impediment to reclassification. At a minimum, these cases pose far less of a hurdle to reclassification than they did for the order upheld in *USTelecom*. Here, as before, “changed factual circumstances” need not be “critical to [the Commission’s] classification decision.”¹⁸⁸ And Title II proponents also cannot credibly maintain that the 2015 reclassification ruling has, in the brief span during which it has been subject to ongoing judicial review and legislative repeal efforts, “engendered serious reliance interests that must be taken into account.”¹⁸⁹ If challengers were to raise this argument, it would be *their* burden to establish the reliance interests that the Commission must take into consideration: “[T]he extent to which” the FCC must “address reliance will be affected by the thoroughness of [challengers’] public comments,”¹⁹⁰ and they

¹⁸⁵ *Aeronautical Radio v. FCC*, 928 F.2d 428, 445 (D.C. Cir. 1991).

¹⁸⁶ 567 U.S. 239 (2012).

¹⁸⁷ 135 S. Ct. 1199 (2015).

¹⁸⁸ 825 F.3d at 709.

¹⁸⁹ *Id.* at 708 (internal quotation marks omitted).

¹⁹⁰ *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2127, 2128 n.2 (2016) (Ginsburg, J., concurring).

must present those costs with particular specificity.¹⁹¹ It is not clear any such costs exist, much less that they could be reasonably supported with evidence.

In short, if it was permissible under the APA for the previous Commission to undo nearly two decades of consistent Title I classification decisions and findings on the basis of predictive judgments regarding the policy merits of Title II, it unquestionably remains permissible for the current Commission to reinstate the Title I classification that was in place for nearly two decades and that has already been approved by the Supreme Court.

II. THE COMMISSION HAS MULTIPLE PATHS AVAILABLE FOR ENSURING STRONG OPEN INTERNET PROTECTIONS WHILE PROMOTING INCREASED INVESTMENT AND INNOVATION.

Comcast strongly supports the vital tenets of Internet freedom aptly encapsulated in the NPRM—namely, that “consumers should have access to the content, applications, and devices of their choosing as well as meaningful information about their service, all without deterring the investment and innovation that has allowed the Internet to flourish.”¹⁹² As discussed above, these principles are central to Comcast’s commitment to meeting the needs and expectations of its broadband customers, and Comcast will continue to adhere to them regardless of the legal framework the Commission puts in place.

To be sure, given broadband providers’ strong incentives to meet their customers’ needs, there is no reason to presume—as prior Commissions have too readily done—that ISPs have an incentive to engage in blocking, throttling, or anticompetitive paid prioritization. And it is telling that, in the pre-rules era, the number of alleged net neutrality violations was astonishingly

¹⁹¹ See *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 722 (D.C. Cir. 2016) (deeming forfeited reliance costs argument wherein complaining party made only “offhand references to ‘millions of dollars’” at stake); see also *id.* at 723 (party “has an obligation to explain why it believes its reliance costs must be considered and to supply sufficient information about its costs”).

¹⁹² See NPRM ¶ 71.

small. As Chairman Pai recognized, “These utility-style regulations, known as ‘Title II,’ were and are like the proverbial sledgehammer being wielded against the flea—except that here, there was no flea.”¹⁹³ Judge Silberman similarly observed in *Verizon*: “That the Commission was able to locate only four potential examples of such conduct is, frankly, astonishing. In such a large industry . . . one would think there should be ample examples of just about any type of conduct.”¹⁹⁴ Notwithstanding the lack of a marketplace failure, Comcast fully understands the consumer desire for clear protections and supports maintaining a regulatory backstop for these principles, at least until a more permanent legislative solution is put in place. The Commission’s efforts to safeguard Internet openness while promoting greater broadband investment and innovation—coupled with Comcast’s and other ISPs’ ongoing commitments to open Internet protections—will provide a bridge to the time when Congress acts and crafts a permanent bipartisan legislative solution. Congressional action is the best and, in the end, perhaps the only way to put an end to the decade of regulatory ping pong, which has created so much uncertainty for providers and consumers alike.

For now, the Commission can safeguard the free and open Internet through several different measures, including, consistent with the D.C. Circuit’s *Verizon* decision, promulgating new bright-line rules under Section 706. Alternatively, although not favored by many opponents for reasons that are unclear, the Commission also could support the adoption of open Internet principles backed by FTC enforcement, at least as a backstop before Congress acts. The record

¹⁹³ *Id.* at 4492 (statement of Chairman Pai); *see also Title II Order*, 30 FCC Rcd. at 5933 (Pai Dissent) (“The evidence of these continuing threats? There is none; it’s all anecdote, hypothesis, and hysteria. A small ISP in North Carolina allegedly blocked VoIP calls a decade ago. Comcast capped BitTorrent traffic to ease upload congestion eight years ago. Apple introduced FaceTime over Wi-Fi first, cellular networks later. Examples this picayune and stale aren’t enough to tell a coherent story about net neutrality. The bogeyman never had it so easy.”).

¹⁹⁴ *Verizon*, 740 F.3d at 664-65 (Silberman, J., dissenting).

of this proceeding should provide the Commission with ample evidence and legal and policy analysis to determine which approach is best suited to meet these important policy objectives.

Regardless of the approach it adopts, the Commission must ensure that these protections are carefully crafted in a manner that safeguards broadband investment and innovation, and comports with the light-touch regulatory framework the Commission seeks to restore.

Maintaining the core open Internet protections strikes the right regulatory balance to deliver the greatest benefits to consumers. Equally important to achieving this goal is avoiding any measures that will upset this balance and undermine the Commission's objectives. Specifically, the Commission should eliminate the misguided "general conduct standard," which—even in the rule's brief existence to date—has stymied ISP innovation. The Commission also should revert to a market-based, hands-off approach to Internet interconnection, and it should eliminate the specter of regulating so-called specialized services. Moreover, the Commission should reaffirm that BIAS is an inherently interstate service and, thus, subject to exclusive federal regulation. It also should adhere to the principle of regulatory parity among ISPs, regardless of technology, to ensure a level competitive playing field.

A. Regardless of How the Commission Chooses To Proceed, Comcast Strongly Supports the Principles That Undergird the Open Internet.

As noted above, Comcast has consistently supported open Internet protections and will continue to do so regardless of what legal framework is in place. The consensus principles of openness on which the Internet was built are a core component of Comcast's commitment to its customers. Indeed, Comcast has prominently and unequivocally reaffirmed—in advertisements, blog posts, and elsewhere—that "we've always been committed to an open internet that gives

you the freedom to be in charge of your own online experience. And that will not change.”¹⁹⁵

As Comcast CEO Brian Roberts recently affirmed:

To be clear, we continue to strongly support a free and Open Internet and the preservation of modern, strong, and legally enforceable net neutrality protections. We don’t block, throttle, or discriminate against lawful content delivered over the Internet, and we are committed to continuing to manage our business and network with the goal of providing the best possible consumer experience.¹⁹⁶

Likewise, Comcast and other ISPs have explained in a recent joint statement that “[a]n open internet means that we do not block, throttle or otherwise impair your online activity.”¹⁹⁷ And “[w]e firmly stand by that commitment because it is good for our customers and good for our business.”¹⁹⁸ Consistent with that promise, Comcast will continue to support the principles of ensuring transparency and prohibiting blocking, throttling, and anticompetitive paid prioritization, as we have previously.

Transparency. Comcast firmly believes in transparency to customers regarding the key performance metrics and terms and conditions of its broadband service. There is no question that consumers benefit from “effective disclosure of Internet service providers’ network management practices, performance, and commercial terms of service,” and that transparency with respect to such practices and service attributes remains critical.¹⁹⁹ Indeed, an effective transparency regime is essential for consumers to make informed choices among competing service providers, and

¹⁹⁵ May 2017 Joint ISP Commitment.

¹⁹⁶ Roberts Blog Post; *see also* Cohen April 26 Blog Post.

¹⁹⁷ May 2017 Joint ISP Commitment.

¹⁹⁸ *Id.*

¹⁹⁹ *NPRM* ¶ 89.

such requirements are less intrusive than other forms of regulation.²⁰⁰ That is why Comcast supported transparency in prior Commission proceedings,²⁰¹ and we continue to do so today.

No Blocking. Comcast, along with other leading broadband providers, has long pledged not to block consumers from accessing lawful Internet traffic.²⁰² Comcast supported the original no blocking rule that the Commission adopted in 2010.²⁰³ As we noted in our 2014 Open Internet Comments, the D.C. Circuit in *Verizon* authorized the Commission to prohibit blocking; we accordingly called for the Commission to “reinstate a no-blocking rule that guarantees that end users can access the entire Internet.”²⁰⁴ Comcast remains committed to this core principle. It is how we operate our network today, and we believe that any framework the Commission adopts can and should continue to include a no blocking principle.²⁰⁵

²⁰⁰ *Id.*

²⁰¹ See, e.g., Comcast 2014 Open Internet Comments at 15 (noting that “well-designed disclosure rules are the most effective and least intrusive regulatory measures at the Commission’s disposal,” and that such requirements “bolster competition” and benefit consumers) (internal quotation marks and citation omitted).

²⁰² See, e.g., David L. Cohen, *Surprise! We Agree with the President’s Principles on Net Neutrality: Reiterating our Strong Support for the Open Internet*, Comcast Voices Blog (Nov. 11, 2014), <http://corporate.comcast.com/comcast-voices/surprise-we-agree-with-the-presidents-principles-on-net-neutrality-reiterating-our-strong-support-for-the-open-internet> (“No blocking. We agree—and that is our practice.”) (“Cohen Nov. 2014 Blog Post”).

²⁰³ David L. Cohen, *FCC Votes on Rules for the Open Internet*, Comcast Voices Blog (Dec. 21, 2010), <http://corporate.comcast.com/comcast-voices/fcc-votes-on-rules-for-the-open-internet> (“[T]he rules as described [in the 2010 Open Internet Order] generally appear intended to strike a workable balance between the needs of the marketplace for certainty and everyone’s desire that Internet openness be preserved.”).

²⁰⁴ Comcast 2014 Open Internet Comments at 18-19.

²⁰⁵ May 2017 Joint ISP Commitment; Cohen May 18 Blog Post (“To be clear, and as I have previously stated, Comcast supports strong, legally enforceable net neutrality protections that ensure a free and Open Internet for all of our customers. We do not and will not block, slow down, or discriminate against lawful content.”).

No Throttling. Comcast likewise supports the “no throttling” principle—i.e., that BIAS providers should not impair or degrade lawful Internet traffic on the basis of content, application, service, or use of a non-harmful device, subject to reasonable network management. We have made clear that “[n]o throttling . . . is our practice” and have repeatedly committed not to engage in such conduct.²⁰⁶

No Anticompetitive Paid Prioritization. Comcast has never entered into any “paid prioritization” agreements, and we have always made clear that we “do not and will not . . . discriminate against lawful content.”²⁰⁷ In the 2014 rulemaking, Comcast noted that “there is broad agreement among ISPs and various other participants in the Internet ecosystem” for prohibiting “any paid prioritization arrangements that threaten Internet openness.”²⁰⁸ Comcast further suggested that the Commission could adopt a strong presumption against “exclusive [paid prioritization] arrangements and arrangements that prioritize a broadband provider’s own affiliated Internet content vis-à-vis unaffiliated content.”²⁰⁹ Likewise, in the 2010 rulemaking, we noted that there was consensus that the Commission could adopt a flexible and realistic standard to address unreasonable and anticompetitive discrimination.²¹⁰ We continue to support

²⁰⁶ Cohen Nov. 2014 Blog Post; *see also, e.g.*, Cohen May 18 Blog Post; Roberts Blog Post (“We don’t . . . throttle . . . lawful content delivered over the Internet.”); Watson Blog Post (“Here is what we stand for when we say we believe in an Open Internet. We do not block, slow down, or discriminate against lawful content.”).

²⁰⁷ Cohen May 18 Blog Post.

²⁰⁸ Reply Comments of Comcast Corp., GN Docket Nos. 14-28, 10-127, at 28 (Sept. 15, 2014) (“Comcast 2014 Open Internet Reply Comments”).

²⁰⁹ *Id.* at 28.

²¹⁰ Reply Comments of Comcast Corp., GN Docket No. 09-191, WC Docket 07-52, at 18-22 (Apr. 26, 2010) (“Comcast 2010 Open Internet Reply Comments”).

measures to prevent paid prioritization arrangements between BIAS providers and edge providers that could harm competition and undermine Internet openness.²¹¹

At the same time, the Commission also should bear in mind that a more flexible approach to prioritization may be warranted and may be beneficial to the public.²¹² For example, a telepresence service tailored for the hearing impaired requires high-definition video that is of sufficiently reliable quality to permit users “to perceive subtle hand and finger motions” in real time.²¹³ And paid prioritization may have other compelling applications in telemedicine.²¹⁴ Likewise, for autonomous vehicles that may require instantaneous data transmission, black letter prohibitions on paid prioritization may actually stifle innovation instead of encouraging it.²¹⁵

²¹¹ As discussed below, building flexibility into any rule-based restriction on paid prioritization arrangements is necessary to ensure that the rule does not possess common-carrier characteristics of the sort the *Verizon* court found problematic when vacating the 2010 no blocking and non-discrimination rules. See discussion *infra* Section II.B.2.

²¹² See Theodore R. Bolema, *Allow Paid Prioritization on the Internet for More, Not Less, Capital Investment*, Free State Foundation, at 3 (May 1, 2017), http://www.freestatefoundation.org/images/Allow_Paid_Prioritization_on_the_Internet_for_More,_Not_Less,_Capital_Investment_050117.pdf (explaining that “[v]arious forms of paid prioritization arrangements can be found in many different industries” and that “these pricing arrangements have not worked to exclude those who do not pay for prioritization, and more typically lead to lower prices and better services for the most cost-conscious customers”) (“Bolema Paper”).

²¹³ See Bret Skorup, *The FCC’s Misguided Paid Priority Ban*, The Technology Liberation Front (Apr. 13, 2017), <https://techliberation.com/2017/04/13/the-fccs-misguided-paid-priority-ban/> (“Apr. 13 Skorup Blog”).

²¹⁴ See Roslyn Layton, *How the FCC’s Ban on Prioritization Puts Patients at Risk*, TechPolicyDaily.com (July 17, 2015), <http://www.techpolicydaily.com/communications/telemedicine-fcc-open-internet/>.

²¹⁵ See Philip E. Ross, *Nokia Chief Says Net Neutrality Hurts Driverless Cars*, IEEE Spectrum (Mar. 5, 2015), <http://spectrum.ieee.org/cars-that-think/transportation/self-driving/nokia-chief-says-net-neutrality-hurts-driverless-cars-> (explaining that self-driving cars require “near-instantaneous data,” which requires a “differentiated quality of service”); Thomas W. Struble, *On the Relationship Between QoS & QoE: Why Differentiated Traffic Management on the Internet Is Not a Zero-Sum Practice*, TechFreedom, at 16 (Aug. 31, 2016), http://docs.techfreedom.org/Paid_Prioritization_TPRC_2016.pdf (“[F]orthcoming services like

Commercial arrangements that entail prioritizing such traffic could ensure the low latency levels needed to achieve the high level of data quality necessary for such services to thrive.

B. The Commission Could Effectuate Consensus Open Internet Protections by Adopting Revised Bright-Line Rules Under Section 706.

The Commission could reasonably choose to reestablish certain core rules pursuant to the Section 706 authority identified by the D.C. Circuit, and could appropriately craft such rules to ensure consistency with the court’s guidance while fully protecting consumers. Comcast has previously argued that imposing appropriately tailored rules under Section 706 would be a sound way to preserve the Commission’s ability to address potential harms in a flexible manner while removing the Title II overhang that threatens network innovation and investment.

1. *The D.C. Circuit Has Held That the Commission Has Authority To Adopt Targeted Open Internet Rules Under Section 706.*

Notwithstanding that the Commission’s Section 706 authority has been a source of some debate, and likely will remain so until Congress provides a legislative solution, the D.C. Circuit agreed with the Commission in *Verizon* that “[S]ection 706 of the 1996 Telecommunications Act . . . furnishes the Commission with the requisite affirmative authority to adopt [open Internet] regulations.”²¹⁶ In *USTelecom*, the D.C. Circuit reaffirmed this holding, stating that “the Commission’s [S]ection 706 authority extends to rules ‘governing broadband providers’ treatment of internet traffic” and that the court “fully adopt[ed]” its “findings and analysis in

autonomous cars . . . have no ability to use caching to improve user [quality of experience] in the face of [quality of service] disruptions because, with those services, content must be pushed from end to end as fast as it is being produced . . . in order for the services to function properly.”); *see also* Bolema Paper at 3 (“Autonomous vehicles, interactive e-learning, and telemedicine are examples of applications in their early stages of development that require a high level of end-to-end reliability. Investors may be unwilling to take the risk of investing in these applications if they cannot be assured of reliable prioritized broadband connections.”).

²¹⁶ *Verizon*, 740 F.3d at 635.

Verizon concerning the existence and permissible scope of the Commission’s [S]ection 706 authority.”²¹⁷ While some have expressed misgivings about that conclusion, Section 706 represents a judicially validated path forward for establishing effective open Internet rules.

2. *If the Commission Adopts New Rules, It Should Revise Various Aspects of Its Previous Provisions To Be Consistent with the D.C. Circuit’s Analysis.*

As Comcast explained in its submissions in the 2014 open Internet rulemaking, the *Verizon* court provided “a clear roadmap for the Commission to promulgate sensible and legally sound open Internet rules pursuant to Section 706.”²¹⁸ And the record before the Commission in the 2014 proceeding confirmed that the Commission could make modest modifications to the rules initially adopted in 2010 to comply with the court’s guidance without compromising openness.²¹⁹ That remains the case today. As explained above, the Commission’s reliance on Title II was wholly unnecessary to safeguard open Internet protections.

Transparency. To ensure that consumers continue to have the information necessary to make informed choices about their Internet service, the Commission can retain its original conception of the transparency rule, which was upheld by the *Verizon* court as a legitimate exercise of the Commission’s Section 706 authority.²²⁰ The 2010 transparency requirements

²¹⁷ *USTelecom*, 825 F.3d at 734.

²¹⁸ Comcast 2014 Open Internet Comments at 13. Indeed, as Judge Brown recognized in her dissent to the D.C. Circuit’s order denying *en banc* rehearing of the *Title II Order*, at the time of adoption, then-Chairman Wheeler stated that the 2014 NPRM was intended to “reinstat[e] rules that achieve the goals of the 2010 Order using the Section 706-based roadmap laid out by the court [in *Verizon*]” and that “[n]o statement from the FCC—until after the President intervened, that is—ever suggested the Commission felt compelled by *Verizon* to reclassify broadband if it wanted to implement any ‘net neutrality’ principles.” Judge Brown Dissent, 855 F.3d at 400 (quoting *Protecting and Promoting the Open Internet*, Notice of Proposed Rulemaking, 29 FCC Rcd. 5561, 5647 (2014) (statement of Chairman Wheeler)).

²¹⁹ See Comcast 2014 Open Internet Reply Comments at 4-9.

²²⁰ *Verizon*, 740 F.3d at 659.

were appropriately tailored to meet consumers’ information needs without substantially burdening ISPs.²²¹ As NCTA and USTelecom have explained, the requirements under the *2010 Open Internet Order* “ensure that ample information about broadband service attributes will remain available to consumers, enabling them to make fully informed decisions about the broadband services available in the marketplace.”²²²

In contrast, as Comcast and others have pointed out, the nebulous enhanced disclosure obligations proposed in the 2014 NPRM (and adopted in the *Title II Order*) impose significant unreasonable costs on ISPs while conferring at most marginal benefits to consumers.²²³ For example, the enhanced disclosure rules require ISPs to disclose more granular information about network performance metrics—such as actual and expected packet loss and providing specific notice to customers when a network practice may affect their use of the service.²²⁴ This

²²¹ The 2010 open Internet rule stated, “A person engaged in the provision of broadband Internet access service shall publicly disclose accurate information regarding the network management practices, performance, and commercial terms of its broadband Internet access services sufficient for consumers to make informed choices regarding use of such services and for content, application, service, and device providers to develop, market, and maintain Internet offerings.” *Preserving the Open Internet; Broadband Industry Practices*, Report and Order, 25 FCC Rcd. 17905 ¶ 54 (2010) (“*2010 Open Internet Order*”).

²²² Letter from Rick Chessen, Senior Vice President, Law and Regulatory Policy, NCTA, and Jonathan Banks, Senior Vice President, Law and Policy, USTelecom, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-28, at 3 (Feb. 3, 2017) (“NCTA-USTelecom Feb. 2017 Letter”).

²²³ See Comcast 2014 Open Internet Comments at 16-18; see also Ajit Pai, Commissioner, FCC, Remarks before the Heritage Foundation, *The FCC and Internet Regulation: A First-Year Report Card*, at 4 (Feb. 26, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-337930A1.pdf; (stating that the enhanced disclosure requirements confer “little if any benefit to consumers”); USTelecom PRA Comments, GN Docket No. 14-28, at 12 (July 20, 2015) (“In addition to the substantial burdens associated with the proposed information collection, the information that broadband providers are expected to collect will have little or no practical utility to the Commission and the public.”).

²²⁴ *Title II Order* ¶¶ 163-170.

additional information has little practical meaning to consumers and may be confusing as well.²²⁵ As NCTA has noted, “various ambiguities and inconsistencies make it difficult, if not impossible, for an ISP to be sure that it is in full compliance with the rule.”²²⁶ Indeed, since the Commission adopted these enhanced requirements, numerous parties have underscored the difficulties that compliance with these obligations creates.²²⁷ The unnecessary costs imposed by these additional requirements divert resources that would be better used to invest in network upgrades or expansion.

No Blocking. Once BIAS is reclassified as an information service, the Commission would be on firm legal ground in adopting a new no-blocking rule pursuant to Section 706. As Comcast noted in the 2014 rulemaking, before the Commission took its unwise detour by imposing Title II regulation, there was widespread consensus in the record that the Commission could “reinstate the 2010 no-blocking rule with the revised rationale proposed in the [2014] NPRM, consistent with the D.C. Circuit’s guidance in *Verizon*.”²²⁸ In *Verizon*, the court made

²²⁵ See Comments of Verizon, GN Docket Nos. 14-28, 10-127, at 23 (July 15, 2014) (“Verizon 2014 Open Internet Comments”) (accurate disclosures of “a particular service’s speed, latency, jitter, and other core characteristics would be meaningless to all but the most technically sophisticated customers”).

²²⁶ NCTA Small Business Exemption Comments, GN Docket No. 14-28, at 2 (Aug. 5, 2015).

²²⁷ NCTA-USTelecom Feb. 2017 Letter at 3; Competitive Carriers Association *et al.*, Request for Stay, GN Docket No. 14-28 (Jan. 13, 2017). Even the Commission has recognized that these requirements are “particularly burdensome for small providers” and thus temporarily exempted them from the requirements. *Title II Order* ¶ 172; see also *Small Business Exemption from Open Internet Enhanced Transparency Requirements*, Order, 32 FCC Rcd. 1772 ¶ 9 (2017) (waiving the enhanced transparency requirements for small providers for an additional five years).

²²⁸ Comcast 2014 Open Internet Reply Comments at 5; see also Reply Comments of NCTA, GN Docket Nos. 14-28, 10-127, at 24 (Sept. 15, 2014) (“As a general matter, the record provides strong support for the Commission’s proposal[] to reinstate the no blocking rule. . . .”); Joint Comments of CWA and NAACP, GN Docket No. 14-28, at 18 (July 15, 2014) (supporting the adoption of the 2010 no blocking rule as modified consistent with the *Verizon* court’s proposal).

clear that it was possible for the Commission to reasonably adopt a valid no-blocking rule under Section 706 while also avoiding impermissible common carriage obligations.²²⁹

No Throttling. Comcast also would support maintaining a “no-throttling” rule, which would prohibit BIAS providers from impairing or degrading lawful Internet traffic on the basis of content, application, service, or use of a non-harmful device. Just as the *Verizon* decision makes clear that the Commission has the authority to prohibit blocking pursuant to Section 706, it leaves no doubt that the Commission can and may prohibit throttling without treating BIAS providers as common carriers.²³⁰ To avoid needless uncertainty and the chilling effects associated with overbroad rules such as the general conduct standard,²³¹ any no-throttling rule should be clearly defined as applying only to device-, content-, service-, or application-specific practices, and be subject to reasonable network management, as the current rule is.

No Anticompetitive Paid Prioritization. As noted above, Comcast’s submissions in the 2014 rulemaking supported a rebuttable presumption against “exclusive [paid prioritization] arrangements and arrangements that prioritize a broadband provider’s own affiliated content vis-à-vis unaffiliated content.”²³² Other stakeholders supported this presumption-based framework and agreed that it was consistent with the Commission’s authority under Section 706.²³³ By adopting a framework that avoids an “absolute or inflexible” ban, the Commission could avoid

²²⁹ See *Verizon*, 740 F.3d at 658-59 (observing that a no-blocking rule could be formulated in a manner that would allow for individualized negotiations so as not to be considered common carriage).

²³⁰ See *id.* at 655-57.

²³¹ See discussion *infra* Section II.D.1.

²³² Comcast 2014 Open Internet Reply Comments at 28.

²³³ See, e.g., *id.* at 7 nn.13-14, 28-30 (describing various proposals).

running afoul of the limits identified by the *Verizon* court, which invalidated the 2010 non-discrimination rule because it left “no room at all for ‘individualized bargaining.’”²³⁴

Even apart from the (modest) legal constraints identified by the *Verizon* court, there is no sound policy rationale for a categorical ban on all paid prioritization arrangements in today’s marketplace. A sweeping prohibition is much too blunt a tool, especially given that the asserted harms of such arrangements are entirely speculative.²³⁵ No ISPs have ever entered into paid prioritization arrangements, even before 2015 when there were no *per se* prohibitions of such arrangements in place.²³⁶ There is simply no sound rationale for a blanket prohibition on all paid prioritization arrangements, particularly when certain forms of prioritization (especially at the direction of end users, or for public safety communications) can be pro-competitive and otherwise beneficial, as is evident in numerous other commercial contexts.²³⁷ In particular, paid

²³⁴ *Verizon*, 740 F.3d at 657-58.

²³⁵ *See id.* at 662-65 (Silberman, J., dissenting); *see also* Comcast 2010 Open Internet Reply Comments at 18-20 (citing to the statements of multiple scholars and comments explaining that an absolute ban fails to strike a socially beneficial balance, especially given the lack of evidence of harmful discrimination).

²³⁶ Interview by David Kaut of Michael O’Rielly, Commissioner, FCC, on The Communicators, C-SPAN (Dec. 13, 2016), <https://www.c-span.org/video/?420059-1/communicators-michael-orielly&start=213> (“We ban paid prioritization. However, we have no instances of it actually being in place and it may be necessary for a number of different activities that will be beneficial to consumers.”).

²³⁷ *See, e.g.*, Declaration of Michael L. Katz, Exhibit 1, Verizon 2014 Open Internet Comments, at 5 (July 15, 2014) (“Allowing an edge provider to make expenditures to improve its service through a differentiated arrangement is a pro-competitive action that benefits end users directly (by offering them a more-attractive service option) and indirectly (by increasing the competitive pressures faced by rival edge providers). Moreover, a differentiated access arrangement might be an important component of a new entrant’s strategy for challenging well-established incumbents that already purchased superior Internet access by building their own backbone networks or making extensive use of content delivery networks (CDNs).”); Declaration of Marius Schwartz, Exhibit 3, Comments of AT&T, GN Docket No. 09-191, WC Docket No. 07-52, at 7-8 (Jan. 14, 2010) (“It is widely appreciated in economics and regulatory policy that differential treatment and pricing can be presumptively benign or beneficial for a number of

prioritization could be used by government entities to issue severe weather and Homeland Security warnings and for emergency services purposes, as well as certain end-user applications such as telepresence systems for the hearing impaired, telemedicine, and autonomous vehicles, as noted above.²³⁸

C. The Commission Also Could Effectuate These Principles by Relying on Industry Commitments Backed by FTC Enforcement.

Alternatively, as suggested in the NPRM, the Commission could choose to promote Internet freedom by relying on enforceable industry commitments to abide by widely accepted open Internet standards, and the FTC could be on the front line of enforcing those commitments.²³⁹ As explained above, Comcast has long pledged not to engage in blocking, throttling, or anticompetitive forms of paid prioritization—as have many other BIAS providers and trade associations representing the broadband industry.²⁴⁰ Comcast has strong incentives to maintain these commitments in the future. As Comcast explained in its 2014 comments, “[i]f a provider were to block or degrade Internet applications or content, the provider would incur substantial subscriber losses and reputational harm.”²⁴¹ Thus, Comcast is willing to incorporate these commitments into the publicly stated policies that govern our relationship with customers, and the Commission can press other providers to do likewise. Proponents of Title II may

reasons. Policy interventions thus have typically circumscribed only differences that might entail anti-competitive discrimination or otherwise undesirable discrimination.”).

²³⁸ See Bolema Paper at 3; Apr. 13 Skorup Blog.

²³⁹ NPRM ¶¶ 76-77.

²⁴⁰ See, e.g., May 2017 Joint ISP Commitment (affirming commitments to open Internet principles by 21 broadband ISPs, including Altice, Comcast, Charter, Cox, and Mediacom).

²⁴¹ Comcast 2014 Open Internet Comments at 5-6 (“Providing access to the open Internet has become an essential component of cable operators’ and other broadband providers’ businesses, and consumers have come to expect and demand the ubiquitous and unrestricted access that these companies have consistently offered them.”).

wrongly claim that this is an imperfect or short-term solution, because Comcast could simply change its publicly stated policies to eliminate these commitments at any time. To address these concerns, Comcast also is willing to pledge to keep these commitments firmly in place and not alter them, except to adjust to changes in the law or regulatory landscape. In fact, as noted above, in the period between the issuance of the *Verizon* opinion and the adoption of the *Title II Order*—a period of enormous Internet and edge provider growth—consumers were protected by a set of voluntary industry commitments to open Internet principles, without any instances of abuse.

As another option, the Commission might enlist the support of major industry trade associations to develop codes of conduct to ensure that their members are committed to adhering to open Internet principles. This approach has been used successfully to honor consumer privacy in the online advertising space,²⁴² for example, where the FTC has “vigorously promoted” the use of self-regulatory codes of conduct to protect consumer privacy.²⁴³ Compliance with these codes of conduct may be monitored and even effectively enforced in the first instance by the industry trade association that developed them, in addition to the relevant regulatory agency.²⁴⁴

²⁴² See, e.g., Digital Advert. Ass’n, *Self-Regulatory Principles for Online Behavioral Advertising* (July 2009), www.aboutads.info/resource/download/seven-principles-07-01-09.pdf; Network Advert. Initiative, *NAI Code of Conduct* (June 2017), <https://www.networkadvertising.org/code-enforcement/code>.

²⁴³ FTC, *Protecting Consumer Privacy in an Era of Rapid Change*, at ii (Mar. 2012), <https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-report-protecting-consumer-privacy-era-rapid-change-recommendations/120326privacyreport.pdf> (“2012 FTC Privacy Report”).

²⁴⁴ See, e.g., National Advertising Initiative (“NAI”), Enforcement, <https://www.networkadvertising.org/code-enforcement/enforcement> (last visited July 16, 2017) (explaining the ways by which NAI monitors and investigates the practices and policies of its members and engages in enforcement activity for violations, including sanctions and noting that NAI may “refer the matter to the Federal Trade Commission” in the event of a violation); Letter from Steve Largent, President and CEO, CTIA, to FCC Chairman Wheeler and FCC

Whether these public commitments by ISPs take the form of individual companies' publicly stated policies or industry codes of conduct, such commitments would be enforceable by the FTC under Section 5 of the FTC Act, which prohibits "[u]nfair methods of competition . . . , and unfair or deceptive acts or practices."²⁴⁵ The FTC has previously asserted authority to enforce such public commitments under Section 5.²⁴⁶ For example, in the privacy context, the FTC has stated that, "[t]o the extent that strong privacy codes are developed, the [FTC] will view adherence to such codes favorably in connection with its law enforcement work," but that nevertheless the FTC "will also continue to enforce the FTC Act to take action against companies that engage in unfair or deceptive practices, *including the failure to abide by self-regulatory programs they join.*"²⁴⁷ Consistent with these statements, the FTC has brought enforcement actions against companies that have failed to abide by their commitments to a self-regulatory code.²⁴⁸

Commissioners Clyburn, Rosenworcel, Pai, and O'Rielly, at 2 (Dec. 12, 2013), <https://www.ctia.org/docs/default-source/fcc-filings/ctia-letter-on-unlocking.pdf> ("CTIA's annual recertification process will serve as an audit mechanism to ensure that carriers agreeing to the code are in compliance with the voluntary principles regarding device unlocking.").

²⁴⁵ 15 U.S.C. § 45(a).

²⁴⁶ *See, e.g.*, Letter of Jessica L. Rich, Director, FTC, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 16-42, at 2-4 (Apr. 22, 2016) ("The FTC has long advocated for the use of meaningful codes of conduct, and the FTC has well-established authority to enforce such codes of conduct under the FTC's Section 5 authority to prohibit deceptive practices.").

²⁴⁷ 2012 FTC Privacy Report at vi (emphasis added).

²⁴⁸ *See, e.g.*, Order Approving Stipulated Order for Permanent Injunction and Civil Penalty Judgment, *United States v. Google*, No. 12-04177 (N.D. Cal. Nov. 16, 2012) (approving a permanent injunction and fine against Google for representing that it complies with NAI's self-regulatory code and subsequently violating a provision of the code); Press Release, FTC, FTC Approves Final Orders Resolving Allegations That Companies Misrepresented Participation in International Privacy Program (Apr. 14, 2017), <https://www.ftc.gov/news-events/press-releases/2017/04/ftc-approves-final-orders-resolving-allegations-companies> (describing settlements reached by three companies with the FTC for deceptive claims that the companies were certified adherents to the Asia-Pacific Economic Cooperation Cross-Border Privacy Rules, a voluntary code of conduct enforced by the FTC). The FTC may rely on Section 5 to enforce

FTC enforcement would have several legal and policy benefits. To begin with, the FTC has significant expertise with respect to the consumer protection and competition issues at the heart of open Internet policy.²⁴⁹ FTC enforcement over open Internet protections would complement the FTC’s jurisdiction over online privacy practices, which, as noted above, the NPRM also proposes to reinstate. Moreover, whereas the Commission has suggested that it lacks authority to impose open Internet requirements on entities other than BIAS providers, the FTC has a greater ability under Section 5 to prevent unfair methods of competition and unfair or deceptive acts or practices by *all* participants in the Internet ecosystem, thus promoting a technology-neutral level playing field in this important area of the economy.²⁵⁰ Although a panel of the Ninth Circuit called into question the FTC’s ability to address any anticompetitive or unfair or deceptive acts or practices by telecommunications service providers in *FTC v. AT&T*

public commitments with respect to alleged misrepresentations to consumers as well as to other businesses. *See FTC v. IFC Credit Corp.*, 543 F. Supp. 2d 925, 934 (N.D. Ill. 2008) (explaining that “[t]he [FTC] Act empowers district courts to redress injury to ‘consumers’ or others resulting from an unfair or deceptive act or practice,” including “businesses as well as individuals”); *see also Orkin Exterminating Co.*, 108 F.T.C. 263, 263, 371 (1986), *aff’d Orkin Exterminating Co., v. FTC*, 849 F.2d 1354 (11th Cir. 1988) (finding that Orkin’s attempts to raise agreed-upon annual renewal fees for pest control in contradiction of its contractual commitment “to individuals and businesses (‘consumers’)” to charge a specific fixed annual renewal fee for life violated Section 5 of the FTC Act as an unfair practice).

²⁴⁹ *See* Comments of the Staff of the Bureau of Consumer Protection of the Federal Trade Commission, WC Docket No. 16-106, at 3-6 (May 27, 2016) (describing “the FTC’s decades of experience pursuing law enforcement, consumer and business education, and policy activities” in the consumer protection space); Letter from EPIC et al., to Maureen Ohlhausen, Acting FTC Chairman, and Terrell McSweeney, FTC Commissioner, at 1 (Feb. 15, 2017), <https://epic.org/privacy/internet/ftc/EPIC-et-al-ltr-FTC-02-15-2017.pdf> (“The [FTC] plays a critical role today safeguarding American consumers.”).

²⁵⁰ *See, e.g.*, Roslyn Layton, *A Modern Framework for Internet Freedom*, American Enterprise Institute Blog (May 11, 2017), <http://www.aei.org/publication/modern-framework-internet-freedom/> (“The FTC has always been capable to address net neutrality and was ready to do so as far back as the Comcast-BitTorrent skirmish in 2007. The concerns raised by net neutrality advocates are already part of the FTC’s unfair and deceptive practice standard with the sundry categories of denial of access, discrimination, predatory pricing, bundling and selective distribution agreements.”).

Mobility LLC, the court’s decision to rehear the case *en banc* rendered the prior panel decision ineffective and will likely correct the misguided conclusion reached in that case.²⁵¹ As Comcast stated in its joint amicus brief filed in support of the FTC, “the FTC is best-suited to protecting consumers from non-common carrier activities that cause them harm” and “given its broad jurisdictional scope, only the FTC can apply consumer protection rules consistently across industries.”²⁵² Finally, this approach would be consistent with the consensus-based, light-tough regulatory approach that had existed for many years prior to the Commission’s *Title II Order* and that had helped foster unprecedented investment, innovation, and expanded deployment of broadband services, as well as a robust Internet ecosystem of diverse applications, edge services, and content that consumers highly value.

D. The Commission Should Ensure a Light-Touch Regulatory Framework That Fosters Investment and Innovation by Limiting Regulation to These Core Principles or Rules.

Whether the Commission adopts rules or devises an enforcement regime based on public industry commitments with FTC oversight, the Commission should take proactive steps to eliminate overly expansive regulations and prospectively limit any such measures that would undermine a light-touch regulatory framework. Doing so would further ensure that consumers benefit from greater broadband investment and innovation—consistent with the pro-investment

²⁵¹ See *FTC v. AT&T Mobility LLC*, 835 F.3d 993 (9th Cir. 2016), *reh’g en banc granted*, No. 15-16585, 2017 WL 1856836 (9th Cir. May 9, 2017); see also Statement of FCC Chairman Ajit Pai on Ninth Circuit Decision to Rehear *FTC v. AT&T* Case (May 9, 2017) (“Now that the court’s prior decision is no longer effective, it will be easier for the FTC to protect consumers’ online privacy. The court’s action also strengthens the case for the FCC to reverse its 2015 Title II Order and restore the FTC’s jurisdiction over broadband providers’ privacy and data security practices. Indeed, it moves us one step closer to having the consistent and comprehensive framework for digital privacy that the American people deserve.”).

²⁵² Brief of Charter Communications, Comcast Corp., Cox Communications, and Verizon as Amici Curiae Supporting the Federal Trade Commission, *FTC v. AT&T Mobility LLC*, No. 15-16585, at 7-8 (9th Cir. June 26, 2017).

policies embodied in Section 706—and would promote the policy set forth by Congress that “the vibrant and competitive free market . . . for the Internet” be preserved “unfettered by Federal or State regulation.”²⁵³

1. *The Commission Should Eliminate the Ill-Conceived General Conduct Standard.*

Consistent with the NPRM’s proposal to restore the classification of BIAS as an information service, the Commission also should adopt its proposal to eliminate the ill-conceived general conduct standard.²⁵⁴ The general conduct standard has never been part of any prior formulation of net neutrality rules. It is the progeny of Title II reclassification. Indeed, it epitomizes the harms of the regulatory overhang caused by Title II regulation of BIAS, as it ultimately hurts rather than benefits consumers, and is ripe for indiscernible and potentially inconsistent application in ways that would undermine the Commission’s light-touch regulatory framework.

As the Commission itself explained, the general conduct standard “represents [the Commission’s] interpretation of [S]ections 201 and 202 in the broadband Internet access context.”²⁵⁵ Thus, at its core, the general conduct standard is a common carrier mandate inextricably linked to Title II. Once the Commission reinstates the classification of BIAS as a

²⁵³ 47 U.S.C. § 230(b).

²⁵⁴ NPRM ¶¶ 72-75. Eliminating the general conduct standard also will advance the Trump Administration’s policy objective to eliminate unnecessary regulation. *See* Exec. Order 13,771 § 1, 82 Fed. Reg. 9339 (Feb. 3, 2017) (“[I]t is important that for every one new regulation issued, at least two prior regulations be identified for elimination.”).

²⁵⁵ *Title II Order* ¶ 137; *see also id.* ¶ 295.

Title I information service, it would be unlawful to continue to apply such common carriage obligations to BIAS.²⁵⁶

But even if the Commission could point to some alternative statutory basis to preserve the general conduct standard under a separate rationale that divorces it from Title II common carriage, it should still eliminate this roving license to second-guess ISPs' business practices, as it creates significant uncertainty and has a corresponding chilling effect on broadband investment and innovation. This open-ended rule made little sense under a Title II common carrier regime, and would make even less sense as applied to a Title I information service. Unlike the consensus bright-line principles discussed above,²⁵⁷ prior to the *Title II Order*, the general conduct standard had never before been part of any formulation of net neutrality principles developed over more than a decade. Moreover, unlike the bright-line protections, which set out clear rules of the road and protect consumers in an even-handed manner without impeding the growth of the Internet, the general conduct standard is vague (by design), and its application is far from clear-cut. The standard broadly prohibits ISPs from “unreasonably interfer[ing] with or unreasonably disadvantage[ing] (i) end users’ ability to select, access, and use broadband Internet access service or the lawful Internet content, applications, services, or devices of their choice, or (ii) edge providers’ ability to make lawful content, applications, services, or devices available to end users.”²⁵⁸ In applying the standard, the Commission relies on a totality-of-the-circumstances

²⁵⁶ See *Verizon*, 740 F.3d at 650 (holding that, given the Commission’s decision to classify ISPs as providers of “information services” rather than providers of “telecommunications services,” “the Commission would violate the Communications Act were it to regulate broadband providers as common carriers”).

²⁵⁷ See discussion *supra* Sections II.A & II.B.

²⁵⁸ *Title II Order* ¶ 136 (internal quotation marks omitted); see also 47 C.F.R. § 8.11.

approach on a case-by-case basis that considers a *non-exhaustive* list of at least seven factors, which are themselves imbued with ambiguity.²⁵⁹

As a result, ISPs and other companies with whom ISPs do business are required to engage in an onerous, multi-faceted, and frequently doubt-filled analysis when they consider offering a new Internet-related product or service.²⁶⁰ This creates a perpetual state of uncertainty for ISPs who could find their innovative offerings subject to unpredictable and intrusive new regulation and enforcement action justified under this standard. It is appropriate, then, that the *Title II Order* referred to the general conduct standard as a “catch-all,” because as Commissioner O’Rielly aptly observed it is “quite literally, a catch-*all*” that knows no bounds,²⁶¹ sweeping in seemingly *any* ISP conduct that may have a competitive effect. Even Chairman Wheeler himself admitted, when asked what the general conduct standard could address, that “we don’t really know. No blocking, no throttling, no fast lanes. Those can be bright-line rules because we know about those issues. But we don’t know where things go next.”²⁶² Especially with multi-billion dollars of potential investment at stake and with multi-million dollar penalties for providers that guess wrong about the Commission’s ultimate approach, that is no way to spur innovation. In fact, as noted above, the Commission has already used the general conduct standard to justify a wide range of investigations and to make negative findings (which have since been rescinded)

²⁵⁹ Specifically, the Commission analyzes, among other to-be-determined factors, the following subjective factors: end-user control; competitive effects; consumer protection; effect on innovation, investment, or broadband deployment; free expression; application agnostic; and standard practices. *See Title II Order* ¶¶ 139-145.

²⁶⁰ *See* discussion *supra* Section I.B.2.

²⁶¹ *Title II Order* ¶ 21; *id.* at 5999 (O’Rielly Dissent) (emphasis in original).

²⁶² Statement of Tom Wheeler, Former Chairman, FCC, Press Conference (Feb. 26, 2015), <https://www.c-span.org/video/?c4534447/wheeler-general-conduct-standard>.

about certain free data offerings,²⁶³ which the current Commission majority has recognized can be pro-consumer and pro-competitive.²⁶⁴ As the NPRM underscores:

After a thirteen-month investigation, the Report did not specifically call for an end to any provider's practices or identify any particular harm from offering consumers free data. . . . Instead of giving providers clear rules of the road to govern future conduct, this report put a provider on notice that an enforcement action could be just around the corner. The Report, and the investigation that preceded it, left Internet service providers with two options: either wait for a regulatory enforcement action that could arrive at some unspecified future point or stop providing consumers with innovative offerings.²⁶⁵

Thus, the general conduct standard puts ISPs in an impossible position, and the only certain way for ISPs to avoid potential enforcement action is to decline to innovate. Ultimately, the regulatory uncertainty produced by this standard chills ISP investment and innovation due to concerns that any new services and business models they might otherwise seek to offer consumers could be found in violation of this broad and unwieldy standard. If Comcast's experience in 2015 and 2016 is representative, there are likely dozens of new offerings and

²⁶³ Wireless Telecommunications Bureau, *Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Content and Services*, Report (Jan. 11, 2017), https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0111/DOC-342987A1.pdf, retracted by Wireless Telecommunications Bureau Report: *Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero Rated Content and Services*, Order, 32 FCC Rcd. 1093 (WTB 2017).

²⁶⁴ See Press Release, FCC, Chairman Pai Statement on Free Data Programs (Feb. 3, 2017), https://apps.fcc.gov/edocs_public/attachmatch/DOC-343345A1.pdf (“These free-data plans have proven to be popular among consumers, particularly low-income Americans, and have enhanced competition in the wireless marketplace. Going forward, the Federal Communications Commission will not focus on denying Americans free data.”); Press Release, FCC, Statement of Commissioner Michael O’Rielly on FCC’s Zero-Rating Investigation (Dec. 2, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342406A1.pdf (objecting to the Commission’s investigation and remarking that “[i]t would be difficult to come up with a better example of a complex, controversial policy at the current Commission than this attempt to intimidate providers in order to shut down popular offerings to consumers”).

²⁶⁵ NPRM ¶ 74.

services impeded or delayed because of this regulatory overhang. As David L. Cohen recently explained:

I also want to add into the investment calculus the impact on innovation. . . . Comcast's original Stream TV, which wasn't even an Internet service, it was an IP delivered service in the home, and we end up with a year-long FCC investigation, which essentially delays the launch of the service [for 18 months] that potentially could be incredibly popular with customers. . . . So there is a crystalized example of . . . where the Commission said 'we are not going to get into this' and we end up with a 12-month investigation by the FCC into something that isn't even covered by the open Internet rules because it is not an Internet-delivered service over a BIAS network.²⁶⁶

There is no doubt that Comcast was not the only company so affected, either directly or indirectly, by the incredibly wide berth the prior Commission granted itself to investigate new products and services under the aegis of the general conduct standard, which only underscores the serious chilling effect the FCC's Title II regime has had on innovation. As a result, consumers and the economy lose out on, or are slower to receive, the benefits of these innovations.

The "advisory opinion" process established in the *Title II Order* offers no real relief from these harmful, unintended consequences of the general conduct standard. As Chairman Pai has remarked, "seeking the government's blessing in advance is precisely the opposite of permission-less innovation."²⁶⁷ In fact, the process seems only to add to the cost and uncertainty of compliance with the substantive standard. In order to take advantage of the process, ISPs must reveal detailed future business plans, subject to a potential request for more information

²⁶⁶ Free State Found., Telecommunications Policy Conference at 38:50 (May 31, 2017), <https://www.c-span.org/video/?429299-3/telecommunications-policy-conference-part-2> (statement of David L. Cohen, Senior Executive VP and Chief Diversity Officer, Comcast Corporation).

²⁶⁷ *NPRM*, 32 FCC Rcd. at 4493 n.10 (statement of Chairman Pai).

from the Commission.²⁶⁸ Even then, there is no guarantee that the Commission would issue an opinion, much less in a timely manner that would align with ISPs’ business planning needs.²⁶⁹ Nor would the issuance of an opinion provide any real assurances to ISPs, as the opinions would not be binding and could be rescinded at a later time.²⁷⁰ In fact, the advisory opinion process was so poorly constructed that there is no evidence that it ever resulted in the issuance of an opinion.

Given the absence of any evidence of harm under the Commission’s previous light-touch approach before the promulgation of the general conduct standard, there is no reason to believe that extraordinary regulatory measures, especially one so detrimental to innovation and consumers, are necessary or justified. Continuing to subject ISPs to this ongoing uncertainty, in the absence of any indication of harm, is directly contrary to the public interest.

2. *The Commission Should Adopt the Proposal To Return to a Market-Based Interconnection Regime.*

Comcast supports the NPRM’s proposal to return to the Commission’s prior policy of refraining from regulating ISPs’ interconnection and traffic exchange practices—a policy that fostered an efficient, dynamic, and robustly competitive traffic-exchange marketplace with rapidly declining prices for transit and content delivery network (“CDN”) services and, ultimately, innovation and investment in broadband infrastructure. As the NPRM properly recognizes, prior to the *Title II Order*, Internet interconnection or traffic exchange was “an area historically unregulated” by the Commission.²⁷¹ The *Title II Order* grounded its oversight of

²⁶⁸ See *Title II Order* ¶ 233.

²⁶⁹ See *id.* ¶ 234.

²⁷⁰ See *id.* ¶ 235.

²⁷¹ NPRM ¶ 42.

interconnection in the *Order*'s reclassification of BIAS as a Title II service and the decision, for the first time, to deem Internet traffic exchange to be a component of BIAS, rather than as distinct from “last mile” connections.²⁷² As Title II regulation falls away, there is no basis to subject privately negotiated Internet traffic-exchange arrangements to ongoing regulatory oversight, particularly given the dynamic and competitive nature of the marketplace.

The well-functioning interconnection marketplace that existed prior to the *Title II Order* before any such regulation was in place provides ample evidence that Commission oversight and regulatory intervention is not needed.²⁷³ Before the *Title II Order* was adopted, parties generally had been able to reach and operate under interconnection agreements on equitable and mutually beneficial terms, with few exceptions.²⁷⁴ Indeed, time and again, prior Commissions have

²⁷² See *Title II Order* ¶¶ 195, 204 (citing Sections 201, 202, and 208 as the source of authority to regulate Internet interconnection and traffic exchange). The Commission previously distinguished Internet backbone providers and backbone services, on the one hand, from ISPs and mass market, last-mile BIAS, on the other. See, e.g., *1998 Report to Congress* ¶¶ 62-63; *AT&T Inc. and BellSouth Corp. Application for Transfer of Control*, Memorandum Opinion and Order, 22 FCC Rcd. 5662 ¶¶ 125, 133 (2007).

²⁷³ Dom Robinson, *CDN Market Pricing Down, but Overall Growth Continues*, Streaming Media, May 22, 2017, <http://www.streamingmediaglobal.com/Articles/ReadArticle.aspx?ArticleID=118381>; see also *DrPeering International, Internet Transit Prices: Historical and Projected*, <http://drpeering.net/white-papers/Internet-Transit-Pricing-Historical-And-Projected.php> (noting downward historical and projected trend in CDN pricing).

²⁷⁴ See, e.g., David Lieberman, *Netflix and AT&T Reach Interconnection Agreement*, Deadline, July 29, 2014, <http://deadline.com/2014/07/att-netflix-interconnection-peering-streaming-deal-811925/>; Drew Fitzgerald, *Netflix Reaches Interconnection Deal with Verizon*, Wall St. J., Apr. 28, 2014, <https://www.wsj.com/articles/netflix-reaches-interconnection-deal-with-verizon-1398726571>; Press Release, Comcast Corporation, Comcast and Netflix Team Up to Provide Customers with Excellent User Experience (Feb. 23, 2014), <http://corporate.comcast.com/news-information/news-feed/comcast-and-netflix>; Press Release, Cogent Communications, Sprint and Cogent Reach Agreement on Exchange of Internet Traffic (Dec. 22, 2008), <http://www.cogentco.com/en/news/press-releases/149-sprint-and-cogent-reach-agreement-on-exchange-of-internet-traffic>; Dyn Blog, Cogent Becomes Transit-Free, June 26, 2008, <https://dyn.com/blog/cogent-becomes-transitfree/> (noting that Cogent had established a direct connection to the America Online Transit Data Network).

acknowledged the highly competitive nature of the marketplace and the “ubiquitous Internet connectivity” available to marketplace participants.²⁷⁵ And the dramatic decline in backbone pricing and CDN services that occurred in the absence of Commission regulatory oversight only further demonstrates the *lack* of any need for direct regulation of this competitive marketplace, much less heavy-handed Title II regulation.²⁷⁶ As the Internet ecosystem has matured and as various ways to reach end users have evolved, interconnecting parties have continued to successfully negotiate and rely on such private arrangements without Commission

²⁷⁵ In approving the Global Crossing/Level 3 transaction, the Commission found that engaging in anticompetitive transit and peering practices would actually cause the combined company to “lose customers to its remaining peers, because those entities would still enjoy ubiquitous Internet connectivity and, hence, would be more attractive to customers.” *Applications Filed by Global Crossing Limited and Level 3 Communications, Inc. for Consent to Transfer Control*, Memorandum Opinion and Order and Declaratory Ruling, 26 FCC Rcd. 14056 ¶ 27 (2011); *see also SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd. 18290 ¶ 132 (2005) (“[I]nterconnection between Internet backbone providers has never been subject to direct government regulation, and *settlement-free peering and degradation-free transit arrangements have thrived.*”) (emphasis added).

²⁷⁶ Between 2005 and 2015, transit prices fell over 99 percent on a cost-per megabit basis. *See* Appendix A. CDN pricing has followed the same dramatic downward price trend. In 2016, CDN pricing declined, on average, 22 percent (down 45 percent for the largest customers), following a 20 percent average decline in prices in the prior year. *See* Dan Rayburn, *CDN Market Update: Web Performance, DIY, and CDN Pricing Trends*, May 15, 2017, <http://www.danrayburn.com/cdn2017.pdf>.

intervention.²⁷⁷ There is no reason to believe that this will cease once the Commission’s brief regulatory interlude concludes.²⁷⁸

3. *The Commission Should Eliminate the Prospect of Regulating Specialized Services.*

The NPRM is right to question the wisdom of the *Title II Order*’s treatment of non-broadband Internet access service data services (“non-BIAS data services” or “specialized services”). In particular, consistent with its effort to restore a light-touch regulatory framework for BIAS, the Commission should eliminate what amounts to back-door regulation of non-BIAS data services established in the *Title II Order*.²⁷⁹

²⁷⁷ See, e.g., Press Release, Level 3 Communications, Level 3 and Google Reach Settlement-Free Interconnection Agreement (Jan. 15, 2016), <http://investors.level3.com/investor-relations/press-releases/press-release-details/2016/Level-3-and-Google-Reach-Settlement-Free-Interconnection-Agreement/default.aspx>; Press Release, AT&T, Cogent and AT&T Enter Into Interconnection Agreement (June 10, 2015), http://about.att.com/newsroom/cogent_and_att_enter_into_interconnection_agreement.html; Press Release, Comcast Corporation, Comcast, Level 3 Announce Long-Term Interconnection Agreement (May 21, 2015), <http://corporate.comcast.com/news-information/news-feed/comcast-level-3>.

²⁷⁸ Even proponents of the regulation of interconnection via Title II acknowledge that the Commission’s efforts to remove utility-style regulations will have little impact on their businesses and their ability to deliver traffic to end users. See David Schaeffer, Chairman and CEO of Cogent Communications, Q1 2017 Earnings Call, Tr. at 7 (May 4, 2017), <https://ofccolo.snl.com/Cache/335BA6457F2000423538.PDF?Y=&CachePath=%5c%5cdmzdoc2%5cwebcache%24%5c&O=PDF&D=&T=&reqFrom=SNL3> (“I also believe that our contracts are sufficient to guarantee that we not only have adequate capacity today, but we’ll continue to increase capacity as our customers need it.”); Jeffrey K. Storey, President and CEO, Level 3 Communications, Inc., Q1 2017 Earnings Call, Tr. at 6 (May 3, 2017), <https://ofccolo.snl.com/Cache/6E47423A042000408800.PDF?Y=&CachePath=%5c%5cdmzdoc2%5cwebcache%24%5c&O=PDF&D=&T=&reqFrom=SNL3> (“Level 3 has long believed in an open Internet. . . . But we’ve also approached this through commercial negotiations with people that we have to interface with. And so we’ll continue to do that. We believe an open Internet is good, but at the same time, we’ve worked through all of the issues that we need with our customers and with other providers to make sure that we have the interconnection facilities in place and support our business model.”).

²⁷⁹ See NPRM ¶ 94.

While claiming that the Commission would simply continue to monitor the development and use of specialized services in an effort to support future innovation and investment,²⁸⁰ the *Title II Order* nevertheless adopted a contradictory approach by threatening broadband providers with enforcement action if the Commission—at its discretion—“determine[d] that these types of service offerings are undermining investment, innovation, competition, and end-user benefits.”²⁸¹ In so doing, the Commission effectively extended its regulatory reach to services that, by definition, fall outside of BIAS and beyond even the asserted harms that were said to require such heavy-handed intervention in the provision of Internet access service.

This approach was entirely unnecessary then, and it remains unnecessary now. The record underlying the *Title II Order* was devoid of evidence that specialized services had been used to evade the open Internet rules or were “undermining investment, innovation, competition, and end-user benefits.”²⁸² Rather, the *Title II Order* conceded that there was, in fact, “little resulting evidence of broadband providers using these services to undermine the 2010 rules.”²⁸³ Indeed, the record in the *Title II Order* “overwhelmingly support[ed] . . . treating non-BIAS data services differently than broadband Internet access service under the open Internet rules.”²⁸⁴ As the Commission previously explained, this flexibility would “continue to drive additional investment in broadband networks and provide end users with valued services without otherwise constraining innovation.”²⁸⁵

²⁸⁰ See *Title II Order* ¶¶ 211, 213.

²⁸¹ See *id.* ¶ 210.

²⁸² See *id.*

²⁸³ See *id.* ¶ 211.

²⁸⁴ See *id.*

²⁸⁵ See *id.*

In contrast, the threat of a potential enforcement action and subjecting ISPs to even greater regulatory scrutiny for “non-BIAS data services” would likely further chill investment and stifle innovation.²⁸⁶ To avoid these negative effects, the Commission should recognize that specialized services have not caused any harms to competition or consumers, let alone a negative impact “on last-mile capacity available for, and the performance of, broadband Internet access service.”²⁸⁷ Although the Commission of course should stay apprised of how these services continue to develop, and will retain the option to reengage if necessary, it should conclude that the record provides no basis for an active regulatory role in this area. This would align with the light-touch regulatory framework for BIAS that the Commission seeks to restore, and would reinforce the key public policy goal to drive greater broadband investment, innovation, and deployment.

4. *The Commission Should Expressly Reaffirm the Primacy of Federal Authority over BIAS as an Interstate Service.*

The NPRM seeks comment on how classifying BIAS as “as an interstate information service . . . would . . . impact jurisdiction.”²⁸⁸ Of course, the Commission’s treatment of BIAS as an interstate information service would not be a novel development. To the contrary, for decades, the Commission consistently has made clear that BIAS is an interstate service and, as such, is not subject to state utility regulation (or similar forms of regulation).²⁸⁹ In reestablishing

²⁸⁶ See discussion *supra* Sections I.B.1 & I.B.2.

²⁸⁷ *2010 Open Internet Order* ¶¶ 113-114 (articulating why the Commission would “closely monitor” the development of specialized services).

²⁸⁸ *NPRM* ¶ 69.

²⁸⁹ Interstate communications are “governed solely by federal law” and states are generally “precluded from acting in this area.” *Ivy Broad. Co. v. AT&T Co.*, 391 F.2d 486, 490-91 (2d Cir. 1968) (“The Supreme Court has held that the establishment of this broad scheme of regulation of interstate service by communications carriers indicates an intent on the part for Congress to occupy the field to the exclusion of state law.”); see also *Vonage Holdings Corp. Petition for*

a consistent and comprehensive light-touch regulatory framework for BIAS that is designed to promote Internet investment and innovation, the Commission should reaffirm its prior findings that BIAS is an interstate service and find that states have no jurisdiction or authority to impose their own conduct standards or other economic regulation on BIAS providers. In addition, the Commission should make clear that, in adopting a national, uniform policy for regulating BIAS, it will preempt any state or local laws that conflict with or stand as an obstacle to the accomplishment of the policy and regulatory determinations made in this proceeding.²⁹⁰

Specifically, the Commission can and should expressly preempt any state or local laws that attempt—on their face or in their application—to regulate ISPs in their provision of BIAS. While recognizing that under state law certain generally applicable consumer protection

Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission, Memorandum Opinion and Order, 19 FCC Rcd. 22404 ¶¶ 22-32 (2004) (determining that “[d]ue to the intrinsic ubiquity of the Internet, *nothing short of Vonage ceasing to offer its service entirely* could guarantee that any subscriber would not engage in some communications where a state may deem that communication to be ‘intrastate,’” and thus that it is impossible to separate out the interstate and intrastate components of Internet-based VoIP services, and also preempting state law that “impermissibly encroaches on [the FCC’s] exclusive jurisdiction over interstate services”), *aff’d sub nom. Minn. Pub. Utils. Comm’n v. FCC*, 483 F.3d 570 (8th Cir. 2007); *Bell Atl. Tel. Cos. v. FCC*, 206 F.3d 1, 5 (D.C. Cir. 2000) (noting that the Commission previously found Internet access service to be inherently interstate because “a substantial portion of Internet traffic involves accessing interstate or foreign websites” (quoting *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Inter-carrier Compensation for ISP-Bound Traffic*, Declaratory Ruling and Notice of Proposed Rulemaking, 14 FCC Rcd. 3689 ¶ 18 (1999))).

²⁹⁰ Commissioner O’Rielly has rightly expressed concerns about the prospect of such problematic state or local actions in the absence of a clear statement by the Commission. *See NPRM*, 32 FCC Rcd. at 4508 (statement of Commissioner O’Rielly) (“If the Commission decides that [BIAS] is an interstate information service, then states and localities should be foreclosed from regulating it, as some states are currently attempting to do with new broadband privacy laws, fees, approval processes, and other requirements.”); *see also California v. FCC*, 39 F.3d 919, 933 (9th Cir. 1994) (upholding Commission’s preemption of state laws that would conflict with the Commission’s goal of promoting a mass market for enhanced services for small customers, and finding that the Commission demonstrated that compliance with conflicting state and federal laws would in effect be impossible).

authority remains unaffected (e.g., state laws preventing fraudulent behavior), such preemption should cover all economic, public-utility, or conduct regulations, including those styled as consumer protection regulations that have the specific purpose or effect of constraining how ISPs provide BIAS and what ISPs do with respect to their BIAS networks. Preemption also should extend to Internet traffic exchange—which similarly entails the transmission of inextricably mixed intrastate and interstate traffic and thus is just as clearly jurisdictionally interstate as retail BIAS.²⁹¹

This approach would be consistent with decades of deeply considered policy and precedent. The Commission long ago preempted state regulation of “enhanced services”—i.e., information services—to ensure that Internet access would be regulated *exclusively* at the federal level to the extent it is regulated at all. For example, more than a decade ago, the Commission made clear that “federal authority has already been recognized as preeminent in the area of information services, and particularly in the area of the Internet and other interactive computer services, which Congress has explicitly stated should remain free of regulation.”²⁹² In this regard, the Commission’s prior deregulatory framework occupied the field in a way that, in the Commission’s policy judgment, optimized the Internet’s ability to flourish. Moreover, as the

²⁹¹ Particularly in light of the Commission’s proposal to reinstate its federal policy of permitting Internet traffic exchange arrangements to be hashed out in the marketplace without government putting a thumb on the scale, preemption would help ensure that states and localities do not undermine that policy determination.

²⁹² *Petition for Declaratory Ruling that pulver.com’s Free World Dialup Is Neither Telecommunications Nor a Telecommunications Service*, Memorandum Opinion and Order, 19 FCC Rcd. 3307 ¶ 16 (2004); see also *Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry)*, Memorandum Opinion and Order on Further Reconsideration, 88 F.C.C.2d 512 ¶ 83 n.34 (1981) (“States, therefore, may not impose common carrier tariff regulation on a carrier’s provision of enhanced services.”); *Amendment of Sections 64.702 of the Commission’s Rules and Regulations (Third Computer Inquiry) et al.*, Report and Order, 104 F.C.C.2d 958 ¶ 343 (1986) (explaining that the Commission “preemptively deregulated enhanced services, foreclosing the possibility of state regulation of such offerings”).

Eighth Circuit also explained, “The FCC has promoted a market-oriented policy allowing providers of information services to burgeon and flourish in an environment of free give-and-take of the market place without the need for and possible burden of rules, regulations and licensing requirements. Thus, any state regulation of an information service conflicts with the federal policy of nonregulation.”²⁹³

Even in the *Title II Order* (which otherwise was deeply problematic in its classification of BIAS as a Title II service), the Commission nevertheless reaffirmed its “longstanding conclusion” that BIAS is indisputably jurisdictionally interstate.²⁹⁴ It also once again made clear that the Commission has the authority to preempt “states from imposing obligations on broadband service that are inconsistent with [the Commission’s] carefully tailored regulatory scheme,” and announced its clear intent to “act promptly, whenever necessary, to prevent state regulations that would conflict with the federal regulatory framework or otherwise frustrate federal broadband policies.”²⁹⁵ To the same end, regardless of the precise approach to safeguarding Internet openness that the Commission chooses to adopt, the Commission should reaffirm the primacy of federal law in establishing a uniform light-touch framework for BIAS, consistent with Congress’s mandate “to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal *or State* regulation.”²⁹⁶

²⁹³ *Minn. Pub. Utils. Comm’n*, 483 F.3d at 580 (emphasis added, internal citations and quotations omitted).

²⁹⁴ *Title II Order* ¶ 431.

²⁹⁵ *Id.* ¶ 433.

²⁹⁶ 47 U.S.C. § 230(b) (emphasis added).

Moreover, the Supreme Court has made clear that a federal agency may preempt state regulation where it “conflicts with [the federal agency’s] regulations,”²⁹⁷ or “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.”²⁹⁸ Where, as here, the Commission has established the most appropriate federal regulatory framework to achieve these objectives—including expressly considering and rejecting more burdensome regulatory alternatives—it may broadly preempt state laws that would conflict with or undermine that federal policy, or at a minimum should clearly express its intent to do so, as the Commission did in the *Title II Order*.²⁹⁹ Critically, the Supreme Court has long recognized that federal preemption is just as warranted when the federal government decides to interpose truly light-touch regulation as opposed to heavy-handed regulation—or even when the agency declines to impose any affirmative regulation at all.³⁰⁰

²⁹⁷ *City of New York v. FCC*, 486 U.S. 57, 64 (1988).

²⁹⁸ *Crosby v. Nat’l Foreign Trade Council*, 530 U.S. 363, 373 (2000) (citation omitted); *Geier v. Am. Honda Motor Co.*, 529 U.S. 861, 883-84 (2000) (citation omitted).

²⁹⁹ *See, e.g., City of New York*, 486 U.S. at 64 (“[I]n proper circumstances[, a federal] agency may determine that its authority is exclusive and pre-empts any state efforts to regulate in the forbidden area.”); *Title II Order* ¶ 433.

³⁰⁰ *See, e.g., Ark. Elec. Coop. Corp. v. Ark. Pub. Serv. Comm’n*, 461 U.S. 375, 384 (1983) (“[A] federal decision to forgo regulation in a given area may imply an authoritative federal determination that the area is best left *unregulated*, and in that event would have as much pre-emptive force as a decision *to regulate*.”) (emphasis in original); *Minn. Pub. Utils. Comm’n*, 483 at 580 (“Competition and deregulation are valid federal interests the FCC may protect through preemption of state regulation.”); *see also Geier*, 529 U.S. at 883-84 (state cause of action preempted where a federal decision to adopt a more permissive approach rather than impose specific requirements constituted a substantive determination that federal statutory objectives, including promoting innovation, were best achieved by less, not more, regulation). States simply may “not undo federal deregulation with regulation of their own.” *Nw., Inc. v. Ginsberg*, 134 S. Ct. 1422, 1424 (2014) (citation omitted).

E. The Commission Should Ensure Regulatory Parity Among All BIAS Providers.

Any regulatory framework the Commission adopts should be technology neutral and ensure regulatory parity among all BIAS providers. In stark contrast to the traditional telecommunications marketplace—where incumbent providers long enjoyed state-sanctioned monopolies—all broadband providers have been “new entrants” over the last two decades and, therefore, they should all be treated alike. In other analogous contexts, the Commission has long recognized that arbitrary technology-based distinctions distort competition and ultimately harm consumers.³⁰¹

There is no sound basis in 2017 to adopt different regulatory frameworks for fixed and mobile broadband services (just as there was not in 2015).³⁰² To the contrary, consumers care

³⁰¹ See, e.g., *Business Data Services in an Internet Protocol Environment; Technology Transitions; Special Access for Price Cap Local Exchange Carriers; AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, Report and Order, 32 FCC Rcd. 3459 ¶ 157 (2017) (“[L]ack of regulatory parity that stems from the prior applications of forbearance [from tariffing requirements] is preventing competition and holding back our efforts to ‘encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.’ . . . [T]he lack of regulatory parity among broadband data services providers . . . has created barriers to entry and impeded competition.”); *Telecommunications Services Inside Wiring, Customer Premises Equipment; Implementation of the Cable Television Consumer Protection and Competition Act of 1992; Cable Home Wiring*, First Order on Reconsideration and Second Report and Order, 18 FCC Rcd. 1342 ¶ 80 (2003) (modifying the cable inside wiring rules to apply to *all* MVPDs, not just cable operators, and noting that doing so “will promote regulatory parity and enhance competition among MVPDs”); *Amendments of Parts 73 and 76 of the Commission’s Rules Relating to Program Exclusivity in the Cable and Broadcast Industries*, Notice of Inquiry and Notice of Proposed Rulemaking, 2 FCC Rcd. 2393 ¶ 12 (1987) (in discussing the syndicated exclusivity rule for broadcasters, the Commission stated that: “To ensure free and efficient functioning of competitive market processes, the Commission seeks to permit equality, to the extent possible within our regulatory framework, of contractual opportunity among competing modes of distribution. . . . Failure to supply parity in contractual freedom will bias the nature of competitive rivalry among competing suppliers in ways not grounded in operating efficiencies but instead based on artificial handicaps exacerbated by disparate regulatory treatment.”).

³⁰² See, e.g., Comcast 2014 Open Internet Comments at 40-42.

just as much about mobile BIAS as they do fixed BIAS to meet their broadband connectivity needs,³⁰³ and, as such, these services should be treated in the same manner. This is precisely the rationale the Commission adopted a decade ago when it first classified wireless broadband as an information service.³⁰⁴ The Commission reasoned that a uniform classification among broadband technologies “supports the Congressional goal of promoting broadband deployment and encouraging competition in the provision of broadband services, by ensuring regulatory parity among all broadband Internet access services—regardless of whether they are offered through wireline, cable, or wireless technology.”³⁰⁵ The Commission further stated that “[w]ithout a consistent approach toward all Internet access providers (both within the wireless industry and across diverse technologies)[,] the possibility of full and fair competition will be compromised.”³⁰⁶

In this regard, Comcast supports the Commission’s proposal to return mobile BIAS to its original classification as a private mobile service.³⁰⁷ Returning fixed broadband to its classification as an information service while leaving mobile broadband as a common carrier service not only would be legally unsound, but also would be inconsistent with the

³⁰³ See Ericsson, *Ericsson Mobility Report 7* (Nov. 2016), <https://www.ericsson.com/assets/local/mobility-report/documents/2016/ericsson-mobility-report-november-2016.pdf> (“Mobile broadband will complement fixed broadband in some segments, and will be the dominant mode of access in others. Many PCs and tablets are currently used without a mobile subscription, one reason being the price difference between Wi-Fi only models and those with mobile capabilities. Despite this, the number of PCs and tablets with mobile capabilities and a subscription will increase 30 percent by 2022.”).

³⁰⁴ See *Appropriate Regulatory Treatment for Broadband Access to the Internet over Wireless Networks*, Declaratory Ruling, 22 FCC Rcd. 5901 ¶ 55 (2007).

³⁰⁵ *Id.*

³⁰⁶ *Id.*

³⁰⁷ See *NPRM* ¶ 55.

Commission’s longstanding principle of technological neutrality, given the interconnected nature of the Internet.

By the same token, mobile and fixed BIAS providers should be subject to the same substantive obligations.³⁰⁸ To be sure, technological differences may warrant applying open Internet protections differently in certain instances. For example, reasonable network management may mean different things for mobile wireless (or Wi-Fi) networks than for fixed networks.³⁰⁹ But these differences do not warrant a different set of obligations for fixed and mobile broadband technologies.³¹⁰

This is particularly true in today’s marketplace. Whatever regulatory distinctions between fixed and mobile broadband might have been warranted in 2010,³¹¹ they are no longer apt today. Nor, as a general matter, would such distinctions be warranted from the perspective of consumers.³¹² Consumers already use their mobile broadband services in ways that increasingly overlap with how they use their fixed broadband connections. As CTIA recently explained to the

³⁰⁸ *See id.* ¶ 95 (seeking comment on whether mobile broadband should be treated differently from fixed broadband).

³⁰⁹ Even in the *Title II Order* the Commission recognized the flexibility provided by the reasonable network management exception, noting that mobile broadband providers must take into account mobility and reliance on spectrum but concluding that the exception allows sufficient flexibility for such providers. *See Title II Order* ¶ 101.

³¹⁰ *See id.* ¶ 92 (“The Commission has long recognized that the Internet should remain open for consumers and innovators alike, regardless of the different technologies and services through which it may be accessed.”).

³¹¹ *See 2010 Open Internet Order* ¶¶ 94-95 (noting that, at the time, mobile broadband services were in “an earlier-stage platform than fixed broadband” and presented “special considerations”). But even then, the Commission observed that the mobile broadband ecosystem was “experiencing very rapid innovation and change.” *Id.*

³¹² *See Title II Order* ¶ 92 (“Broadband users should be able to expect that they will be entitled to the same Internet openness protections no matter what technology they use to access the Internet.”).

Commission in its comments on the state of mobile wireless competition, “consumers today are engaging in a mobile-first lifestyle,” and “[m]any consumers still use their mobile phones for traditional services such as SMS/MMS text messaging (97 percent), voice/video calling (92 percent), Internet access (89 percent), and email access (88 percent).”³¹³ This overlap in uses will only accelerate as new wireless technologies increase capacity and overcome operational constraints.³¹⁴ Thus, consistent with its longstanding principle of technological neutrality, the Commission should ensure a level playing field by treating fixed and mobile broadband services in the same manner.

CONCLUSION

Comcast supports the Commission’s effort to take a fresh look at how best to maintain sensible open Internet protections, while eliminating the investment-stifling and innovation-chilling overhang that Title II has brought to the Internet ecosystem. As discussed herein, the Commission *can* have it both ways; it can and should reclassify BIAS as an information service, and, pending congressional action, it has multiple options available for ensuring continued Internet openness under a Title I classification, including: (1) codifying such core net neutrality protections as FCC rules under Section 706, and (2) providing for federal enforcement by the FTC of industry commitments to net neutrality protections, including transparency, no blocking, no throttling, and no anticompetitive paid prioritization.

³¹³ Comments of CTIA, WT Docket No. 17-69, at 10, 14 (May 8, 2017) (“CTIA Comments”); *see also* Comments of AT&T, WT Docket No. 17-69, at 26 (May 8, 2017) (“Overall data usage in North America increased by 44 percent in 2016, according to Cisco’s latest estimate, and North America continues to lead the world in terms of available mobile broadband speeds.”).

³¹⁴ *See* CTIA Comments at 47-50 (highlighting the various use cases and economic benefits of 5G).

At the same time, the Commission should ensure that any regulatory framework is appropriately tailored to the interests at stake—and thus should eliminate the exceedingly vague and overbroad “general conduct standard,” reinstate a hands-off approach to the competitive Internet traffic-exchange marketplace, reaffirm the unregulated status of specialized services, continue the longstanding approach of preempting state and local regulation that would undermine these policies, and ensure that any rules it adopts for BIAS apply on a technology-neutral basis. By pursuing this light-touch approach, the Commission can meet the Chairman’s goal of “maintain[ing] a free and open Internet while making sure that ISPs have strong incentives to bring next-generation networks and services to all Americans.”³¹⁵

Respectfully submitted,

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³¹⁵ Pai May 18 Statement at 3.

APPENDIX A

Innovation and Investment Under Title I: By the Numbersⁱ

	<u>2005</u>	<u>2010</u>	<u>2015</u>
Fixed and mobile Internet connectionsⁱⁱ	50.2 million	168.9 million	355.2 million
Homes passed by cable high-speed data serviceⁱⁱⁱ	103+ million	128.8 million	137.4 million ^{iv}
Percentage of Americans with access to fixed broadband at 25/3 Mbps	N/A	72% ^v	90% ^{vi}
Median actual fixed download speed of broadband connections^{vii}	N/A	10.4 Mbps ^{viii}	41.2 Mbps
Percentage of fixed Internet connections with speeds greater than or equal to 10 Mbps^{ix}	4.7%	40.9%	78.1%
Percentage of fixed Internet connections with speeds greater than or equal to 25 Mbps^x	0.1%	1.5%	53.5%
Percentage of American adults who use the Internet^{xi}	68%	76%	84%
OVD paid subscribers (U.S.)^{xii}	0	24.4 million	88.7 million
Hours per week spent watching streamed on-demand content^{xiii}	N/A	2.9 hours ^{xiv}	6 hours
Online video as a percentage of Internet traffic^{xv}	12% ^{xvi}	40%	63%
Internet transit prices per Mbps (U.S.)^{xvii}	\$75	\$5	\$0.63
Broadband providers' annual capital expenditure^{xviii}	\$62 billion	\$68 billion	\$76 billion
Combined market capitalization of select edge provider companies^{xix}	\$381 billion	\$511 billion	\$1.73 trillion

ⁱ Figures provided in table are based on available data for stated year or within one year of stated year due to data limitations, as noted.

ⁱⁱ FCC, Internet Access Services Report: Status as of December 31, 2015, at 2; FCC, Internet Access Services Report: Status as of December 31, 2010, at 3; FCC, High-Speed Services for Internet Access: Status as of December 31, 2005, at 1 (all reporting connections over 200 kbps in at least one direction).

ⁱⁱⁱ SNL Kagan Data (for 2010 and 2015, which excludes overlap from overbuilders); Comments of NCTA, MB Docket No. 05-255, at 32-33 (Sept. 19, 2005), (estimating that as of July 2005, “[c]able’s broadband services are available to more than 103 million homes”).

^{iv} Includes commercial and residential passings by cable.

^v *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, 30 FCC Rcd. 1375 ¶ 84 tbl. 7 (2015) (reporting December 2011 data).

^{vi} *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*, 2016 Broadband Progress Report, 31 FCC Rcd. 699 ¶ 79 (2016) (reporting December 2014 data).

^{vii} FCC, 2016 Measuring Broadband America Fixed Broadband Report, chart 3, <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/charts-measuring-broadband-america-2016#chart3>.

^{viii} *Id.* (showing March 2011 data).

^{ix} FCC, Internet Access Services Report: Status as of December 31, 2015, fig. 2(a); FCC, Internet Access Services Report: Status as of December 31, 2010, tbl. 12; FCC, High-Speed Services for Internet Access: Status as of December 31, 2005, tbl. 5 & chart 9 (estimate based on available data).

^x FCC, Internet Access Services Report: Status as of December 31, 2015, fig. 2(a); FCC, Internet Access Services Report: Status as of December 31, 2010, tbl. 12; FCC, High-Speed Services for Internet Access: Status as of December 31, 2005, tbl. 5 (estimate based on available data).

^{xi} Andrew Perrin & Maeve Duggan, *Americans' Internet Access: 2000-2015*, Pew Research Center (June 26, 2015), <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/>.

^{xii} Tom Fitzgerald, *Pay Cable vs. SVOD: How They Stack Up*, Media Life, Jan. 28, 2016, <http://www.medialifemagazine.com/pay-cable-vs-svod-stack/>; SNL Kagan, *State of Online Video Delivery*, at 8 (2015).

^{xiii} Ericsson, *TV and Media 2015* (Sept. 2015), <http://www.ericsson.com/res/docs/2015/consumerlab/ericsson-consumerlab-tv-media-2015.pdf>.

^{xiv} *Id.* (showing 2011 data).

^{xv} See Cisco Virtual Networking Index (2009-2014), http://large.stanford.edu/courses/2010/ph240/abdul-kafi1/docs/white_paper_c11-481360.pdf; Press Release, Cisco, Cisco Virtual Networking Index Predicts Near-Tripling of IP Traffic by 2020 (June 7, 2016), <https://newsroom.cisco.com/press-release-content?articleId=1771211>.

^{xvi} Cisco Visual Networking Index (2007-2012), https://newsroom.cisco.com/dlls/2008/ekits/Cisco_Visual_Networking_Index_061608.pdf (showing 2006 data).

^{xvii} DrPeering International, *What Are The Historical Pricing Trends*, <http://drpeering.net/FAQ/What-are-the-historical-transit-pricing-trends.php>.

^{xviii} USTelecom, Historical Broadband Provider Capex, <https://www.ustelecom.org/broadband-industry-stats/investment/historical-broadband-provider-capex> (includes both wired and wireless providers).

^{xix} Aggregate market capitalization of Internet Association members Amazon, eBay, Facebook, Google, Microsoft, Netflix, Salesforce, and Twitter at YE 2005, 2010, 2015. See Internet Association, Members, <https://internetassociation.org/our-members/>; Macrotrends, <http://www.macrotrends.net>.

APPENDIX B

APPENDIX B

Economic Studies Submitted in GN Docket No. 14-28 Regarding Benefits of Title I Classification of BIAS and Harms to Investment and Innovation Posed by Title II Classification (Organized Chronologically by Date Submitted into the FCC Docket)

[Guidelines & Questions to Frame the Network Neutrality Proceedings](#)

William Rinehart | American Action Forum | March 24, 2014

“Over the past year alone, average broadband speeds increased 31 percent. Of the world’s investment in broadband, the U.S. has nearly a fourth of it, even though we only have 4 percent of the world’s population. In the last comprehensive study conducted by McKinsey on the subject, the U.S. was the largest player in the global Internet supply ecosystem, capturing more than 30 percent of global Internet revenues and more than 40 percent of net income. The U.S. tech economy also continues to be the most diversified, garnering relatively equal contributions from hardware, software and services, and telecommunications. Innovative centers throughout the country contribute to the value of American tech startups, which tower over the rest of the world.”

“The Commission has not taken reclassification off the table, but it should. Reclassifying under Title II regulation would reverse 40 years of law and layer a whole set of regulations on broadband services. Cable companies . . . never operated under these laws and flourished in their absence.”

[Innovation, Investment, and Competition in Broadband and the Impact on America’s Digital Economy](#)

Roslyn Layton & Michael Horney | March 29, 2014

“A decade ago, the EU accounted for roughly one-third of the world’s communications capex. That number today has plummeted to less than one-fifth, mainly because the EU has not kept pace with the United States, Canada, and Japan, and largely because of onerous utility-style regulation.”

“If the EU provides any evidence, it is that static competition created through managed access (regulated reselling and unbundling) not only does not increase investment or innovation, but does not support overall next-generation broadband coverage.”

[U.S. v. European Broadband Deployment: What Do the Data Say?](#)

Christopher S. Yoo | Center for Technology, Innovation and Competition | June 2014

“Some claim the European model of service-based competition, induced by stiff telephone-style regulation, outperforms the facilities-based competition practiced in the U.S. in promoting broadband. Data analyzed for this report reveals, however, that the U.S. led in many broadband metrics in 2011 and 2012.”

“Disparities between European and U.S. broadband networks stemmed from differing regulatory approaches. Europe has relied on regulations that treat broadband as a public utility and focus on promoting service-based competition, in which new entrants lease incumbents’ facilities at wholesale cost (also known as unbundling). The U.S. has generally left buildout, maintenance, and modernization of Internet infrastructure to private companies and focused on promoting facilities-based competition, in which new entrants are expected to construct their own networks. Regression analysis indicates that the U.S. approach has proven more effective in promoting NGA coverage than the European approach.”

“A far greater percentage of U.S. households had access to Next Generation Networks (NGA) (25 Mbps) than in Europe. This was true whether one considered coverage for the entire nation (82% vs. 54%) or restricted the analysis to rural areas (48% vs. 12%), suggesting that the U.S. approach proved more effective than the European approach at narrowing the digital divide.”

“The difference in regulation and competition models influenced the amount of broadband investment in the U.S. and Europe. In Europe, where it was cheaper to buy wholesale services from an incumbent provider, there was little incentive to invest in new technology or networks. In the U.S., however, providers had to build their own networks in order to bring broadband services to customers. Data analysis indicates that as of the end of 2012, the U.S. approach promoted broadband investment, while the European approach had the opposite effect (\$562 of broadband investment per household in the U.S. vs. \$244 per household in Europe).”

“Data analyzed for the study resolves the question whether the U.S. is running behind Europe in the broadband race or vice versa. The answer is clear and definitive: As of 2012, the U.S. was far ahead of Europe in terms of the availability of NGA. . . . The empirical evidence . . . confirms that the United States is faring better than Europe in the broadband race and provides a strong endorsement of the regulatory approach taken so far by the U.S.”

[Comments of Thomas M. Lenard, Ph.D., President and Senior Fellow, Technology Policy Institute](#)

Thomas M. Lenard | Technology Policy Institute | July 14, 2014

“Broadband has thus far been subject to light-handed regulation, consistent with its classification as a Title I information service. Title II public utility regulation would change that and would signify a sharp departure from the status quo, under which the broadband market has generally thrived.”

“Title II regulation would subject broadband to non-discriminatory open access requirements and to price regulation. Such public utility regulation has not been notably conducive to innovation. Broadband is a capital intensive industry, requiring billions of dollars of investment in technologies that are sometimes quite risky. Title II regulation would inhibit the development of new business models, increase risk, reduce expected returns, and therefore adversely affect incentives for investment and innovation in the broadband infrastructure and possibly at the edge as well.”

“Title II regulation would hinder efforts to extend broadband penetration. There are at least two reasons for this. First, the rules would preclude the introduction of innovative pricing plans that

might reduce prices to some or all consumers—particularly more price-sensitive consumers—thereby inducing them to increase their adoption of broadband. Second, the rules would reduce the return on investment (partly because of the limitations on pricing) and therefore the buildout of the broadband infrastructure. . . . This has been confirmed by empirical studies comparing the U.S. with the European experience under public-utility-style regulation, such as implied by Title II. Both Wallsten and Hausladen and Yoo find that such regimes have a significant negative effect on investment and deployment of advanced networks. . . . Title II regulation may also reduce incentives to invest and innovate at the edge of the network. For example, if such regulation precludes pricing plans that would increase broadband subscribership, it would also reduce the market for providers of content, adversely affecting innovation at the edge.”

“Imposing Title II public utility regulation would represent the sharpest departure from the status quo, and would have serious adverse effects on investment and innovation in the Internet infrastructure over time. The history of public utility regulation suggests it generally has been counterproductive and harmed the consumers it was designed to protect.”

[Competition in Broadband and “Internet Openness”](#)

Andres V. Lerner, Ph.D. | Compass Lexecon | July 15, 2014

“More likely, ex ante regulation that restricts the ability of providers to experiment with and implement legitimate business arrangements would impose considerable costs, distort competition and market outcomes, and reduce investment incentives, to the detriment of consumers.”

“The current competitive environment, and massive historical and planned investments in deploying broadband networks to meet consumer demands, have been achieved by relying on competitive market forces, not through rigid regulation.”

[Protecting and Promoting Consumer Benefits Derived from the Internet](#)

Michael L. Katz | University of California at Berkeley | July 15, 2014

“Consumer welfare is best protected if the Commission allows broadband Internet access providers to manage their networks and offer differentiated services or implement innovative pricing strategies as long as those practices do not harm competition. Moreover, where conduct is disallowed, public policy should do so only in response to specific instances of identified harm, rather than imposing sweeping prohibitions that throw out the good with the bad.”

“Allowing flexibility and encouraging this innovation and investment will make these services more useful and also increase the degree to which mobile wireless Internet access services provide an effective competitive alternative to fixed-line services. The imposition of new rules could attenuate investment incentives, harming competition and consumers. Whatever one thinks of the potential benefits of network neutrality regulations, those benefits must be weighed against the resulting loss of investment incentives.”

[Comments of International Center for Law and Economics](#)

Geoffrey Manne et al. | ICLE; TechFreedom | July 17, 2014

“[O]nce a service was placed within Title II, it would *always* be potentially subject to the requirements of Title II, depending on the whims of the FCC. Such regime uncertainty . . . would perpetuate the outdated structure of the Act and undermine investment in competing infrastructure – precisely the opposite of the pro-deployment agenda begun by the Clinton administration and required as a predicate to regulation in this proceeding.”

[The Mistake of One-Sided Open Internet Policy](#)

William Lehr | MIT | July 17, 2014

“[T]he FCC’s singling out today’s broadband access ISPs is like the proverbial ‘drunk under the streetlight’ (who looks for his keys where the light is, not where the keys were most likely dropped). The legacy of last-mile telecommunications service regulation makes it reflexively easy and natural to focus on potential threats to Internet openness stemming from potential abuses by broadband access ISPs. Unfortunately, adopting such an unbalanced perspective contributes directly to regulatory uncertainty and inconsistency, which are significant economic costs of regulation and undermines both the open Internet and the promotion of broadband deployment (investment).”

[The Best Path Forward on Net Neutrality](#)

Robert Litan & Hal Singer | Progressive Policy Institute | September 2014

“[I]n the absence of empirical evidence about likely investment responses, the FCC should preserve its regulatory flexibility and keep a close eye on investment responses. A light-touch approach, in which the agency draws on its authority under Section 706, would preserve flexibility.”

“[S]tarting with a heavy-handed Title II approach could risk substantial core investment without generating any offsetting incremental investment at the edge. Under the ‘mother-may-I’ approach of Title II, it is much harder to ratchet down regulation once it has been imposed. For example, Title II could entail a rate-setting process for edge- or customer-facing offerings by ISPs; once a regulated rate is established, a new proceeding would be needed to adjust it. Because Title II would limit the FCC’s flexibility in the face of such uncertainty over investment responses, the better approach in our view is starting with antidiscrimination enforcement under Section 706.”

“[T]he FCC should eschew the heavy-handed approach of Title II regulation, and lean instead on its Section 706 authority to regulate potential abuses by ISPs on a case-by-case basis. Investment across both edge and content providers will be greater compared to Title II, and the FCC can avoid any unintended consequences such as creeping regulation that encompasses content providers or other ISP services.”

Economic Repercussions of Applying Title II to Internet Services

Christian Dippon & Jonathan Falk | NERA | September 9, 2014

“[I]f the FCC decides to use Title II for Internet services, it would seriously disrupt the Internet ecosystem. It would allow for regulatory arbitrage—ecosystem participants will not provide services that are in demand but services that receive the most favorable regulatory treatment. Given the uncertain and undefined nature of Title II as applied to Internet services, it would necessarily introduce much regulatory risk for all participants of the ecosystem. For instance, under Title II reclassification, ISPs would not have the proper incentives to provide additional network capacity. This, in turn, would forestall innovation from startup edge providers and favor more traditional service providers. Costs for most, if not all, ecosystem participants would increase because the regulatory process, not market forces, would define market success. Why would the regulatory process increase costs? The answer is simple—the regulatory process quite often requires significant funding for lobbying and litigation, funding that many Internet service providers do not have built into their budgets.”

“[D]istorting the incentives of ecosystem participants has direct negative effects on competition. It creates market barriers because only those with adequate funding will obtain a favorable regulatory environment. Similarly, it will lower innovation as risk levels increase because obtaining the necessary financial funding will become a problem with riskier investments. At a minimum, it will increase retail prices as regulatory costs and the additional risk must be recovered in the long run. In essence, applying Title II to Internet services neutralizes market forces as market outcomes are no longer determined by these forces but by regulatory policy.”

“[T]he consequences of these effects will result in decreased consumer welfare in the United States. Practically, this means reduced technology take-up, which, in turn, increases the digital divide and lowers the US’s competitive broadband positioning relative to other nations. Even absent the reclassification, according to the FCC’s most recent report, an estimated 17 percent of US households are without broadband service. Through the American Recovery and Reinvestment Act of 2009 (Recovery Act) and the National Broadband Plan, the Obama Administration has put specific programs in place to approach or even reach full broadband penetration. By applying Title II to Internet services, these efforts will become futile. Each percentage point increase in broadband penetration is expected to increase employment by 0.2-0.3 percent. Hence, failing to serve the 17 percent of households signifies the potential loss of over seven million US jobs. The failure to increase broadband penetration will also negatively impact other macroeconomic indicators, including research and development in the Internet sector and foreign direct investments.”

[The Consequences of Net Neutrality Regulations on Broadband Investment and Consumer Welfare: A Collection of Essays](#)

American Consumer Institute | Posted to ECFS September 9, 2014 (originally published November 19, 2009)

Banning Internet Access Price Discrimination is Bad for Consumers

Larry F. Darby

“A recurring theme in the case for applying common carrier type rate and services regulation of Internet access providers is that ‘discrimination’ is bad and markets cannot be trusted to prevent it.”

“Price discrimination has salutary financial effects inasmuch as it permits cost recovery, reduces risk, allows for the widest diffusion and use of services and thereby encourages investment and innovation. A uniform pricing standard would increase risk, would limit the reach and scope of diffusion of services and would likely not cover costs – all of which are serious deterrents to investment.”

Does Net Neutrality Help or Hurt Consumers?

Stephen B. Pociask

““The FCC should be highly skeptical of calls to substitute special economic regulation of the Internet for free and open competition enforced by the antitrust laws. Marketplace restrictions proposed by some proponents of ‘net neutrality’ could in fact prevent, rather than promote, optimal investment and innovation in the Internet, with significant negative effects for the economy and consumers.””

“In a comprehensive study on this issue, Darby and Fuhr found that a ban on multi-sided pricing would require consumers to pay for all of the upgrades to the Internet, thereby increasing consumer prices and decreasing broadband demand – both of which would reduce network investment. The study estimated the present value of lost consumer welfare to be as much as \$32 billion over 10 years, or about \$285 per broadband household. Sidak evaluated and modified Darby’s figures and re-estimated the welfare losses to be in the range of \$3.44 to \$7.74 billion per year. Pociask found that restrictions on multi-sided market pricing would mean that consumers lose \$69 billion in potential benefits over the next 10 years.”

Network Neutrality Regulation Would Impose Consumer Welfare Losses

Hance Haney

“Jeffrey A. Eisenach observes that U.S. cable operators invested more than \$115 billion to upgrade their networks between 1996 and 2006. Investment accelerated significantly in 2000, immediately after Chairman Kennard made clear unbundling would not apply. He adds that the bulk of cable’s investment has gone into network upgrades that have yielded a faster, more robust broadband infrastructure.”

“Eisenach says that all of the evidence suggests cable companies in the U.S. would not have deployed advanced broadband infrastructures, or deployed them as rapidly and wisely as they

did, if the FCC had yielded to pressure to impose ‘open access’ requirements in 1999, nor would the telephone companies today be rapidly and widely deploying advanced FTTH and fiber to the neighborhood (FTTN) infrastructures if the FCC had imposed unbundling requirements on those investments.”

[Innovation and National Broadband Policies: Facts, Fiction and Unanswered Questions](#)

Larry F. Darby & Joseph P. Fuhr Jr. | American Consumer Institute | Posted to ECFS September 9, 2014 (originally published March 2, 2010)

“We find that innovation is thriving at both the core and the edge of the network in the current policy environment, which has fundamentally allowed the Internet to evolve with little government involvement. Further, we find no evidence that greater FCC involvement in markets for broadband services would protect or promote innovation in the Internet Ecosystem. Indeed, we believe that such intervention is more likely to discourage innovation than to stimulate it.”

“Imposing common carrier type regulation on network providers would diminish network providers [sic] incentives and opportunities to continue historic trends in innovation and investment.”

“There is no analysis or data in the literatures on innovation and regulation to prove claims that the proposed net neutrality rules would on balance promote innovation in the Internet Ecosystem.”

“The proposed net neutrality rules might be expected to reduce innovation in broadband networks and those that would be enabled at the edge. They would do so to the extent that new constraints on broadband network providers would increase uncertainty and risk, reduce prospects for growth, and undermine network managers’ incentives and opportunities to adapt to rapidly changing technical and economic conditions in the Internet Ecosystem.”

“Available data and analysis do not establish: a) the absence of network innovation in general; b) the primacy of innovation at the edge over the core; or most importantly; c) that greater ex ante regulation of markets for broadband infrastructure is needed, or can reasonably be expected to increase the rate of innovation and consumer welfare creation by network providers and elsewhere in the Internet Ecosystem.”

“Our review finds no significant market failure attributable to insufficient innovation by network providers or superior innovation outside network infrastructures. As to the need for new regulations, the public interest would be well served were the Commission to heed the wisdom of Hippocrates: ‘First, do no harm!’”

[The Broadband Credibility Gap](#)

George S. Ford et al. | CommLaw Conspectus | Posted to ECFS October 31, 2014 (originally published July 2010)

“Unless the regulator is able to take steps to assure investors it will behave favorably . . . society may suffer. Such assurances from regulators, by their own admission, are ephemeral in nature. A benefit of Title I classification is that the ‘light touch’ is enforced exogenously by the courts,

forcing the Commission to present compelling and well-crafted arguments for regulatory intervention.”

“[I]t is fair to say that reclassification will expose, *with a positive and increased probability*, the Internet to ‘heavy-handed’ regulations that ‘chill investment.’”

“[E]vidence suggests that the large negative abnormal returns for the broadband providers [in response to the FCC’s proposal] were a response to reclassification and not a multichannel video industry shock. In other words, the markets looked at the FCC’s Statements and sent the stock prices of the relevant firms significantly downward [10%, on average]. This decline suggests that the capital markets accept neither the FCC’s promises nor their characterization of the proposed change in regulation. Since investment is determined by the capital markets, this is strong evidence that the reclassification scheme will undermine the allocation of new resources to broadband infrastructure, even if the FCC ultimately keeps its word.”

“Based on [BAML’s] analysis the potential for lower investment are likely and the ramifications will be felt not just in telecom and cable, but potentially in the vendor sector as well. We believe the only leverage carriers have beyond the Courts in this debate are jobs and investment and both could be threatened by this move.”

“Standard and Poor’s analyst Tuna Amobi noted that a ‘third-way’ framework . . . creates potential long-term negative investment (and competitive) implications for major cable broadband providers.”

[The Impact of Title II Regulation of Internet Providers on Their Capital Investments](#)

Kevin A. Hassett & Robert J. Shapiro | Sonecon | November 19, 2014

“If the status quo continues, with data services unencumbered by Title II regulation, the several ISPs in our sample are expected to spend approximately \$218.8 billion in new capital investments over the next five years in their wireline and wireless networks. In contrast, under Title II regulation of all wireline data services, these ISPs’ wireline and wireless capital investments over the next five years would drop to an estimated range of \$173.4 billion to \$190.7 billion. Title II regulation of ISPs thus reduces these companies’ total investments by \$28.1 billion to \$45.4 billion (between 12.8 percent and 20.8 percent) over the next five years. Wireline investments by these firms would be 17.8 percent to 31.7 percent lower than expected. These estimates are based on a specification of the econometric model which weights ISPs by the number and implicit growth rate of their subscriptions, which helps them plan their capital expenditures based on projected demand. We investigated other specifications, including one unweighted for subscriptions and others which take account of different scale responses to spikes in wireless investments. In every case, a projected expansion of Title II regulation led to large reductions in investments.”

“Some proponents of Title II regulation of ISPs have tried to minimize these potential effects on investment and innovation by promising FCC forbearance from the most burdensome aspects of traditional public-utility regulation, such as tariffing, interconnection, unbundling and pricing-related regulation. Yet, many legal experts believe that FCC forbearance would entail a protracted process with significant chances for judicial reversals. Moreover, given the FCC’s

record of having once rejected Title II regulation of ISPs and now considering a reversal of that position, the prospect of Title II will continue to introduce uncertainties which in themselves will have significant effects on investment. The study reviews the impact of such uncertainties on investment and concludes that the effects are potentially large and negative.”

[Outdated Regulations Will Make Consumers Pay More for Broadband](#)

Robert Litan & Hal Singer | Progressive Policy Institute | December 2014

“Self-styled consumer advocates are pressuring federal regulators to ‘reclassify’ access to the Internet as a public utility. If they get their way, U.S. consumers will have to dig deeper into their pockets to pay for both residential fixed and wireless broadband services. How deep? We have calculated that the average annual increase in state and local fees levied on U.S. wireline and wireless broadband subscribers will be \$67 and \$72, respectively. And the annual increase in federal fees per household will be roughly \$17. When you add it all up, reclassification could add a whopping \$15 billion in new user fees on top of the planned \$1.5 billion extra to fund the E-Rate program. The higher fees would come on top of the adverse impact on consumers of less investment and slower innovation that would result from reclassification.”

[Tariffing Internet Termination: Pricing Implications of Classifying Broadband as a Title II Telecommunications Service](#)

George S. Ford & Lawrence J. Spiwak | Federal Communications Law Journal | December 2014

“While the Federal Communications Commission has taken a light-touch regulatory approach to broadband Internet access, the agency is coming under intense political pressure to reverse course and reclassify broadband Internet connectivity as a common carrier telecommunications service under Title II in order to protect the ‘Open Internet.’ Doing so would permit the Commission to regulate BSPs under Sections 201 and 202 of the Communications Act, which, it is argued, can be used to prevent Broadband Service Providers from establishing slow and fast lanes for the delivery of edge-provider traffic to consumers. Under current case law, the plain terms of the Communications Act, and the Commission’s own precedent, it is clear that “reclassification” is more than a political platitude; reclassification invokes significant and complex legal and economic issues which, in turn, require significant and complex implementation, which, in turn, will have ‘significant consequences for the global development of the Internet.’”

[Joint Economists’ Letter](#)

Babette Boliek et al. | December 9, 2014

“As economists who study information markets and U.S. regulatory processes, we express a common opinion: ‘Network Neutrality’ rules are likely to come at a high social cost. Specifically, investments in network infrastructure will tend to decline if constrained by regulatory rules that limit how such productive assets can be operated and priced.”

“Common carrier regulations were inimical to the rise of the commercial Internet. As they were stripped away, innovative economic activity of enormous social value emerged, and the light touch regulatory policies that have governed broadband networks have proven resoundingly

successful. The development of the Internet ecosystem would likely suffer under a more intrusive regime, and the threat to the explosion of mobile innovation is particularly worrisome.”

“When Title II restrictions were lifted through a long series of deregulatory rule makings (principally called Computer I, Computer II and Computer III), advanced information services emerged where they had previously been blocked. This is the view not only of academic economists. . . . It is also the view of the expert federal regulatory agency, the FCC.”

“Even when arguing for policies counter to the pattern, regulators have themselves documented the inverse relationship between broadband regulation and innovation. The emergence of the ‘Open Internet,’ as heralded in the Commission’s 2010 Open Internet Order, came about via competitive economic forces, not net neutrality regulation – and was actively thwarted, initially, by Title II rules. To re-impose such rules today is to subvert the very dynamics that grow networks and, hence, support a rich eco-system for Internet content and applications.”

[Net Neutrality and Title II of the Communications Act](#)

Bruce M. Owen | Stanford Institute for Economic Policy Research | January 26, 2015

“[T]here is little current evidence to support a call for Title II regulation. Indeed, such regulation in the past has caused more consumer harm than good, partly by enhancing industry influence on politicians and regulators, and partly by distorting prices and discouraging investment and innovation.”

“By the end of the 20th Century a broad consensus developed among economists that price regulation, even of monopolists, and certainly of industries with multiple competing suppliers, is unlikely in practice to improve consumer welfare. Maintaining efficient prices and providing incentives for progressive management of regulated firms rarely works. This is partly because the political economy of regulatory interventions tends to favor producers, not consumers. Using Title II of the Communications Act to reach the goals of net neutrality (nondiscrimination) requires price regulation of competing suppliers of Internet services.”

[Submission for the Record by the Progressive Policy Institute](#)

PPI | February 4, 2015

Obama’s plan to regulate the Internet would do more harm than good

Dr. Michael Mandel | Washington Post | November 14, 2014

“Each year, the Progressive Policy Institute (PPI) prepares an ‘Investment Heroes’ report identifying the companies that are investing the most in the United States. In 2013, the telecom and cable industry led the list with \$46 billion in investment. Compare that with Europe, where Title II-style regulations have suffocated broadband innovation and investment.”

Investment Heroes: Who's Betting on America's Future?

Diana G. Carew & Michael Mandel | Progressive Policy Institute | July 2012

“Telecom companies like AT&T, Verizon and Comcast are making huge investments in broadband infrastructure.”

“In fact, telecom companies comprise 5 of the top 25 ‘Investment Heroes.’ And it’s easy to see why. The exponential growth in consumer demand for cable and wireless data services makes it both a necessity and an incentive for these companies to invest in building out their service capabilities. Investment is what led to development of the latest high-speed 4G networks, estimated to be 50% more efficient in streaming wireless data than its 3G predecessor. What’s more, the commitment of these telecom companies to investment in wireless infrastructure, cable communications, and processing equipment is a good example of how investment can have important spillover benefits. By using the infrastructure developed and maintained by telecom companies, companies that develop software applications for smart devices along with companies that provide Internet services—like Facebook and Twitter—are able to innovate and get those innovations to consumers quickly. Because of the broadband networks in place these non-telecom companies are able to expand their businesses and service offerings.”

U.S. Investment Heroes of 2013: The Companies Betting on America's Future

Diana G. Carew & Michael Mandel | Progressive Policy Institute | September 2013

“Indeed, telecommunications and cable companies are a major driver of U.S. investment today, sparking the rise of what we call ‘the data-driven economy.’ The digital transformation of the U.S. economy would not be possible if high-speed fixed and mobile broadband networks were not in place. That’s why encouraging private investment in our nation’s broadband infrastructure is rightly a major priority. . . . [I]t is essential to have policies that facilitate continued investment in cable and telecommunications, technology, and energy.”

U.S. Investment Heroes of 2014: Investing at Home in a Connected World

Diana G. Carew & Michael Mandel | Progressive Policy Institute | September 2014

“The continued strength of domestic investment by telecommunications and cable companies is apparent. For example, Comcast moved up from being in the 10th spot last year to ranking 7th this year, on the strength of its investment in its X1 cable platform equipment, wireless gateways, and network capacity.”

“The second biggest contributor to investment growth [from 2007 to 2012] was the information sector, which includes telecom, cable, and Internet ‘edge’ companies, as well as content producers such as publishers and movie makers. Investment in this sector rose by \$21 billion (in 2012 dollars) between 2007 and 2012. Broadly speaking, the combination of telecom, tech, and content—which in another context PPI has called the tech/info sector—has been a potent force for growth.”

“Fourth, the FCC must adopt an approach to the net neutrality debate that does not choke off investment. Currently, net neutrality advocates are pushing the FCC to regulate the Internet as a

public utility, which runs counter to the light-touch regulation that has enabled the data-driven economy to prosper. Instead, a new PPI report by Bob Litan and Hal Singer proposes that the FCC should pick the policy that maximizes total investment across the entire Internet ecosystem. They suggest case-by-case adjudication of Internet anti-competitive discrimination is the best path forward for ensuring an open Internet.”

Infrastructure Investment and Economic Growth: Surveying New Post-Crisis Evidence
Diana G. Carew & Michael Mandel | Progressive Policy Institute | March 2014

“[T]he ongoing revolution in high-speed broadband would not be possible without extensive private sector investment in developing and deploying high-speed networks. . . . Private investment is what led to fixed fiber broadband speeds topping out at one gigabit per second. Further, with the deployment of these ever-faster fixed and mobile broadband networks, private sector investment in broadband continues to rise. One estimate placed private investment in broadband networks totaled \$1.2 trillion from 1996 through 2011. A 2013 White House report suggests over \$250 billion has been privately invested in wired and wireless broadband networks since 2009, and estimates \$35 billion will be privately invested in 2013 alone.”

“As PPI has previously documented, telecommunications and cable companies are among the top companies investing in America. In fact, of the top 25 companies on our list for 2013, six were telecommunications and cable companies—AT&T, Verizon, Comcast, Sprint, Time Warner Cable, and CenturyLink. Public documents show they invested in deployment of broadband networks, new equipment, and even public Wi-Fi hotspots. Together, we estimate these 6 companies invested \$50 billion over the last year, one-third of the total money invested.”

[The Net Neutrality Order: It's Worse Than We Thought](#)

Christian Dippon & Jonathan Falk | NERA | March 16, 2015

“Referencing our White Paper from among the almost four million submissions received can be taken as tacit acknowledgment that our section on harms was compelling enough to require notice; the FCC’s counter-argument was not that the harms were not real, but that they were illusory because the regulatory risks were not real. Having dispelled the notion that the regulatory risks are illusory, however, we now reassert, more strongly for having been implicitly accepted, the effects of regulatory uncertainty on innovation, end-user satisfaction with broadband service, BIAS competition, and employment in the economy. All can be expected to fall.”

“We focused our critique on Section 201(b), which we assumed would be part of the regime, and we were right. In particular, we focused on nomenclature, confident that any regulatory scheme turns on definitional issues, and litigants will attempt to exploit nomenclatural ambiguities. What we did not anticipate was the broad scope of the other provisions that would raise regulatory uncertainty, which makes the situation more of a problem.”

“Even the bright-line tests have waivers and exemptions for reasonable management practices, which the FCC will determine on a case-by-case basis. As we said in the White Paper, it would be impossible to do otherwise because the dynamic nature of the Internet ecosystem makes

predicting business models, management practices, state preemption requests, privacy waivers, and the rest unspecifiable in advance. The FCC apparently agrees with this proposition, and it agrees with the proposition that regulatory uncertainty can hinder innovation. Yet, the FCC ignores the fact that this plethora of case-by-case pleadings is anathema to regulatory certainty.”

Other Relevant Studies (Cited Frequently in GN Docket No. 14-28 But Not Submitted)

[Net Neutrality Is Bad Broadband Regulation](#)

Robert Litan & Hal J. Singer | The Economists' Voice | September 2010

“[T]he FCC is promising that the current and future FCC would refrain from invoking the more draconian levers available under Title II, including price regulation. But can telecoms rely on this promise? The verdict from the markets is ‘no.’ Investment analysts, for example, have noted that the major telecom carriers are already paying significant dividends—even more than tobacco companies—suggesting that they are too worried about future regulation to invest this money. One economic study by the Phoenix Center estimates that the May 6, 2010 announcement of the FCC’s plans to reclassify Internet service shaved ten percent from the value of stocks of cable companies that also would be subject to the FCC’s proposed new Title II regulatory regime (controlling for movements in the broader stock index), but had no effect on the stock prices of direct broadcast satellite providers that would not be subject to the proposed reclassification.”

“Cambridge Strategic Management Group estimates that the FCC’s planned reclassification of ISPs would cause 47 percent fewer households to financially justify fiber-to-the-home investment, impacting some 29 million homes nationwide.”

“Craig Moffett of Bernstein Research opines that, with the imposition of net neutrality rules and Title II reclassification, Verizon FiOS ‘would be stopped in its tracks,’ AT&T’s U-Verse ‘deployments would slow,’ and Clearwire’s investment in wireless 4G service might be scaled back. Bank of America/Merrill Lynch and Standard and Poor’s reached similar conclusions regarding adverse investment effects.”

[What Is the Effect of Regulation on Broadband Investment \(Regulatory Certainty and the Expectation of Returns\)](#)

George S. Ford & Lawrence J. Spiwak | Phoenix Center for Advanced Legal & Economic Public Policy Studies | September 19, 2012

“U.S. policymakers constantly call for increased investment in the broadband infrastructure. Yet, the FCC consistently signals to investors its intent to reduce the returns to such infrastructure through various forms of price and non-price regulation. If the government is serious about promoting broadband investment, then it needs to stop sending the wrong signals to the market. So, while Broadband Service Providers in the United States have certainly continued to invest significant sums over the past several years to support their networks and expand availability, our analysis makes clear that even higher levels of investment would be supported in a more investment-friendly regulatory climate.”

“[A]ctions by the current FCC signal an increased probability of strong price regulation of broadband services. Our model thus predicts a higher level of broadband investment in Europe than in the United States, other things constant.”

“[A]rguments for more regulation of the Broadband Service Providers due to purportedly ‘high profits’ in the industry have no empirical support. Profitability of Broadband Service Providers

is below that of the average for S&P 500 firms, and well below that of other firms in the broadband ecosystem (i.e., Google and eBay).”

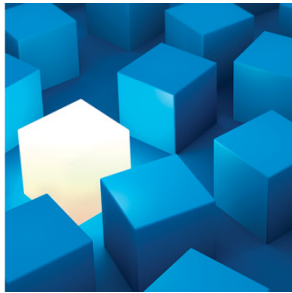
[How Europe Can Catch Up With the US: A Contrast of Two Contrary Broadband Models](#)

Martin H. Thelle & Bruno Basalisco | Copenhagen Economics | June 2013

“A decade after US and EU broadband policies took two diverging paths, investment levels are very different. In fact, the latest available OECD estimates show that investment in telecommunications networks in the US per capita is more than 50% higher than in Europe (US \$197 to US \$129).”

APPENDIX C

PUBLIC INTEREST REPERCUSSIONS IN REPEALING UTILITY-STYLE TITLE II REGULATION AND REAPPLYING LIGHT- TOUCH REGULATION TO INTERNET SERVICES



NERA
ECONOMIC CONSULTING

White Paper

by

Christian M. Dippon, PhD

Prepared on Behalf of Comcast Corporation

July 17, 2017

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EXECUTIVE SUMMARY AND KEY FINDINGS

The decision by the Federal Communications Commission (FCC) in 2015 to subject all Internet Service Providers (ISPs), including both wireline and mobile wireless providers (collectively, Broadband Internet Access Service or BIAS providers), to Title II of the Communications Act was unwise. The problem with this decision has little to do with the logic of certain specific rules that the FCC sought to establish, that is, no blocking, no throttling, enhanced transparency, and no paid prioritization (collectively, the Open Internet Rules). Rather, the problem is grounding these rules within the broad and heavily intrusive framework of Title II and creating the associated General Conduct Standard.

Notwithstanding the Agency's forbearance from a number of legacy Title II provisions, the sweeping Title II provisions that continue to apply have created substantial uncertainty and the prospect of onerous ex-post conduct and rate regulation for BIAS providers. Moreover, the Agency's seemingly broad forbearance from provisions like wholesale access and retail tariff requirements is only a temporal concept. The FCC can reverse itself at any time once Title II is invoked. From the standpoint not only of BIAS providers but also of edge providers (particularly start-ups), this risk translates into enormous regulatory uncertainty, which in turn has simple, predictable, and especially negative implications for U.S. consumers.

Under the regulatory risk and uncertainty created by the current Title II classification, there will be lower levels of investment and, relatedly, lower levels of innovation, which will lead to lower levels of Internet subscriptions, yielding lower levels of employment at the macroeconomic level. Thus, whether particular Open Internet Rules represent good social policy or not, the regulatory overhang from the imposition of Title II clearly has significant negative side effects.

This White Paper examines the public interest implications of applying Title II regulation to BIAS providers. It demonstrates that, even with substantial forbearance in its application, Title II is an attempt to fit a square peg into a round hole. Drafted in the 1930s, Title II was not designed to address the issue for which it is currently being used and is simply unworkable because it is incapable of regulating the dynamic Internet without generating immense regulatory uncertainty, compliance burdens, and distortions in edge markets that, in turn, hurt the Internet ecosystem and thus harm the public interest. Importantly, no regulator can credibly state today that Title II-based Open Internet Rules and the amorphous Title II-based General Conduct Standard have sufficient specificity to avoid these harms.

The only sensible way to implement the Open Internet Rules is through light-touch regulation, thereby avoiding the serious side effects of Title II regulation and still ensuring adherence to these rules. All of the large BIAS providers have committed to basic open Internet principles (no blocking, no throttling, etc.) that provide the fundamental consumer “net neutrality” assurances and protections reflected in the Open Internet Rules. These promises are not mere lip service, as there is no evidence that BIAS providers can profitably break the Open Internet Rules. Furthermore, light-touch regulation provides additional safeguards with the least amount of economically harmful spillover. We know what such a light-touch regime looks like—it was the regime that governed for nearly two decades before Title II reclassification. We also know the result that emerged from that regime—the dynamic Internet of today.

In the NRPM, the FCC seeks answers on whether the Title II classification serves the public interest. The answer is a resounding “no.” The economic evidence clearly demonstrates that Title II causes more harm to the public interest than any good that might come from using this regulatory framework. Specifically:

- Title II creates enormous regulatory uncertainty. Coupled with the General Conduct Standard, it establishes a regulatory environment that is completely open-ended and unknowable even in principle. This, in turn, negatively affects investment, innovation, Internet subscriptions, and U.S. employment statistics.
- There is no evidence that Title II and regulation like the General Conduct Standard are necessary to implement the Open Internet Rules. In addition to the commitments made by the major BIAS providers, there is no evidence that BIAS providers did, can, or would harm the Internet ecosystem.
- Title II is a very poor fit for the Internet ecosystem. It was developed during an era when there was no Internet. Further, it was designed to remedy an entirely different problem than the one it is purportedly being used to address today. That is, Title II, which is basically utility-style regulation, was designed to resolve the horizontal market power of plain-old-telephone-service (POTS) providers (i.e., monopoly providers). However, the problem the FCC was trying to solve with the Open Internet Rules is one of alleged vertical market power (i.e., a gatekeeper position between an edge provider and a subscriber).
- Forbearance from particular common carrier regulations is no answer to the harms and uncertainty created by Title II. Achieving the objectives of the Open Internet Rules requires forbearance from large swaths of Title II because Title II was designed for a different purpose and has many provisions that have nothing to do with blocking, throttling, anticompetitive paid prioritization, or transparency. However, as long as Title II is the law under which providers must operate, any forbearance by the FCC introduces contingency and the possibility of revocation. This regulatory uncertainty, which is unrelated to the Open Internet Rules, derives exclusively from the use of Title II. Even worse, the 2015 Open Internet Order did not forbear from some of the broad and vague Title II provisions, but it actually adopted a new General Conduct Standard, creating the prospect of wide-ranging investigations using ad hoc criteria that directly affects future investment and innovation. The prior Commission's zero-rating investigation is an indication of the kind of highly problematic regulatory uncertainty that the General Conduct Standard and Title II generally create.

- The harm to the public interest from retaining the application of Title II to BIAS providers is significant and quantifiable. Estimates of \$35 billion per year in lost investment and, cumulatively, lost jobs nationwide that may have reached 700,000 since the FCC's reclassification of BIAS providers are reasonable. These losses are the proper standard of comparison that the FCC must consider—estimates of lost investment in a world of growing investments *but for* the threat of Title II.

I. Background

A. The Road to Title II Reclassification

Comcast Corporation (Comcast) has asked me to review and respond to certain topics raised in the Federal Communications Commission's (FCC or Commission) recently issued Notice of Proposed Rulemaking (NPRM) entitled "Restoring Internet Freedom."¹ As discussed in the NPRM, since the inception of the Internet, the FCC had been regulating broadband Internet service as an information service under Title I instead of a telecommunications service under Title II of the Communications Act. In its 2010 Open Internet Order,² the Commission established no blocking and no unreasonable discrimination rules, as well as rules requiring Internet Service Providers (ISPs) to disclose their network management practices, performance, and commercial terms.³

The 2010 Open Internet Order was essentially prophylactic as there was little evidence of blocking or degrading content actually having occurred.⁴ The order also voiced concern regarding competitive choices for end users with about 70 percent of households at the time having two or fewer choices at download speeds of at least 3 Mbps and upload speeds of at least 768 kbps.⁵ In 2014, the United States Court of Appeals for the D.C. Circuit vacated the no blocking and no unreasonable discrimination rules because they impermissibly treated

¹ In the Matter of Restoring Internet Freedom, WC Docket No. 17-108, *Notice of Proposed Rulemaking*, FCC CIRC1705-05 (rel. May 23, 2017) (hereafter NPRM). All views expressed are my own.

² In the Matter of Preserving the Open Internet and Broadband Industry Practices, GN Docket No. 09-191 and WC Docket No. 07-52, *Report and Order*, FCC 10-201 (rel. Dec. 23, 2010) (hereafter 2010 Open Internet Order).

³ NPRM, ¶¶ 6, 8, 13, 19.

⁴ 2010 Open Internet Order, ¶ 41.

⁵ 2010 Open Internet Order, ¶ 32.

Broadband Internet Access Service (BIAS) providers as Title II common carriers.⁶ Consequently, the 2015 Open Internet Order reclassified BIAS providers under Title II, reinstated the no blocking mandate, added a no throttling prohibition, and transformed the no unreasonable discrimination requirement into a flat prohibition on paid prioritization.⁷ In addition, the 2015 Open Internet Order added a broad General Conduct Standard.⁸

The 2015 Open Internet Order was primarily preventative as little or no evidence was presented of additional instances of blocking, throttling, or paid prioritization harms.⁹ The 2015 Open Internet Order also expressed concerns about the broadband providers' alleged "gatekeeper" position. It claimed that consumers experience high switching costs and noted, "45 percent of households have only a single provider option for 25 Mbps/3 Mbps broadband service."¹⁰ However, because it largely relied upon the D.C. Circuit's characterization of the market as of 2009, it performed a very limited market analysis. In fact, Judge Williams in his dissent to the 2015 Open Internet Order highlighted this point, "The Commission emphasizes how few people have access to 25 Mbps, but that criterion is not grounded in any economic analysis."¹¹

B. The FCC's NPRM Questions

The FCC asks a number of questions in the NPRM related to the costs and benefits of imposing Title II regulation on BIAS providers. In particular, the Commission seeks comment on whether regulatory uncertainty resulting from both what was imposed and what is forborne under Title II

⁶ NPRM, ¶ 20.

⁷ In the Matter of Protecting and Promoting the Open Internet, GN Docket No. 14-28, *Report and Order on Remand, Declaratory Ruling, and Order*, FCC 15-24 (rel. Mar. 12, 2015), ¶¶ 4, 16, 68 (hereafter 2015 Open Internet Order).

⁸ 2015 Open Internet Order, ¶ 136.

⁹ 2015 Open Internet Order, ¶¶ 65, 102-103.

¹⁰ 2015 Open Internet Order, ¶¶ 80-81.

¹¹ *United States Telecom Association, et al. v. Federal Communications Commission*, United States Court of Appeals, District of Columbia Circuit, Statement of Circuit Judge Williams, p. 14.

affects broadband investment and innovation.¹² The Commission also asks whether the limited examples of actions that allegedly harmed consumers cited in the 2015 Open Internet Order justify the imposition of a General Conduct Standard under Title II and whether preexisting federal and state competition and consumer protection regimes along with industry adopted standards are sufficient to regulate conduct.¹³ This paper provides an economic response to these questions.

The paper is structured as follows: In the remainder of this section, I discuss the importance of basing a regulatory regime on solid economic analysis. Section II examines the economic theory and objectives of utility-style regulation. That is, I explain the objective of Title II and contrast it with the objectives of the Open Internet Rules. In Section III, I detail the harms to the Internet ecosystem from continuing to extend Title II and the related General Conduct Standard to BIAS providers. Section IV specifically examines the impact of Title II on investment and innovation. Section V quantifies the harm of Title II on U.S. employment. Section VI presents the conclusions reached in this White Paper, which highlight that the objectives of the Open Internet Rules can be achieved without Title II and should be enforced instead under the previous light-touch regulatory regime that made the Internet as successful and powerful as it is today.

C. Meaningful Regulatory Responses Must Be Based on Economic Analysis

Whether politics or other factors drove the choice to link the Open Internet Rules to Title II, the history leading to Title II reclassification of BIAS providers makes it clear that Title II was not chosen because it was the optimal means of implementing the Open Internet Rules. Indeed,

¹² NPRM, ¶¶ 48-49.

¹³ NPRM, ¶ 50.

during the period in advance of reclassification in 2015, FCC regulation was characterized by a lighter-touch regime that regulated BIAS providers clearly and effectively but with little prospect of regulatory overhang or overreach. This White Paper uses economic tools to compare these two regimes.

The central organizing principle of this assessment is that BIAS services occupy the middle of a two-sided market. Two-sided markets are those in which an entity brings two sides together for economic gain that each would find difficult to realize on its own. A classic example is an over-the-air television station; the signal from the television station provides a means for advertisers to reach consumers and for viewers to receive programming. Without the television station, it would be far more costly for viewers to receive the programming, and it would be far more costly for advertisers to reach consumers. In this example, over-the-air viewers pay nothing for the programming, whereas advertisers pay all the costs of the television station, but this is not a necessary feature of two-sided markets. The standard (pre-Internet) newspaper is an example where both advertisers and consumers paid; advertisers paid for access to those reading the newspaper whereas readers paid for the news.

The economics of two-sided markets can be quite complicated, but from the standpoint of the entity in the middle, increased profits flow from an enhanced ability to satisfy both sides of the market. Increasing the utility of subscribers makes it more likely that subscriptions will increase, and increasing subscriptions will increase the market for edge providers and thereby will

enhance their profitability. This is simply a restatement in more rigorous economic terms of the so-called “virtuous cycle” of the Internet ecosystem.¹⁴

By contrast, any negative investment effect as a result of applying Title II breaks the virtuous cycle. Decreased investment by BIAS providers lowers the utility of subscribers, all things equal, in that congestion may increase or services that require higher bandwidths may simply never find a market that provides the bandwidths they need. This lowered utility not only functions directly as a social harm but also cuts the size of the market and therefore reduces the profitability of edge providers. A decreased market then reduces the gains from innovation, resulting inevitably in less innovation. In addition, regulation directly increases the cost of innovation, reducing it further, and lowering the utility to subscribers. The Commission must examine the impact of Title II on the public interest with this cycle in mind, recognizing that harming BIAS providers will consequently also harm edge providers and consumers—the very groups that the Open Internet Rules are supposed to protect.

II. The Economic Theory of Utility-Style Regulation

Since Adam Smith’s *Wealth of Nations* in 1776, economists have observed that markets do an excellent job at allocating scarce resources among alternative uses. That said, even perfect markets cannot run without any supervision at all. All U.S. markets, for example, depend on the legal system to help prevent consumer fraud and on some kind of antitrust enforcement to prevent the undue exercise of market power.

¹⁴ “Four years ago, the Commission adopted open Internet rules to protect and promote the ‘virtuous cycle’ that drives innovation and investment on the Internet—both at the ‘edges’ of the network, as well as in the network itself.” (2015 Open Internet Order, ¶2.)

Utility-style regulation is designed to address a particular type of market failure: horizontal market power (usually flowing from economies of scale or scope) that would give a utility the ability to increase its own profits at the expense of social welfare.¹⁵ Utility-style regulation particularly focuses on the ability of a horizontally dominant utility to increase price for its service to a level above the socially optimal price and to reap so-called monopoly profits. Where horizontal market power is a problem, the standard regulatory solution is to impose regulatory approval of the prices charged by the monopolist. Title II in fact contains numerous sections relating to rate regulation, showing that horizontal market power was and remains a central concern of that specific Title.

In its order extending Title II to cover BIAS providers and its ensuing investigations, the FCC clearly indicated that it did not find horizontal market power to be a problem. For example, in its report on the pricing practice of zero-rating (which, if found, would be deemed a violation of the Open Internet Rules), the FCC explicitly denied the presence of a horizontal market power problem with respect to BIAS.¹⁶ Similarly, the 2015 Open Internet Order (at present) purposely forbore from those aspects of regulation that explicitly regulated the prices BIAS providers could

¹⁵ Horizontal market power is pricing control stemming from the ability of a firm or a small group of firms to increase prices without suffering a sufficient loss in sales so as to make the price increase unprofitable. A necessary condition of market power is that either one firm (horizontal monopoly) or only a few firms (horizontal oligopoly) supply a large share of the market for this product, but that condition alone is not sufficient to establish that market power exists. Horizontal market power need not be measured by observed market shares if markets are *contestable*, that is, if there are competitors that could quickly move in to restrain price increases.

¹⁶ See, Wireless Telecommunications Bureau, “Policy Review of Mobile Broadband Operators’ Sponsored Data Offerings for Zero-Rated Content and Services” (issued Jan. 11, 2017), p. 6, available at <https://www.fcc.gov/document/release-report-policy-review-mobile-zero-rating-practices> (hereafter Zero-Rating Investigation).

charge although it did not forbear from those provisions of Title II that could empower the FCC to impose ex-post price regulation.¹⁷

Instead, the battle over net neutrality is a battle over so-called *vertical* dominance. This theory requires most consumers to have little choice of who to select as their BIAS provider (i.e., mobile wireless and wireline) or a limited ability to switch among providers. In theory, the position in between the BIAS subscriber and the edge provider is such that a provider residing there can benefit from a competitive advantage and consequently extract additional profits purely from its relative position in the value chain. These profits purportedly will reduce economic welfare by raising prices to one side of the market or the other (or both). It is important to note that the FCC has not established horizontal market power in BIAS markets, and even if it did, there would need to be an additional step to show that the provider would have the incentive and ability to leverage its horizontal market power in related vertical markets.

Even if the conditions for vertical dominance exist (which have never been clearly established and are highly doubtful in this dynamic marketplace), they are simply not the problem that Title II was promulgated to correct. Title II was directed, first, at the question of how to regulate wireline telephone companies with horizontal monopolies: only one company provided phone service to a household and without some sort of regulation that company could charge whatever it wanted. The solution in that case was to regulate AT&T and the other wireline monopolists as *common carriers*, that is, companies responsible for connecting participants in telephone calls and earning explicitly regulated rates of return for doing so. Utility-style regulation is

¹⁷ Although such forbearance perhaps reveals a regulatory desire for lighter-touch regulation in light of significant and growing competition among BIAS providers, it nevertheless causes significant harm to the industry as price regulation (both ex ante and ex post) and other regulatory measures remain a looming possibility once Title II is invoked. See 2015 Open Internet Order, ¶¶ 31, 202–203.

fundamentally the wrong type of regulation to consider here, even *assuming* there is concern about vertical market power.

A. Economic Prerequisite for Utility-Style Regulation

Utility-style regulation requires some sort of market failure whose negative consequences are so severe that the intrusive, costly process of regulation is a better alternative. By market failure, I do not mean a market that lacks any of the attributes of a perfectly competitive market because no market behaves according to the textbook ideal. Antitrust has the concept of a workably competitive market,¹⁸ that is, a market in which the basic forces of competition work well enough so that extraordinary regulatory intervention is not required.¹⁹

This point of view takes as its starting point the notion that regulation has costs. There are direct social costs of regulation (FCC staff, regulatory staff at the utilities, reporting and compliance costs, etc.), but these are not the largest costs of regulation. Looming much larger are issues of incentives, rent seeking, and added uncertainty. However, once these costs are acknowledged, there needs to be a sufficiently large market failure to justify intervention. It is axiomatic, for example, that rate regulation “of a firm in a competitive market harms consumers: Prices set below the competitive level result in diminished quality, while prices set above the competitive level drive some consumers to a less preferred alternative.”²⁰ Thus, prior to regulatory intervention, the relevant regulatory agency must perform proper economic market analysis. No such analysis was undertaken here. Rather, the FCC simply resorted to existing utility-style

¹⁸ The FCC’s concept of an “effectively competitive” market is roughly equivalent.

¹⁹ As said earlier, there are standard regulatory aspects of the legal system that in a sense regulate *all* markets. Those background regulatory institutions (antitrust enforcement, criminal fraud statutes, trademark law, etc.) are taken as given and necessary.

²⁰ *National Association of Telecommunications and Advisers, Et Al., v. Federal Communications Commission*, No. 15-1295 (D.C. Cir. 2017) at 10 (citing Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions*, Vol. I 21, 66-67 (1970)).

regulation (i.e., Title II) with no clear vision as to how the outdated framework would be applied to BIAS services.

B. BIAS Providers Operate in a Competitive Market

BIAS providers operate in an environment that is workably competitive. This observation may seem surprising to those who follow the FCC statistics on the number of broadband subscribers and potential subscribers who have only one or two available BIAS providers. However, there are numerous problems with relying only on the FCC's statistics as indicative of the level of competition.

First, counting competitors is only one of many steps in analyzing a market's competitiveness. Many geographic markets in the United States are competitive with only two or three competitors, and in the vast majority of markets, consumers have the choice of at least two wireline BIAS providers and four wireless BIAS providers. Further, in a market as quickly moving as BIAS, competitors that have not yet emerged are not just a vague possibility; they are often strong contenders for entry. Google Fiber, for example, is in very few cities, so it counts as a BIAS option for a small fraction of the population. Yet, Google certainly has the resources to ramp up its competitiveness and may be only a relatively small innovation away from being able to compete nationwide quite quickly, including via wireless offerings.²¹ Other firms like AT&T are constantly implementing and reassessing the possibilities of nationwide entry with dramatically faster bandwidths.²² The threat of competitive entry and expansion (by Google,

²¹ See, for example, Jon Brodtkin, "Google Fiber is now a fiber *and* wireless ISP," available at <https://arstechnica.com/information-technology/2016/10/google-fiber-now-owns-a-wireless-isp-but-isnt-giving-up-on-fiber/>.

²² "GigaPower Launches in New Markets," About AT&T, available at http://about.att.com/newsroom/gigapower_launches_in_new_markets_november.html

AT&T, and others) further disciplines prices in the marketplace; simply counting existing competitors does not recognize the contestable nature of the market.

Second, the FCC characterizations of competition require a definition of what constitutes “broadband.” Currently, the download speed baseline is set at 25 Mbps and the upload speed at 3 Mbps, whereas the download speed baseline was set at 4 Mbps and the upload speed at 1 Mbps prior to the 2015 Open Internet Order.²³ Although it is certainly necessary to set some sort of definition as to what constitutes broadband, this sort of binary and seemingly random classification artificially truncates the true boundaries of competition. Indeed, it is a fundamental economic principle that competition occurs on the margin; not every customer need be in play for competition to work well. For many people, 10 Mbps service, or even 3 Mbps, is more than adequate for their needs and forms a near perfect substitute for faster bandwidths.²⁴ At the margins, even 3G wireless, which offers download speeds of around 3 Mbps, can usefully constrain wireline broadband, and 4G/LTE wireless service does so all the more. More important, almost all customers could potentially receive satellite broadband services. These services offer download speeds comparable to current 3G and 4G speeds, and although upload speeds presently are limited relative to terrestrial broadband, that is not a concern for many

²³ Micah Singleton, “The FCC has changed the definition of broadband,” *The Verge* (Jan. 29, 2015), available at <https://www.theverge.com/2015/1/29/7932653/fcc-changed-definition-broadband-25mbps>.

²⁴ Even for watching HD video on a TV screen, speeds such as 3 Mbps are adequate. See, e.g., Hulu, “Internet speed requirements for streaming HD and 4K Ultra HD,” available at https://help.hulu.com/s/article/ka041000000q29vAAA/requirements-for-hd?language=en_US (recommending speeds of 1.5 Mbps for SD video, 3 Mbps for HD video, 6 Mbps for higher-quality HD video, and 13 Mbps for 4K Ultra HD video).

consumers. Further, satellite broadband speeds are continuing to improve and new technologies are garnering substantial investor interest from major players.²⁵

As evidenced in Table 1, in 2009, only 24 percent of census tracts had access to two or more providers of 6 Mbps download service. It is sometimes difficult to recall that many (including the FCC) regarded that level of service as actually exceeding the definition of broadband at the time. In just four years and without any significant regulatory interference, 94 percent of developed census blocks had access to two or more providers of 10 Mbps service.²⁶ Table 2 presents the same statistics for 2014, 2015, and June 2016 after the FCC changed its tracking metric to census block groups.

²⁵ See, ViaSat, “High-Capacity Satellite System: Transforming Satellite Broadband,” available at <https://www.viasat.com/products/high-capacity-satellites>. See also <https://www.theverge.com/2017/6/23/15861658/ajit-pai-fcc-oneweb-approval-satellite-launch-space-internet> (discussing OneWeb and other new low-orbit non-geostationary entrants).

²⁶ The FCC estimated the percentage of households in census tracts in which providers reported residential fixed connections from 2009 through 2013 and switched to developed census blocks (i.e., census blocks that contain housing units) for 2014 forward. See, Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of June 30, 2016* (April 2017); Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of December 31, 2015* (Nov. 2016); Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of December 31, 2014* (Mar. 2016) ; Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of December 31, 2013* (Oct. 2014); Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of December 31, 2009* (Dec. 2010).

Table 1: Households Located in Census Tracts in which Providers Report Residential Fixed Connections (2009, 2013)

		At least 3 mbps downstream & over 200 kbps upstream	At least 3 mbps downstream & over 768 kbps upstream	At least 6 mbps downstream & 1.5 mbps upstream	At least 10 mbps downstream & 1.5 mbps upstream
2009	0 providers	1%	3%	19%	21%
	1 providers	7%	21%	57%	58%
	2 providers	44%	48%	22%	20%
	3+ providers	48%	28%	2%	2%
2013	0 providers	0%	0%	0%	1%
	1 providers	0%	1%	5%	5%
	2 providers	12%	13%	29%	29%
	3+ providers	88%	86%	66%	65%

Table 2: Developed Census Blocks in which Providers Report Deploying Residential Fixed Connections (2014-June 2016)

		At least 3 mbps downstream & at least 768 kbps upstream	At least 10 mbps downstream & at least 1 mbps upstream	At least 25 mbps downstream & at least 3 mbps upstream	At least 100 mbps downstream & at least 10 mbps upstream
2014	0 providers	0%	1%	30%	-
	1 providers	6%	10%	47%	-
	2 providers	20%	28%	20%	-
	3+ providers	74%	61%	3%	-
2015	0 providers	0%	1%	29%	53%
	1 providers	5%	9%	47%	36%
	2 providers	17%	24%	20%	10%
	3+ providers	78%	66%	4%	1%
June 2016	0 providers	0%	0%	21%	51%
	1 providers	0%	3%	37%	37%
	2 providers	10%	18%	29%	10%
	3+ providers	90%	79%	13%	2%

Now that some regard 25 Mbps as a minimum for broadband service, the most recent figures (June 2016) show that 42 percent of census blocks have two or more potential fixed providers. This statistic, however, significantly understates the population as a whole with access to these options because census blocks are not uniformly populated. Yet, these numbers are being used as

evidence to support the claim that a consumer's choice of BIAS providers is limited. However, there is no reason to think (as long as regulatory uncertainty does not alter the trajectory) that what used to be true of 3 Mbps service will not soon be true of 25 Mbps service: ubiquity. Of course, speeds of 5, 10, 15, and 20 Mbps no doubt provide very good substitutes for speeds of 25 Mbps or more, particularly when even the most highly intensive bandwidth applications (e.g., HD video) only use a fraction of 25 Mbps bandwidth. Notably, the most recent figures show that 97 percent of census blocks have two or more potential fixed providers offering speeds of 10 Mbps or more, and 79 percent have three or more. Moreover, there are glimmerings (through the creation of a new 100 Mbps column in the FCC survey) of a future in which, as long as innovation and investment are allowed to proceed with light-touch regulation, more and more customers will gain access to faster and faster speeds.

Third, the actual observed behavior of nominally sole providers of BIAS belies the characterization of these markets as noncompetitive. The investments made by BIAS providers are not the actions of cozy monopolists but instead look like firms that are highly motivated by the recognition that a failure to innovate means extinction. BIAS providers have been providing faster and faster bandwidth speeds at essentially flat prices (and declining prices as a function of \$/Mbps).²⁷ The dynamic competition in this industry amply demonstrates that simply counting competitors and reporting penetration statistics by unevenly populated census metrics is a misleading procedure. In an environment as rapidly evolving as the Internet ecosystem, your strongest competitor next year may not even be a company yet. Many parts of this market are

²⁷ See, Bureau of Labor Statistics Data, "Databases, Tables & Calculators by Subject" (July 7, 2017), available at <https://data.bls.gov/timeseries/pcu5171105171106>.

highly contestable as those who thought that AOL, Blockbuster Video, Yahoo, and Myspace were too powerful to stop can attest.

Fourth, for many purposes, smartphones provide an alternative means of BIAS service provision to customers. Wireless and wireline are not perfect substitutes for all Internet services because (at least at the moment) wireless bandwidth is generally more expensive and until recently was not available on an unlimited consumption basis. However, wireline and wireless serve as partial substitutes; therefore, the actions of wireline companies to influence wireless companies and vice versa are expected. In fact, some wireline providers offer wireless services and often use the same network infrastructure for both services. Further, there can be no serious dispute that for the vast majority of U.S. customers wireless companies are competing with one another. Table 3 provides the same figures as Table 1 but includes wireless as well as fixed BIAS providers. Even in 2013, the number of choices per household in census tracts dramatically increased, reflecting for many consumers the competitive reality then and today and certainly the potential for even more significant competition in the years ahead. (The FCC has not provided this data since 2013.)

Table 3: Households Located in Census Tracts in which Providers Report Residential Fixed Connections or Operate a Mobile Wireless Network

		At least 3 mbps downstream & over 200 kbps upstream	At least 3 mbps downstream & over 768 kbps upstream	At least 6 mbps downstream & 1.5 mbps upstream	At least 10 mbps downstream & 1.5 mbps upstream
2009	0 providers	1%	3%	18%	21%
	1 providers	6%	17%	56%	58%
	2 providers	35%	40%	22%	20%
	3+ providers	58%	40%	3%	2%
2013	0 providers	0%	0%	1%	1%
	1 providers	0%	0%	2%	2%
	2 providers	0%	0%	4%	5%
	3+ providers	100%	100%	95%	93%

Fifth, BIAS services are provisioned in a two-sided market, and the competition on the edge provider's side of the market is intense. Edge providers (e.g., Netflix) earn revenue directly from subscribers or through acting as an intermediary (e.g., Google) between subscribers and advertisers. They already have incentives to make the access experience for BIAS subscribers as smooth as possible using the least amount of bandwidth. Nuechterlein and Yoo point out, as both a theoretical and a practical matter, that in a two-sided market even having monopoly access to the BIAS customer may not give any leverage to the BIAS provider. "All we know is that, despite the MVPD/ISP's gatekeeper status, it is very unlikely to earn monopoly rents from any interconnection deal."²⁸ Although the animating policy concern is that BIAS providers can demand payment from an edge provider for access to subscribers, the circumstances under which they can do so are very limited,²⁹ and the FCC has not attempted to demonstrate that they are present under current conditions.

Sixth, the competitive conditions in BIAS markets are dependent on the proclivity of customers who have choices to switch providers when circumstances warrant. Although there is certainly some customer inertia, the basic wiring and even the equipment at the customer's premise can usually be repurposed to any BIAS provider.³⁰ If both Spectrum and Verizon FiOS offer service to a particular household, then switching between services is a simple matter. In fact, many

²⁸ Jonathan E. Nuechterlein and Christopher S. Yoo, "A Market-Oriented Analysis of the 'Terminating Access Monopoly' Concept," Penn Law Faculty Scholarship Paper 1612 (2015), pp. 32–33.

²⁹ Without attempting to give an exhaustive set of circumstances, Nuechterlein and Yoo posit as requirements: "(1) a retail provider controls exclusive access to a potential recipient of a communication and could feasibly condition that access on the receipt of a termination payment, (2) a mechanism exists for the originator of the communication to make that payment either directly or indirectly, and (3) the originator has a strong need to reach the particular recipient in question and thus would be willing to pay supracompetitive rates to do so." All three of these, particularly (1) and (3), do not seem to fit large swaths of the BIAS market and are certainly questionable where interconnection is available through numerous routes to BIAS providers, and the market for switching is robust generally, even if not in particular areas.

³⁰ Wireless may be slightly different in that the handset may be imperfectly interoperable. However, competitors can often address that with the promise of a new free handset to switchers.

customers switch BIAS providers regularly in response to various promotions and offers.³¹ Surveyed results filed with the FCC show that one-third of all subscribers have changed their provider in the last two years and almost half in the last four years.³² This is consistent with a survey commissioned by the FCC in 2010—presumably a less competitive broadband market than at present—which reported that 36 percent of customers had switched broadband providers within the prior three years.³³ The heavy national and regional advertising that BIAS providers (both wireless and wireline) do would make little sense otherwise.

C. Title II Reclassification Is a Poor Solution in Search of a Problem

Before categorizing the harms of Title II reclassification and in light of the Nuechterlein and Yoo results mentioned in the previous section, it is worth considering exactly why the FCC sought to mandate the Open Internet Rules. The popular argument for intrusive rules regarding the Internet seems to stem directly from an incorrect assumption that most customers have only one actual BIAS provider. However, as expressed by the FCC, the real fear is that BIAS providers will leverage a terminating monopoly (often called a gatekeeper position) with the customer by playing off one edge provider against another (or by favoring their own edge provision of services). However, as explained, the potential for subscriber retail price increases because of a lack of competition (i.e., the exercise of horizontal market power) was not a concern.

Significantly, the Commission did not adopt the open Internet rules based on a finding that broadband providers have market power, but rather on the

³¹ Customer churn has long been recognized as a fact in telecommunications since the beginning of competition. See, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, DA 16-1061, *Nineteenth Report*, WT Docket No. 16-137 (rel. Sept. 23, 2016), ¶ 18; see also, Keith Nissen of SNL Kagan, “US consumers switching multichannel service providers remarkably steady,” (June 13, 2017), source: S&P Global Market Intelligence.

³² Filings of Comcast and Time Warner in FCC Docket 14-57, September 23, 2014.

³³ “Broadband decisions: What drives consumers to switch – or stick with – their broadband Internet provider,” FCC Working Paper (Dec. 2010), p. 2, available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-303264A1.pdf.

Commission's determination that broadband providers function as "gatekeepers" with the capability to control or restrict end user customers' ability to utilize Internet content and services as well as edge providers' ability to deliver their offerings to consumers.³⁴

Moreover, although this vertical "gatekeeper" threat is alleged, there are very few examples of the FCC's alleged potential abuse ever occurring. The few examples mentioned by proponents of intrusive rules for the Internet, such as BIAS providers controlling access to their networks and the ability to "threaten the open nature of the Internet ... due to consumer switching costs,"³⁵ are both outdated and fleeting in their application. In fact, the competitive mischief feared as both possible and likely turns out to be not very feasible or lucrative for the gatekeeper at all.

Long gone are the days when AOL and Yahoo were valuable precisely because they "controlled" user access to the Internet. The "walled garden" concept in which the BIAS provider's homepage was its subscriber's window to the Internet and the BIAS provider gave its subscriber standard services like email and news dramatically evolved. This evolution was driven by consumers' preferences for a more open and less curated experience that allowed them to "surf" for content they desired instead of content they were fed. More and more, edge providers emerged to provide the services that subscribers wanted, and the BIAS providers' offerings became just another option for consumers, although BIAS providers do continue to provide core information processing services such as DNS lookup, caching, and security features for the vast majority of BIAS customers. The BIAS providers were unable to use their supposed gatekeeper status either to thwart this entry or to demand payment to make up for any loss of their own provision of service to a new competitor. BIAS providers have learned that providing excellent Internet

³⁴ FCC Wireless Telecommunications Bureau Report, "Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Content and Services" (Jan. 2017), p. 7.

³⁵ 2015 Open Internet Order, ¶¶ 97–98.

access service is their comparative advantage—including ubiquitous access to third-party content and services. Further, the better they do it, the more money they will make. It is for this reason that it is firmly in their interest to adhere to the Open Internet Rules, at least insofar as the Open Internet Rules make their subscribers better off.

As Nuechterlein and Yoo point out, it is not a terminating monopoly alone (again, ignoring potential retail competitors including wireless) that causes inefficient outcomes. If it were, very small ISPs in rural communities with few subscription choices for BIAS services would be the most capable of extracting monopoly rents.

There is skepticism about whether the Open Internet Rules are the solution to a problem (whatever its theoretical merits) that does not seem to have materialized very often in actual markets and is unlikely ever to emerge. Instead, the concern here is about the real and demonstrable harms that have already emerged from the use of Title II to address this theoretical problem.

III. Title II Harms the Economic Outlook of the Internet Ecosystem

The objective of regulatory intervention in a market is to remedy a specific problem (e.g., market failure), which in turn would enable competition and innovation. As proclaimed by President Clinton at the signing of the Act of 1996:

But this [Internet] revolution has been held back by outdated laws, designed for a time when there was one phone company, three TV networks, and no such thing as a personal computer. Today, with the stroke of a pen, our laws will catch up with our future. We will help to create an open marketplace where competition and innovation can move as quick as light.³⁶

³⁶ Remarks by President Clinton in Signing Ceremony for the Telecommunications Act Conference Report, Library of Congress, February 8, 1996.

With this statement, President Clinton established two crucial objectives: (1) laws should be updated in light of technological progress and market changes, and (2) updated laws should further competition and innovation. The corollary of these objectives is that laws designed for outdated technologies and different market structures when applied to new and rapidly changing technologies in the highly dynamic Internet ecosystem hinder innovation and competition. As discussed in the following sections, applying Title II to BIAS providers violates both of these fundamental and logical objectives.

A. The Effects of Title II on BIAS and Edge Providers

The FCC failed to update Title II in light of technological progress and market changes, and its decision to classify BIAS providers under Title II failed to create competition and innovation. In fact, it did the opposite.

Because Title II is an inapt place to house the Open Internet Rules, it comes as no surprise that the FCC tried to customize its application of an unwieldy and bloated set of monopoly requirements by forbearing from large portions of Title II and then incorporating into that jerry-rigged framework additional vague regulatory concepts. There is a marked difference between the absence of regulation and forbearance because the latter introduces significant regulatory uncertainty. Even if the FCC decides to forbear from regulating BIAS providers from certain or many provisions of Title II in the near term, the fact that at any time it could implement additional rules under Title II jurisdiction creates uncertainty in the industry.

All telecommunications providers need to know with certainty what regulations they are subject to as it is critical to their business planning efforts and continued operations. Choosing to invest in a project is an inherently risky enterprise. The farther out in time a firm must go to earn a

revenue stream that recovers the investment, the more exposed to risk the investment becomes. Case-by-case inquiries mean that the future revenue streams needed to recover investment can become prospectively non-remunerative and in the worse cases through fines and settlements in essence declared retroactively illegal. A rational business owner has to consider this possibility in deciding whether to make an investment or to offer a new service to the market. This increased uncertainty unambiguously cuts expected future cash flows and therefore unambiguously reduces the probability of investment and innovation even in cases where the regulator would have eventually approved the investment.

In practice, the response of companies to this sort of uncertainty is to create a *hurdle rate*. A hurdle rate for a capital project is simply the incremental return to capital projects required over and above the cost of capital to the firm to account for the fact that sinking capital is an irreversible decision.³⁷ This incremental capital cost forms a barrier to investment: if regulatory uncertainty increases the cost of capital by 1 percent, projects that would have been approved without regulatory uncertainty now may not have a high enough rate of return to meet the hurdle rate. For a BIAS provider, the Title II contribution to regulatory uncertainty is in addition to all the other sources of uncertainty that the firm faces. At the margins, lost investment follows from a continuum of investment projects compared against a new higher standard for funding.

This problem is endemic to regulated markets; however, as a historical matter, regulations imposed under Title II solved it by guaranteeing rates of return for all prudently incurred investments. Prices were set at a level that guaranteed cost recovery plus a reasonable rate of return. There was still some regulatory uncertainty about what was or was not “prudently

³⁷ Avinash K. Dixit and Robert S. Pindyck, “The Options Approach to Capital Investment,” *Harvard Business Review* (May-June 1995), p. 7.

incurred,”³⁸ but for the most part the regulatory bargain (“I’ll build what seems to be needed as long as I am guaranteed a return”) worked fairly well.

Where it falls apart, however, is when the parts of Title II that are used to guarantee rates of return are properly forborne from as inappropriate to address the current perceived need by some for extremely intrusive Internet regulation. In that case, the regulatory uncertainty of still being subject to ratemaking jurisdiction remains but with no backstop of guaranteed returns, so investment and innovation inevitably suffer.

This has been seen before in practice. The following assessment of investment by ILECs in telecommunications equipment is an example:

It was only after the courts affirmed the FCC’s 2005 Triennial Review Remand order (TRRO), which greatly reduced the ILEC’s unbundling obligations, especially with respect to fiber, hybrid-fiber, and packetized switching, and UNEP, that ILEC investment finally began to grow again.³⁹

The current case is even worse; the FCC makes no promises at all about returns on investment, nor could it because the customers of BIAS providers are not captive. Thus, the choice to invest capital on the part of BIAS providers is now hostage not only to market forces but also to regulatory uncertainty that flows directly from Title II reclassification. As Jason Furman notes:

We also must recognize that investments in infrastructure depend critically on a stable, predictable and light touch regulatory regime. Companies make major financial commitments upfront and only realize the returns to these commitments over time. To make the investments, they require stability and predictability.⁴⁰

No one knows, not even the regulators themselves, exactly how the Open Internet Rules will be interpreted. To the extent that the FCC knew, the 2015 Open Internet Order could have simply

³⁸ See, for example the nuclear power plant construction disallowances in the 1980s and 1990s.

³⁹ Anna-Maria Kovacs, “Regulation in Financial Translation: Investment Implications of the FCC’s Open Internet Proceeding” (Oct. 2014), p. 21.

⁴⁰ Jason Furman, “Total Factor Productivity and Telecommunications: Policy Ingredients for Shared Growth,” AEI’s Center on Internet, Communications and Technology Policy (Sept. 17, 2013).

announced those interpretations, but it did not know. In no fewer than 17 places in the 2015 Open Internet Order, the FCC announced that it would consider particular issues on a “case-by-case basis.”⁴¹ However, anyone making an investment must take into account their own assessments of FCC future rulings in deciding which investments to make in their networks. This uncertainty always accompanies the adoption of new regulations to some degree. However, the uncertainty was made exponentially worse by the broad prescriptive language of the General Conduct Standard, which prohibits practices that “unreasonably interfere with or unreasonably disadvantage the ability of consumers to reach the Internet content, services, and applications of their choosing or of online content, applications, and service providers to access consumers.”⁴² Taken together with decades of inapt precedent in applying the underlying Sections 201 and 202 of the Act largely to monopoly telephone providers in a pre-Internet era now applied to BIAS providers, the uncertainty becomes overwhelming.

Moreover, although forbearance was certainly welcome in the short term, the case-by-case uncertainties ultimately are made even worse by a forbearance-dependent regime. The FCC forbore from any ex-ante rate regulation in the 2015 Open Internet Order; however, there are no enforceable (against the FCC) rules that make forbearance dependable. There is literally nothing in the 2015 Open Internet Order that would stop a future FCC from imposing explicit rate regulation under the auspices of Title II. For example, under the *Chevron* doctrine, the FCC’s decisions to forbear generally are entitled deference, and so, presumably, are the decisions to undo forbearance.⁴³ Even worse, to the extent that *Chevron* is itself under attack,⁴⁴ the decision to

⁴¹ Christian Dippon and Jonathan Falk, “The Net Neutrality Order: It’s Worse Than We Thought,” (Mar. 16, 2015), pp. 6–8.

⁴² NPRM, ¶ 72.

⁴³ *Chevron U. S. A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984).

forbear on some aspect of Title II classification could in the future be taken away from the FCC entirely and left to a court to decide.

B. The General Conduct Standard and the Zero-Rating Investigations

One of the first contentious examples of the problems portended by the prior Commission's case-by-case approach to evaluating new BIAS offerings under Title II has to do with the practice of "zero-rating" where BIAS providers (particularly wireless providers) exclude certain Internet services from usage-based billing policies. The FCC's initial investigations into wireless carriers' zero-rating plans really gave us the earliest insight as to what Title II reclassification could mean for new investment and innovation in the provision of BIAS.

In January 2017, the FCC released its "Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Content and Services."⁴⁵ That report analyzed four different zero-rated mobile wireless plans against a list of 16 qualitative criteria and found that two plans were problematic and two were not.⁴⁶ The 16 criteria themselves are not prioritized in any particular way, nor could anyone know exactly how FCC staff would evaluate each program against these criteria, much less how the criteria themselves would be weighted together to give a "thumbs up" or a "thumbs down" to particular offerings. To the extent that general principles could be gleaned from the treatment of the particular services at issue and their differences, the companies involved had no ability even to guess in advance how these inquiries would conclude.

⁴⁴ See, for example, Ilya Somin, "Gorsuch is right about Chevron Deference," *The Washington Post* (Mar. 25, 2017), available at <https://www.washingtonpost.com/news/volokh-conspiracy/wp/2017/03/25/gorsuch-is-right-about-chevron-deference>.

⁴⁵ See, Zero-Rated Investigation.

⁴⁶ The FCC looked at T-Mobile Binge On, AT&T Data Perks, AT&T Sponsored Data, and Verizon FreeBee Data 360. See, Zero-Rated Investigation, p. 1.

Finally, as an indication about how variable this open-ended regime can be, in under a month (February), Chairman Pai stopped all investigations of zero-rating programs. Of course, under Title II, his successors would be free to start them up again at any time.

I address the Zero-Rating Investigation report in more detail when I discuss the particular harms to innovation from Title II reclassification. However, this case study demonstrates how the effect of such actions on BIAS provider incentives for future investment and innovative pricing could be devastating. Determining what services to offer and the price and conditions under which to offer them are at the core of business decision making. At a minimum, innovative pricing plans like these will require an entire round of second-guessing not about whether the given service is in the public interest but whether the FCC will *think* it is. Even after the FCC's Zero-Rating Investigation report, there is no reason to think that future zero-rating investigation offerings will be able to be assessed by their originators even against the 16 *announced* case-by-case qualitative criteria, not to mention others that might be in the offing but simply not contemplated at the time of the 2015 Open Internet Order.

Although the Zero-Rating Investigation report focused on wireless BIAS providers, the consequences for edge providers are probably even worse. All (or almost all) zero-rating programs, as well as other sponsored data plans that the FCC lumped into its zero-rating inquiry, involve agreements between edge providers and BIAS providers.⁴⁷ These providers need to decide whether to participate in these offerings and to incur marketing expenses, investment costs, consumer education costs, and support costs in doing so. Their decisions to participate will clearly depend on how the FCC views the actions of their BIAS partners. However, whatever

⁴⁷ 2015 Open Internet Order, ¶ 151.

expertise BIAS providers might glean over time through interactions with FCC staff and Commissioners on these policies, there is no particular reason to expect edge providers to be similarly engaged. Their uncertainties, therefore, are magnified by not being even a direct party to the regulators' inquiries.

As bad as the zero-rating experience proved to be, it is only the tip of the iceberg as to how widely the General Conduct Standard might range. Grounded in Sections 201 and 202 of Title II, the General Conduct Standard is breathtakingly broad. These statutory sections provide:

All charges, practices, classifications, and regulations . . . shall be just and reasonable, and any such charge, practice, classification, or regulation that is unjust or unreasonable is hereby declared unlawful It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services . . . by any means or device, or to make or give any undue or unreasonable preference of advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.⁴⁸

The General Conduct Standard, in turn, provides the Commission's interpretation of these obligations in the Internet context and states:

Any person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not unreasonably interfere with or unreasonably disadvantage end users' ability to select, access, and use broadband Internet access service or the lawful Internet content, applications, services, or devices of their choice, or edge providers' ability to make lawful content, applications, services, or devices available to end users. Reasonable network management shall not be considered a violation of this rule.⁴⁹

At this time, the text of the FCC's General Conduct Standard is open-ended, undefined, and uninterpreted, and the dynamic nature of BIAS competition will make these exercises very difficult for the agency. The resulting regulatory uncertainty for both innovative edge providers

⁴⁸ 47 U.S. Code §§ 201 and 202.

⁴⁹ 2015 Open Internet Order, ¶ 21.

and for BIAS providers, however, is eminently foreseeable. Successful edge providers will find themselves defending (without even being a direct party to a complaint) allegations by unsuccessful edge providers that their failures stem from some ISP practice that disadvantaged them. Consumers will have a poorer experience with the unsuccessful edge provider. That edge provider in turn will deflect blame for the poor experience with higher latency, presumably the result of some provisioning decision of its ISP's network. Litigation will ensue, and even if the successful firm wins regulatory uncertainty will thwart its opportunities to expand. All that is required is a colorable argument by the losing edge provider that its business model was disrupted in any way by network issues.

The vagueness of the General Conduct Standard is not a minor feature but a central part of its design. Although it may be the case that no one has the foresight to state with any specificity practices that violate some overarching notion of proper conduct, the proper response to this lack of foresight is to put people on notice after evidence of harm is found and to work to fashion solutions that satisfy all parties. Instead, the General Conduct Standard has put the onus on the BIAS providers themselves with decision-making power about their culpability left to future decision making by the FCC. This structure harms both investment and innovation.

IV. The Imposition of Title II on BIAS Providers Has a Chilling Effect on Investment and Innovation

Advocates of Title II reclassification for BIAS providers as the best and only means of implementing the Open Internet Rules fully understand that their position is undermined if such reclassification in fact deters investment and innovation. The FCC admits as much in the 2015 Open Internet Order:

As discussed below, we forbear from application of many of Title II's provisions to broadband Internet access services, and in doing so, provide the regulatory certainty necessary to continued investment and innovation.⁵⁰

The FCC essentially admits that the foundation of continued investment and innovation is regulatory certainty. Therefore, it must accept the corollary that actions that promote regulatory uncertainty will yield contrary results.

In assessing the BIAS marketplace in relation to the FCC's recent Title II reclassification decision, one oft-cited proposition by supporters of that action that can be rejected is the shibboleth that actual investments in 2016 were higher than in 2015. This sort of evidence in no way indicates whether investments were thwarted. The relevant standard for continued investment is not the difference from last year's investment but what this year's investment would have been were it not for Title II reclassification. Internet infrastructure spending will always grow with traffic volumes and increasing competition, but the question is whether it is growing fast enough to enable new service offerings, whether it is growing in the right places, and whether the risks of investment can support the cost of these investments. Year-on-year growth is not particularly informative.

By contrast, as explained in the following, the FCC's activity has created a significant investment gap, a decrease in investment that given the regulatory uncertainty created by the 2015 Open Internet Order can only be attributed to the Title II reclassification process. In this, I am fully in agreement with Kevin Hassett and Robert Shapiro. Their paper ties the likelihood of investment shortfalls directly to the characteristics of Title II reclassification and, by reference to

⁵⁰ 2015 Open Internet Order, ¶ 419.

the economics literature, demonstrates that the effects observed are plausibly caused by regulatory uncertainty.⁵¹

A. Title II Has a Negative Impact on BIAS Provider Investments

1. Qualitative Evidence from 10-K Statements

One way the increased riskiness of operating under Title II is reflected is in the filings made by the publicly listed BIAS providers to the U.S. Securities and Exchange Commission (SEC). For example, following the 2015 Open Internet Order, the five largest public BIAS providers (AT&T, Verizon, Comcast, Charter, and Cablevision) all included the potential effects of the Order in their discussions of risks to their business so that investors were aware.⁵² Verizon's statement:

For example, in its order imposing so-called “network neutrality” regulations, the FCC reversed course in 2015 on the longstanding “light touch” approach and “reclassified” broadband Internet access services as telecommunications services subject to utilities-style common carriage regulation. While the full scope and effect of this new regulatory approach is uncertain, these rules limit the ways that a broadband Internet access service provider can structure business arrangements and manage its network and open the door to additional restrictions, including rate regulation that could adversely affect broadband investment and innovation.⁵³

Similar discussions of these risks are found in AT&T, Comcast, Charter, and Cablevision's 2016 SEC filings.⁵⁴

⁵¹ Kevin A. Hassett and Robert J. Shapiro, “Regulation and Investment: A Note on Policy Evaluation under Uncertainty, With an Application to FCC Title II Regulation of the Internet By American Enterprise Institute Georgetown Center for Business and Public Policy and NDN,” Georgetown Public Policy Paper (July 2015).

⁵² SEC, Form 10-K, AT&T Inc., December 2015, EX-13 5, pp. 19, 38; Verizon Communications Inc., December 2015, p. 14; Comcast Corp., December 2015, pp. 17, 28; Charter Communications, Inc., December 2015, pp. 36-37; Cablevision Systems Corp., December 2015, pp. 14, 23.

⁵³ SEC, Form 10-K, Verizon Communications Inc., December 2015, p. 14.

⁵⁴ SEC, Form 10-K, AT&T Inc., December 2016, EX-13 5, p. 39; Verizon Communications Inc., December 2016, p. 19; Comcast Corp., December 2016, p. 17; Charter Communications, Inc., December 2016, p. 29; and SEC, Form S-1, Altice USA, Inc., April 11, 2017, p. 29.

2. The Case of Rural Broadband Investment

Negative investment incentives following a regulatory decision are not new. The FCC has previously experienced the negative impact of uncertainty on broadband investment. In October 2011, the FCC initiated a revision of the method by which carriers with universal service obligations received compensation (Universal Service Transformation Order).⁵⁵ The FCC's proposal was driven by several factors, including adapting support mechanisms from voice only to voice and broadband, as well as by concerns that carriers were not spending the compensation they received efficiently.⁵⁶ Compensation mechanisms for wireline carriers differed by carrier type, defined as either "price cap carriers" (RBOCS and other large and mid-sized carriers) or "rate-of-return carriers" (smaller carriers).⁵⁷ For the rate-of-return carriers, where the FCC felt that its current rules "lessen[ed] incentives for some carriers to control costs and invest rationally," the FCC proposed instituting "regression analyses to estimate appropriate levels of capital expenses and operating expenses for each incumbent rate-of-return study area and limit expenses falling above a benchmark based on this estimate."⁵⁸ In particular, it proposed capping recovery for capital and operating expenses using quantile regressions based on publicly available cost and other data.⁵⁹ The Commission tasked its Wireline Competition Bureau to design the cost model by no later than July 1, 2012, and to publish updates to the capped values

⁵⁵ Universal service falls under section 254 [47 U.S.C. 254] of the Communications Act of 1934. [In the Matter of High-Cost Universal Service Support, WC Docket No. 05-337, *Report and Order and Further Notice of Proposed Rulemaking* (rel. Nov. 18, 2011), ¶ 60 (hereafter Universal Service Transformation Order).]

⁵⁶ Universal Service Transformation Order, ¶¶ 5, 7.

⁵⁷ Universal Service Transformation Order, ¶¶ 21, 206.

⁵⁸ Universal Service Transformation Order, ¶¶ 211-212.

⁵⁹ Universal Service Transformation Order, ¶ 216.

each year.⁶⁰ Those companies whose costs exceeded the cap would receive what was euphemistically called a “revised support amount.”⁶¹

The Commission required the Wireline Competition Bureau to compare the costs of similarly situated companies using statistical techniques.⁶² The Wireline Competition Bureau derived two quantile regression analyses, one to generate a capital expense (capex) limit and one to generate an operating expense (opex) limit with the limits set at the 90th percentile.⁶³ Those companies above the percentile would receive support at the capped value with the savings going to companies not constrained by the cap.⁶⁴

One of the original goals of the Universal Service Transformation Order was to “provide for more predictable funding for carriers.”⁶⁵ The quantile regressions turned out to be complicated to perform, and it was difficult to generate accurate results for a number of reasons. One analysis concluded:

[T]he effect of the use of the model as an automatic disallowance is to create a much higher degree of unpredictability and to incent very conservative levels of spending by an individual carrier so that it does not risk shortfalls in recovery on its high-cost spending.⁶⁶

These concerns were directly reflected in the investment data. For example, the NTCA–The Rural Broadband Association released a survey in February 2013. The results of the survey

⁶⁰ Universal Service Transformation Order, ¶¶ 24, 27, 218.

⁶¹ Universal Service Transformation Order, ¶ 218.

⁶² In the Matter of High-Cost Universal Service Support, WC Docket No. 05-337, *Order* (rel. Apr. 25, 2012), ¶ 8 (hereafter 2012 Universal Service Order).

⁶³ The use of a 90th quantile benchmark means that the quantile regression outputs results that describe a line where 10 percent of the actual capex and opex costs are above the line and 90 percent below the line. (2012 Universal Service Order, ¶ 10.

⁶⁴ 2012 Universal Service Order, ¶¶ 5, 10.

⁶⁵ Universal Service Transformation Order, ¶ 18.

⁶⁶ Vincent H. Wiemer & Michael J. Balhoff, “White Paper: Lessons from Rebuilding the FCC’s Quantile Regression Analysis” (Feb. 2013), p. 28.

indicated that more than two-thirds of the respondents postponed or cancelled plans to make network upgrades:

[B]ecause of uncertainty surrounding the FCCs ongoing Universal Service Fund and intercarrier compensation reforms . . . in particular regarding new caps that are based upon volatile, untested models and over the threat of additional cuts, caps and constraints on cost recovery that are still being considered by the FCC.⁶⁷

The effect of these uncertainties was felt in diminished investment. For example, CoBank, a major lender to rural telecommunications carriers, noted that the uncertainty caused by the quantile regression analysis made “it increasingly difficult for [them] to extend credit for the purpose of deploying ubiquitous rural broadband networks.”⁶⁸ Consequently, even though CoBank had more than \$3.3 billion in loan commitments to over 200 rural communications companies, it made no loans for the purpose of network improvements in 2012.⁶⁹ Similarly, on February 15, 2013, the U.S. Department of Agriculture Rural Utility Service (RUS), which is a major provider of rural telecom infrastructure loans, reported to the FCC that unlike in other years, “demand for loans dropped to roughly 37% of the total amount of loan funds appropriated by Congress in FY 2012.” The stated reason was borrower “hesitation to increase debt.” RUS requested that the FCC “restore certainty,” in part by addressing the concerns of rural carriers regarding the quantile regression methodology.⁷⁰ The investment effects of uncertainty continued beyond 2012.⁷¹ This rural broadband example illustrates that investor uncertainty can have

⁶⁷ NTCA, “Survey Shows Rural Telecommunications Carriers Postponing, Delaying Network Upgrades Because of Regulatory Uncertainty” (Feb. 19, 2013).

⁶⁸ Robert West (CoBank) letter to Marlene H. Dortch (FCC), In the Matter of High-Cost Universal Service Support, Ex Parte Notice, WC Docket No. 05-337, May 8, 2012.

⁶⁹ Robert West (CoBank) letter to Marlene H. Dortch (FCC), In the Matter of High-Cost Universal Service Support, Ex Parte Notice, WC Docket No. 05-337, May 8, 2012; Michael J. Balhoff and Bradley P. Williams, “State USF White Paper: New Rural Investment Challenges,” June 2013, p. 1.

⁷⁰ John Charles Padalino (RUS) letter to Marlene Dortch (FCC), In the Matter of High-Cost Universal Service Support, Ex Parte Notice, WC Docket No. 05-337, February 15, 2013; Michael J. Balhoff and Bradley P. Williams, “State USF White Paper: New Rural Investment Challenges,” June 2013, p. 25.

⁷¹ See, for example, Prepared Statement of Lang Zimmerman, Vice President, Yelcot Communications, Mountain Home, AR; on Behalf of NTCA--The Rural Broadband Association, “Coordinating Future Investments in

negative effects on investment levels. It is surely the same effect here with respect to the uncertainty engendered by the FCC's Title II reclassification of BIAS providers.

3. Empirical Estimates of Direct BIAS Provider Investment Shortfalls

Unsurprisingly, for an examination of regulatory risk, the chilling effects of regulatory uncertainty can begin long before specific regulations are actually promulgated. Indeed, the failed attempt to impose the Open Internet Rules (or something like them) in 2010 and the subsequent knowledge that the FCC was clearly trying to find an acceptable alternative legal rubric under which to mandate the Open Internet Rules began to create a downturn in broadband investment. The best empirical statement of this proposition comes from Dr. George S. Ford, Chief Economist at the Phoenix Center.⁷²

The methodology for Ford's study was particularly clear: Bureau of Economic Analysis time series for investments were compared to those series that were the best match for the investment series for the telecommunications sector. The selected benchmark series, appropriately, turned out to be other highly capital intensive sectors with heavy technological focus, particularly, computing, electronic equipment, and machinery investments. By comparing the investment levels from before Chairman Genachowski's beginning explorations of Title II reclassification to the investment levels that resulted from the FCC's drive to reclassify, Ford estimated an investment gap of approximately \$35 billion per year, around a fifth of total investment. He also conducted a number of robustness tests on this analysis and found the downturn levels were

Broadband," Hearing Before the Subcommittee on Livestock, Rural Development, and Credit of the Committee on Agriculture, House of Representatives, One Hundred Thirteenth Congress, Second Session, July 29, 2014.

⁷² George S. Ford, "Net Neutrality, Reclassification and Investment: A Counterfactual Analysis," *Phoenix Center Perspectives* 17-02, (Apr. 25, 2017), available at <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf>; George S. Ford, "Net Neutrality, Reclassification and Investment: A Further Analysis," *Phoenix Center Perspectives* 17-03, (May 16, 2017), <http://www.phoenix-center.org/perspectives/Perspective17-03Final.pdf>.

robust with respect to alternative measures of comparison groups and time periods of uncertainty.⁷³ The follow-up paper showed that disaggregating investments between various components had little effect on the estimates.⁷⁴ Interestingly, these appear unrelated to notions of the Open Internet Rules themselves, as he discerned no slowdown in investment from Chairman Powell's attempts to make net neutrality rules in the absence of Title II regulation. Ford found, in line with my understanding and experience with regulatory uncertainty, that it was not the specific rules that cause the problem; it was embedding the rules in Title II's freewheeling regulatory framework that caused the uncertainty.⁷⁵

Other studies have reached similar results. The CTIA Annual Year-End 2016 Top-Line survey of wireless carriers found an absolute 17.4 percent capital expenditure decline between 2015 and 2016.⁷⁶ No comparison group is offered, which makes a clear interpretation somewhat challenging. However, it is interesting to see that the slowdown did not happen until the FCC made known that wireless carriers, which before this period were previously exempted from its most arduous Open Internet Rules, were somewhat surprisingly swept into the 2015 Open Internet Order's reclassification of BIAS providers as a Title II telecommunications service and made subject to all of them.⁷⁷

⁷³ George S. Ford, "Net Neutrality, Reclassification and Investment: A Counterfactual Analysis," *Phoenix Center Perspectives* 17-02 (Apr. 25, 2017), p. 8.

⁷⁴ George S. Ford, "Net Neutrality, Reclassification and Investment: A Further Analysis," *Phoenix Center Perspectives* 17-03, (May 16, 2017), p. 1. In particular, Ford takes his low estimate of \$150 billion and splits it between property and equipment (\$20 billion per year) and intellectual property (\$10 billion). My estimate of \$35 billion uses his midpoint estimate in the first paper.

⁷⁵ *Ibid.*, p. 4.

⁷⁶ CTIA slideshow, slide 5, available at <https://www.ctia.org/docs/default-source/default-document-library/annual-year-end-2016-top-line-survey-results.pdf?sfvrsn=2>.

⁷⁷ Edward Wyatt, "Obama Asks F.C.C. to Adopt Tough Net Neutrality Rules," *The New York Times* (Nov. 10, 2014), available at <https://nyti.ms/1svTyg0>.

Michael J. Horney, a Research Associate at the Free State Foundation, estimates somewhat smaller losses through comparing shortfalls from a linear extrapolation of USTelecom’s announced investment patterns over time. Although this study lacks a control group and assumes linear extrapolation, it nevertheless supports the general observation that regulatory uncertainty such as that created here chills investment.⁷⁸ Using nonparametric statistical methods, George Ford also analyzed both the CTIA and USTelecom data over the last 14 years and verified the conclusions of the Horney study. He finds that the 2016 slowdown in investment was well outside normal levels of investment variation. Notwithstanding, he acknowledges that the lack of a control group makes a definitive attribution of this slowdown to Title II classification difficult, but concludes that “something is afoot in the broadband business.”⁷⁹

B. Title II Has Had a Negative Impact on Innovation

As serious as the investment losses have been and will continue to be if the Title II process continues in earnest, the innovation losses are almost surely worse. They are also impossible to precisely measure because there is no good metric for innovative input. As pointed out at the time of the 2015 Open Internet Order, the Title II-based General Conduct Standard—far more than the Open Internet Rules—would open large debates about the meaning of the terms and would lead to business uncertainty. The 2015 Open Internet Order allowed that uncertainty would be harmful to innovation, stating:

We are mindful that vague or unclear regulatory requirements could stymie rather than encourage innovation, and find that this approach combined with the factors set out below will provide sufficient certainty and guidance to consumers,

⁷⁸ The Free State Foundation, “Broadband Investment Slowed by \$5.6 Billion Since Open Internet Order” (May 5, 2017), available at <http://freestatefoundation.blogspot.com/2017/05/broadband-investment-slowed-by-56.html>.

⁷⁹ George S. Ford, “Reclassification and Investment: A Statistical Look at the 2016 Data,” Phoenix Center (July 13, 2017), p. 1, available at <http://www.phoenix-center.org/perspectives/Perspective17-08Final.pdf>.

broadband providers, and edge providers—particularly smaller entities that might lack experience dealing with broadband providers—while also allowing parties flexibility in developing new services.⁸⁰

The fact that the FCC attempts to lay out qualitative criteria under which it will make these case-by-case determinations in no way lessens regulatory uncertainty. Like capital investments, implementing innovations requires significant financial resources and long lead times that are economically costly to reverse, and whose outcome is particularly uncertain. As an example, the zero-rating investigation is again instructive. This review began in December 2015. The review finally concluded on January 11, 2017, over a year later—an eternity in Internet time—with an acceptance of T-Mobile’s Binge On and a rejection of AT&T’s Sponsored Data program and Verizon’s FreeBee Data 360.⁸¹ Such protracted and standardless reviews with their uncertain outcomes are not conducive to investment and innovation. On February 3, 2017, each of the carriers received a letter rescinding the conclusions previously expressed by the Wireless Telecommunications Bureau.⁸² As Commissioner O’Rielly phrased it, this allowed these and other companies to “safely invest” under a “permissionless innovation” regime, unless of course the Title II overhang is continued.⁸³

The “virtuous cycle” of innovation leading to investment leading to innovation can be broken just as easily by a slowdown in innovation as by a slowdown in investment. Given that Internet

⁸⁰ 2015 Open Internet Order, ¶ 138.

⁸¹ Wireless Telecommunications Bureau Report, “Policy Review of Mobile Broadband Operators’ Sponsored Data Offerings for Zero-Rated Content and Services,” attached to Tom Wheeler (FCC Chairman) letter to The Honorable Edward J. Markey, January 11, 2017.

⁸² Nese Guendelsberger (Acting Chief Wireless Telecommunications Bureau, FCC) letters to Kathleen Grillo (Senior Vice President and Deputy General Counsel Public Policy and Government Affairs, Verizon), re: Verizon’s FreeBee Data 360 Offering, February 3, 2017; Kathleen Ham (Senior Vice President, Government Affairs, T-Mobile), re: T-Mobile’s Binge On Program, February 3, 2017; Robert W. Quinn, Jr. (Senior Executive Vice President, External and Legislative Affairs, AT&T), re: AT&T’s Sponsored Data and Data Perks Program, February 3, 2017.

⁸³ FCC News, “Statement of Commissioner Michael O’Rielly on Conclusion of Zero Rating Inquiries,” February 3, 2017.

congestion has not been one of the hotter regulatory topics since the Netflix disputes with ISPs and the rise of Content Delivery Networks (CDNs) to move delivery of content closer to consumers, the inference is that the observed investment slowdown is reflective of an innovation slowdown. Were investment to slow without a concomitant innovation reduction, then we would see increased congestion, particularly as volumes naturally rose from previous innovations.

Although the regulatory uncertainty inherent in the Title II reclassification is aimed squarely at BIAS providers, edge providers and consumers will bear the brunt of reduced innovation. Before reclassification, BIAS providers mostly wanted to accommodate new edge providers and services as seamlessly as possible because it is from the value of the services they provide that they maintain and increase subscribers, the main source of their revenue. No one to my knowledge seriously believes that any ISP gets more revenue from its own edge services (except to the extent that Google, through Google Fiber, is a BIAS provider) or payments from edge providers than it gets from subscribers, whether now or in the future under Title II or even under the status quo. Luring and keeping subscribers will always trump ancillary revenue sources however lucrative. In particular, losing subscribers by raising the costs of an edge provider's services is a good way to hasten the dynamic competitive forces leading to its demise.

Under the Title II regime, however, if an edge provider comes to an ISP with a proposal for a new service that requires additional network capacity or some additional work from the BIAS provider, the ISP then must add an assessment of the regulatory process and its likely outcome against both the Open Internet Rules and the General Conduct Standard to its provisioning protocols. Thus, reclassification has added something time consuming, often contentious, and costly to the innovation process: Title II Clearance. Of course, it is only reasonable that the BIAS provider would want to be paid for these extra costs because it must incur them whether or not

the particular new service is successful. Additionally, edge providers may be subject to their own new administrative and/or reporting requirements that might require them, either directly or through the BIAS providers, to seek permission from the Commission prior to offering a new service or launching a new platform.

The Commission wanted to preserve “permissionless innovation,” but, as the zero-rating example shows, these permissionless innovations come with the potential of a retroactive finding of illegality. New costs and regulatory uncertainties compound the risks already present through the uncertainty of market acceptance for the application. This increases the edge provider’s costs and is the reason why it is reasonably certain that some innovations are never funded in the first place. Those innovations that are on the margin between being funded or not in the absence of regulatory uncertainty now cannot make an economic case irrespective of what the FCC might have ultimately concluded. The cost of the regulatory process is burdensome and the result uncertain. An ISP will likely want some type of commitment from the edge provider before it undergoes the regulatory process, which further increases the edge provider’s risk. The entire process deters innovation. In today’s environment, getting your product to the market quickly is critically important. Regulation is an impediment to this because it slows down the introduction of new and innovative services to the public.

V. Induced Inefficiency and Job Losses through Title II Reclassification

This White Paper does not present a full cost-benefit analysis of Title II reclassification. Rather, reasons why the Open Internet Rules are not that valuable and why consumer welfare will suffer from decreased investment (making the Internet more congested) and decreased innovation (making the Internet less valuable to consumers) are given. In a traditional cost-benefit analysis,

investments represent costs not benefits. Investments are used as a shorthand lower-bound estimate to benefits on the theory that investments that pay off must have satisfied sufficient consumer utility to represent a benefit. Moreover, because self-interested corporations do not make investments they do not expect to pay off, the investment changes can be used as proxies for consumer satisfaction.

Similarly, employment impacts are really costs, not benefits. On the other hand, they can be regarded as proxies for consumer welfare somewhere in the economy because the decision to hire additional employees would not rationally be undertaken unless that investment paid off. Ultimately, consumers must value the additional services provided in order to provide the extra revenue to the companies to bear the costs of the extra employees.

Note also that when discussing employment impacts a much more diffuse set of welfare standards is being considered because not only the direct employment effects at the BIAS providers and edge providers but also the “knock-on” effects throughout the economy enabled by better Internet services are being discussed. If an app allows a restaurant to more efficiently take orders from nearby customers and thereby expands its employment in order to fulfill its orders, that firm’s gain in employment is not seen by either the BIAS provider or the edge provider that wrote the app.

There are two sources on the general effects of Internet services on employment that are sufficiently reliable. The first, by Crandall et al. (as cited in my filing in the 2015 Open Internet

Order proceeding),⁸⁴ is the only credible attempt that directly ties employment to broadband subscription rates.⁸⁵ It suggests that a one-percentage point increase in broadband penetration leads to a 0.2–0.3 percent increase in employment.

Applying my previous methodology (see footnote 84), only 47 percent of households actually take the 25 Mbps or better connections that the FCC currently deems to be broadband.⁸⁶ In 2013, speeds this fast were so unlikely that the FCC did not even tabulate this data. Thirty-three percent have slower connections, split about evenly between those with 10 Mbps connections and those with dial-up speeds. Merely upgrading those connections could cut U.S. unemployment significantly. Even if it is presumed that the upgrade from 10 Mbps to 25 Mbps has no employment effect at all (at the time of the Crandall study 10 Mbps would have been considered broadband already), inducing the other 17 percent to subscribe would make these households fundamentally more productive.⁸⁷ Households with slower connections that do not have broadband-speed connections are clearly interested in some level of Internet services. Current broadband services are simply not valuable enough to them to support upgrading. Innovations that they find worthwhile will induce them to subscribe. Investments in litigation, regulatory wrangling, and regulatory delay are productive investments only to those who make a living by their involvement in the regulatory process: lobbyists, lawyers, and expert witnesses.

⁸⁴ Christian Dippon and Jonathan Falk, “Economic Repercussions of Applying Title II to Internet Services” (Sept. 9, 2014), available at <https://ecfsapi.fcc.gov/file/7522639528.pdf>. The employment effects are discussed on pages 31–33.

⁸⁵ Robert Crandall, William Lehr, and Robert Litan, “The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data,” *Issues in Economic Policy* (The Brookings Institution), No. 6, (July 2007).

⁸⁶ See, Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of June 30, 2016* (April 2017), Figure 32.

⁸⁷ The 17 percent is derived as the difference between the 80 percent of households that had connections with speeds of 200 kbps in at least one direction and the 63 percent with speeds of at least 10 Mbps down. (Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of June 30, 2016* (April 2017), Figure 32.)

Therefore, opening the door to more competition and more innovation is our best hope for convincing an additional 17 percent of U.S. households to subscribe to the FCC's current concept of broadband. Applying the employment multiplier above suggests that as many as eight million additional jobs could be created if Title II reclassification were the only thing standing in the way of getting everyone to subscribe to broadband.⁸⁸ It is not, but creating unnecessary impediments is taking public policy in the wrong direction.

However, this issue can also be approached from another angle. Ford used the same techniques that he used in estimating investment losses to estimate employment losses in the telecommunications sector.⁸⁹ He estimated, using the same techniques as his prior study but this time using data on employment instead of investment, a loss of around 100,000 additional telecommunications jobs below what might have otherwise been expected in the absence of Title II reclassification.

The final step of this analysis is to try to project this effect to national employment figures. This can be done through the investment effect and standard economic multipliers. The Ford study predicts shortfalls in investment of roughly \$35 billion per year. A paper by Sosa and Audenrode,⁹⁰ using the Bureau of Economic Analysis RIMS II data and other industry data, estimated that each additional dollar of capital spending generated 20.4 jobs for every million dollars invested in capital equipment. Consequently, the shortfall of \$35 billion per year

⁸⁸ Derived from a 17 percent increase in subscribership times 0.3 percent employment increase times a current U.S. workforce of just under 160 million. See, <https://data.bls.gov/timeseries/LNS11000000>.

⁸⁹ George S. Ford, "Regulatory Revival" and Employment in Telecommunications, Phoenix Center (June 12, 2017), available at <http://www.phoenix-center.org/perspectives/Perspective17-05Final.pdf>.

⁹⁰ David Sosa and Marc Van Audenrode, "Private Sector Investment and Employment Impacts of Reassigning Spectrum to Mobile Broadband in the United States" (Aug. 2011), p. 5, available at http://www.analysisgroup.com/uploadedfiles/content/news_and_events/news/sosa_audenrode_spectrumimpactstudy_aug2011.pdf.

translates to 714,000 jobs (35,000 MM\$ Invested x 20.4 jobs/MM\$). Although this is far higher than the Ford estimate of 100,000 jobs within the telecom industry, it includes the effects in other industries, particularly construction, and within the precision with which such estimates can be made suggests a similar effect. Weighed against the estimate using the methodology of implied jobs lost through subscriber penetration, it suggests that broadband subscribership might already be as much as 1.5 percent lower than it would otherwise be ($0.17 \times 714,000 / 8,160,000$) without the regulatory uncertainty engendered by Title II reclassification.

VI. Conclusion: The Objectives of Net Neutrality Can Be Achieved without Title II

Beyond the negative effects of Title II in reduced investment, innovation, and jobs that this White Paper has been devoted to explaining and quantifying, what can a light-touch regulatory regime do that Title II cannot? If the light-touch regime is well structured, it can implement the economically important part of the Open Internet Rules without causing unnecessary regulatory uncertainty. No regulatory regime can obviate all regulatory uncertainty. However, the particular light-touch regime that got us the amazing 19 years of progress when the FCC treated Internet services as information services not telecommunications services seems appropriate. Whatever regulatory uncertainty is present in that regime, it certainly did little to stop the development of the Internet.

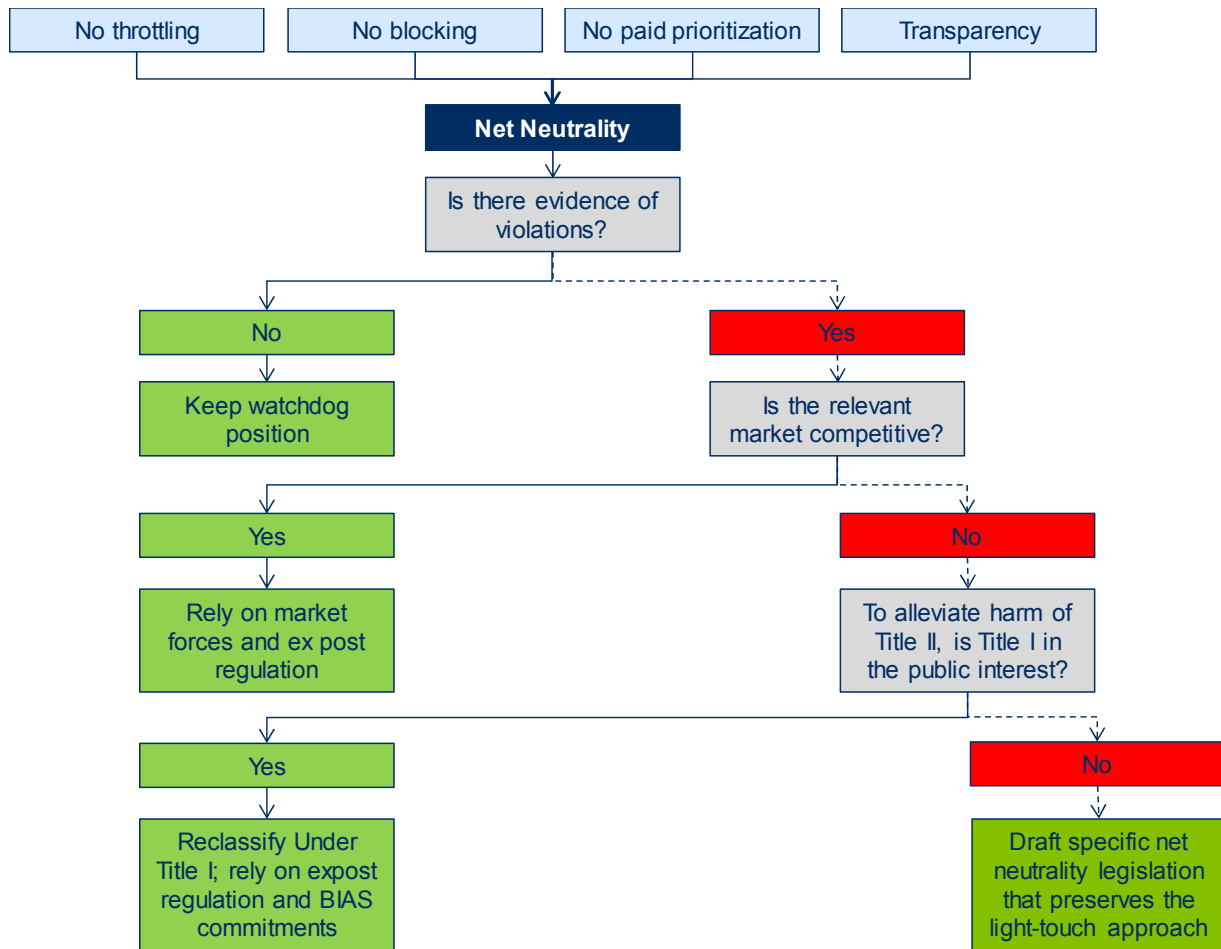
Schematically, one could think of light-touch regulation in terms of a flowchart that gives regulators many places to stop an inquiry. But, most critically, it starts with the observation and delineation of an actual existing problem that is causing inefficiency and consumer harm in the present, not one that conceivably might have some harm in the future. This may seem to some like social policy malpractice—why wait for a problem when you could intervene in advance?

The answer is simple: no regulator knows the future of an industry as dynamic as the Internet ecosystem confidently enough to make such predictions, and the future is uncertain enough even to its participants that piling on additional regulatory uncertainty, no matter how well-intentioned, is likely to do more harm than good.

Once a problem is identified, however, light-touch regulation does not stop there. The next threshold question is whether market conditions are such that the industry can solve the problem on its own. This would critically require an actual inquiry into real competitive choices faced by the particular consumers disadvantaged by some practice. Can they switch providers to an alternative in which the problem is absent? Do they care enough to do so?

Light-touch regulation can achieve the aims of the Open Internet Rules, albeit with some lag and some actual harms suffered by some consumers but without the costs of Title II, which creates continuing harms for all consumers. Schematically, the flowchart for light-touch regulation is depicted in Figure 1.

Figure 1: Flowchart for Regulation



The bottom line is that the FCC can achieve its goals for an open Internet without importing the archaic principles and onerous restrictions embedded in Title II that stifle investment and innovation and cause job losses.

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