Before the
Federal Communications Commission
Washington, DC 20554

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

COMMENTS OF THE OPEN TECHNOLOGY INSTITUTE AT NEW AMERICA

July 17, 2017

Michael Calabrese
Sarah Morris
Amir Nasr
Eric Null
Joshua Stager

Taliesin Gabriel
Andrew Manley
Paul St. Clair
Open Technology Institute | New America
740 15th St NW Suite 900
Washington, D.C. 20005

Table of Contents

Executive Summary

The 2015 Open Internet Order protects consumers and the free market principles that have made the internet a robust engine of innovation and job creation. The majority of Americans only have one choice for a high-speed internet provider, leaving those broadband companies with immense power over the individuals who live in the areas they cover, even on top of the gatekeeper power they enjoy even in markets with more than one provider. Consumers have to pay these companies for their service or they are left without access to tools for education, employment opportunities, healthcare, commerce, government services, and news and information that the internet provides. The power broadband companies hold over consumers is not merely theoretical. History shows that without strong net neutrality rules, broadband companies will discriminate between certain bits of online traffic. Internet service providers have blocked or throttled against traffic for content including voice services and video streaming services for both affiliates of the broadband companies and for unrelated online services as well. Such discriminatory practices harm consumers who pay for access to the internet without manipulation from internet service providers and also distort the market by allowing BIAS providers to dictate winners and losers in the massive online marketplace.

The Commission took action in 2015 to classify broadband internet service as a telecommunications service under Title II of the Communications Act, giving the agency

sound legal grounds to protect consumers and regulate the broadband industry. The D.C. Circuit Court of Appeals upheld the Commission's authority to reclassify broadband as a Title II service last year in a sweeping victory for internet freedom. The Commission's move to classify broadband as a telecommunications service is therefore necessary to sustain basic protections for both consumers and edge providers against discriminatory practices by the broadband ISPs that control the on-ramps to the internet.

If the Commission moves to reverse the classification of broadband as a Title II service it would also undermine consumer privacy, damage efforts to bring broadband access to low-income Americans, and dampen investment in the internet economy. Without Title II jurisdiction over broadband providers, the Commission will have no authority to police the privacy practices of internet service providers, companies that gather large amounts of consumer private information. Similarly, the FCC's ability to offer subsidies for standalone broadband service through its recently-modernized Lifeline program is contingent on Title II classification. The Commission's move in 2016 to update the program to enable recipients of the subsidy to choose standalone broadband programs along with bundled voice and broadband and voice-only programs marked a significant move forward to bridging the digital divide. The Commission's ability to offer standalone broadband service would be under substantial threat in the absence of Title II classification.

The Commission should also retain its authority to protect the public from interconnection abuse. Some of the most flagrant cases of consumer harm took place as a

result of disputes among access internet service providers and the transit providers, content delivery networks, and edge services with which they interconnect. The Commission must not lose its clear authority to protect against these harms.

OTI also supports regulatory parity between fixed and mobile BIAS providers. There is a strong public interest in ensuring that all Americans have largely the same expectations, opportunities and access to content and services online no matter how they connect to the Internet. The Commission must maintain a common regulatory framework for fixed and mobile BIAS providers. Divergent rules for fixed and mobile networks would run contrary to consumer experience and also distort markets for competing broadband internet access services. The recent trends of mass adoption of mobile computing devices, the nationwide deployment of high-speed 4G/LTE networks and incoming 5G technologies, the massive offloading of mobile device data traffic over unlicensed Wi-Fi/wireline connections, the resulting rapid convergence of mobile and wireline networks, and new technologies that facilitate consumers switching back and forth seamlessly between truly mobile (carrier) and nomadic (wireline via Wi-Fi) networks, all support a common regulatory framework.

Any technical differences between BIAS networks—whether cable, satellite, mobile LTE or some other technology—are best accommodated by a Reasonable Network Management exception that is flexible but also strictly limited to purely *technical* (and not business) considerations. The same fundamental principles and obligations should apply

to *all* broadband ISPs, even if the resulting rules are *applied* differently based on what is reasonable network management for a particular Internet access technology.

OTI also strongly believes the Commission has no basis to find that mobile broadband is less of a "commercial" mobile service (CMRS) now than it was in 2015. Today there is no networked service more open, interconnected and universally offered than mobile broadband Internet access service. Mobile carriers integrate VoLTE and Wi-Fi calling, over the internet, to any IP or NANP user. And applications such as Google Voice give both IP- and NANP-addressed users the capability to communicate and interconnect. Whether or not the classification of mobile BIAS as a "private" mobile service (PMRS) was plausible in 2007, in 2017 the *NPRM*'s proposal to redefine mobile BIAS as a "private" radio service (akin to a private taxi or push-to-talk workplace network) – and not as a "commercial" service (akin to the mobile calling and texting services) – only serves to reinforce the fact that the more consistent and natural interpretation of the Act is the one adopted by the FCC in 2015 and upheld by the D.C. Circuit Court in 2016.

Like the 2007 *Wireless Declaratory Ruling*, the current *NPRM* struggles to justify the classification of mobile BIAS as a "private" mobile radio service (PMRS). What is most obvious in 2017 is that mobile BIAS is not remotely comparable to PMRS. Even if the Commission reverses its 2015 finding that mobile BIAS meets the literal definition of CMRS, the clear and extensive record of technological and marketplace changes since 2007 must lead the agency to conclude that mobile BIAS is the "functional equivalent" of CMRS.

I. Introduction

The Federal Communications Commission ("The Commission") has strong net neutrality rules in place that are working for the American people and economy. The rules, and their Title II legal framework, have been upheld in their entirety in federal court. They are, simply put, the best way to ensure that the internet remains a thriving platform for innovation, commerce, speech, and democracy. The Commission enacted the *2015 Open Internet Order* ("The 2015 Order") on the basis of the most robust public docket in the agency's history. That record demonstrated the dramatic changes to the internet ecosystem over the past two decades, including an increasingly consolidated market for broadband internet access service ("BIAS") in which most Americans rely on one of four dominant providers: Comcast, AT&T, Charter, and Verizon. This consolidation amplified the inherent gatekeeper power that all BIAS providers possess as terminating access monopolies. The record also showed significant changes in network technology that enable companies to discriminate against particular types of traffic or users, an ability that did not exist in 1996. As technology allowed BIAS providers to manipulate traffic to their own benefit, the need for strong, enforceable net neutrality rules became apparent.

Now, a mere two years later, the Commission proposes repealing the 2015 *Order* in the above-referenced Notice of Proposed Rulemaking ("NPRM"). A wholesale repeal of the rules, especially with no apparent replacement regime, is an extreme proposal. The Commission must explain why the significant harms identified in 2015 should now be

ignored to accommodate such a radical deregulatory shift. However, the NPRM fails to provide persuasive evidence to justify repealing vital rules that are protecting consumers, small businesses, edge providers more generally and the open internet. Instead, the NPRM poses questions based on flawed assumptions and wild speculation. The best available evidence points to one inescapable conclusion: the 2015 Order is working. In the interest of protecting consumers, closing the digital divide, promoting broadband competition, and retaining the democratic nature of the internet, the Commission should preserve the 2015 O*rder* in its entirety and rescind its misguided NPRM.

II. Net neutrality protects vital economic, political, and social benefits of the open internet.

Net neutrality ensures that the internet continues to exist as a digital public square that fosters free expression, civic engagement, and access to information. New businesses flourish in an ecosystem of permissionless innovation, and internet users can access the breadth of resources the internet has to offer without gatekeeper interference. The NPRM proposes summarily upending this status quo.

As gatekeepers to the internet, BIAS providers exert great leverage in the internet ecosystem. In the absence of strong rules, BIAS providers can cut preferential deals to provide "fast lanes" for some websites and leave smaller competitors with slower access. Virtually every company has some online presence, whether or not the firm is dubbed a "tech company." Businesses rely on the internet to sell products and services, to reach customers, and to market themselves to a bigger audience. This free market exists because

of net neutrality. Without it, BIAS providers could strangle innovation and extract rents from virtually every corner of the American economy.

Indeed, many entrepreneurs have argued that without the 2015 Order, their businesses would have never made it off the ground. More than 150 companies told the Commission in 2014 that net neutrality was "a central reason why the Internet remains an engine of entrepreneurship and economic growth."[1] Etsy, an online retail platform that hosts 1.3 million small business owners, a majority of whom are women, has noted that a lack of strong net neutrality rules would undermine its ability to attract investment capital.[2] Similarly, video streaming service Vimeo stated that it "has flourished due to network neutrality."[3] Countless other companies, from online retailers to payment service apps, rely on net neutrality to ensure their ability to compete with established, well-resourced companies.

While Chairman Pai has argued that his proposal to repeal the 2015 *Order* will help the American people,[4] relinquishing the Commission's authority would give BIAS providers immense power over Americans' access to information and crucial services. Mayors of cities ranging from Boston, Mass., to Lincoln, Neb., have urged Chairman Pai to keep the 2015 Order and argued that his proposal "would have a particularly negative impact on middle and working class families, while simultaneously restricting access to

[1] *See* Letter from Amazon, et. al, *Protecting and Promoting the Open Internet*, GN Dkt. No. 14-28 (May. 07, 2014), *available at* https://static.newamerica.org/attachments/9594-over-100-companies-call-on-fcc-to-protect-network-neutrality/Company_Sign_On_Letter_051414.e2e8cb6a80ce4d5d85c7728673b39668.pdf.
[2] *See* Comments of Etsy, Inc., GN Dkt. No. 14-48 (July 8, 2014).
[3] Comments of Vimeo, LLC, GN Dkt No. 14-28 (July 15, 2014) at 6.
[4] *See* Remarks of FCC Chairman Ajit Pai at the Newseum (April 26, 2017), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0427/DOC-344590A1.pdf.

certain types of online content and services to those who cannot afford to pay more." The mayors stressed the importance of the startup communities in their cities and how they depend on the 2015 Order.[5]

The internet has also been a democratizing force, changing how Americans access news and information and evolving into a critical platform for grassroots organizing and political change. The internet is a level playing field for content creators that has given rise to an entirely new media landscape that was reflected in a Pew Research Center study conducted last year: Half of all adults surveyed aged 18-to-29 said they "often" get news online, as did 49 percent of adults aged 30-to-49 (pluralities in both age demographics).[6] In the modern media and information landscape, it is crucial to retain enforceable rules that prohibit BIAS providers from blocking, throttling or instituting paid prioritization schemes that could favor certain content or content creators. Without enforceable net neutrality rules, there will always remain the threat of a BIAS provider favoring certain news or information over others based on the political ideology of that company's leadership, by manipulating the speeds of politically-bent news organizations' websites or blocking content. If the Commission repeals the 2015 Order, there will be no rules prohibiting that sort of behavior. The free flow of information is contingent on the

[5] *See* Mayoral Letter to FCC Chairman Ajit Pai (July 12, 2017), *available at* https://www.boston.gov/news/mayoral-letter-fcc-chairman-net-neutrality (stating: "When internet providers restrict access to certain types of content and services and charge residents for the luxury of accessing information and services online, we are all less free to participate in the modern economy. For these and many other reasons, repealing these crucial protections will prove disruptive for our residents, our families, our small businesses, and countless others including nonprofits, schools, and libraries").

[6] Amy Mitchell et al., *Pathways to News*, The Pew Research Center (July 7, 2016), *available at* http://www.journalism.org/2016/07/07/pathways-to-news.

preservation of an open platform for reporters, writers, researchers, bloggers, and everyone seeking to have their voice heard. Senator Al Franken summarized this concern well recently on the Senate floor when he said, "Unrestricted public debate is vital to the functioning of our democracy. Now, perhaps more than ever, the need to preserve a free and open internet is abundantly clear."[7]

The 2015 Order is particularly important as the media marketplace becomes increasingly consolidated with the broadband industry itself. Comcast's purchase of NBCUniversal in 2011,[8] AT&T's proposed acquisition of Time Warner,[9] and the news that Verizon is considering acquiring CBS, Comcast, or Disney,[10] all reflect the growing concentration of the media and broadband sectors. As broadband companies grow and take over content creators, it carries with it the threat that they could favor their own information platforms over others, providing those websites with faster speeds or better connection in times of breaking news or otherwise.

III. The 2015 Order was a legally appropriate and necessary response to threats to the online marketplace and the American people.

A. The Commission had ample evidence that discriminatory conduct threatened consumers and the open internet.

[7] *See* Sam Gustin, *Here's How Trump's FCC Is Threatening Your Free Speech,* Vice Motherboard (May 18, 2017), https://motherboard.vice.com/en_us/article/qkgabm/heres-how-trumps-fcc-is-threatening-your-free-speech.
[8] *See* Reuters, *Comcast completes NBC Universal merger* (Jan. 29, 2011), *available at* https://www.reuters.com/article/us-comcast-nbc-idUSTRE70S2WZ20110129.
[9] *See* AT&T Press Release, *AT&T to Acquire Time Warner* (Oct. 22, 2016), *available at* http://about.att.com/story/att_to_acquire_time_warner.html.
[10] *See* Scott Moritz, *Verizon's CEO Is Open to Deal Talks, From Comcast to Disney*, Bloomberg (updated on April 19, 2017, 8:13 AM EDT).

History shows that in the absence of strong net neutrality rules, BIAS providers will discriminate against online content. Since the internet's conception, it has developed as an open, end-to-end network. Traffic flows were dictated by users at the edge, with internet service providers playing a largely passive role in traffic delivery. Technological developments later enabled ISPs to target traffic based on content or particular user, prompting several FCC chairmen to support the nondiscrimination principles of net neutrality. The NPRM would undermine these efforts and constitute a major step back for the open internet.

None of this history is news to the Commission; these harms were discussed extensively and referenced in the 2015 Order.[11] Distressingly, the NPRM downplays or ignores that evidence when it claims there is "virtually no quantifiable evidence of consumer harm."[12] For the benefit of the Commission, OTI will again recount the concrete evidence that, without strong net neutrality rules, consumers will be subject to traffic manipulation and discriminatory conduct. BIAS providers have violated open internet principles in the past. The first notable instance occurred when Madison River Communications was investigated by the Commission for blocking ports used by

[11] *See generally* Comments of OTI, *Protecting and Promoting the Open Internet*, GN Dkt. No. 14-28 (Mar. 23, 2014) ("Mar. 2014 OTI Comments"); Reply Comments of OTI, *Framework for Broadband Internet* Service, *Protecting and Promoting the Open Internet*, GN Dkt. Nos. 10-127, 14-28 (Sept. 15, 2014) ("Sept. 2014 OTI Reply Comments"); Comments of OTI, *Framework for Broadband Internet* Service, *Protecting and Promoting the Open Internet*, GN Dkt. Nos. 10-127, 14-28 (July 17, 2014) ("July 2014 OTI Comments"); Comments of Electronic Frontier Foundation, *Protecting and Promoting the Open Internet*, GN Dkt. No. 14-28 (July 15, 2014); *Preserving the Open Internet, Broadband Industry Practices*, GN Dkt. No. 09-191, WC Dkt. No. 07-52, Report and Order, 25 FCC Rcd. 17905 (Dec. 23, 2010) ("2010 Open Internet Order"); *Protecting and Promoting the Open Internet*, GN Dkt. 14-28, Report and Order, 30 FCC Rcd. 5601, (Mar. 12, 2015) ("*2015 Open Internet Order*").

[12] *Restoring Internet Freedom*, WC Dkt. No. 17-108, Notice of Proposed Rulemaking, 32 FCC Rcd. 4434, at para. 76 (2017) ("2017 NPRM").

competing VoIP services.[13] Ultimately, Madison River settled in a consent decree that included a $15,000 fine.[14] In other instances, AT&T blocked, or attempted to block, voice and voice-like services that could compete with its mobile voice platform.[15]

ISPs have also blocked non-voice services. In 2009, AT&T blocked the Sling media player from streaming video over AT&T's 3G network while allowing video streaming from affiliated partners such as DirecTV.[16] In 2011, Verizon blocked access to third-party tethering applications on Android devices, requiring consumers to purchase expensive tethering plans.[17] The Commission ultimately found this to be in violation of the C-Block spectrum rules that stated providers "shall not deny, limit, or restrict the ability of their customers to use the devices and applications of their choice," and Verizon paid a $1.25 million settlement.[18] Yet in spite of these settlement terms, Verizon continued to employ anti-competitive blocking practices. In 2013, Verizon and T-Mobile blocked their

[13] *See Madison River Communications, LLC and affiliated companies*, DA 05-543, Consent Decree, 20 FCC Rcd. 4295 (2005).
[14] *Ibid.*
[15] *See* Phillip Elmer-DeWitt, *Group asks FCC to probe iPhone Skype restrictions*, Fortune, Apr. 03, 2009 http://for.tn/1tpwDoy (AT&T blocking Skype on the iPhone); Erica Ogg, *Apple blocks Google Voice app for iPhone*, CNet, July 28, 2009 http://cnet.co/2t0KdIu (Apple withholding App Store approval of the Google Voice app, possibly at the request of AT&T); Cecilia Kang, *AT&T faces complaint over iPhone Facetime blocking*, The Washington Post, Sept. 18, 2012 http://wapo.st/S5kq7u?tid=ss_tw&utm_term=.740bed61b826 (AT&T blocked customers with legacy unlimited data plans from accessing Apple's FaceTime while connected to the mobile network).
[16] Comments of Sling Media Inc., *Preserving the Open Internet Broadband Industry Practices*, GN Dkt. No. 09-91, WC Dkt. No. 07-52, 5-6 (filed Jan. 14, 2010). While separate firms at the time of this blocking, AT&T acquired DirecTV in 2015; *see also* Nelson Granados, *AT&T-DirecTV Merger Is Approved But Conditions Will Only Last Four Years*, *Forbes* (July 24, 2015) https://www.forbes.com/sites/nelsongranados/2015/07/24/att-directv-merger-is-approved-but-conditions-will-only-last-four-years/#38f63a936a4f.
[17] Terrence O'Brien, *Carriers crack down on Android tethering apps, rain on our mobile hotspot parade*, Engadget (May 02, 2011), https://www.engadget.com/2011/05/02/carriers-crack-down-on-android-tethering-apps-rain-on-our-mobil.
[18] Terrence O'Brien, *Verizon to stop blocking tethering apps, settles with FCC for $1.25 million*, Engadget (July 31, 2012), https://www.engadget.com/2012/07/31/verizon-to-stop-blocking-tethering-apps-settles-with-fcc-for-1.

customers' access to the Google Wallet mobile payment application.[19] While Verizon claimed they were motivated by security concerns,[20] T-Mobile publicly stated that they were giving preference to their own competing mobile payment system dubbed "Isis."[21]

BIAS providers have also blocked traffic that doesn't compete with affiliated services. In 2008, the Commission ordered Comcast to halt discriminatory throttling of peer-to-peer applications such as BitTorrent.[22] Evidence also suggests Cox was engaged in peer-to-peer interference at the time.[23] In 2013 and 2014, at least four BIAS providers allowed their networks to become critically congested until Netflix and transit networks agreed to re-negotiate their interconnection agreements to include new access fees. The congestion blocked most high-bandwidth traffic—including video conferencing and telemedicine services—for millions of Americans.[24]

---

[19] Sarah Perez, *Google Wallet Rolls Out To More Devices - Nope, Still No Love For Verizon, AT&T Or T-Mobile Owners*, TechCruch (May 16, 2013), http://tcrn.ch/16BW1ib; Karl Bode, *T-Mobile Blocking Google Wallet to Benefit Isis*, DSLReports (May 17, 2013), https://www.dslreports.com/shownews/TMobile-Blocking-Google-Wallet-to-Benefit-Isis-124298.

[20] Karl Bode, *Verizon: We're Blocking Google Wallet for Good Reason, Honest*, DSLReports (Dec. 13, 2012), https://www.dslreports.com/shownews/Verizon-Were-Blocking-Google-Wallet-for-Good-Reason-Honest-122415.

[21] Karl Bode, *T-Mobile Blocking Google Wallet to Benefit Isis*, DSLReports (May 17, 2013), https://www.dslreports.com/shownews/TMobile-Blocking-Google-Wallet-to-Benefit-Isis-124298.

[22] *Commission Orders Comcast to End Discriminatory Network Management Practices*, WC Dkt. 07-52, Press Release, Aug. 1, 2008*, available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-284286A1.pdf (It was this action that famously began the Net Neutrality rulemaking saga, culminating in the current proceeding).

[23] Susan Davis, *Cox About to Feel Wrath of Net Neutrality Activists*, The Wall Street Journal (May 15, 2008), https://blogs.wsj.com/washwire/2008/05/15/cox-about-to-feel-wrath-of-net-neutrality-activists.

[24] *See* "Beyond Frustrated: The Sweeping Consumer Harms as a Result of ISP Disputes," *Open Technology Institute*, November 2014. *See also* "ISP Interconnection and its Impact on Consumer Internet Performance," *Measurement Lab* (October 28, 2014). Google indicated that it believes YouTube was subject to similar treatment. *See* Christina Warren, *YouTube: Slow Buffering Is Totally Your ISP's Fault*, Mashable (July 05, 2014), http://mashable.com/2014/07/05/youtube-blame-isp-slow-buffering/; *see also* Jason Mick, *Despite Legal Threates Google Begins Posting Warnings of ISP Throttling*, Daily Tech (July 07, 2014), http://www.dailytech.com/Despite+Legal+Threats+Google+Begins+Posting+Warnings+of+ISP+Throttling/article36174.htm.

BIAS providers have also experimented with exempting preferred content from a users' data cap restriction, a practice known as "zero rating."[25] Zero rating schemes that function as pay-to-play (i.e., the content providers pay the BIAS provider to have its traffic exempted from data usage limits) have an obvious competitive harm by pricing out smaller or startup edge providers that are unable to pay for the zero rating.[26] However, there is also evidence that zero rating practices that are not pay-to-play can cause anticompetitive harms by incentivizing users to use zero-rated applications.[27] Zero rating harms the public interest by distorting the market, stifling innovation, and limiting consumer choice.

These documented harms indicate a clear pattern of behavior. BIAS providers are interested in monetizing their gatekepeer role in ways that did not exist in the first decades of the internet. These schemes violate the principles of net neutrality and risk destroying the internet as we know it. The Commission was right to act against these threats in 2015.

B. Ex ante rules were necessary because ex post enforcement alone cannot sufficiently protect net neutrality.

Ex ante rules are the best way to fully protect the principles of net neutrality. BIAS providers have demonstrated a clear interest in experimenting with ways to fit

[25] Corynne McSherry et al, *Zero Rating: What It Is and Why You Should Care*, EFF.org, Feb. 18, 2016 https://www.eff.org/deeplinks/2016/02/zero-rating-what-it-is-why-you-should-care
[26] *Ibid.*
[27] *Id.*

discriminatory behavior within the existing rules. A number of interested parties, OTI included, have spoken to the need for clear "rules of the road" that protect consumers and proscribe specific conduct.[28] Narrow and clearly-defined rules create regulatory certainty and stability at all levels of the network. They also establish legal principles and norms that discourage experimentation with discriminatory conduct. While some have argued that ex ante rules are too inflexible,[29] the 2015 Order permits reasonable network management practices that are based in technical justifications.[30] Furthermore, the Commission created a "general conduct rule" as a stop gap which affords for ex post remedies when necessary, essentially creating a regime that blends ex post and ex ante regulation.[31]

While some argue that the objectives and goals of strong net neutrality rules are equally or better served by *ex post* consumer protection via antitrust enforcement,[32] case-by-case and after-the-fact enforcement cannot adequately protect against the harms that result from discriminatory conduct. Antitrust litigation and enforcement requires considerable time and resources to pursue, and is unable to "duplicate the kind of

---

[28] *See Mar. 2014 OTI Comments* at 11; *See also July 2014 OTI Comments* at 27; *Sept. 2014 OTI Reply Comments* at 28; Ferras Vinh, *Rules of the Road: Net Neutrality's Bright Line Protections*, CDT (May 11, 2017), https://cdt.org/blog/rules-of-the-road-net-neutralitys-bright-line-protections/; Shirley Bloomfield, *Rules of the Road Matter — NTCA's Stance on the Net Neutrality Proceedings*, NTCA (May 18, 2017), http://www.ntca.org/ceoblog/rules-of-the-road-matter-ntcas-stance-on-the-net-neutrality-proceedings/.

[29] Bob Goodlatte, *FCC's Net Neutrality Rule Wrecks the Internet*, Goodlatte.House.gov (Apr. 2, 2015), https://goodlatte.house.gov/news/documentsingle.aspx?DocumentID=311.

[30] 2015 *Open Internet Order* at ¶¶ 214-217.

[31] 2015 *Open Internet Order* at ¶ 138.

[32] *See* 2017 NPRM at ¶¶ 78, 84; *see also* Hon. Maureen K. Ohlhausen, *Antitrust Over Net Neutrality: Why We Should Take Competition In Broadband Seriously*, 15 Colo. Tech. L.J. 119 (2016); Rep. Bob Goodlatte, *Use antitrust laws, not regulations to protect the Internet*, The Hill (Sep. 16, 2014), http://thehill.com/special-reports/net-neutrality-september-16-2014/217862-use-antitrust-laws-not-regulations-to.

prospective industry-wide rules contained in the 2015 Open Internet Order."[33] Effective *ex post* enforcement requires those harmed to show a clear individualized injury, and a quantifiable harm, which is exceptionally difficult in cases of net neutrality harms.[34] And in cases where a harmed party can show a clear, quantifiable injury, the time and expense of an antitrust case will mean that relief may come too late. As attorney and former state antitrust official Sally Hubbard explains: "If I'm a startup being throttled or otherwise discriminated against—perhaps because my company competes against a vertically integrated ISP—and my only recourse is to bring an antitrust suit, I'd just close up shop. Antitrust litigation takes too much time and money."[35] Supreme Court Justice Anthony Kennedy questioned the effectiveness of using antitrust enforcement instead of regulation.[36]

Moreover, antitrust law cannot fully protect the values of internet freedom. A regime that relies solely on antitrust law would be narrowly focused on pricing harms,

---

[33] *See* Terrell McSweeny and Jon Sallet, *Kill The Open Internet, And Wave Goodbye To Consumer Choice*, Wired (July 03, 2017), available at https://www.wired.com/story/kill-the-open-internet-and-wave-goodbye-to-consumer-choice/. See also, Former FCC Chairman Genachowski's comments: "Antitrust enforcement is expensive to pursue, takes a long time and kicks in only after the damage is done." Jasmin Melvin, *FCC chief: antitrust law can't adequately defend Internet*, Reuters, May 5, 2011 http://www.reuters.com/article/us-fcc-internet-antitrust-idUSTRE7446LC20110505.

[34] Rob Frieden, "Ex Ante Versus Ex Post Approaches to Network Neutrality: A Cost Benefit Analysis" (2014), at 26-27, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2493945.

[35] Sally Hubbard, Washington Bytes, *The Future of Antitrust Enforcement: Innovation, Wage Inequality and Democracy*, Forbes (June 15, 2017), https://www.forbes.com/sites/washingtonbytes/2017/06/15/the-future-of-antitrust-enforcement-innovation-wage-inequality-and-democracy/#3a440933145d.

[36] *See Turner Broadcasting System, Inc. v. FCC*, 520 U.S. 180, 222-23 (1997) ("Appellants also suggest a system of antitrust enforcement or an administrative complaint procedure to protect broadcasters from cable operators' anticompetitive conduct… Congress could conclude, however, that the considerable expense and delay inherent in antitrust litigation, and the great disparities in wealth and sophistication between the average independent broadcast station and average cable system operator, would make these remedies inadequate substitutes for guaranteed carriage.").

which might address some paid prioritization schemes but ignores non-economic goals such as privacy, freedom of speech, and viewpoint diversity.[37] Unlike the FTC and the Department of Justice, the Commission is empowered to protect these broader societal benefits.

Additionally, because BIAS providers fall under the Commission's jurisdiction, it is unclear how much power or authority the Department of Justice or FTC would have to pursue and enforce *ex post* actions. Supreme Court case law is rife with examples of the Court taking a more skeptical approach to *ex post* antitrust actions out of deference to the FCC's ability to make *ex ante* rules. In *Verizon Communications v. The Law Offices of Curtis V. Trinko, LLP*, the Supreme Court refused to find that Verizon's failure to interconnect with competing services was an antitrust violation.[38] Rather than viewing the application of antitrust law as an effective stop gap to remedy the harms which an ex ante regulatory regime may miss, the Court stated that a "detailed regulatory scheme" employed by Congress suggests the regulated industries have implied immunity from antitrust enforcement.[39] And while the Court noted that the Communications Act has an antitrust savings clause that does not allow for any implied immunity,[40] the Court was skeptical in

[37] *See* Opening Remarks of Terrell McSweeny, *The Future of Broadband Privacy and the Open Internet—Who Will Protect Consumers?,* New America event on April 17, 2017 ("Ex-post case-by-case antitrust enforcement is unable to offer the same protections to innovators as clear, ex-ante rules. A system that solely relies on antitrust enforcement… can not provide the same assurances because antitrust enforcement requires detection, investigation, and potentially lengthy rule of reason analysis. Even assuming you can come up with a cognizable theory, remedying harm years after it occurred may prove challenging or even impossible.").
[38] *Verizon Communications v. Law Offices of Curtis V. Trinko, LLP.*, 540 U.S. 398, 411 (2004).
[39] *Id*. at 406.
[40] *Id*. at 407.

applying antitrust law where the FCC has the power to create rules, even when it declines to do so, noting:

> One factor of particular importance is the existence of a regulatory structure [in the Communications Act] designed to deter and remedy anticompetitive harm. Where such a structure exists, the additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny.[41]

Similarly, in *Pacific Bell Telephone Co. v. Linkline Communications*, the Supreme Court did not find AT&T's practice of charging competing ISPs a higher wholesale price than it charged consumers at retail (a practice known as price squeezing) in an effort to drive out competing ISPs a violation of Section 2 of the Sherman Act.[42] In doing so, the Court expressed hesitation to adopt a remedy that would require it to police pricing at multiple levels, or "aim[] at a moving target, since it is the *interaction* between these … prices that may result in [the anticompetitive harm]."[43] Parallels can easily be drawn between the different levels of pricing at issue in *Pacific Bell* and the different levels of pricing at issue in an interconnection case like that of Netflix discussed above. While *Pacific Bell* dealt with wholesale and retail pricing, interconnection disputes involve the retail prices for both consumers and providers, as well as interconnection access charges assessed by BIAS providers. The Court's apparent lack of concern for AT&T's ability to

[41] *Id*. at 412.
[42] *Pacific Bell Telephone Co. v. Linkline Communications, Inc.*, 555 U.S. 438, 442 (2009).
[43] *Id.* at 452-3. Emphasis included.

drive its competitors out of business is another troubling indicator that antitrust law alone cannot adequately protect net neutrality.[44]

Case law has also made it harder for *ex post* enforcement cases to be brought by consumers in the first case. In *Bell Atlantic Corp. v. Twombly* , the Supreme Court determined that parallel conduct alone was not enough for a claim under Section 1 of the Sherman Act to survive the pleading stage, but that plaintiffs must instead show additional "plus factors."[45] This creates a potential legal Catch 22 where plaintiffs need discovery to find plausible evidence of their claim, but must have have plausible evidence to survive a motion for summary judgment and make it to discovery.[46] The Court in *Comcast Corp. v. Behrend* made class action certification more difficult because it rejected the expert witness model that quantified the financial harm resulting from lost potential competition as sufficient to measure damages on a classwide basis.[47]

If a consumer seeking relief under consumer protection or antitrust law were able to clear these hurdles, it is likely that a mandatory arbitration clause will prevent the claim from being heard by a court.[48] These clauses, typically presented as a Hobson's choice to consumers, severely restrict an individual's ability to seek relief in courts, "even

[44] *Id.* at 456-7. "For if AT&T can bankrupt the plaintiffs by refusing to deal altogether, the plaintiffs must demonstrate why the law prevents AT&T from putting them out of business by pricing them out of the market."
[45] *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 545 (2007).
[46] Leslie Gordon, *For Federal Plaintiffs, Twombly and Iqbal Still Present a Catch-22*, ABA Journal (Jan 01, 2011), http://www.abajournal.com/magazine/article/for_federal_plaintiffs_twombly_and_iqbal_still_present_a_catch-22.
[47] *Comcast Corp. v. Behrend*, 133 S.Ct. 1426, 1432-33 (2013).
[48] Jon Brodkin, *FCC imposes privacy rules and takes aim at mandatory arbritration*, ARTSTECHNICA (Oct. 27, 2016, 12:17 PM), https://arstechnica.com/tech-policy/2016/10/mandatory-arbitration-restricts-rights-of-isp-customers-says-fcc-democrat (highlighting the ubiquity of arbitration clauses in telecommunications contracts).

if the conduct of an *ex ante* regulated carrier approaches unconscionability."[49] The Supreme Court has upheld these clauses and permits federal preemption of state laws that would give consumers more power.[50] Moreover, the Commission appears to have abandoned plans to address mandatory arbitration clauses in ISP contracts.[51] An estimated 99.9 percent mobile wireless contracts contained mandatory arbitration clauses in 2014,[52] underscoring that consumers have no choice but to sign the contract to receive crucial connectivity. The continued dominance of mandatory arbitration makes ex post adjudication of net neutrality harms extraordinarily difficult.

IV. Title II was the appropriate and necessary legal basis for the Commission's rules.

From the discussion above, it is clear that strong net neutrality rules are necessary to protect consumers against harmful and anticompetitive behavior. But as the D.C. Circuit has made clear, the Commission lacks authority to impose these meaningful protections without Title II classification, rendering any other approach inadequate.

The NPRM claims that it will "end[] public utility regulation of the internet" by reinstating the information service classification of BIAS under which the "free and open

[49] Ex Ante v. Ex Post at p. 34.
[50] *Id.*
[51] Jon Brodkin, *FCC imposes privacy rules and takes aim at mandatory arbritration*, Artstechnica (Oct. 27, 2016), 12:17 PM, https://arstechnica.com/tech-policy/2016/10/mandatory-arbitration-restricts-rights-of-isp-customers-says-fcc-democrat (highlighting the ubiquity of arbitration clauses in telecommunications contracts).
[52] *See Abitration Study,* Consumer Financial Protection Bureau (March 2015) at 30 *available at* http://files.consumerfinance.gov/f/201503_cfpb_arbitration-study-report-to-congress-2015.pdf.

internet flourished."[53] It also concludes that "classifying BIAS as an information service is the better reading of the statute."[54] But the NPRM fundamentally misunderstands internet infrastructure, how it has developed over time, and how it works. Further, the text and structure of the act, public policy, and legal authority all support classifying the transmission portion of BIAS as a Title II service.

A. Alternative legal authorities cannot be used to promulgate effective, legally sustainable rules.

Strong net neutrality rules can be implemented only if BIAS is classified as a telecommunications service. The Commission has authority to regulate telecommunications carriers under Title II, and it can treat telecommunications carriers as common carriers only to the extent that they are providing telecommunications services.[55] The hallmark of common carriage and net neutrality is the nondiscrimination principle, which is codified under Title II (specifically, Sections 201 and 202, which prohibit unjust and unreasonable practices). These Title II provisions cannot be effectively applied to services classified under Title I.

Prior attempts to impose nondiscrimination requirements on Title I services failed in court. In 2010, the Commission passed nondiscrimination rules under its Title I and Section 706 authority. The D.C. Circuit's review of these rules was unequivocal: the

[53] 2017 NPRM at ¶ 23.
[54] 2017 NPRM at ¶ 54.
[55] 47 U.S.C. § 153(51) (2012)("A telecommunications carrier shall be treated as a common carrier under this chapter only to the extent that it is engaged in providing telecommunications services").

Communications Act forbids the FCC from treating information services like common carriers, and nondiscrimination is a per se common carrier requirement.[56] Thus, Section 706 alone is insufficient to impose common carrier requirements on Title I services.[57] If the Commission wanted to impose meaningful net neutrality protections, the court made clear that BIAS would have to be a Title II service.

Section 706 should not be interpreted as merely hortatory, as the NPRM proposes. As an initial matter, the interpretation of Section 706 has been subject to much debate, and we will not rehash that here. However, in *Verizon*, the D.C. Circuit upheld the Commission's reasonable determination that Section 706 is an affirmative grant of authority. It is therefore settled law that the authority exists, whether the Commission interprets it as granting authority or not. For instance, today's FCC could interpret it as hortatory, but a future FCC, if it so chose, could reverse that decision. Thus, the exercise is futile. Reinterpreting Section 706 would be essentially arbitrary, and the Commission should instead focus on protecting consumers from harmful and anticompetitive conduct.

Section 706 has another weakness. Previous D.C. Circuit decisions have in narrow circumstances allowed the FCC to impose nondiscrimination requirements on non-telecommunications carriers through Section 706, but those circumstances applied here are insufficient. In *Cellco Partnership v. FCC*, the D.C. Circuit deferred to the Commission's determination that the "data roaming rule" did not impose per se common carrier

[56] *Verizon v. F.C.C.*, 740 F.3d 623 (D.C. Cir. 2014).
[57] Section 706 has other weaknesses that make it a suboptimal approach, such as its required annual finding of lack of adequate buildout of advanced telecom capability, it is not tailored to the particular circumstances here, and it is overbroad in that it opens up regulation of over-the-top services. *July 2014 OTI Comments* at 21-22.

requirements on cell phone carriers because it allowed for individualized "commercially reasonable" negotiations.[58] However, this is the very type of activity that strong open internet rules are meant to prevent. Commercial reasonableness is dictated by the market, so allowing for such behavior allows BIAS providers to dictate their own rules. BIAS providers have already experimented with this type of behavior, and Verizon admitted to wanting to explore these types of agreements in its oral argument in *Verizon v. FCC*.[59] This essentially creates a self-regulatory regime, which would be toothless. Moreover, because it would develop on a case-by-case basis, the commercial reasonableness standard would be vague and consume significant resources for consumers, BIAS providers, and the FCC.[60]

In addition, Section 706 does not contain a clear "deregulatory bent," as Commissioner McDowell argued in 2010.[61] This is obvious from the statute's explicit grant of authority to use "price cap regulation" to remove barriers to infrastructure investment. Price cap regulation is often derided as the worst type of intrusive regulation.[62] It is hard to believe Congress intended Section 706 to be strictly deregulatory when it explicitly gave the FCC authority to cap prices.

[58] *Cellco Partnership v. FCC*, 700 F.3d 534, 548 (D.C. Cir. 2012).
[59] "[B]ut for these rules, [Verizon] would be exploring these types of arrangements." Timothy Karr, *Verizon's Plan to Break the Internet*, HuffingtonPost (Sept. 18, 2013), http://www.huffingtonpost.com/timothy-karr/verizons-plan-to-break-th_b_3946907.html.
[60] July 2014 OTI Comments at 19-21.
[61] 2017 NPRM at para. 101.
[62] For example, see Roger Cheng & Ben Fox Rubin, *Net Fix: Title II, the two words that terrify the broadband industry*, CNet (Feb. 2, 2015).

Section 230 is also unlikely to provide sufficient authority. It is axiomatic that Congress does not delegate authority through policy statements.[63] It is also clear that Section 230(b) is a statement of policy because the heading states "Policy" and the section begins "It is the policy of the United States…."[64] It is unlikely the FCC could use this to support any rules, much less strong net neutrality rules. Further, Section 230 in general is meant to protect platform providers from being held liable for the speech of others, and grants immunity to platform providers that take good faith efforts to remove offensive material. None of this has to do with ensuring BIAS providers generally follow open internet principles and treat content equally.

If the FCC is serious about protecting an open internet, as it claims it is,[65] BIAS must be classified as a telecommunications service—a decision that has twice been upheld by the D.C. Circuit.[66] Sections 230 and 706 are insufficient for strong net neutrality rules. Undoing the 2015 Order is the wrong decision for consumers, e-commerce, and the internet as a whole.

B. Arguments in favor of Title I classification are fundamentally outdated.

By proposing to reclassify BIAS under Title I, the NPRM fundamentally misunderstands the history of internet infrastructure and regulation. The NPRM relies

[63] *Comcast Corp. v. FCC*, 600 F.3d 642 at 651-52 (2009).
[64] 47 U.S.C. § 230(b) (2012).
[65] 2017 NPRM at ¶ 70.
[66] *U.S. Telecom Ass'n v. FCC*, 825 F.3d 674 (D.C. Cir. 2016); *U.S. Telecom Ass'n v. FCC*, 855 F.3d 381 (D.C. Cir. 2017) (Denying petition for rehearing *en banc*).

extensively on previous FCC analysis of different internet access services (primarily dial-up) to justify its desire to reclassify BIAS as a Title I information service today. However, stark differences in these technologies means that the FCC cannot apply the logic from prior analyses to today's broadband world.

Internet services have transformed significantly over the past 20 years. When Congress passed the Telecommunications Act of 1996, dial-up was the primary source of internet access.[67] Dial-up is both technically and functionally very different from today's broadband services. For instance, dial-up internet providers typically offered walled gardens of content that those providers acquired and made available—AOL being the most prominent example.[68] Further, dial-up providers typically leased transmission lines (a telecom service) from another provider or required their customers to have access to a separate transmission line, such as their phone provider.[69] These distinctions informed the Commission's earlier determination that dial-up "internet access service" (which the NPRM conflates with "BIAS," but they are different) was an information service. This same analysis led the Commission to classify DSL transmission lines as a Title II service in 1998,[70] and telephones, which has long been a Title II service.

In the 2002 *Cable Modem Order*, the Commission departed from its traditional understanding of telecom and information services. That order addressed an open

[67] Jonathan E. Nuechterlein & Philip J. Weiser, Digital Crossroads 134 (The MIT Press, 1st ed. 2005).
[68] *Federal-State Joint Board on Universal Service*, CC Dkt. No. 96-45, Report to Congress, 13 FCC Rcd. 11501 (1998) ("*Stevens Report*").
[69] *Stevens Report*.
[70] *Deployment of Wireline Services Offering Advanced Telecommunications Capacity*, CC Dkt. No. 98-147, 13 FCC Rcd. 24012, at ¶¶ 35-36 (1998).

question left by the Stevens Report: how to classify a service that incorporated both transmission and information services.[71] In that case, the FCC had to determine how to classify cable modem service, which arguably offered a single service that included both an information services component and a telecommunications ("data transport") component. The FCC at that time decided that because the cable modem provider "offered" a bundled, integrated service whereby a customer receives both transmission and information services from the same provider, both services should be treated as a bundled information service.[72] Subsequent orders classifying DSL, wireless, and other services under Title I relied on similar logic.[73]

These orders got the technology wrong. The telecommunications portion of the service offered by a BIAS provider is not and has never been "a functionally integrated, finished service that inextricably intertwines information-processing capabilities with data transmission" as the *Wireline Broadband Internet Access Order* claimed.[74] The telecommunications portion has always been separable from any information service because the primary design principle of the internet is to organize functionality by network layers, a type of modularity. Because the functionality in both telecommunications and information services are separated into different layers, and

[71] *Internet Over Cable Declaratory Ruling*, GN Dkt. No. 00-185, CS Dkt. No. 02-52, 17 FCC Rcd. 4798, at para. 41 (2002) ("*Cable Modem Order*") (citing *Stevens Report*).
[72] *Cable Modem Order*.
[73] The *Cable Modem Order*, and subsequent orders that relied on the same logic, got this wrong. The transmission component of the service and the information services that run on top of that transmission have always been separable, and those orders simply got the technology wrong.
[74] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Dkt. Nos. 02-33, 01-337, 95-20, 98-10, WC Dkt. Nos. 04-242, 05-271, 20 FCC Rcd. 14853, at para. 9 (2005).

those layers are modular such that the layers can interact without the telecommunications portion depending in any way on information services, telecommunications and information services are clearly separable. The technology itself clearly delineates between telecommunications and information service, and so should the law. The FCC must implement its statutory directives by finding that BIAS includes a separable telecommunications service.

Even if one agrees with the analyses of those orders, the market has changed such that the transmission component of BIAS should now be considered a Title II service. Relying on outdated analysis from past orders would be unreasonable.[75] The offer from BIAS providers is no longer a bundle of proprietary, walled-garden content as in the days of AOL. As the Commission acknowledged and highlighted, BIAS providers today market their services as an access path to internet based content. BIAS providers distinguish, and indeed consumers compare, their services based on factors such as speed.[76] The Commission rightly concluded that consumers believe they are primarily purchasing a transmission service, even if additional services are offered.[77]

More recent FCC orders reflect a newer, more accurate understanding of the telecom networks and internet service. In the 2015 *Order*, the FCC recognized that the market and technology have changed since the days of dial-up and early cable modem service. Today, BIAS providers rarely lease telecommunications services from other

[75] 2015 Open Internet Order at ¶ 341.
[76] *Id.* at ¶ 351.
[77] *Id.* at ¶ 354.

carriers. Further, the transmission and information processing services are no longer integrated. The analyses in the *Stevens Report* and *Cable Modem Order* no longer apply to broadband internet access, and therefore do not provide a contemporary basis for reclassifying BIAS back to Title I.

To be sure, BIAS providers also offer information services like email and news websites. But those services, as stated above, are separate from the connectivity that consumers expect. They also compete with the parallel offerings of many other edge providers. Moreover, it is true the *Cable Modem Order* acknowledged that users "may" access third party websites and applications through a cable modem,[78] and nonetheless classified cable modem service as an information service. In 2002, accessing third party content through a cable modem was the exception, and the number of third party websites and applications was small. Today, most online services are not affiliated with BIAS providers and third party content is abundant.[79]

The Commission must understand these key technical points before it can make a decision about classification, because many of these misunderstandings contribute to its errors in the NPRM.

C. Nothing in the text or structure of the Act provides a persuasive reason to classify BIAS under Title I.

[78] *Cable Modem Order* at ¶ 25.
[79] 2015 *Open Internet Order*.

The NPRM stretches to find reasons that BIAS more appropriately fits the information services definition. Classifying BIAS as a whole as an information service is not the better reading of the statute.

The Commission first argues, erroneously, that BIAS meets the definition of information service because BIAS "offers" the "capability" for "generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications."[80] The Commission claims BIAS meets the definition because internet users can, among other things, use broadband service to post on social media, read a newspaper, make an address book or grocery list, or upload filtered photographs, and that BIAS "offer" these "capabilities" by offering internet access.

This interpretation of "capability for" is unreasonable and contradicts precedent. From the time "information service" was defined as part of the AT&T Consent Decree,[81] until the Commission misinterpreted it in the *Cable Modem Order*, the phrase "capability for" meant that the information service provider itself is engaged in the processing of the information. But the examples listed in the *NPRM* are not that. Those are examples of services offered *by others* over the transmission lines (the telecom service). The AT&T Consent Decree made this distinction clear by stating the Bell Operating Companies would have to ensure their networks could carry the information services provided by others—

[80] 47 U.S.C. § 153(24) (2012).
[81] Modification of Final Judgment at 9, *U.S. v. American Tel. and Tel. Co.*, 522 F.Supp. 131 (D.C. Cir. 1982) (No. 82-0192).

yet, the Bell Operating Companies still provided a telecom service and were explicitly prohibited from offering information services.[82]

If a telecommunications service were transformed into an information service because it made available the information services *of others*, then no general use service could ever constitute a telecom service. But general use services are common carriers, not private carriers, and this is one reason why "points specified by the user" was included in the definition of telecommunications service.[83] For example, telephone service, the quintessential Title II service, also allows anyone to acquire, retrieve, utilize, or make available information to others over the telephone network. Anyone can learn what the weather is by calling a phone number,[84] or order a product over the phone, or host press conferences to make information available over the phone. But the mere fact that these services and activities, and many others, can occur over the telephone network does not turn telephone service itself into a Title I service. In other words, the telephone service is not "offering" the services *of others*, it is "offering" the telephone line. The same is true of broadband. Reading the statute in the way the *NPRM* does would lead to the absurd result that even telephone service would no longer be a Title II service.

It is further incorrect to claim, as the NPRM does, that consumers pay for more than transmission, such as caching or protocol processing.[85] As an initial matter, the NPRM appears to refer to *all* caching, *all* protocol processing, and *all* DNS services when it

[82] *American Tel. and Tel. Co.,* 522 F.Supp. at 190.
[83] 47 U.S.C. § 153(51) (2012).
[84] That number for DC is (202) 671-0331. *See* https://dpr.dc.gov/page/dpr-weather-hotline.
[85] 2017 NPRM at ¶ 29-30.

discusses them. This approach is fundamentally flawed. Each of these services has different uses, and those uses matter particularly because of the telecom management exception in the definition of information services.[86] The FCC must ensure that when it discusses "caching," "protocol processing," "DNS," or any other term referring to a particular capability, that it is clearly referring to those capabilities *when used for the management of telecommunications services*. When those services are used for non-telecom-network-management purposes, those services would constitute separate information services. To ignore this distinction is to ignore the statutory definition of information service, which depends on the use of certain capabilities.

Consumers pay for delivery of content. There is no evidence that consumers make choices about providers (if they have a choice at all) because one provides better email, web hosting, caching, or DNS. Quite the contrary, much of the time consumers pay their BIAS provider for transmission to access the internet content they desire, regardless of whether that content comes from a cached server or whether the BIAS provider uses protocol processing to deliver that content. Consumers want the content, and BIAS providers deliver that content even if it requires protocol processing or caching. But that does not mean consumers "want and pay for" those capabilities. Consumers are unlikely to even know those capabilities exist.

[86] 47 U.S.C. § 153(24) (2012). The definition of information services "does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service."

The Commission further erroneously argues that BIAS providers do not fit the definition of telecommunications services. The Commission first argues that because routing decisions are made by the BIAS provider, that users do not "specify" the points between which information passes. This is wrong. The user specifies both points between which data transmits: the user him or herself and either the IP address or the domain name of the site desired. Telecom services have long made their own routing decisions. The most obvious example is the telephone network. Users input a phone number and the telephone network determines how to route the call. There is nothing new or special about this process, and it does not undermine BIAS as a telecom service. For similar reasons, users are not required to know the geographic location of the end point for the service to be telecommunications.[87] This draws another parallel to telephone service, where users do not know the precise geographic location of the caller on the other end, yet the service is still a Title II service.

The NPRM also states that BIAS providers "routinely change the form or content of the information sent over their networks."[88] It points to firewalls and protocol processing as examples. This is again incorrect. As the Title II Order stated, adding headers to packets does not change the form or content of those packets.[89] When the user requests information online from a specific point, any technical changes that have to be made to ensure the network delivers that information is a telecom service because it meets the

[87] 2015 Open Internet Order at para. 361.
[88] 2017 NPRM at ¶ 30.
[89] *2015 Open Internet Order* at ¶ 362.

telecommunications management exception of information services. This would include protocol processing to "interweave IPv4 networks with IPv6 networks."[90]

Firewalls similarly do not "change" content, they simply block it. That is not a change in content. In fact, the content is the same as requested, it merely does not reach the user for other reasons. Also, firewalls are typically used to block traffic that is harmful to the network (most content harmful to a computer on a network can harm to the network itself), so even if blocking content via firewalls constituted a change in form or content, it would still meet the telecom management exception in the definition of information services because blocking that content would be for managing the network.

The NPRM seeks comment on DNS and caching and how they are used.[91] As discussed above, when discussing DNS and caching, it must be made clear that we refer to DNS and caching when used to manage the telecom network. Caching, for instance, when used by BIAS providers reduces the load on the network and reduces the distance over which networks must carry data. It therefore benefits the BIAS provider primarily. The benefit to a user is negligible. Alternatively, when Akamai offers caching, that is for the user's benefit, and would generally be considered an information service.[92] Further, DNS (when converting a domain name to an IP address) benefits the BIAS provider as well, because it is essentially routing information that makes retrieving the correct information

[90] 2017 NPRM at para. 30; *see 2015 Open Internet Order* at ¶ 375.
[91] 2017 NPRM at ¶ 37.
[92] 2015 *Open Internet Order* at ¶ 372.

easy for the BIAS provider.[93] The parallel in telephone service is computer-assisted directory assistance, where a user can find the phone number (like an IP address in BIAS) of a person based on their name (like a domain name in BIAS). This service has long been adjunct-to-basic and did not transform telephone service into an information service. DNS similarly does not direct a classification of BIAS as an information service.[94]

It is even more absurd to argue that Sections 230 and 231 dictate that BIAS is an information service. The NPRM claims that Section 230 defines internet access as an "information service."[95] The language of the statute does not support this reading. Looking at the definition of interactive computer service as a whole shows that Section 230 did not define internet access service as an information service. Section 230 defines an interactive computer service as "any information service, system, or access software provider that provides or enables computer access by multiple users to a computer server, including specifically a service *or system* that provides access to the Internet…"[96] By its own terms, this definition does not state internet access service is an information service. On the contrary, it expressly states that the internet access is a "service *or system*." Because statutes should be interpreted to avoid surplusage, service and system must have two different meanings, and thus internet access service could also be a "system," not an information service.

[93] *Id.* at 366 (Quoting *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 1012-13 (2005) (Scalia, J., dissenting)).
[94] 2015 *Open Internet Order* at ¶ 366.
[95] 2017 NPRM at ¶ 31.
[96] 47 U.S.C. § 230(f)(2) (2012) (Emphasis added).

Section 231 is similarly unavailing. The *NPRM* claims that Section 231's definition of "internet access service" decides the question because it expressly states that it does not include "telecommunications services." But Congress used "internet access service" to mean dial-up service, and was not specifically referring to BIAS.[97] Even if Section 231 somehow did reference BIAS, such a narrow focus on the definition ignores the reasoning behind including that language in the definition. The relevant substantive portion of Section 231 states that a person does not violate subsection (a) of Section 231 if it is "a telecommunications carrier engaged in the provision of a telecommunications service; [or] a person engaged in the business of providing an internet access service."[98] Thus, the purpose of defining internet access service in that statute as not including telecommunications services was because those services were already exempted under the statute and Congress wanted to avoid any potential ambiguity.

And finally, the Sections 230 and 231 arguments should be rejected, as they have been before, because Congress does not hide elephants in mouseholes. In this case, the NPRM claims that Congress hid the elephant of mandatory information services classification of all internet services in the mouseholes of Sections 230 and 231, which are separate statutes addressing specifically indecent online content with their own definition sections. This simply cannot be the case, and that logic was upheld by the D.C. Circuit.[99]

[97] The *Stevens Report* used similar language to refer to dial-up service. *Stevens Report* at ¶ 73.
[98] 47 U.S.C. § 231(b)(1)-(2) (2012).
[99] *U.S. Telecom Ass'n*, 825 F.3d at 702-703.

The *NPRM* also incorrectly argues that the structure of Title II is a poor fit for BIAS because the Commission forbore from several portions of Title II when it reclassified BIAS.[100] As an initial matter, Congress gave the Commission the ability to forbear from certain requirements of the Telecommunications Act if it found that doing so would be in the public interest.[101] The *NPRM* now complains that the 2015 Order forbore from *too many* portions of Title II and is now twisting that to provide part of the basis for undermining the classification.

Moreover, many of the sections from which the Commission forbore *could have* been applied to BIAS but were not as a matter of policy. For instance, the Commission could have applied the unbundling requirement to BIAS, but did not. It could have applied the interconnection requirement to BIAS as well, but again, it did not. These are merely two examples of forbearance authority being tailored to BIAS—not because the requirements did not apply, but because the Commission made an affirmative decision not to apply them. The Commission's tailored approach through forbearance should not undermine the appropriateness of Title II classification in general.

The *NPRM* states "increased investment is likely to lead to a faster closing of the digital divide for rural and low-income consumers, higher speeds and more competition for all consumers, as well as more affordable prices."[102] But the *NPRM* cites no evidence for this claim. It is puzzling that reclassifying BIAS back to Title I would somehow close

[100] 2017 NPRM at ¶ 33.
[101] 47 U.S.C. § 160 (2012).
[102] 2017 NPRM at para. 48.

the digital divide, when the digital divide exists because of the disparity between the relative cost of building a network to an unserved (typically rural) area and the expected return on that investment. Reclassification itself is unlikely to change that equation substantially, and even if it were likely, the *NPRM* provides no suggestion as to why.

It is further puzzling to argue reclassifying back to Title I would somehow result in increased competition. Reclassification is unlikely to lead to multiple networks being built in the same area, a practice often referred to as "overbuilding" by those who think it is wasteful.[103] In fact, the BIAS market consolidated dramatically under Title I.[104] From 2002 to 2015, a wave of mergers and acquisitions left just four dominant wireline providers and four dominant wireless providers.[105] Similarly, the NPRM offers no evidence that prices decreased under Title I—or that Title II led to price increases.

V. Reclassifying BIAS under Title I would substantially harm the public interest.

In addition to eliminating the Commission's only effective means of protecting net neutrality, reclassifying BIAS under Title I would contravene the Commission's public interest mandate. While the consequences of Chairman Pai's proposal are far-reaching,

[103] Brent Skorup, *Who Needs the FCC?*, National Affairs (Winter 2016), http://bit.ly/2vcaSja.
[104] Pui-Wing Tam, *Consolidation in the Broadband World*, The New York Times (Apr. 26, 2016), https://nyti.ms/2utfzrt.
[105] The four largest fixed BIAS providers account for about 71% of all subscriptions. Press Release, Leichtman Research, About 960,000 Added Broadband in 1Q 2017 (May 19, 2017) (*available at* http://www.leichtmanresearch.com/press/051917release.html). *See also*, Scott Webster & Jessica Dolcourt, *Before You Switch Wireless Carriers, Read This*, CNet(Feb. 3, 2016), http://cnet.co/2ezp0Pa.

OTI highlights the specific harms to (1) consumer privacy, (2) broadband access, and (3) network investment.

A. Abandoning Title II would leave Americans vulnerable to privacy abuses.

As the gatekeepers to the internet and all the services it provides, BIAS providers are uniquely positioned to collect vast amounts of sensitive data about their customers. Without Title II, the Commission's authority to protect consumer privacy in this space would shift to the Federal Trade Commission, which lacks the necessary technical prowess and rulemaking authority to effectively protect the customers of BIAS providers.

The Commission has historically protected consumer privacy under Section 222 of the Communications Act, which imposes a duty on all Title II carriers to protect the privacy of the data gathered about their customers.[106] As the expert agency in telecommunications services, the Commission is the most appropriate regulatory body to oversee the privacy practices of BIAS providers. The FCC also has the rulemaking authority necessary to effectively prevent abuses of consumer privacy.[107] Shifting jurisdiction to the FTC would shift consumer privacy to an agency with less authority and more roadblocks to clear, bright-line protections. The FTC's effectiveness is undermined by a lengthy review process and limited enforcement of consent orders. Marc Rotenberg, the president and chief executive of the Electronic Privacy Information Center, put it

[106] *See* 47 U.S.C. §222,, at 52, *available at* https://transition.fcc.gov/Reports/1934new.pdf.

[107] See C-Span's *The Communicators,* Jan. 18, 2017 ("The FTC… at their heart, they are enforcers, they don't have what is called 'rulemaking authority'... We are an expert agency, they have to deal with everything from computer chips to bleach, and now we're going to add telecom into that. I think since 1934 there has been an expert agency in telecommunications and it makes sense to stay that way.")

succinctly: "Having brought lots of privacy cases to both the FTC and the FCC, I'm just not impressed by the FTC's ability to safeguard consumer privacy."[108]

The Commission demonstrated its expertise last year when it passed strong, common-sense privacy rules that required BIAS providers to receive explicit opt-in consent from customers before using sensitive information such as geo-location, financial information, health information, children's information, social security numbers, web browsing history, application usage history and the content of communications.[109] Although Congress later repealed those rules, Chairman Pai recently testified to the Senate that the Commission is still obligated to oversee broadband privacy practices.[110]

Opponents of the Commission's privacy rules have frequently and erroneously argued that the Federal Trade Commission should regulate the privacy of both internet service providers and edge providers in the same way, but this approach ignores the reality of the marketplace. As OTI has previously argued, while consumers are not required to choose one specific edge provider to access services online, they *do* have to choose an internet service provider to use crucial services such as educational tools,

---

[108] See *Trump's Repeal of Internet Privacy Rules Shifts Regulatory Powers to FTC,* Morning Consult, April 4, 2017 https://morningconsult.com/2017/04/04/trumps-repeal-internet-privacy-rules-shifts-regulatory-powers-ftc/ ("'The core issue is that the FCC has rulemaking authority and the FCC issues substantial fines — the FTC has neither,' Marc Rotenberg, president and chief executive of the Electronic Privacy Information Center, said Monday in an interview... He cited two FTC settlements made in cases brought forward by his group, involving Google Buzz and changes made to Facebook Inc.'s privacy preferences, where he said the agency 'failed to enforce their own consent orders.'").

[109] *See Protecting the Privacy of Customers of Broadband and Other Telecommunications Services Report and Order*, passed Oct. 27, 2016 and released Nov. 2, 2016.

[110] *See* March 8 FCC Oversight hearing, C-Span, https://www.c-span.org/video/?423947-1/new-fcc-chair-ajit-pai-testifies-capitol-hill.

health care tools and employment opportunities.[111] While it is appropriate to apply the FTC's authority to combat deceptive practices, it does not make sense to simply apply that same framework to internet service providers, because the broadband market lacks sufficient competition and should therefore be held to a higher standard than online "edge" services that fall under the FTC's jurisdiction. For broadband customers to retain genuine choice over how companies use their data, there should be ex ante rules in place, and a regulatory agency tasked with enforcing those rules. It is crucial for Americans to retain an expert agency in charge of protecting their privacy from broadband companies in such a consolidated marketplace. That privacy protection, however, is contingent on the Commission retaining its Title II classification of broadband.

B. Abandoning Title II would exacerbate the digital divide.

The 2015 Order also serves as the basis for the Commission's move to extend the Lifeline subsidy program to BIAS offerings—a major step toward closing the digital divide.[112] Abandoning Title II would jeopardize this vital program. Chairman Pai has promised that "broadband will remain in the Lifeline program" as long as he is

[111] *See OTI and IPR Opposition*, p 6 ("The *Order* appropriately recognizes that BIAS providers and other telecommunications providers hold a different place in the communications ecosystem than other types of companies, and that privacy regulations promulgated under Title II of the Communications Act need not and should not replicate other privacy frameworks, including that enforced by the Federal Trade Commission.")
[112] *See Lifeline Modernization Order* at para. 39 ("The BIAS that we define as a supported service for the Lifeline broadband program is a telecommunications service that warrants inclusion in the definition of universal service in this context."); and n. 92 ("In the *Open Internet Order,* the Commission concluded that BIAS is a telecommunications service subject to our regulatory authority under Title II of the Act regardless of the technological platform over which the service is offered.").

chairman.[113] To retain the Commission's clear authority to administer this key program, the agency should maintain its Title II classification of BIAS providers.

The digital divide remains a force that keeps millions of Americans offline, disconnected from the modern economy and vital services. The Pew Research Center reported that only 53 percent of adults with annual incomes of $30,000 or less has broadband at home, and that only 56 percent of adults in the same income bracket have a desktop or laptop computer.[114] According to the Commission, 64.5 million Americans lack internet access, with affordability being the primary barrier.[115] Undoing the agency's Title II jurisdiction over broadband companies would strip the Commission's ability to bring broadband to more Americans. A December 2015 Pew Research Center study showed that non-broadband adopters were increasingly likely to see their lack of broadband access as a disadvantage in significant areas of their lives, including finding out about new job opportunities or gaining new career skills, learning about or accessing government services and getting health information.[116] As OTI has previously argued[117], the digital

[113] Statement of FCC Chairman Ajit Pai on the Future of broadband in the Lifeline program, March 29, 2017 https://apps.fcc.gov/edocs_public/attachmatch/DOC-344129A1.pdf ("I support including broadband in the Lifeline program to help provide affordable, high-speed internet access for our nation's poorest families.").
[114] *See Digital divide persists even as lower-income Americans make gains in tech adoption,* Monica Anderson, March 22, 2017 http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption.
[115] *See Lifeline Modernization Order* para 2 ("The biggest reason these Americans don't sign up for broadband today is cost. Only half of all households in the lowest income tier subscribe to a broadband service and 43 percent say the biggest reason for not subscribing is the cost of the service.")
[116] *See Home Broadband 2015,* John B. Horrigan and Maeve Duggan (Dec. 21, 2015), http://www.pewinternet.org/2015/12/21/home-broadband-2015 ("Roughly two-thirds (69%) of Americans indicate that not having a home high-speed internet connection would be a major disadvantage to finding a job, getting health information or accessing other key information – up from 56% who said this in 2010.")
[117] *See* Comments of New America's Open Technology Institute filed Aug. 31, 2015 ("The gap between the digital haves and have-nots has dramatic secondary effects that limit access to needed government services, perpetuate income inequality, and dampen economic growth across all socioeconomic strata.")

divide is especially stark for low income communities and communities of color. The research company eMarketer released data in June 2017 revealing that "Hispanics are less likely than other demographic groups to access the internet, while whites continue to be more connected than anyone else," according to Recode.[118] The digital divide is especially harmful to households with school-age children that lack access to vital educational resources—a problem former Commissioner Rosenworcel called the "homework gap."[119]

As of March 2017, 3.5 million people were already receiving broadband subsidies through the Lifeline program.[120] The Commission should not undermine the legal foundation of a program that is making headway in closing the digital divide for millions of Americans.

C. Abandoning Title II would harm network investment.

The 2015 Order ensures that BIAS providers cannot dictate the winners and losers of the online marketplace by preserving the "virtuous cycle" of internet use, investment, and demand for innovative services.[121] Without these protections, BIAS providers are well positioned to use their gatekeeper role to stifle innovation, deter startup investment, and stall job growth in the internet economy.

---

[118] *See* Rani Molla, *American Hispanics are still less likely to access the internet,* Recode (June 15, 2017), *available at* https://www.recode.net/2017/6/15/15808988/hispanics-internet-access-race-emarketer

[119] *See* John B. Horrigan, *The numbers behind the broadband 'homework gap',* The Pew Research Center (April 20, 2015), *available at* http://www.pewresearch.org/fact-tank/2015/04/20/the-numbers-behind-the-broadband-homework-gap.

[120] *See* Jacob Kastrenakes, *FCC chief plans to hand broadband subsidy program's expansion off to states,* The Verge (March 29, 2017), *available at* https://www.theverge.com/2017/3/29/15106850/fcc-lifeline-program-reverse-federal-oversight-ajit-pai.

[121] *See* 2015 Open Internet Order at para. 77.

The 2015 Order has benefitted companies of all sizes by keeping the online market a level playing field for innovation and competition. Amazon, Facebook, and Google all began as small startups that relied on net neutrality to grow into successful global businesses that create thousands of jobs. Today's small startups rely on the 2015 Order to preserve the competitive market that allowed companies like Amazon to succeed in the past.[122]

Chairman Pai's claims of declining broadband investment are factually dubious. All indications point to the conclusion that the rules are working for both consumers and industry. A coalition of small BIAS providers recently affirmed their "full support" for the 2015 Order, noting they "have encountered no new additional barriers to investment or deployment as a result of the 2015 decision to reclassify broadband as a telecommunications service and have long supported network neutrality as a core principle for the deployment of networks for the American public to access the internet." The providers also made the point that the FCC's "current course threatens the viability of competitive entry and competitive viability."[123] Sonic, a broadband company in the Sacramento area, recently disputed claims that the *2015 Order* dampened infrastructure

[122] *See* Engine letter to Chairman Ajit Pai *available at* http://www.engine.is/startups-for-net-neutrality/ ("Without net neutrality, the incumbents who provide access to the internet would be able to pick winners or losers in the market. They could impede traffic from our services in order to favor their own services or established competitors. Or they could impose new tolls on us, inhibiting consumer choice… Our companies should be able to compete with incumbents on the quality of our products and services, not our capacity to pay tolls to internet access providers.")

[123] Letter from A Better Wireless, NISP, LLC, et. al, *Protecting and Promoting the Open Internet*, GN Dkt. No. 14-28 (June 27, 2014).

investment, arguing that many BIAS providers "have already proved this theory false" by "continuing to invest despite the current net neutrality requirement."[124]

Those small ISPs are not the only ones who testify that the 2015 *Order* has not harmed internet speeds. NCTA – The Internet and Television Association recently touted Akamai's "State of the Internet" report that found the average peak connection in the United States has increased since 2015.[125] These numbers support the proposition that the 2015 Order preserved the "virtuous cycle" of innovation.[126] NCTA also recently said "billions of dollars annually are being invested to improve the speed and capacity of networks."[127]

BIAS providers are also telling their investors and the Securities and Exchange Commission a different story. According to Free Press, "Not one single publicly traded U.S. internet service provider has ever told its investors (or the Securities and Exchange Commission) that Title II had a negative impact or negatively impacted its investments." The group also found that the topic of Title II reclassification "largely disappeared" from all broadband providers' investor calls following the Commission's vote until after the November 2016 election, "when political considerations returned to the conversation after

[124] *See* Dane Jasper, "Why you should support net neutrality" (May 31, 2017) *available at* http://www.sfchronicle.com/opinion/openforum/article/Why-you-should-support-net-neutrality-11186622.php.
[125] *See* NCTA, *America's Internet Speeds Continue to Soar* (June 2, 2017), *available at* https://www.ncta.com/platform/broadband-internet/americas-internet-speeds-continue-to-soar.
[126] *See* Harold Feld, "NCTA Proves Virtuous Cycle Works" (June 8, 2017), *available at* https://www.publicknowledge.org/news-blog/blogs/ncta-proves-virtuous-cycle-works ("The FCC adopted the Open Internet Order because it determined that doing so would preserve the traditional incentive of broadband providers to make money by selling faster better broadband, rather than follow the airline model of making your must-have product consistently worse so that those who can afford to do so pay extra just to get to 'less Hellish.'").
[127] *See* NCTA, *Unleashing Connectivity, Entertainment, and Jobs* (July 5, 2017), *available at* https://www.ncta.com/platform/industry-news/unleashing-connectivity-entertainment-and-jobs

more than a year of industry successes under the Title II framework." The report lifted statements from broadband companies to the SEC and its investors, where these corporations are legally obligated to tell the truth. Free Press also found that Comcast, Mediacom, and Cincinatti Bell accelerated or completed upgrades to next-generation networks since 2015.[128] Data from the U.S. Census Bureau similarly shows that capital expenditures were up $2.7 billion in 2015 compared to 2014.[129] Research from the Internet Association also found that there has been no negative impact on broadband infrastructure investment as a result of the *2015 Order*. The Internet Association added they also found no decline in investment in the U.S. compared to other Organization for Economic Co-operation and Development countries.[130]

VI. The Commission should retain its authority to protect the public from interconnection abuse.

The Commission's proposal to relinquish authority over internet traffic exchange, or "interconnection," is misguided and should be rejected. The Commission's thoughtful and prudent approach to interconnection was one of the landmark achievements of the

[128] *See* Free Press, *It's Working: Free Press Documents Historic Levels of Investment and Innovation Since FCC's 2015 Open Internet Order* (May 15, 2017) *available at* https://www.freepress.net/press-release/108079/its-working-free-press-documents-historic-levels-investment-and-innovation-fccs.
[129] *See* U.S. Census Bureau *Capital Expenditures for Structures and Equipment for Companies With Employees: 2015 and 2014 Revised available at* https://www2.census.gov/programs-surveys/aces/visualizations/2015/information.pdf.
[130] *See* Internet Association, *Principles To Preserve & Protect An Open Internet,* (June 21, 2017), p 7 *available at* https://cdn1.internetassociation.org/wp-content/uploads/2017/06/InternetAssociation-Open-Internet-Principles-Full.pdf.

2015 Order. Repealing that achievement would restore a glaring loophole that ISPs exploited, at great cost to consumers and businesses, before the 2015 rules were enacted.

Nondiscrimination issues do not exist solely between access BIAS providers and their end users. In recent years, some of the most egregious network discrimination occurred between BIAS providers and the transit ISPs, content delivery networks, and edge services with whom they interconnect. The Commission developed a strong body of evidence to support its conclusions about interconnection. This evidence cannot be easily swept aside. The interconnection points between access and transit networks are a vulnerable part of the internet's architecture. The Commission must retain clear authority to address harms at this point in the network to protect the Open Internet and fulfill its public interest mandate.

A. The Commission's conclusion that BIAS includes interconnection was legally sound and grounded in strong empirical evidence.

The NPRM's assertion that the 2015 Order was an "expansive departure from agency precedent" with respect to interconnection is unfounded. After a lengthy study of internet traffic exchange, the Commission concluded:

> *BIAS involves the exchange of traffic between a broadband Internet access provider and connecting networks. The representation to retail customers that they will be*

able to reach 'all or substantially all Internet endpoints' necessarily includes the promise to make the interconnection arrangements necessary to allow that access.[131]

This determination was justified and appropriate. The Commission based its findings on empirical research, robust stakeholder input, and deliberative analysis—the hallmarks of good administrative procedure. Rather than an "expansive deviation," the Commission's conclusion was a quintessential example of evidence-based rulemaking, underscoring precisely why Congress created expert agencies like the FCC in the first place.

As the NPRM notes, the Commission had previously excluded interconnection from the scope of the 2010 Open Internet Order.[132] But most of that order was overturned in *Verizon v. FCC*. One would naturally expect any future order to deviate from a past rulemaking that had been deemed legally flawed. The *Verizon* decision left Title II as the only available legal authority for the Commission to protect the public from discriminatory network practices. The court held that the Commission cannot use 706 authority to prohibit network discrimination. *Verizon* also makes clear that, in the absence of Title II, the Commission cannot protect end users and edge providers from anticompetitive access fees or abusive interconnection practices. US Telecom echoed the NPRM's concerns in a recent lawsuit that alleged the Commission had exceeded its authority with respect to interconnection. The D.C. Circuit rejected this argument, concluded that the FCC's interconnection authority was legally sound, and upheld the 2015 Order in its entirety.

[131] 2015 *Open Internet Order* at ¶ 28.
[132] *Id.* note 125; *see also 2010 Open Internet Order* at at ¶ 67.

The 2015 Order's interconnection authority is supported by a deep record and clear analysis of how the interconnection market operates. ISPs exist in a two-sided market that includes end users and the complex array of networks that comprise the backbone of the Internet. Without interconnections to transit providers, content delivery networks, and edge services, BIAS providers could not offer broadband internet access service. Accordingly, the Commission reasoned that interconnection is "simply derivative of" the telecommunications service offered to end users. As COMPTEL explained, this action was "a logical extension of the 2010 Open Internet Order and clearly in line with the Commission's proposal."[133]

The robust public record demonstrated that, in the years after the 2010 Order was enacted, traffic discrimination had moved from the core of the last mile to the point of interconnection. The Commission found that interconnection management can be abused in a manner that "prevents consumers from reaching the services and applications of their choosing."[134] Commenters submitted evidence that this is precisely what happened in late 2013 and early 2014, just as the Commission opened a new net neutrality proceeding. At the time, the nation's four largest BIAS providers were embroiled in a series of high-profile disputes over the terms of their interconnection arrangements with transit providers and edge companies. Simultaneously, Measurement Lab detected severe and prolonged congestion with the same four providers. The ISPs appeared to be deliberately allowing their interconnection ports to congest in an effort to gain leverage in their contractual

[133] *United States Telecom Ass'n v. FCC*, 825 F.3d 684, 712 (D.C. Cir. 2016).
[134] *2015 Open Internet Order* at ¶ 205.

negotiations with interconnecting parties like Netflix and Level 3. The fact that their customers experienced severely degraded speeds for months on end was mere collateral damage. The logical conclusion derived from this record is that interconnection abuse is the functional equivalent of blocking—a practice that both supporters and opponents of the 2015 Order agree should be impermissible.

The record also showed that this new form of interconnection abuse had quietly swelled into a crisis impacting millions of Americans. Consumer websites from this time period are filled with complaints and frustrated pleas from end users whose connections had degraded to unusable speeds.[135] The nationwide scope of the crisis was a clear threat to the public interest that demanded a federal response. OTI argued that the situation was unacceptable:

> *"Regardless of whether the Commission believes a transport price or a peering agreement is an appropriate resolution of the business dispute, under no circumstances can it be acceptable to systematically degrade the consumer experience during these negotiations. … Consumers have paid for a full suite of content and services, and regardless of who is to blame, it is simply not acceptable to remove or disable a service from a platform that has been purchased in good faith."* [136]

The Commission agreed that the situation was untenable and that the record supported federal action. Nothing in the NPRM disputes this record or explains why the

[135] *See* "Beyond Frustrated: The Sweeping Consumer Harms as a Result of ISP Disputes," *Open Technology Institute*, November 2014. *See also* "ISP Interconnection and its Impact on Consumer Internet Performance," *Measurement Lab*, October 28, 2014.

[136] Reply comments of the Open Technology Institute at New America, GN Docket No. 14-28, GN Docket No. 10-127 (September 15, 2014) at 17.

Commission should have turned a blind eye to significant consumer harm on a national scale.

Moreover, the NPRM wrongly asserts that interconnection was classified as a telecommunications service in the 2015 Order. There is no basis for this assertion. The 2015 Order did not classify interconnection as a Title II service; rather, it established that interconnection was part of BIAS. OTI supported this determination because interconnection is not an offer to the public for a fee. Accordingly, the NPRM's inaccurate assertion should not inform the Commission's deliberations in this proceeding.

Lastly, the NPRM mischaracterizes the interconnection authority as a radical step. The jurisdiction established by the 2015 *Order* was narrow and limited. The Commission elected to retain the barest "targeted authority" to address interconnection disputes on a case-by-case basis. Only sections 201, 202, and 208 of the Communications Act were invoked, while the rest were forborn.[137] Most importantly, the Commission explicitly declined to create any restrictions or bright line rules related to interconnection. The Commission argued that it would be "premature to adopt prescriptive rules to address any problems that have arisen or may arise."[138] This is not a radical approach; it is arguably the lightest possible touch the Commission could have made. It is also far less than what OTI asked the Commission to establish; OTI proposed a three-pronged interconnection oversight regime consisting of (1) an enhanced transparency rule requiring ISPs to routinely disclose interconnection agreements to the Commission, (2) a public

[137] 2015 Open Internet Order at para. 195.
[138] 2015 Open Internet Order at para. 202.

measurement platform that would continuously monitor for interconnection congestion, and (3) a bright-line ban on any interconnection-related fee that functioned as a rent-seeking access toll.[139] The Commission rejected all of these proposals and instead chose to merely clarify that consumers and companies could turn to the Commission as a forum to resolve interconnection disputes. The Commission also rejected then-Commissioner Pai's preference to do nothing about interconnection. We believe the 2015 Order's approach to interconnection reflects an appropriate balance of these competing preferences.

B. The 2015 Order appears to have deterred interconnection abuse.

The congestion crisis of 2013 and 2014 was an egregious abuse of ISP power that left millions of Americans stuck in a proverbial online slow lane. The worst congestion typically ended a few days after the ISP brokered a new interconnection agreement with a targeted transit provider or edge company (likely on terms highly favorable to the BIAS provider). Market observers feared that the congestion could resume at any time. However, there has been no evidence of large-scale interconnection congestion in the two years since the 2015 Order was enacted. In a recent update to its 2014 study, Measurement Lab found "significant overall improvement in performance in broadband access in the United States."[140] M-Lab found that interconnection-related congestion has declined

[139] Notice of Ex Parte Communications, Open Technology Institute at New America, GN Dkt. Nos. 10-127, 14-28, MB Docket No. 14-57 (Dec. 22, 2014).
[140] *See* Comments of Measurement Lab, GN Dkt. No. 17-108 (July 15, 2017).

substantially, and that most points of congestion identified in 2014 saw service restored by the second quarter of 2015, when the Open Internet Order went into effect.[141]

The Commission's interconnection-inclusive authority may have contributed to the improved interconnection performance in the United States. The Commission has not adjudicated any interconnection disputes since 2015, but the mere existence of a dispute resolution mechanism can deter abusive practices. The improved health of the American interconnection market suggests that the Commission's light-touch approach is working.

It should be noted that several ISPs disputed the details of the 2013-14 congestion crisis and insisted they were not at fault. However, they did not dispute the notion that interconnection is inherently vulnerable to gatekeeper abuse. No ISP claims that they lack the ability to congest interconnection ports, nor do they deny that poorly maintained interconnection ports can severely degrade their customers' service. ISPs have the technical ability and financial incentive to act as interconnection gatekeepers. This concern was a prominent factor in the regulatory reviews of Comcast's failed bid to acquire Time Warner Cable and Charter's successful acquisition of TWC one year later.[142]

Indeed, it is likely not a coincidence that the ISPs implicated in the 2013-14 disputes were the nation's four biggest. Only BIAS providers with sufficiently large market share can engage in interconnection abuse; smaller providers do not have a large enough customer base to leverage in negotiations. Comcast, AT&T, Charter, and Verizon attained

[141] *Id*.
[142] *Applications of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership for Consent to Assign or Transfer Control of Licenses and Authorizations*, MB Dkt. No. 15-149, 31 FCC Rcd. 6327, (May 10, 2016).

their dominant market shares within the past decade, largely through acquisition of smaller providers. This reflects the consolidation of the BIAS market over the past 20 years, and could help explain why major interconnection disputes only recently became prevalent. As long as the ISP market is dominated by just a handful of companies, the threat of interconnection abuse remains. The Commission's limited authority in this space provides a vital check on the interconnection market. If the Commission rescinds this authority as the NPRM proposes, anticompetitive practices will likely resume and flourish.

C. Relinquishing interconnection authority would harm the public interest and weaken the Commission's understanding of the market.

The NPRM's interconnection proposal would inflict substantial harm on American consumers, the economy, and regulators. Relinquishing jurisdiction over interconnection would "give[] broadband providers a loophole big enough to drive a truck through," as Commissioner Clyburn recently noted.[143] This loophole was effectively closed in 2015, but its restoration would enhance the gatekeeper power of the nation's biggest ISPs to the detriment of everyone else.

As the Commission noted in 2015, anticompetitive interconnection practices can have a "deleterious effect on the Open Internet."[144] These practices often lead to onerous new fees and new barriers to market entry. This, in turn, reduces the edge competition that has made the internet economy a thriving engine of job creation and innovation.

[143] 2017 NPRM at 4499. (Clyburn, dissenting).
[144] 2015 Open Internet Order at para. 195.

Excessive interconnection fees could become an enormous upfront cost for startups that effectively shut them out of the market. Even larger companies such as Amazon are threatened by interconnection pricing.[145] The lack of an enforcement or adjudicating authority in the interconnection market would also create uncertainty for investors, creating a devastating chilling effect on startup investment and innovation. The cost of internet transit could also increase, leading to higher prices for virtually any service that relies on the internet to reach customers. Perhaps most importantly, consumers would once again be vulnerable to prolonged congestion. For the millions of Americans who suffered through the 2013-14 interconnection disputes, the internet was effectively broken. They were paying for a service that was not delivered, and they had no recourse or sense of why it was happening. The Commission should not send American internet users back into that abyss.

The NPRM's proposal would also deny regulators and the public crucial information about the state of the internet transit market. Prior to 2015, this market was notoriously opaque—a black box of private arrangements, informal handshake deals, and rigid nondisclosure agreements. This opacity partly explains why the Commission struggled to develop a record on interconnection in 2010. It also explains why consumers were left in the dark when interconnection disputes interfered with their service. The 2015 Order helped crack open the black box of interconnection, shedding light on the transit

[145] *Protecting the Internet and Consumers Through Congressional Action: Hearing Before the Subcommittee on Communications of the House Energy and Commerce Committee*, 114th Cong. (2015) (Statements of Paul Misener, Vice President of Global Public Policy, Amazon.com) (preliminary transcript available at https://energycommerce.house.gov/hearings-and-votes/hearings/protecting-internet-and-consumers-through-congressional-action).

market and promoting competition through transparency. There is no need to eliminate this authority and its positive impacts. The Commission, investors, and the American people should not have to rely on a canary in the coal mine to know if the transit market is failing. By that point, it may be too late.

As Daniel Lyons of the American Enterprise Institute recently argued, "interconnection disputes between the networks that comprise the internet will play an increasing role going forward … Pundits should focus more on understanding the contours of this space as the spotlight shifts from the edge and moves toward the core of the network."[146] OTI agrees. The 2015 Order enables precisely the kind of study that Mr. Lyons suggests by giving the FCC a mechanism for understanding what is happening in the interconnection market. Nothing in the 2015 Order prohibits conduct or presupposes knowledge with respect to interconnection. As the Commission explained:

> *"[W]e find that the best approach is to* ***watch, learn, and act as required****, but not intervene now, especially not with prescriptive rules. This Order—for the first time—provides authority to consider claims involving interconnection, a process that is* ***sure to bring greater understanding*** *to the Commission."*[147]

This is the lightest possible touch on the market. Anything less would be a total abdication of jurisdiction, as the NPRM proposes, and send the transit market back into the black box that silenced informed parties and left the Commission in the dark. Such an outcome

[146] Daniel Lyons, *Cisco's report on internet trends: Implications for tech policy*, TechPolicyDaily.com (June 12, 2017, 6:00 AM), http://www.techpolicydaily.com/communications/ciscos-report-internet-trends-implications-tech-policy.
[147] 2015 Open Internet Order at para. 31.

would be dangerous for the marketplace and contravene the Commission's public interest mandate.

The 2015 Order's approach to interconnection was a justified and appropriate outgrowth of a robust public record and the Commission's evolving expertise. By establishing interconnection jurisdiction, the Commission responded to serious problems that had harmed millions of Americans. A federal appeals court affirmed the legality of this jurisdiction and the current Commission should retain it for the good of the marketplace and the public interest.

VII. The Commission Should Preserve a Robust Internet Conduct Standard

The Commission should reject the NPRM's proposal to eliminate the Internet Conduct Standard, or "general conduct rule." Much of the 2015 Order's power to protect consumers stems from this rule, which establishes a framework to evaluate new and unforeseen network management practices. The rule was designed to address the Commission's legitimate concern that "there may exist other current or future practices that cause the type of harms our rules are intended to address."[148]

The Commission had good reason to worry about keeping up with changing behavior: The 2010 Order was conceived in large part as a reaction to Comcast's throttling

[148] 2015 *Order* at ¶¶ 135–36.

of BitTorrent in 2007, but it did not address emerging practices such as interconnection. Within a few years, BIAS providers had seemingly abandoned interest in aggressive throttling and had moved on to interconnection manipulation. Similarly, the mobile carrier practice of "zero rating" high-bandwidth content, such as music and streaming video, has been used both to promote competition among ISPs (T-Mobile's BingeOn) and as a means to give a carrier's affiliated over-the-top video content a substantial competitive advantage over unaffiliated edge providers (AT&T's Sponsored Data). The Commission's ability to examine and distinguish among such practices will be critical both to protecting consumers and promoting competition going forward. By creating a general conduct standard, the Commission wisely gave itself a mechanism to close future loopholes that also discourages ISPs from seeking out loopholes in the first place.

A. The Internet Conduct Standard is the Commission's only mechanism for protecting consumers from evolving practices.

The Commission adopted the General Conduct Rule based on its determination that the three bright-line rules – barring blocking, throttling, and paid prioritization – are insufficient "to protect the open nature of the Internet" because "there may exist other current or future practices that cause the type of harms [the] rules are intended to address."[149] To address potentially harmful practices that do not fall squarely under the bright-line rules, the Commission established a more general and flexible no-

[149] 2015 *Order* at ¶¶ 135–36.

unreasonable interference/disadvantage standard.[150] Importantly, the current General Conduct Rule is intended to represent "the Commission's interpretation of Section 201 and 202 of the Act in the broadband Internet access context."[151]

OTI strongly agrees that bright-line rules are necessary but not sufficient to preserve an open internet. As we argued above, today's three bright-line rules and the classification of BIAS as a "telecommunications" service subject to core Title II common carrier regulations are the only adequate and legally sustainable basis to protect consumers and promote innovation, investment and competition among all participants in the internet ecosystem. Nevertheless, if the Commission had never adopted the three bright-line rules – or does not maintain them – it would be *even more essential* to maintain a mechanism to both promulgate *ex ante* guidance concerning new and potentially discriminatory practices harmful to consumers, and to adjudicate complaints by consumers and edge providers concerning unreasonably discriminatory/harmful ISP practices.

OTI strongly disagrees with the *NPRM*'s proposal "not to adopt any alternatives to the Internet conduct rule."[152] Without bright line rules, it would at least be possible for the

[150] *Ibid*. The "General Conduct Rule" prohibits broadband providers from "unreasonably interfer[ing] with or unreasonably disadvantag[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." *Id.* at ¶ 136. The Commission set forth a non-exhaustive list of factors to guide its application: end-user control; competitive effects; consumer protection; effect on innovation, investment, or broadband deployment; free expression; application agnosticism; and standard practices. *See id.* at ¶¶ 138–45. "The standard is designed to be flexible so as to address unforeseen practices and prevent circumvention of the bright-line rules." *US Telecom* at 98.

[151] FCC Wireless Telecommunications Bureau, *Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Contant and Services*, (Jan. 11, 2017) (*retracted*), at 10 ("*WTB Zero Rating Report*"). The report was sent to members of Congress who had written requesting prospective guidance on the issue, but was vacated by the new Chairman shortly after its release.

Commission to communicate an Internet Conduct Standard under which the Commission can prohibit, on a case-by-case basis as necessary, "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 edge providers to access consumers using the internet."[153] But without a robust Internet conduct standard similar to the GCR, consumers and edge providers will have limited and static protections at best. And coupled with the *NPRM*'s skepticism about the need for bright line rules[154] – and the Commission's apparent determination to make bright line rules legally untenable by reclassifying BIAS as an information service – it is clear that the logical outcome of the *NPRM* is no limits whatsoever on the ability of BIAS providers to discriminate or favor their own content, regardless of the harms to consumers and competition.

OTI believes that an Internet Conduct Standard is essential to any effective net neutrality regime. Moreover, the version adopted in the 2015 Order is consistent with a "light touch" regulatory approach since it both forbears from heavy-handed alternatives available under Title II (e.g., structural separation and prescriptive conduct restrictions) and also gives providers prospective guidance concerning new or questionable practices.

As the Wireless Bureau explained in its January report on the practice of zero rating by mobile BIAS providers, the current GCR is a substitute for the traditional structural and/or prescriptive conduct safeguards imposed by the Commission and by Congress over

[152] *NPRM* at ¶ 75.
[153] *2015 Title II Order* at ¶ 135.
[154] *Id*. at ¶ 76-91.

the past half-century to protect consumers and competitors from the ability of telecommunications providers to favor affiliated content or services.[155] The Bureau's report (now retracted) focused on the practice of mobile carriers favoring affiliated video content through the pricing of zero-rated data. It explained how vertical integration by telecommunications providers with leverage as "gatekeepers" over competitors in adjacent, upstream markets has long been subject to preemptive regulatory measures, including structural separation and conduct restrictions, by both Congress and the Commission.[156] Importantly, the Bureau report explains why, in the context of the 2015 Order, the Commission found that broadband providers' ability to leverage their power as terminating access monopolies ("gatekeepers" of the internet's on-ramps) "occurred even in the absence of market power."[157]

The 2015 Order also took steps to mitigate uncertainty about the sustainability of new or borderline ISP practices by establishing a process that allows companies to obtain an advisory opinion concerning any "proposed conduct that may implicate the rules," in order to "enable companies to seek guidance on the propriety of certain open Internet practices before implementing them."[158] As the D.C. Circuit court in *US Telecom* concluded, "[t]he opportunity to obtain prospective guidance thus provides regulated

[155] *WTB Zero Rating Report* at 6-7, 13-4.
[156] *Id.* at 6-8, 13-14. "It is this concern that, in the context of local bottlenecks and emerging long-distance competition, led to the breakup of the Bell System in 1984," *id*. at 7, and to Congress in 1996 adopting both structural and conduct provisions on Bell operating companies and their electronic publishing affiliates, *id*. at 13-14.
[157] *Id*. at 7, citing *2015 Order* at ¶ 40.
[158] 2015 *Order* at ¶¶ 229–30. The opinions issued by the Enforcement Bureau "will be publicly available." *Id*. at ¶¶ 229, 231.

entities with 'relief from [remaining] uncertainty.'"[159] The court noted that although the Commission refrained from imposing a bright-line rule on practices that may or may not be more harmful than beneficial to consumers – such as zero rating and interconnection – it avoided vagueness and undue uncertainty by facilitating guidance and advisory opinions from the Enforcement Bureau. "[C]ompanies that seek to pursue those sorts of practices may petition for an advisory opinion and thereby avoid an inadvertent infraction," the court stated.[160]

In the 2015 Order, the Commission took a modest approach by defining bright line rules only with respect to practices (e.g., blocking, throttling, paid prioritization) that could rarely benefit consumers or the economy, while acknowledging that many other practices (e.g., zero rating, data caps, interconnection) have many variations and contexts that need to be considered as they arise and adjudicated on a case-by-case basis. OTI urges the Commission to maintain an internet conduct standard as balanced as the current GCR and not leave consumers and edge providers without protection or effective recourse. An internet conduct standard, combined with a prospective advisory opinion process and a streamlined enforcement process, represents a prudent balance between the interests of all the internet's stakeholders.

[159] *US Telecom* at 104 (citations omitted).
[160] *Id*. at 104. "[T]he fact that advisory opinions cannot be used for present conduct or conduct pending inquiry is integral to the procedure's purpose—to encourage providers to 'be proactive about compliance' and obtain guidance on proposed actions *before* implementing them." *Id*.

B. Eliminating the rule will discourage network investment and promote conduct that harms consumers and stifles innovation.

Eliminating the general conduct rule will not promote network investment, as the NPRM asserts.[161] If anything, the opposite is most likely the case: it will incentivize ISPs to invest in new ways to monetize the scarcity of their existing network rather than deploy new infrastructure. This disincentive is compounded if the elimination of basic common carrier protections permits BIAS providers to favor their own affiliated applications, content and services over competing edge provider offerings. The absence of even a case-by-case internet conduct standard protecting consumers and edge providers would turn the virtuous cycle upside down. In reality both ISPs and edge providers would have less incentive to invest.

A leading example of the perverse investment incentives created by non-enforcement of an internet conduct standard are sponsored data offerings, under which edge providers pay ISPs to zero-rate their video or other high-bandwidth content or applications. It is no coincidence that sponsored data plans have been limited to mobile BIAS providers with usage caps. A fiber or other very high-capacity fixed network cannot generate profit from sponsored data, since their subscribers can access any application or content without fear of incurring surcharges for excess data use (that is, assuming that current prohibitions on blocking and throttling are not also eliminated).

[161] *NPRM* at ¶ 73.

Mobile BIAS providers have even less incentive to invest in network capacity upgrades when they can leverage a combination of zero rating and sponsored data to gain a substantial competitive advantage over rival edge providers in adjacent markets for streaming video and other high-bandwidth services. It is ironic, therefore, that the NPRM, in its cursory discussion of the merits of an internet conduct standard, spent considerable space criticizing the "now-retracted" report released last January to members of Congress who had written the Commission to express concern about certain zero rating practices.[162]

The Wireless Bureau's report examined four very different zero rated data offerings by three different mobile BIAS providers (T-Mobile, AT&T and Verizon). Applying the current General Conduct Rule – and it's "no-unreasonable interference/disadvantage standard" – the Bureau concluded that *as implemented*, T-Mobile's BingeOn zero rating program for streaming music – which treats all edge providers equally – "appears not to discriminate against or disadvantage (much less unreasonably discriminate or unreasonable disadvantage) any edge provider or end user."[163] The report reaches essentially the same conclusion concerning AT&T's Data Perks program. In both cases, this prospective advisory opinion provided considerable certainty to other ISPs as well concerning how and why these two very different zero rating models can be beneficial to consumers and carriers alike (or at least it did, until the new chairman retracted the report).

[162] *See WTB Zero Rating Report*, *supra* note __.
[163] *Id*. at 12.

In contrast, the Wireless Bureau's report concluded that AT&T's Sponsored Data program and Verizon's similar Freebee Data 360 program present significant risks to consumers, competition and potential edge innovators. The Bureau's analysis showed that AT&T in particular has structured its zero rating program to create an anti-competitive advantage for its DirecTV subsidiary in relation to competing over-the-top video offerings. The Bureau found that unlike T-Mobile, which charges all edge providers the same zero rate for participating in BingeOn, AT&T imposes an estimated $5 per gigabyte charge on third party providers, a fee for zero rating that is uneconomic to its over-the-top video competitors (such as DISH's Sling TV) and which it in effect does not charge its wholly-owned subsidiary (DirecTV).[164] While AT&T's own internet video streaming service is effectively offered free of data charges to its mobile BIAS subscribers, that same large share of the total market for streaming video – more than 130 million subscribers – would be effectively unavailable to DirecTV competitors faced with otherwise similar cost structures. In short, AT&T's Sponsored Data program, dressed up as "zero rating" and wielded as an anti-competitive weapon against competitors in the adjacent market for streaming video services, is a classic example of the sort of anti-competitive and unreasonable discrimination that Congress intended to bar.

The ability of BIAS providers to vertically integrate and favor affiliated content through discriminatory practices is a recipe for *less* investment. This is because both mobile BIAS providers and competing edge providers know the ISP's leverage as a

[164] *Id* at 15.

terminating access monopoly can rig competition in adjacent markets. The Bureau's report, with its case-by-case analysis of how zero rating could be beneficial or harmful, shows exactly why a robust internet conduct standard – coupled with an advisory opinion process – can protect internet stakeholders, minimize uncertainty to ISPs about prohibited conduct, and be flexible enough to evolve along with marketplace and technical realities.

VIII. Mobile Broadband Internet Access Is Properly Classified As A Commercial Service (CMRS) And Subject To Strong Network Neutrality Protections

There is a strong public interest in ensuring that all Americans have largely the same expectations, opportunities and access to content and services online no matter how they connect to the Internet. Low-income and minority communities continue to disproportionately rely on mobile broadband in lieu of fixed broadband to connect to the internet. Continued advances in mobile network technologies and in the mobile marketplace since 2015 also support maintaining a common regulatory framework for fixed and mobile BIAS providers. Divergent rules for fixed and mobile networks would run contrary to consumer experience and also distort markets for competing broadband internet access services. The recent trends of mass adoption of mobile computing devices, the nationwide deployment of high-speed 4G/LTE networks and incoming 5G technologies, the massive offloading of mobile device data traffic over unlicensed Wi-Fi/wireline connections, the resulting rapid convergence of mobile and wireline networks, and new technologies that facilitate consumers switching back and forth seamlessly

between truly mobile (carrier) and nomadic (wireline via Wi-Fi) networks, all support a common regulatory framework.

Any technical differences between BIAS networks – whether cable, satellite, mobile LTE or some other technology – are best accommodated by a Reasonable Network Management exception that is flexible but also strictly limited to purely *technical* (and not business) considerations. The same fundamental principles and obligations should apply to *all* broadband ISPs, even if the resulting rules are *applied* differently based on what is reasonable network management for a particular Internet access technology.

OTI also strongly believes the Commission has no basis to find that mobile broadband is less of a "commercial" mobile service (CMRS) now than it was in 2015. Today there is no networked service more open, interconnected and universally offered than mobile broadband Internet access service. Mobile carriers integrate VoLTE and Wi-Fi calling, over the internet, to any IP or NANP user. And applications such as Google Voice give both IP- and NANP-addressed users the capability to communicate and interconnect. Whether or not the classification of mobile BIAS as a "private" mobile service (PMRS) was plausible in 2007, in 2017 the *NPRM*'s proposal to redefine mobile BIAS as a "private" radio service (akin to a private taxi or push-to-talk workplace network) – and not as a "commercial" service (akin to the mobile calling and texting services) – only serves to reinforce the fact that the more consistent and natural interpretation of the Act is the one adopted by the FCC in 2015 and upheld by the D.C. Circuit Court in 2016.

Like the 2007 *Wireless Declaratory Ruling*, the current *NPRM* struggles to justify the classification of mobile BIAS as a "private" mobile radio service (PMRS). What is most obvious in 2017 is that mobile BIAS is not remotely comparable to PMRS. Even if the Commission reverses its 2015 finding that mobile BIAS meets the literal definition of CMRS, the clear and extensive record of technological and marketplace changes since 2007 must lead the agency to conclude that mobile BIAS is the "functional equivalent" of CMRS.

A. The Open Internet Order and D.C. Circuit Decision Correctly Interpreted Both the Plain Meaning and Intent of Section 332

The Commission's determination to reverse the classification of broadband internet access service (BIAS) as telecommunications runs headlong into a most inconvenient fact: Title III provides that "commercial" mobile services must be regulated as a common carrier. And so, as it did in 2007, the Commission seeks to avoid a statutory contradiction by proposing that mobile BIAS is properly defined as a "private" mobile radio service (PMRS).[165] Whether or not this interpretation was plausible in 2007, in 2017 the *NPRM*'s proposal to redefine mobile BIAS as a "private" radio service (akin to a private taxi dispatch or push-to-talk workplace network) -- and not as a "commercial" service (akin to the mobile calling and texting services now integrated into mobile data plans offered to

[165] Declaratory Ruling, *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, WT Docket No. 07-53, 22 FCC Rcd 5901 at ¶¶ 19-20 (2007) ("*Wireless Declaratory Ruling*"). The 2007 *Wireless Declaratory Ruling* concluded that even if mobile broadband services were an "interconnected service" for purposes of Section 332, "we find it would be unreasonable to classify mobile wireless broadband Internet access service as commercial mobile service because that would result in an internal contradiction within the statutory scheme." *Id.* at ¶ 41.

the general public) -- only serves to reinforce the fact that the more consistent and natural interpretation of the Act is the one adopted by the FCC in 2015 and upheld by the D.C. Circuit Court in 2016.

The Commission and the D.C. Circuit Court correctly interpreted Section 332 to find that mobile Broadband Internet Access Service (BIAS) is a commercial mobile service (CMRS). While Section 3 of the Act *prohibits* common carrier treatment of an information service, Section 332(c)(1)(A) *requires* common carrier treatment of a wireless service that satisfies the definition of "commercial mobile service."[166] Thus, as both the D.C. Circuit and the Commission have found, the information service and Private Mobile Service (PMRS) classifications must go hand in hand to avoid a "contradiction in the statutory framework arising from classifying mobile wireless broadband Internet access service" as an information service but not as PMRS.[167] This potential contradiction makes it particularly important that the Commission justify the basis for its tentative conclusion that mobile BIAS in 2017 is a "private" (PMRS) and not a "commercial" (CMRS) offering. As the D.C. Circuit noted in *U.S. Telecom*, "a reasoned explanation is needed for disregarding facts and circumstances that underlay . . . the prior policy."[168]

As the D.C. Circuit decision in *U.S. Telecom* observed, there is "no dispute" that mobile broadband meets three of the four parts of the statutory definition of commercial mobile

[166] *Id.* at ¶ 50; 47 U.S.C. § 332(c)(1)(A) (2017).
[167] *U.S. Telecom* at 76-78; *Wireless Declaratory Ruling* at ¶ 49.
[168] *Id.* at 76 (quoting *FCC v. Fox Television Stations, Inc.,* 556 U.S. 502, 515-16 (2009)).

service.[169] "The sole remaining question is whether mobile broadband also 'makes interconnected service available.'"[170] The 1993 statute defined "interconnected service" as "service that is interconnected with the public switched network (as such terms are defined by regulation by the Commission)."[171] In its 1994 Order implementing the statute, and prior to existence of mobile broadband, the Commission defined the "public switched network" as "[a]ny common carrier switched network . . . that use[s] the North American Numbering Plan in connection with the provision of switched services."[172] And in 2007, in its *Wireless Declaratory Ruling*, the Commission classified mobile BIAS as an "information service" and as PMRS, finding that mobile broadband was not interconnected with the public switched telephone network and that a PMRS classification was necessary to avoid a statutory contradiction, as noted above.[173]

In the 2015 *Open Internet Order*, the Commission classified mobile BIAS as a commercial mobile service,[174] citing the "sharp contrast" to the nascent mobile broadband ecosystem in existence at the time of the 2007 *Wireless Declaratory Ruling*.[175] The Commission updated its definition of "public switched network" so that it covers "the network that includes any common carrier switched network . . . that use[s] the North American Numbering Plan, *or public IP addresses*, in connection with the provision of

[169] *Id.*at 57.
[170] *Ibid*.
[171] § 332(d)(2).
[172] 47 C.F.R. § 20.3 (prior version effective through June 11, 2015).
[173] *Wireless Declaratory Ruling* at ¶¶ 19-20.
[174] *2015 Open Internet Order* at ¶ 388.
[175] *Id.* at ¶ 398.

switched services."[176] The *2015 Open Internet Order* also concluded that mobile broadband service is also an "interconnected service" not only because it shares all the other attributes of the traditional telephone network (PSTN), but also because mobile BIAS provides the capability for users relying on either IP or NANP addressing to communicate ubiquitously. This technical reality is more the reality in 2017 than it was even two short years ago, as we detail in the sections below.

The D.C. Circuit in *U.S. Telecom* acknowledged the distinction between the capabilities of mobile BIAS in 2007, when the Commission initially classified it as PMRS, and 2015, finding that the Commission's reclassification of mobile broadband as a commercial mobile service (CMRS) was reasonable and supported extensively by the record.[177] The Court found that "[i]n support of its reclassification decision, the Commission relied on, and recounted in detail, evidence of the explosive growth of mobile broadband service and its near universal use by the public."[178] Moreover, as the record demonstrated, the 2015 *Order* noted that mobile connection speeds are dramatically faster, 4G mobile networks are broadly deployed, far more Americans use mobile BIAS than use the traditional phone networks, data consumption is soaring, and the technical capabilities and proliferation of functionality – including the ability to communicate with all NANP endpoints – are robust and continue to rapidly improve.[179]

---

[176] *Id.* at ¶ 391.
[177] *U.S. Telecom* at 56.
[178] *Id.* at 61; *see 2015 Open Internet Order* at ¶¶ 88–92, 391, 398–99.
[179] *U.S. Telecom* at 68-70; *2015 Open Internet Order* at ¶¶ 76, 89, 89 n.170, 401, 401 n.1168; *see Wireless Declaratory Ruling* at ¶¶ 11, 12, 12 n.45; *see also Ex Parte* Letter from Michael Calabrese, OTI, Erik Stallman, CDT,

In contrast, like the 2007 *Wireless Declaratory Ruling*, the current *NPRM* struggles to justify the classification of mobile BIAS as a private mobile service. The *NPRM* proposes to "reach the same conclusions" as the 2007 Ruling with respect to the definition of CMRS and, oddly, asks *whether* there have been "any material changes in technology, the marketplace, or other facts" *since 2007* that would justify a different result.[180] Of course, at the time of the 2007 *Wireless Declaratory Ruling*, smartphones were a novelty. The Apple iPhone had just been introduced, offered exclusively by one mobile carrier, and "[i]ndependent 'app stores' allowing for the seamless downloading and integration of standalone applications [e.g., VoIP calling] into the customer's handset did not exist."[181] As the *U.S. Telecom* decision noted, VoIP applications now come "bundled with the primary operating systems available in every smartphone" and are no longer "functionally distinct" as they were in 2007.[182] Indeed, as described below, today apps like Google Voice give both IP-addressed and NANP-addressed users the capability to communicate and interconnect. The marketplace and ecosystem for mobile broadband has only continued to grow in use, technological capability, and functional integration. The Commission would be unjustified to find that mobile broadband is less of a commercial mobile service now than it was in 2015.

---

and Harold Feld, PK, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 14-28, 10-127 at 4-6 (filed Dec. 11, 2014) ("*OTI Dec. 11 Letter*").

[180] *NPRM* at ¶ 59.

[181] *U.S. Telecom* at 68-69 (citing *Ex Parte* Letter from Harold Feld, Public Knowledge, to Marlene H. Dortch, FCC, GN Docket 14-28, 10-27 (filed Dec 19, 2014) ("*Public Knowledge Letter"*)).

[182] *U.S. Telecom* at 69 (citing *OTI Dec. 11 Letter*).

Congress made clear in the plain language of the statute and its intent in enacting Section 332 that it expected the definition of CMRS to evolve and to that end Congress expressly delegated the authority to the FCC to define terms such as "public switched network," "interconnected service," and "capability."[183] Moreover, as the Commission recognized explicitly in the 1994 *CMRS Order* establishing these definitions – and as the *U.S. Telecom* decision explained – Congress did so with an intent to maintain and extend common carrier consumer protections for both initial (voice) and "advanced" Personal Communications Services, Congress never intended for "public switched network" to mean only the public switched *telephone* network (as it would have thus stated).[184] We describe this further in the next section.

At a technical, statutory, and intuitive level, mobile broadband users are "interconnected" with other mobile broadband users as well as telephone network users. As detailed below, consumers have the "capability" to send *and* receive communications *from* either an IP-based end-point or North American Numbering Plan (NANP) end-point *to* either an IP-based end-point or a North American Numbering Plan (NANP) end-point The increasing popularity of Voice Over Internet Protocol (VoIP) applications such as Skype and FaceTime has merged the functionality of these applications with the functionality of the mobile voice ("native dialing") and with apps and services downloaded from software and other companies.

---

[183] *U.S. Telecom* at 66; *see* 47 U.S.C. § 332(d).
[184] *U.S. Telecom* at 63-64.

Just as consumers are distinguishing less and less between mobile and wireline broadband networks for communication purposes (see section C below), so too are they distinguishing less the differences between VoIP applications and traditional voice calling services. These services have become so "functionally integrated" that the Commission appears to lack any "reasoned explanation" for departing from the current classification of mobile BIAS as a commercial mobile service.[185] The current regime promotes Congress's stated intent to have "consistent regulatory treatment of fixed and mobile broadband."[186] Any regime change to an "original" classification would be unreasonable and contrary to the evident changes in the marketplace, technology, and consumer behaviors and expectations.

---

1. Mobile Broadband Internet Access is Clearly a Commercial and not a Private Mobile Service

In the current *NPRM*, the Commission proposes to return mobile BIAS from its current classification as a commercial mobile service (CMRS) to what it calls its "original classification" by the 2007 *Wireless Declaratory Ruling* as a Private Mobile Radio Service (PMRS).[187] Section 332(d) defines "commercial mobile service" as "any mobile service . . . that is provided for profit and makes interconnected service available (A) to the public or (B) to such classes of eligible users as to be effectively available to a substantial portion of

[185] *Id*. at 76.
[186] *Id*. at 77.
[187] *NPRM* at 55.

the public, as specified by regulation by the Commission."[188] An "interconnected service" is a "service that is interconnected with the public switched network (as such terms are defined by regulation by the Commission)."[189] Commercial mobile services are subject to common carrier regulations under Title II of the Act,[190] while private mobile services, classified as information services, are not subject to common carrier regulations.[191] We examine the terms "public switched network" and "interconnected service" in turn, below, but first it is essential to review the Congressional intent underlying Section 332 as well as the Commission's contemporaneous understanding that Section 332 gave the agency the authority and obligation to define the terms in light of a changing marketplace and for the purpose of maintaining common carrier consumer protections.

As the D.C. Circuit in *U.S. Telecom* concluded, Congress clearly did not intend to forever limit the definition of commercial mobile services (CMRS) – and the "light touch" consumer protections mandated by Section 332(c) – to mobile telephone services.[192] The

[188] § 332(d)(1).
[189] § 332(d)(2).
[190] § 332(c)(1)(A) ("A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this chapter."); *see* § 153(51) ("A telecommunications carrier shall be treated as a common carrier under this chapter only to the extent that it is engaged in providing telecommunications services.").
[191] § 332(c)(1)(D)(2) ("A person engaged in the provision of a service that is a private mobile service shall not, insofar as such person is so engaged, be treated as a common carrier for any purpose under this chapter."); *see* §153(24) ("The term 'information service' means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.").
[192] *U.S. Telecom* at 62 ("Nothing in the statute compels attributing to Congress such a wooden, counterintuitive understanding of those categories."); *see Ex Parte* Letter from Michael Calabrese, Open Technology Institute, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 14-28, 10-127 at 2 (filed Jan. 27, 2015) ("*OTI Jan. 27 Letter*"); *OTI Dec. 11 Letter* at 3-4; *Ex Parte* Letter from Laura Moy and Kate Forscey, Public Knowledge, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 14-28, 10-127 (filed Dec. 19, 2014) ("*Public Knowledge Dec. 19 Letter*"); *Ex Parte* Letter from Michael Calabrese, New America's

Congressional intent underlying Section 332 emphasized regulatory parity and the consumer protections inherent in common carriage regulation. In furtherance of this purpose, Congress gave the Commission express authority in Section 332 both to define the terms "interconnected with the public switched network" and to determine, in the alternative, if a service is the "functional equivalent" of a CMRS.[193]

The broad and forward-looking Congressional purpose behind the 1993 amendments to Section 332 is evident in the statements of the House and Senate authors, former Rep. Edward Markey and former Sen. Daniel Inouye, then the respective chairmen of the House and Senate communications subcommittees. Like the statutory language and the Conference Report, they in no way suggested that CMRS should be limited to the existing switched circuit telephone service. Instead they both looked forward with an emphasis on the Commission's authority to maintain and extend the consumer protections of common carriage regulation as the nation transitions into more varied and advanced PCS services.

Introducing the Licensing Improvement Act of 1993 – and supporting its inclusion in the Omnibus Budget and Reform Act of 1993 (OBRA) – Rep. Markey stated, in part:

> A fundamental regulatory step that this legislation takes is to ***preserve the core principle of common carriage as we move into a new world of services such as PCS***. I have grave concerns that the temptation to put new services under the heading of private carrier [PMRS] is so great that the FCC and the States will lose their ability to impose the lightest of regulations on these services. . . . ***The risk of labeling all services private is that the key principles of nondiscrimination***, no alien ownership, and even minimal State regulation ***would be swept away***.

Open Technology Institute, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 14-28, 10-127 (filed Nov. 10, 2014).

[193] § 332(d).

> ***The fact that this legislation ensures PCS, the next generation of communications, will be treated as a common carrier is an important win for consumers*** and for State regulators and for those who seek to carry those core notions of nondiscrimination and common carriage into the future.[194]

Senator Inouye, a lead co-sponsor, made similar remarks in support of including the amendments to Section 332 in the 1993 OBRA:

> ***The FCC is given the authority to determine who will be included in the definition*** of a commercial mobile service provider. . . .
>
> The FCC is about to issue licenses for personal communications services [PCS] in the next year. ***I believe these new services should be regulated under the same framework as the cellular services***. The regulatory parity provisions ensure that all mobile service carriers . . . are ***treated as common carriers***.[195]

Notably, the similar language introduced in the House and in the Senate was amended in Conference Committee primarily to give the Commission additional express authority, as noted above, to define "interconnected with the public switched network" and also to determine whether services in the future are the "functional equivalent" of CMRS.

At the time of the 1994 *PCS Order*, the primary distinction between CMRS and PMRS was between "commercial" services that were broadly offered to the public – and facilitated universal interconnection – and services that were "private" in the sense that they were closed to the general public and facilitated specific communications needs. The classic examples of PMRS are traditional radio dispatch systems, such as push-to-talk taxicab or workplace networks. Other examples of PMRS include police, ambulance, and

[194] House Floor Statement of Statement of Rep. Markey, Congressional Record, Volume 139 at H3286-87 (May 27, 1993) (emphasis added).
[195] Senate Floor Statement of Sen. Inouye, Omnibus Budget Reconciliation Act, Congressional Record, Volume 139 at S7857, S7950 (June 24, 1993) (emphasis added).

other emergency responders, mass transit companies, and utility organizations that demand the enclosure, security, and combination of brevity and speed of communications.[196] These private services lack the key characteristics of openness and interconnectedness that make commercial mobile services valuable to a consumer.

Today there is no networked service more open, interconnected and universally offered than mobile broadband Internet access service. The Commission stretched the limits of reason in the 2007 *Wireless Broadband Access Order* to find that, *a decade ago*, mobile BIAS was a private mobile service.[197] The Commission did so to harmonize mobile broadband services with the "information services" classification it gave to other types of broadband services in the 2002 *Cable Modem Order*,[198] the 2005 *Wireline Broadband Classification Order*,[199] and the 2006 *Broadband Power Line Order*.[200] Despite mobile broadband's dissimilarities to the private services expressly described by Congress in the 1993 Licensing Improvement Act and by the Commission in the 1994 *CMRS Order*,[201] the Commission nevertheless found that PMRS was an appropriate classification for the

---

[196] *See generally* Michele Farquhar (Chief, Wireless Telecommunications Bureau), *Private Land Mobile Radio Services: Background*, FCC Staff Paper (Dec. 18, 1996) ("*FCC PLMRS Report*"), at 1-10, available at http://wireless.fcc.gov/reports/documents/whtepapr.pdf (describing the historical and present uses, users, and systems of private mobile land radio services).

[197] *Wireless Declaratory Ruling* at ¶ 2.

[198] *Inquiry Concerning High-Speed Access to the Internet Over Cable & Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities,* GN Docket No. 00-185, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798, 4802 at ¶ 7 (2002) ("*Cable Modem Order*").

[199] *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities et al.,* CC Docket Nos. 02-33, 01-337, 95-20, 98-10, WC Docket Nos. 04-242, 05-271, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005) ("*Wireline Broadband Classification Order*").

[200] *In the Matter of United Power Line Council's Petition for Declaratory Ruling Regarding the Classification of Broadband Over Power Line Internet Access as an Information Service*, WC Docket No. 06-10, Mem. Opinion & Order, 21 FCC Rcd 13281 (2006) ("*Broadband Power Line Order")*.

[201] Implementation of Sections 3(n) and 332 of the Communications Act Regulatory Treatment of Mobile Services, GN Docket No. 93-252, *2nd Report and Order*, 9 FCC Rcd 1411 at ¶¶ 118, 120 (1994) ("*1994 CMRS Order*").

"nascent" mobile broadband industry given the statutory contradiction that any other classification would create.[202]

In the 2015 *Open Internet Order*, the Commission "updated its definition of the 'public switched network' to include both users reachable by ten-digit phone numbers *and* users reachable by IP addresses."[203] The D.C. Circuit found the Commission did so "[i]n the interest of achieving that regulatory symmetry and bringing mobile broadband into alignment with mobile voice as a commercial mobile service"[204] and that this decision was "reasonable and supported by record evidence demonstrating the 'rapidly growing and virtually universal use of mobile broadband service' today."[205] The Court found "the Commission relied on, and recounted in detail, evidence of the explosive growth of mobile broadband service and its near universal use by the public" in support of its reclassification of mobile BIAS in the 2015 *Order*.[206] Finally, the Court found that "[a]ccording to the Commission . . . mobile broadband meets all parts of the statutory definition of a "commercial mobile service" subject to common carrier regulation."[207]

In sum, Congressional intent in 1993, the Commission's *CMRS Order* in 1994, the Commission's well-documented findings in 2015, and the D.C. Circuit's decision in 2016 all agree that Congress clearly did not intend to forever limit the definition of commercial mobile services (CMRS) – and the "light touch" consumer protections mandated by

[202] *Wireless Declaratory Ruling at* ¶ 59.
[203] *U.S. Telecom* at 58.
[204] *Ibid.* and *see 2015 Open Internet Order* at ¶ 391.
[205] *U.S. Telecom* at 58 (citing *2015 Open Internet Order* at ¶ 399).
[206] *Id*. at 59; *see 2015 Open Internet Order* at ¶¶ 88–92, 391, 398–99.
[207] *Id*. at 58.

Section 332(c) – to mobile *telephone* services. The technical and marketplace realities of 2015 (and more so in 2017) are vastly different than in 2007. As we describe in the next section, applications such as Google Voice and MagicJack Connect allow IP-based users to *both send and receive* communications from NANP-based users as if they were also NANP-based. This level of functional integration can only reasonably be construed to grant mobile broadband users the "*capability* to communicate to or receive communication from all other users" on the public switched network.

2. The "Public Switched Network" Referenced in Section 332 is Not Synonymous with or Limited to the Legacy Telephone Network

As the *U.S. Telecom* decision stated, the 2015 *Open Internet Order*, "relying on the growing universality of mobile broadband as a medium of communication for the public, expanded the definition of the public switched network so that it now uses IP addresses in addition to telephone numbers in connection with the provision of switched services."[208] The Commission found that, upon examination of Congressional intent in the defining "public switched network," the term "should not be defined in a static way, recognizing that the network is continuously growing and changing because of new technology and increasing demand."[209] Moreover, a textual understanding of the term "public switched network" in Section 332 "reaches any network that is both 'public' and 'switched.'"[210]

As the D.C. Circuit found in *U.S. Telecom*, if Congress meant for the "public switched network" to be limited to the telephone network, it "could (and presumably

[208] *Id.* at 63.
[209] 2015 *Open Internet Order* at ¶ 391 (citing *Second CMRS Report and Order*, 9 FCC Rcd at 1436, ¶ 59).
[210] *U.S. Telecom* at 65.

would) have used the more limited – and more precise – term 'public switched telephone network.'"[211] Congress decided to instead use "public switched network," which the Court argued "by its plain language can reach beyond telephone networks alone."[212] If Congress wanted to forever limit CMRS to services directly interconnected to the traditional telephone network, the Conference Committee would not have added language authorizing the Commission to define the terms.[213] Congress could have referred specifically to the "telephone" network if it intended to strictly limit the future services that the Commission might designate as CMRS – but instead it cast the provision more broadly.[214]

Critically, Congress omitted the word "telephone" from the plain language of the statute.[215] The court in *U.S. Telecom* noted that extemporaneously reading the word "telephone" into the statute is not a reasonable interpretation.[216] "Nothing in the statute compels attributing to Congress such a wooden, counterintuitive understanding" of

[211] *Id.* at 64.
[212] *Ibid.*
[213] *See 2015 Open Internet Order* at ¶ 369.
[214] *See id.* at ¶ 396 n.1142.
[215] 47 U.S.C. § 332(d)(2); *see U.S. Telecom* at 64 ("Indeed, Congress used that precise formulation in another, later-enacted statute. *See* 18 U.S.C. § 1039(h)(4). Here, though, Congress elected to use the more general term 'public switched network,' which by its plain language can reach beyond telephone networks alone . . . Not only did Congress decline to invoke the term 'public switched telephone network,' but it also gave the Commission express authority to define the broader term it used instead.").
[216] *U.S. Telecom* at 63 (noting that adding critical words to statutes is "an unpromising avenue for an argument about the meaning of the words Congress used").

public versus private mobile services that would require such an interpretation of "public switched network."[217]

Congressional intent underlies this conclusion. In the statutory language and in the Conference Report, Congress in no way suggested that CMRS should be limited to the existing switched circuit telephone service. Congress adopted the Senate's provisions in the Conference Report for the Omnibus Budget Reconciliation Act of 1993. The Conference Report explicitly stated that, unlike the House version, the "Senate definition expressly recognizes the Commission's authority to define the terms used in defining 'commercial mobile service.'"[218] More critically, although the House version included the word "telephone," the Conference Committee adopted the Senate language that omits the word "telephone," so that the statute actually enacted states that CMRS must be "interconnected with the public switched network" as those terms are "defined by regulation by the Commission." This, in turn, is consistent with the statements of the 1993 Act's authors, noted above. As Rep. Markey stated, "[t]he fact that this legislation ensures PCS, the next generation of communications, will be treated as a common carrier is an important win for consumers." [219]

It is also relevant to recall that in 1993, Internet access relied on dial-up modems and copper telephone lines, which at that time were considered foundational elements for

[217] *Id.* at 64 ("Mobile petitioners conceive of 'public switched network' as a term of art referring only to a network using telephone numbers. But if that were so, it is far from clear why Congress would have invited the Commission to define the term, rather than simply setting out its ostensibly fixed meaning in the statute.").
[218] H.R. Rep. 103-213, 103d Cong., 1st Sess., at 496 (1993) ("*Conference Report*").
[219] House Floor Statement of Statement of Rep. Markey, Congressional Record, Volume 139 at H3286-87 (May 27, 1993).

what the Clinton Administration called the emerging "information superhighway." Although mobile broadband Internet access was unknown at the time, Congress in 1993 was keenly aware of the need to extend the utility of the "public switched network" beyond telephony to high-speed Internet access, which accounts for the several changes in the 1993 Conference Report that expanded the discretion of the Commission to define, assess and update the appropriate classification of wireless networks.

The D.C. Circuit found that the Commission "permissibly considered a network using telephone numbers and IP addresses to be a "public switched network."[220] The use of IP addressing to route voice calls, texts and all manner of digital communication is as universal as the NANP number system. "[T]oday's broadband Internet access networks use their own unique addressing identifier, IP addresses, to give users a universally recognized format for sending and receiving messages across the country and worldwide."[221]

Congress also gave the Commission the flexibility to update the definition and scope of the "public switched network" to account for changes to the communications marketplace and thereby to extend consumer common carrier protections. The mobile ecosystem has steadily shifted from the legacy circuit switched network as the internet and its IP addressing system have become ubiquitous and the predominant network as voice fades as a separate service. In 2017, there are several applications used by millions of people that are further blurring the lines between the traditional phone system

[220] *U.S. Telecom* at 65.
[221] *2015 Open Internet Order* at ¶ 391.

connecting two NANP end-points over the public switched telephone network and VoIP services that allow individuals – including those without internet access – to call and connect with one another over the internet using mobile broadband.

As argued above, new applications and developing technologies enable voice communication using "over the top" services to anyone on the "public switched network," which was rightfully reclassified to include both the traditional phone networks as well as mobile broadband internet service. The D.C. Circuit Court of Appeals specifically cited OTI's argument that because VoIP applications such as FaceTime and Google Hangouts now come "bundled with the primary operating system" on Apple and Android devices, respectively, they are no longer "rare and clearly functionally distinct" as they were in 2007, as well as Public Knowledge's observation that any distinction between calls made with a device's "native" dialing capacity and those made through VoIP have become "increasingly inapt."[222] The Court agreed with the Commission's decision to determine that mobile VoIP is among the various ways consumers can communicate between NANP and IP endpoints on the public switched network. "In light of these developments, the Commission reasonably determined that mobile broadband today is interconnected with the newly defined public switched network," the Court wrote in its opinion.[223]

---

[222] *U.S. Telecom* at 69-70.
[223] *Id.* at 70.

Today's 'Public Switched Network' Ubiquitously Interconnects IP and NANP Endpoints

Since 2015, the mobile broadband and legacy telephone network have become even more fully interconnected as over the top messaging and calling services give consumers the capability to connect to telephone numbers associated with the North American Numbering Plan (NANP). Consumers are now able to use a variety of internet-enabled applications that allow them to send calls and texts to NANP end-points.

As the Commission anticipated in the 2015 *Open Internet Order*, today applications such as **Google Voice** reflect the fully interconnected nature of the mobile broadband and legacy telephone networks. Google Voice provides the capability for voice calls in both directions between IP and NANP endpoints. Google Voice assigns users a single common "phone" number (address) for U.S. customers who have a Google account to use for up to six devices. Google Voice allows users to choose from available NANP phone numbers,[224] but the calls and texts are sent "over the top" using a combination of broadband IP and the NANP system. Consumers can use the internet to make phone calls and send text messages from a computer to a NANP end-point in the same way a person making a call or sending a text message between two NANP end-points.[225] Conversely, consumers on a phone lacking internet access (e.g., a POTS landline) can place calls that are routed over the Internet (IP addressing) to mobile devices (e.g., tablets, laptops, smartphones),

[224] *See* Google Voice Help Website, "Set Up a Google Voice Account," *available at* https://support.google.com/voice/answer/7207482?hl=en&ref_topic=1707989 (accessed July 13, 2017).
[225] *See* Google Voice Help Website, "Call Someone," *available at* https://support.google.com/voice/answer/3379129?co=GENIE.Platform%3DDesktop&hl=en (accessed July 13, 2017).

including to individuals who do not subscribe to any traditional "telephone" (NANP) service.

The way Google Voice blends the use of the PSTN and VoIP services for its application showcases the gradual blurring of lines between mobile broadband and the legacy phone network as the basis of communications systems. When using Google Voice, it is not inherently obvious to the user whether or not they are using the internet or the legacy phone network to communicate with somebody. Google Voice routes calls from mobile devices through the PSTN, but goes through Google cloud services on the internet as well.[226] Additionally, because broadband users are assigned a virtual 10-digit NANP number, a person placing a voice call from mobile or landline telephone (a NANP end-point) can connect to a Google Voice user on their mobile device or computer (an IP-based end-point) – and thereby interconnect with consumers who do not subscribe to any traditional "telephone" (NANP) service.

MagicJack Connect, an application available for download to Apple and Android mobile devices, also allows users to make and receive phone calls to NANP end-points over the internet.[227] The application enables calling both to the U.S. and internationally, including from IP endpoints back to U.S. landlines. The company specifically advertises

[226] *See* Nadeem Unuth, *How Google Voice Works,* Lifewire (March 9, 2017), *available at* https://www.lifewire.com/how-google-voice-works-3426682.
[227] *See* MagicJack Connect Website, "Frequently Asked Questions," *available at* http://www.mjconnect.com/faq/ (accessed July 13, 2017).

that after purchasing an upgrade, users can "make and receive calls like you normally would. Your friends and family can call you just like a regular phone number."[228]

The company also sells a MagicJack dongle that plugs into the USB port of a computer and allows users to make and receive phone calls to NANP end-points over the internet.[229] Users can use the MagicJack dongle to call mobile phones and landlines (NANP endpoints) in the U.S. and Canada using a high-speed internet connection.[230]

Users of the application **Skype** are able to pay to make calls to mobile and landline telephones with NANP numbers. Skype enables users to call from the IP-based end-point (the Skype app) to a NANP end-point using either a mobile device or a desktop or laptop computer. Consumers have the capability to go through the internet to connect through the Public Switched Telephone Network through another Skype application, dubbed **SkypeOut**. The application allows its users to call landlines or cellphones through the PSTN from an internet-connected device without assigning a telephone number to the outgoing call. "A telephone number is not needed to place an outgoing call to the public switched telephone network. Several applications that permit outbound calls to the public switched telephone network from an internet-connected device do not assign a telephone number to the calling party," Skype's parent company, Microsoft, stated in comments filed with the Commission in July 2017 regarding a Commission proposal aimed at

[228] *Ibid*.
[229] *See* MagicJack Website, "Learn How VoIP Calling Works With magicJack," available at http://www.magicjack.com/how-it-works.html (The device uses VoIP to enable the user to make local and long-distance calls to the U.S. and Canada using an internet connection) (accessed July 13, 2017).
[230] *See* MagicJack Website, "magicJackGO," available at http://www.magicjack.com/magicJackGO.html (accessed July 13, 2017).

preventing robocalls. Users of SkypeOut can call cellphones and landlines without entering an origin call number or caller ID.[231]

The SkypeOut application directs calls from an IP-based end-point and then redirects it to the Public Switched Telephone Network or cell phone services to eventually reach the NANP end-point.[232] For the consumer, the capability to reach a NANP end-point phone through the PSTN reflects the interconnected nature of mobile broadband and the legacy phone system.

Similarly, Viber offers an application, **Viber Out**, that gives its users the capability to pay to make calls to landline and mobile phone users who have not downloaded Viber using Voice Over Internet Protocol.[233] Consumers can use a similar application, LINE, to make free VoIP calls to cellphones and landlines in certain countries after watching an advertisement through its LINE Out program.[234] The program allows users to call individuals who do not use the application for free, all through its VoIP system.[235]

There are several other applications that enable users to use VoIP to call people who have the same application, such as WhatsApp or FaceTime. WhatsApp, like Facebook Messenger, also enables users to send text messages to one another over the internet.

---

[231] *See* Comments of Microsoft, *Advanced Methods to Target and Eliminate Unlawful Robocalls,* CG Docket No. 17-59 at 14 (July 3, 2017), available at https://ecfsapi.fcc.gov/file/10703558104752/Microsoft%20Robocalling%20Comments%20-%20filed%203%20July%202017.pdf.

[232] *See* Nadeem Unuth, *The SkypeOut Service,* Lifewire (updated February 23, 2017), available at https://www.lifewire.com/skypeout-service-3426829.

[233] *See* Nadeem Unuth, *Viber App Review,* Lifewire (updated February 23, 2017), available at https://www.lifewire.com/viber-app-review-3426625.

[234] *See* Nadeem Unuth, *LINE App Review*, Lifewire (updated February 23, 2017), available at https://www.lifewire.com/line-app-review-3426438

[235] *See* LINE website, "Make up to 5 minute calls for free to almost anywhere around the globe," available at https://line.me/en/call (accessed July 17, 2017).

In 2015, the Commission agreed with commenters, including OTI, that updating the definition of the "public switched network" was necessary due to changes in the communications landscape that reflected the ubiquity of mobile broadband as well as emerging technologies and services.[236] Further changes in the ecosystem and the increased popularity of VoIP applications, as detailed above, demonstrate that the Commission made the right decision to update the definition of the "public switch network." The Commission correctly concluded in 2015 that by "reflecting the foregoing changes in technology and communications infrastructure, [the Commission's] definition contemplates a single network comprised of all users of public IP addresses and NANP numbers, and not two separate networks…"[237] The D.C. Circuit upheld the Commission's decision in 2016, stating: "As we have explained, the Commission, relying on the growing universality of mobile broadband as a medium of communication for the public, expanded the definition of the public switched network so that it now uses IP addresses in addition to telephone numbers in connection with the provision of switched services."[238]

3. Today the Internet and Telephone System are both Separately and Together an "Interconnected Service"

The second argument that opponents of common carrier regulation of mobile BIAS have forwarded is that even if "public switched network" includes Internet Protocol-

[236] *2015 Open Internet Order* at ¶ 396.
[237] *Ibid*.
[238] *U.S. Telecom* at 63.

enabled communication services, mobile broadband still fails to qualify as "interconnected." As the D.C. Circuit court found in *U.S. Telecom*:

> There is no dispute that mobile broadband meets three of the four parts of the statutory definition of commercial mobile service. Mobile broadband is a "mobile service"; it "is provided for profit"; and it is available "to the public" or "a substantial portion of the public." *Id.* § 332(d)(1). In those respects, mobile broadband bears the hallmarks of a commercial—and hence not a private—mobile service. The sole remaining question is whether mobile broadband also "makes interconnected service available."[239]

The Commission currently defines "interconnected service" as a service that "gives subscribers the capability to communicate to or receive communication from other users on the public switched network."[240] Whether mobile BIAS today is an "interconnected service" boils down to whether the service "gives subscribers the *capability* to communicate to or receive communication from all other users on the public switched network" as redefined to encompass devices using both IP addresses and telephone numbers."[241] There is "no dispute" that mobile broadband users can "send and receive communications from all other users of the Internet."[242] The Commission noted in 2015 that in "sharp contrast to 2007," when the agency characterized mobile BIAS as being in a

[239] *Id.* at 54.
[240] 47 C.F.R. § 20.3 (prior version effective through June 11, 2015); *see U.S. Telecom* at 74 (finding that "mobile broadband would qualify as interconnected service *regardless* of the Commission's adjustment" of the word, "all" prior to "other users"); *see also 2015 Open Internet Order* at ¶ 390 (concluding that mobile BIAS is an interconnected service with the inclusion of "all").
[241] *U.S. Telecom* at 66 (quoting 47 C.F.R. § 20.3) (emphasis added).
[242] *U.S. Telecom* at 67 (quoting *2015 Open Internet Order* at ¶ 398).

"nascent stage" – and the first iPhone had just been introduced – the mobile broadband market had "evolved such that hundreds of millions of consumers" used mobile broadband to access the internet.[243] Indeed, the ubiquity of smartphone use in the United States is growing. The Pew Research Center reports that 77 percent of Americans used a smartphone as of November 2016, up from the 67 percent in the group's April 2015 survey.[244] The importance of mobile broadband internet access is even greater for low-income communities. In that same data set, the Pew Research Center found that 20 percent of Americans who make $30,000 annually or less rely almost exclusively on smartphones to access the internet – meaning they have a smartphone but do not have broadband internet at home. Only 12 percent of Americans in that income bracket owned smartphones and had no broadband internet at home in 2013, Pew reported.[245]

In addition, as we detailed in the previous section, IP-based and NANP-based systems, both separately and together, make interconnected service available. In 2015 the Commission specifically determined that mobile broadband users do have the capability to communicate with telephone users (NANP endpoints) through VoIP and related applications.[246] The D.C. Circuit in *U.S. Telecom* agreed with this analysis.[247] Explaining

[243] *2015 Open Internet Order* at ¶ 398.
[244] Pew Research Center Website, "Mobile Fact Sheet," available at http://www.pewinternet.org/fact-sheet/mobile/ (accessed July 13, 2017).
[245] Monica Anderson, *Digital divide persists even as lower-income Americans make gains in tech adoption,* Pew Research Center (March 22, 2017), available at http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/?utm_content=bufferc79de&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer.
[246] *2015 Open Internet Order* at ¶¶ 400–401; *see also U.S. Telecom* at 67 ("[A] mobile broadband user . . . with a VoIP application on her tablet can call her friend's home phone number even if the caller's tablet lacks cellular voice access (and thus has no assigned telephone number). When she dials her friend's telephone number, the VoIP service sends the call from her tablet's IP address over the mobile broadband network to connect to the

that the Commission "had a different understanding about the relationship between mobile broadband and VoIP" in 2007 than it did in 2015, the D.C. Circuit found that the Commission properly based its conclusion in the 2015 *Open Internet Order* on that fact that "VoIP applications now function as an integrated aspect of mobile broadband, rather than as a functionally distinct, separate service."[248] Specifically, the Commission relied on "changes in the marketplace . . . highlight the convergence between mobile voice and data networks that has occurred since the Commission first addressed the classification of mobile broadband Internet access in 2007."[249] The D.C. Circuit concluded that the record before the Commission "substantially support[ed] that understanding, as well as the associated finding that the relationship between VoIP applications and mobile broadband today significantly differs from that of 2007."[250]

As we detailed in the previous section, there is substantial evidence that VoIP applications are even more functionally integrated into mobile broadband services today. Google Voice is the leading example of a widely-used app that permits voice calls in both directions between IP and NANP endpoints. Subscribers of mobile broadband data services expect to be able to send communications to IP-based and NANP-based users through services such as FaceTime, MagicJack Connect, Google Hangouts, Viber, Skype and other very commonly used voice, video call and texting apps. Moreover, these

---

telephone network and, ultimately, to her friend's home phone. As such, mobile broadband, through VoIP, 'gives subscribers the capability to communicate to"'telephone users. 47 C.F.R. § 20.3.").

[247] *U.S. Telecom* at 67.

[248] *Id.* at 68.

[249] *2015 Open Internet Order* at ¶ 401.

[250] *U.S. Telecom* at 68.

services are increasingly "bundled with the primary operating systems available in every smartphone."[251] As the D.C. Circuit noted: "Any distinction between calls made with a device's 'native' dialing capacity and those made through VoIP thus has become 'increasingly inapt.'"[252]

Mobile carriers are also taking part in the integration of voice calling between IP and NANP end-points as the internet increasingly becomes the predominant network for all personal communications services including voice, texting, and data. In addition to their ongoing transition to Voice over LTE (VoLTE), all four major U.S. carriers (AT&T, Verizon, Sprint and T-Mobile) offer Wi-Fi calling services.[253] Today, carriers will increasingly route voice calls by mobile BIAS subscribers through a Wi-Fi network, which generally bypasses the traditional public switched telephone network while also allowing call completion to NANP end-points, similar to Google Voice and other apps. In 2014, T-Mobile announced its Wi-Fi Calling would be enabled on Apple's iOS 8 as an integrated application (no download required): "Just connect to any available Wi-Fi network, check that Wi-Fi Calling is turned on on your capable smartphone, and make a call (or send a text, email, etc.) as you normally would. That's it."[254] By March 2015, T-Mobile had 7

[251] *OTI Dec. 11 Letter* at 6.
[252] *U.S. Telecom* at 70 (quoting *OTI Dec. 11 Letter* at 5); *see also Public Knowledge Dec. 19 Letter* at 10.
[253] *See* Lynn La & Andrew Hoyle, "Everything you need to know about Wi-Fi calling," CNET (updated July 30, 2016) *available at* https://www.cnet.com/news/what-you-need-to-know-about-wifi-calling/.
[254] *See* T-Mobile Press Release, "Welcome to Wi-Fi Calling!" available at https://newsroom.t-mobile.com/news-and-blogs/welcome-to-wi-fi-calling.html (accessed July 17, 2017) ("One of the best things about T-Mobile Wi-Fi Calling is that it's so simple to use. You don't need to activate anything or download a special app. Just connect to any available Wi-Fi network, check that Wi-Fi Calling is turned on on your capable smartphone, and make a call (or send a text, email, etc.) as you normally would. That's it.").

million users of Wi-Fi calling.[255] AT&T,[256] T-Mobile,[257] Sprint,[258] and Verizon[259] all offer the ability to make international calls using Wi-Fi calling services. Consumers use the internet in the exact same way as a traditional phone circuit network, and don't necessarily distinguish between the two systems, a clear sign of the interconnected nature of the two telecommunications services. Sprint's website reveals that it plans to update select devices this year to allow "an active call to transfer from Wi-Fi to Sprint's LTE network, if you move outside your current Wi-Fi coverage," further blurring the lines between Wi-Fi, the wireless LTE network, and the public switched telephone network.[260]

The D.C. Circuit found the Commission reasonably determined that mobile broadband is interconnected with the public switched network with the understanding that IP-based users can *send* messages to NANP-based end-points.[261] However, IP-based users can now also *receive* voice calls and other communications from NANP-based users, whether they are mobile or landline-based.[262] This further solidifies the Court's agreement that the technical and marketplace realities of 2015 (and now, more so, in 2017) are vastly

---

[255] Phil Goldstein, "T-Mobile counts 7M customers using Wi-Fi calling," *Fierce Wireless* (March 13, 2015), available at http://www.fiercewireless.com/wireless/t-mobile-counts-7m-customers-using-wi-fi-calling.
[256] Lance Whitney, "AT&T spreads Wi-Fi calling beyond the U.S.," *CNET* (March 23, 2016), available at https://www.cnet.com/news/at-t-expands-wi-fi-calling-to-countries-outside-the-us/.
[257] T-Mobile Support Website, "Wi-Fi Calling," available at https://support.t-mobile.com/docs/DOC-1680 (accessed July 13, 2017).
[258] Sprint Support Website, "FAQs about Wi-Fi calling," available at https://www.sprint.com/en/support/solutions/services/faqs-about-wi-fi-calling.html (accessed July 13, 2017) ("*Sprint FAQs Website*").
[259] Verizon Support Website, "Wi-Fi Calling FAQs," available at https://www.verizonwireless.com/support/wifi-calling-faqs/ (accessed July 13, 2017).
[260] *Sprint FAQs Website,* available at https://www.sprint.com/en/support/solutions/services/faqs-about-wi-fi-calling.html.
[261] *U.S. Telecom* at 70.
[262] *Id.* at 72-73 ("We note that the Commission had information before it in this [2015 Open Internet Order] proceeding indicating that a mobile broadband (or other computer) user can employ a service enabling her to receive telephone calls to her IP address.").

different than in 2007. Applications such as Google Voice allow IP-based users to *receive* communications from NANP-based users a*s if they were also NANP-based* (see the section above). This level of functional integration can only reasonably be construed to grant mobile broadband users the "*capability* communicate to or receive communication from all other users" on the public switched network.

B. Mobile Broadband Internet Access is the Functional Equivalent of CMRS and is Not a Private Mobile Service

Section 332 defines private mobile service in the negative as "any mobile service . . . that is *not a commercial mobile service* or the *functional equivalent* of a commercial mobile service, as specified by regulation by the Commission."[263] A forward-looking Congress expressly authorized the Commission to determine if advanced wireless services are the functional equivalent of a commercial mobile service.[264] Relying on the increasing interconnectedness and ubiquity of mobile BIAS, the Commission concluded in 2015 that mobile broadband internet access service is "unavoidably" not a private mobile service under Section 332.[265] The D.C. Circuit affirmed the Commission's decision that mobile

[263] 47 U.S.C. § 332(d)(3).
[264] *Ibid*; s*ee OTI Jan. 27 Letter* at 14 (explaining that "the legislative history of Section 332 – and the Commission's concurrent determination that future PCS services would be presumptively CMRS – demonstrates that Congress recognized that, as technology evolved, services that did not initially appear to be CMRS could evolve into common carrier (and no longer 'private') mobile services"); *see also 2015 Open Internet Order* at ¶ 407 ("We find that Congress included the functional equivalence provision in the statute precisely to address such new developments for services that may not meet the literal definition of commercial mobile service.").
[265] *2015 Open Internet Order* at ¶ 404; *see* Letter from Gene Kimmelman, President, Public Knowledge to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 14-28, 10-127, at 5 (filed Nov. 7, 2014) (explaining that to clarify the application of a statutory term, such as the Commission did with Section 332(d)(3), is "the essence of an 'interpretive' rather than a 'legislative' rule, requiring no notice or comment").

BIAS meets the definition of CMRS and therefore declined to consider whether it is also the "functional equivalent" of CMRS.[266]

Assuming, *arguendo*, that the Commission reverses its 2015 finding that mobile BIAS meets the definition of CMRS, we believe the agency must nevertheless conclude mobile BIAS is the "functional equivalent" of CMRS. We believe the clear and extensive record of technological and marketplace changes since 2007 render mobile BIAS the functional equivalent of a commercial mobile service.[267] As detailed below, mobile BIAS is unlike the private mobile radio services of 1994 and even less like the private mobile services of today.[268]

What is most obvious in 2017 is that mobile BIAS is *not* remotely comparable to a private mobile radio service (PMRS). The Wireless Bureau's 1996 report on Private Land Mobile Radio Services (PLMRS), just two years after the FCC's *CMRS Order*, restates the commonly accepted understanding that private mobile radio services in the 1990s "offered users access to a ***discrete and limited set of endpoints***."[269] Indeed, that's the entire point of PMRS: they are private, closed and special-purpose networks connecting people

---

[266] *U.S. Telecom* at 56, 63-64 (declining to examine the "functional equivalence" question because the Court determined that mobile BIAS was in fact a commercial mobile service).
[267] *Id.* at 56 (finding that find that the Commission's reclassification of mobile broadband as a commercial mobile service was reasonable and supported by the record).
[268] *2015 Open Internet Order* at ¶ 399, 404 (The *2015 Order* compared the "discrete and limited set of endpoints" that characterize PMRS with the broad public offering of mobile BIAS, including its "universal access . . . and its present and anticipated future penetration rates").
[269] Michele Farquhar (Chief, Wireless Telecommunications Bureau), *Private Land Mobile Radio Services: Background*, FCC Staff Paper (Dec. 18, 1996), at iv ("*FCC PLMRS Report*"), *available at* http://wireless.fcc.gov/reports/documents/whtepapr.pdf. Although other private radio services are considered PMRS because they do not meet the definition of CMRS, and are not the functional equivalent of CMRS, PLMRS systems regulated under Part 90 have historically been the most common category of private mobile radio services. *See* FCC Mobility Division, *Private Land Mobile Radio Services*, Rule Part 47 C.F.R. Part 90, *available at* https://www.fcc.gov/wireless/bureau-divisions/mobility-division/private-land-mobile-radio-services.

(typically workers) engaged in a common enterprise. The very first sentence of the Wireless Bureau's report summarizes this decades-long understanding: "Since the 1920s, the private land mobile radio services (PLMRS) have been meeting the *internal communication needs* of private companies, state and local governments, and other organizations."[270] The Wireless Bureau explained further that:

> [What] differentiates private wireless use from commercial use . . . is that . . . Private radio users employ wireless communications as they would any other tool or machine – radio contributes to their production of some other good or service. For commercial wireless service providers, by contrast, the services offered over the radio system is the end product. . . .
>
> **This difference in purpose is significant because it has historically been the foundation of the different regulatory treatments afforded to the different communities.**[271]

Examples of private mobile radio services are "[p]ublic safety agencies, utilities, railroads, manufacturers, and a wide variety of other businesses--from delivery companies to landscapers to building maintenance firms."[272] As the Wireless Bureau details, the needs of private networks – including immediacy, control, reliability, and security in contacting a discrete set of users – vary significantly from the needs of commercial service consumers who desire the near-universal communication that characterizes the postal system and telephone networks.[273] The universality of commercial networks – and their ability to reach the general public and most business firms – is exactly what makes them so uniquely valuable.

[270] *FCC PLMRS Report* at 4.
[271] *Id*. at 7 (emphasis added).
[272] *Id*. at 1.
[273] *Id*. at 25-30.

That mobile broadband has evolved into the functional equivalent of CMRS is reinforced by the present reality that the service mobile carriers most commonly offer and sell to the general public today is ***a broadband data service*** that makes little if any distinction – in price, in the radio access network, or in terms of the user's experience – between voice, text and Internet access.[274] Voice calls and texting – classic commercial mobile services – are now just applications of the general purpose data network that operates (sometimes via IP addressing, sometimes via NANP) on the same mobile device (e.g., the "smartphone"). Mobile broadband internet access emerged on PCS spectrum as a CMRS offering (until the 2007 *Wireless Declaratory Ruling*) and today more than ever it is both fully integrated with voice calling and is the functional equivalent of a common carrier service (CMRS).[275]

The predominant mobile carriers argue *as if* they still offer broadband Internet access and mobile voice/telephone services separately. Unlike 2007, they do not. Currently the subscriptions most commonly advertised and sold to the general public by mobile carriers are for a *broadband data service* that makes little if any distinction – in price, in the radio access network, or in terms of the user's experience – between voice, text and Internet access.

In 2007, subscribers purchased buckets of voice calling minutes and had the option to purchase texting or rudimentary internet access as an add-on service, priced separately. Today each of the four national carriers exclusively sell smartphone plans that bundle

[274] *OTI Jan. 27 Letter* at 14-15.
[275] *Ibid.*

voice, texting and internet access as applications – not as separately priced or optional "commercial" (voice and/or text) and "private" (Internet access) services.[276] From a consumer's perspective, it is a single broadband data plan that is widely offered to the public for a fee – a common carrier data plan offering that is clearly both directly interconnected with the PSTN *and* the "functional equivalent" of CMRS.[277] This is uniformly the case for smartphones, which are now the single most common mobile device. And although millions of Americans continue to rely on feature phones with limited broadband Internet capabilities (compared to smartphones), it is not easy to find a plan that offers voice minutes or texting separate from data.[278] Finally, as described in the section above, mobile carriers are also taking part in the integration of voice calling

[276] Like the other national carriers, for example, Verizon prominently markets smartphone *plans* that inseparably bundle broadband voice, texting and data (i.e., internet access, although they don't call it that). From a consumer's perspective, there is only one integrated offering: mobile data plans, each of which is completely interconnected with the traditional public switched network using NANP, increasingly by both integrated VoIP and VoLTE applications. *See* Verizon Website, "Plans and Services," available at http://www.verizonwireless.com/wcms/consumer/shop/shop-data-plans.html (accessed July 17, 2017); *see also* AT&T Website, "Mobile Share Plans from AT&T," available at https://www.att.com/shop/wireless/plans/mobileshare.html (accessed July 17, 2017); T-Mobile Website, "Cell Phone Plans | Cheap Cell Phone Plans & Unlimited Data | T-Mobile," available at http://www.t-mobile.com/cell-phone-plans/individual.html#lplan_menu_1 (accessed July 17, 2017); Sprint Website, "Get the best Cell Phone Plans with Sprint," available at https://www.sprint.com/landings/datashare/index.html?INTNAV=ATG:HE:DataShare (accessed July 17, 2017) (indicating that mobile broadband plans are typically priced by the gigabyte – the functional equivalent of the 2007 practice of pricing cellular phone service by the minute).

[277] An exception to this are the data only subscriptions that come bundled with non-phone devices, such as dongles for notebooks, tablets and mobile hotspot devices (e.g., a MiFi access point).

[278] *See* AT&T, "Mobile Share Plans from AT&T," available at https://www.att.com/shop/wireless/plans/mobileshare.html (accessed July 17, 2017) (indicating that AT&T subscribers who want a post-paid mobile plan using only a basic feature phone must still sign up for a plan that includes data as well as voice and text); AT&T, "New GoPhone Plans with Unlimited Text to Mexico, Canada, 100 other Countries," available at https://www.att.com/shop/wireless/gophone-plans.html#fbid=OZXSH1dXUtv (accessed January 27, 2015) (indicating that mobile data is also included in the bundle for pre-paid plans on basic feature phones).

between IP and NANP end-points as the internet increasingly becomes the predominant network for all personal communications services.

C. Open Internet Consumer Protections Should Apply Equally to Fixed and Mobile Broadband Internet Access Services

Continued advances in mobile network technologies and in the mobile marketplace since 2015 support maintaining a common regulatory framework for fixed and mobile BIAS providers. Adopting different rules for fixed and mobile networks would run contrary to consumer experience and also distort markets for competing broadband internet access services. The increasing prevalence of Wi-Fi offload – with mobile device users continually shifting back and forth between mobile and fixed-line connectivity – along with emerging 5G wireless network technologies (which will further the convergence of 'mobile' and fixed networks) reinforce this view. Any technical differences between BIAS networks – whether cable, satellite, mobile LTE or some other technology – are best accommodated by a Reasonable Network Management exception that is flexible but also strictly limited to purely *technical* (and not business) considerations.

As OTI's technical study demonstrated in 2014 (discussed below), LTE technology permits mobile carriers to adhere to basic non-discrimination rules under a reasonable network management exception that recognizes differences in underlying network technologies, even permitting a degree of application-neutral and/or user-choice prioritization if necessary to deal with severe congestion.[279] OTI continues to agree with

[279] *Mobile Broadband Networks Can Manage Congestion While Abiding by Open Internet Principles*," CTC Technology & Energy and Wireless Future Project/Open Technology Institute (Nov. 13, 2014), available at

the cable industry association's observation, in its 2014 comments, that "today's marketplace realities make it untenable to maintain regulatory distinctions between fixed and mobile broadband providers. Any such regime would almost certainly be arbitrary and capricious."[280]

Mobile Network Capacity, Throughput, Traffic and Functionality are Robust, not 'Nascent'

As the Commission concluded in the *2015 Open Internet Order*, mobile broadband is unquestionably "no longer in a nascent stage."[281] Smartphone adoption, network connection speeds and data consumption have skyrocketed. In a November 2016 Pew Research Center survey, 77 percent of respondents said they own a smartphone, up from 67 percent in April 2015. Smartphone usage has risen to 92 percent among 18- to 29-year-olds and 88 percent among 30- to 49-year-olds.[282] The increased use of smartphones has been noted by CTIA as well, which reports that the number of smartphones in active use in the United States increased from 228 million in 2015 to 262 million in 2016, a nearly 15 percent increase.[283]

---

https://s3.amazonaws.com/www.newamerica.org/downloads/OTI_CTC_Wireless_Network_Neutrality_Engineering_Study_FINAL_111314.pdf.

[280] Comments of NCTA, GN Docket Nos. 14-28, 10-127 (filed Nov. 17, 2014), at 76; *see* Comments of Comcast, GN Docket Nos. 14-28, 10-127 (filed Nov. 17, 2014), at 41-42 (stating it would be "irrational as a policy matter [and] entirely unworkable as a practical matter in today's marketplace" to subject public fixed Wi-Fi offerings and mobile broadband services to different open Internet rules).

[281] *2015 Open Internet Order* at ¶ 88 ("We find that the mobile broadband marketplace has evolved, and continues to evolve, but is no longer in a nascent stage. As discussed below, mobile broadband networks are faster, more broadly deployed, more widely used, and more technologically advanced than they were in 2010.").

[282] Pew Research Center, "Mobile Fact Sheet," available at http://www.pewinternet.org/fact-sheet/mobile/ (accessed July 13, 2017).

[283] CTIA, "Americans' Wireless Data Usage Continues to Skyrocket," available at https://www.ctia.org/industry-data/ctia-annual-wireless-industry-survey (accessed July 13, 2017).

Since the Commission made its determination about mobile's ubiquity in the broadband ecosystem in 2015, speeds have increased dramatically. The *Open Internet Order* cited data from Cisco showing an average mobile connection speed of 2,058 kilobits per second (about 2 Mbps) in 2013 and an average 709 kbps in 2010.[284] In 2016, the average mobile downstream speed was 6.8 mbps, according to Cisco.[285] Cisco estimates that by 2021 the average mobile network connection speed will increase to 20.4 mbps.[286] Crowd-sourced speed tests by Ookla show that the download speeds for the three largest U.S. carriers already exceed an average 20 mbps.[287] Increased speed is the result of increased deployment of advanced technologies, such as 4G LTE. According to CTIA, download speeds for all mobile phones have increased by nearly 40 percent since 2015, and 4G LTE download speeds average almost 17 mbps.[288] LTE is now widely available nationwide, with CTIA reporting that 95 percent of the country's population is covered by three or more LTE-based service providers.[289]

Concurrent with these substantial changes in smartphone adoption and network speed, network capacity and total mobile data traffic has continued to surge. Mobile traffic grew 41 percent in the United States in 2016 and made up 6.1 percent of total

[284] *2015 Open Internet Order* at ¶ 89.
[285] Cisco, *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016–2021 White Paper*, Cisco VNI Mobile (udpated March 28, 2017) available at http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html.
[286] *Ibid*.
[287] T-Mobile Blog, "Verizon Drops to 3d in Latest Ookla Rankings" (July 17, 2017), available at https://newsroom.t-mobile.com/news-and-blogs/categories/network/verizon-network-ranking-drops.htm.
[288] CTIA, *Wireless Snapshot 2017* (May 2017) ("*CTIA Wireless Snapshot 2017*"), available at https://www.ctia.org/docs/default-source/default-document-library/ctia-wireless-snapshot.pdf.
[289] *Ibid*.

internet traffic.[290] Cisco predicts that mobile data traffic in 2021 will be equivalent to 12 times the volume of the entire U.S. Internet in 2005.[291] CTIA also found that reported annual wireless data traffic rose 42 percent from 2015 to 2016, to 13,719 billion megabytes.[292] In the *2015 Open Internet Order*, the Commission touted how mobile data traffic had "exploded" to 3.23 exabytes in 2013,[293] but that number had already more than doubled to 7.2 exabytes per month by the end of 2016.[294]

The surge in total traffic reflects increased consumer reliance on mobile BIAS for high-bandwidth applications, particularly video and music streaming. In 2015, the average monthly mobile data usage per subscriber on a smartphone was 2,908 MB per month (up from 1,361 MB per month in 2014 and 269 MB per month in 2010).[295] The steady migration of consumers from 3G to 4G to 5G mobile broadband data connections will continue to drive growth in usage and network capacity. Cisco *2016 VNI Index* notes that a 4G connection generates four times more traffic on average than a 3G connection.[296] By 2021, a 5G connection will generate 4.7 times more traffic than the average 4G connection.[297] 5G has the capability to improve connectivity significantly. CTIA estimates

---

[290] Cisco, *Cisco Visual Networking Index: Forecast Highlights* (2016) ("*Cisco 2016 VNI Index*"), available at: http://www.cisco.com/c/m/en_us/solutions/service-provider/vni-forecast-highlights.html# (accessed July 7, 2017).
[291] *Ibid.*
[292] CTIA, *Wireless Industry Survey* (2016) at 3, available at https://www.ctia.org/docs/default-source/default-document-library/annual-year-end-2016-top-line-survey-results-final.pdf?sfvrsn=2.
[293] *2015 Open Internet Order* at ¶ 36.
[294] *See Cisco 2016 VNI Index.*
[295] FCC *Nineteenth Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, at p 89 n.VII.B.2, available at https://apps.fcc.gov/edocs_public/attachmatch/DA-16-1061A1.pdf.
[296] *Cisco 2016 VNI Index.*
[297] *Ibid*.

that 5G latency rates are estimated to be five-to-ten-times lower than 4G LTE (4G latency is currently 10 milliseconds over the air, 50 milliseconds end-to-end). "This enables consumers to have good quality voice over IP (VoIP) calls and video calls with little delay or jitter," CTIA argues in a white paper, showcasing the ubiquity of mobile broadband in the coming 5G world into which wireless companies seek to tap.[298]

Consumers are increasingly using the growth of the wireless ecosystem to access the internet – and content providers, advertisers and related industries are benefiting. The Pew Research Center found that 97 percent of 18- to 29-year-olds surveyed use their smartphones to access the internet, as did 90 percent of 30- to 49-year-olds and 80 percent of respondents 50 years or older.[299] Mobile is driving Americans' interaction with digital media on the internet, as on average people in the United States spend more time engaging with online media (3.1 hours per day) than on a desktop or laptop computer (2.2 hours daily).[300] The dominance of mobile in internet browsing is reflected in its dominance in the online advertising market, where mobile advertising surpassed desktop advertising for the first time in 2016, and drove an overall growth in digital advertising to $73 billion for the year, up from $60 billion for 2015.[301]

Low-Income Communities and Communities of Color Rely Disproportionately on Mobile for Internet Access

[298] CTIA, "The Next Generation of Wireless: 5G Leadership in the U.S." (Feb. 9, 2016), at 11, available at https://www.ctia.org/docs/default-source/default-document-library/5g_white-paper_web2.pdf.
[299] Aaron Smith, "U.S. Smartphone Use in 2015," Pew Research Center (2015), available at http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.
[300] Mary Meeker, "Internet Trends 2017— Code Conference" (May 31, 2017), available at http://dq756f9pzlyr3.cloudfront.net/file/Internet+Trends+2017+Report.pdf.
[301] *Ibid*.

The Internet is now the nation's common communications platform and leading source of information. There is a strong public interest in ensuring that all Americans have largely the same expectations, opportunities and access to content and services no matter how they connect to the Internet. As a result, platform parity – or the lack of it – will have an enormous social and economic impact on the disproportionate share of young, historically marginalized populations who rely primarily – and often exclusively – on mobile devices to connect to the Internet.

For low-income Americans, mobile plays an even more essential role as households' only connection to the internet.[302] The lack of a common regulatory framework for fixed and mobile broadband connections would exacerbate the nation's digital divide by adding an 'Open Internet Divide' to the detriment of disproportionate numbers of low-income and rural communities, as well as communities of color. Studies show that these historically marginalized groups are not only much less likely to have a high-speed broadband connection at home, they are also more than twice as likely to rely either exclusively or primarily on mobile broadband devices for access to the Internet. The Commission must not assume that every American is equally willing or financially able to purchase and access *both* a high-capacity fixed connection at home (and/or work) *and* a mobile phone and data subscription.

[302] Monica Anderson, "Digital divide persists even as lower-income Americans make gains in tech adoption," Pew Research Center (March 22, 2017) (*"Pew Digital Divide Study"*), available at https://goo.gl/31XjKY (finding that 20 percent of adults who made $30,000 or less in 2016 had a smartphone but no broadband at home, compared to just 12 percent of adults in that wage bracket in 2013).

The data show that low-income communities and communities of color continue to disproportionately rely on mobile broadband in lieu of fixed broadband to connect to the internet. As we detailed in 2014, the share of Americans relying exclusively on their smartphones to access the Internet is far higher among Hispanics, Blacks, adults aged 18-to-29, and households earning less than $30,000 a year.[303] Overall, 88 percent of Americans are regular users of the internet, but only 73 percent have broadband at home.[304] The Pew Research Center found that 20 percent of Americans who make $30,000 or less annually had a smartphone but no home broadband in 2016.[305] In 2013, only 12 percent of Americans in that annual income bracket owned a smartphone without home broadband.[306] The same survey found that in 2016, only 10 percent of Americans who make between $30,000 and $100,000 annually were smartphone-only internet users, while only four percent of Americans who make $100,000 or more each year were smartphone-only users.[307] And although it makes little difference whether a "wireless-only household" is making voice calls on a mobile or wireline connection, it can make a world of difference whether students, job seekers and others can access the same internet experience as their more affluent peers can on a high-speed wireline connection at home or work.

[303] Comments of Open Technology Institute and Benton Foundation, *Protecting and Promoting the Open Internet*, GN Docket Nos. 14-28, 10-127 (July 17, 2014), at 33-34.
[304] Aaron Smith, "Record Shares of Americans Now Own Smartphones, Have Home Broadband," Pew Research Center (Jan. 12, 2017), available at http://www.pewresearch.org/fact-tank/2017/01/12/evolution-of-technology/ (noting that 77 percent of Americans have a smartphone).
[305] *Pew Digital Divide Study.*
[306] *Ibid*.
[307] *Ibid*. The Commission noted in 2015 that data from the National Health Interview Survey "show that 59.1 percent of adults living in poverty reside in wireless-only households, relative to 40.8 percent of higher income adults."

Pew reported in 2015 that communities of color used their smartphones more than white Americans to find information related to health conditions, housing, employment, government services, educational content, or to submit a job application.[308] Among African Americans, 19 percent owned a smartphone but lacked a fixed broadband connection at home, compared to 10 percent in 2013.[309] Nearly a quarter of Hispanics surveyed (23 percent) by Pew in 2015 relied entirely on smartphones to access broadband – compared to 16 percent in 2013.[310] This important trend was cited by CTIA in a filing with the Commission on the state of wireless competition.[311]

Mobile and Fixed Networks are Converging, Particularly from a Consumer Perspective

OTI supports the principle that all consumers should be "entitled to the same Internet openness protections no matter what technology they use to access the Internet."[312] From the perspective of both consumers and industry competitors, the traditional distinctions between wireline and wireless networks will continue to blur. Devices consumers use to access the Internet are increasingly mobile, but they will rely for connectivity on both mobile carrier and (primarily) wireline networks – often moving back

[308] Monica Anderson, "Racial and ethnic differences in how people use mobile technology," Pew Research Center (April 30, 2015), available at http://www.pewresearch.org/fact-tank/2015/04/30/racial-and-ethnic-differences-in-how-people-use-mobile-technology/.
[309] John B. Harrington & Maeve Duggan, "Home Broadband 2015," Pew Research Center (Dec. 21, 2015) at 2, available at http://www.pewinternet.org/files/2015/12/Broadband-adoption-full.pdf.
[310] *Id*. at 9
[311] *See* Comments of CTIA, *In the matter of Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, WT Docket No. 16-137 (May 31, 2016), at 30, available at https://www.ctia.org/docs/default-source/fcc-filings/160531-filed-ctia-mobile-wireless-competition-report-comments.pdf. *See also CTIA Wireless Snapshot 2017* (explaining that in 2016, 50.8 percent of American households only had a mobile wireless connection at home, with no other telephone connection available, and two-thirds of millennials live in wireless-only households).
[312] *2015 Open Internet Order* at ¶ 92.

and forth between the two seamlessly during the same web session without interrupting the connection to a call, streaming video, or other application or service. Or at least that is the sort of pervasive connectivity that will greatly benefit consumers – and spur greater innovation and competition among and between Internet platforms – *if* the Commission does not decide to bifurcate the Internet and distort the marketplace by giving mobile carriers a competitive advantage.

Today the devices most commonly used for internet access – smartphones – have become truly hybrid network devices, with consumers toggling back and forth between fixed and mobile networks in order to optimize trade-offs between connectivity, speed and cost. As a wireline network extension, Wi-Fi is not only offloading roughly 80 percent of all mobile device data traffic, it is also fueling new hybrid network business models – such as Republic Wireless, Comcast's XFINITY Mobile, and Charter's Spectrum Wi-Fi – that offer the promise of increasing inter-platform innovation and competition.

Regulatory parity is equally important from the consumer perspective, since mobile device users subscribers toggling between fixed (Wi-Fi) and mobile BIAS networks are typically not even aware which network they are on – and, aware or not, consumers should not be subject to divergent consumer protections from one minute to the next. The D.C. Circuit opinion in *US Telecom* described the importance of regulatory parity for consumers:

> . . . Wi-Fi connections originate from a landline broadband connection, which is now a telecommunications service regulated as a common carrier under Title II. If a consumer loses her Wi-Fi connection for some reason . . . her device could switch automatically from a Wi-Fi connection to a mobile

> broadband connection. If mobile broadband were classified as a private mobile service, her ongoing session would no longer be subject to common carrier treatment. In that sense, ***her mobile device could be subject to entirely different regulatory rules depending on how it happens to be connected to the internet at any particular moment*** – which could change from one minute to the next, potentially *even without her awareness*.[313]

Fixed broadband and mobile broadband networks are converging, particularly as mobile BIAS moves to small cells tied closely to fixed networks, and achieves high speeds and low latencies that rival gigabit fiber connections. In the emerging 5G world, there may be little, if any, distinction between fixed and mobile broadband internet access. Like the proliferation of Wi-Fi, providers will vastly improve network capacity and latency by integrating fixed network backhaul and wireless connections in very close proximity.

The recent trends of mass adoption of mobile computing devices, the nationwide deployment of relatively high-speed 4G/LTE networks and incoming 5G technology, the massive offloading of a majority of mobile device data traffic over unlicensed Wi-Fi/wireline connections, the resulting rapid convergence of mobile and wireline networks, and new technology that facilitates consumers switching back and forth seamlessly between truly mobile (carrier) and nomadic (wireline via Wi-Fi) networks, all support a common regulatory framework. Exempting mobile BIAS from any open internet rule, as the Commission noted in 2015, "risks creating a substantively different Internet experience for mobile broadband users as compared to fixed broadband users."[314]

Degrees of Competition Do Not Justify Divergent Open Internet Rules

[313] *U.S. Telecom* at 77 (emphasis added).
[314] *2015 Open Internet Order* at ¶ 92.

The comparative degree of competition in the fixed and mobile markets for BIAS is neither a relevant nor a sound basis for establishing a divergent regulatory framework for open internet consumer protections.[315] High consumer switching costs, Early Termination Fees (ETFs), and difficulties in porting phone numbers and migrating data remain features of the mobile BIAS marketplace that make it impractical for consumers to switch back and forth, as if between competing brands of toothpaste. Even if there was effective competition, the largest mobile carriers would still have strong incentives to favor their own content and services over competitive offerings from thousands of other edge providers that do not control the final "gateway" connection to consumers. Mobile ISPs have a common interest in seeking rents from adjacent market providers and in securing a competitive advantage for their own competing apps, content, and services regardless of competition, churn, and other market forces. As Microsoft argued in 2014, "even if there is more than one mobile broadband access provider in a specific market, there may, not be effective competitive alternatives (for edge providers or consumers) and these mobile broadband access providers retain the ability to act in a manner that undermines the competitive neutrality of the online marketplace."[316]

In practice, consumers face a variety of time-consuming and expensive switching costs.[317] Most obviously, Early Termination Fees (ETFs) impose substantial lump sum

[315] *See 2015 Open Internet Order* at ¶ 93 ("[S]everal mobile providers who opposed application of the broader rules in 2015 argued that additional rules were unnecessary because competition for mobile broadband service adequately restrained the behavior of mobile Internet service providers.").
[316] Comments of Microsoft, GN Docket Nos. 14-28, 10-127 (July 17, 2014), at 23-24.
[317] *Ex Parte* Letter from Consumers Union and Open Technology Institute to Marlene H. Dortch, FCC, GN Docket Nos. 14-28, 10-127 (Jan. 28, 2015), at 2 ("*CU/OTI Jan. 28 Letter*") ("Of course, subscribers *can* switch carriers, but

switching costs on consumers.[318] Consumers also face difficulties in porting their phone numbers from national to local service providers, and especially in rural areas where provider options are particularly sparse.[319] Additionally, when considering whether to switch providers, the vast majority of postpaid subscribers must now do so as a group and not as individuals.[320] The Commission found that the level of wireless churn, "when viewed in conjunction with data on consumer satisfaction, is consistent with the existence of important switching costs for customers."[321]

A Reasonable Network Management Exception Can Accommodate Technical Differences

The *NPRM* also seeks comment on whether there are *technical* reasons that could justify maintaining different open internet rules for mobile and fixed network providers. OTI believes the Commission's existing exception for reasonable network management provides sufficient flexibility to accommodate the unique constraints or challenges of any particular network technology, whether fixed or mobile.[322] The same fundamental principles and obligations should apply to *all* broadband ISPs, even if the resulting rules are *applied* differently based on what is reasonable network management for a particular

---

relatively few do primarily because of the multiple strategies that carriers use to create both the perception and the reality of substantial financial penalties, loss of time and uncertainties about retaining your data or even, in some cases, your phone number.").

[318] *Ibid.*

[319] *Ibid.* ("Phone number portability is administered so that it works well only for national carriers, since consumers often don't have the option to keep their number when moving from a national to non-national carrier.").

[320] *Id.* at 3 ("Not only do groups face the cost of multiple ETFs, but frequently the contract termination dates become nonsynchronous due to the addition of new lines and individuals upgrading their devices at different points in time.").

[321] *2015 Open Internet Order* at ¶ 98.

[322] *See Ex Parte* Letter from Michael Calabrese, Open Technology Institute, to Marlene H. Dortch, GN Docket Nos. 14-28, 10-127 (Nov. 17, 2014), at 1-4 ("*OTI/CTC Ex Parte*").

Internet access technology. The cable industry association, in its 2014 comments, made the important point that "[w]hile technological differences might be relevant in *applying* the open Internet rules … such differences should not have any bearing on whether a given obligation applies in the first place."[323] The *2015 Open Internet Order* recognized this distinction and correctly concluded that it is technically feasible for mobile networks to adhere to a common set of rules that includes a Reasonable Network Management exception that recognizes differences in underlying network technologies.

In 2014 OTI commissioned and placed in the record a technical study concluding that mobile carriers operating LTE networks have the capability to implement strong network neutrality rules that prohibit any discriminatory treatment of third-party applications or content.[324] The study demonstrated the fallacy of wireless industry claims (at that time) that adherence to strong network neutrality protections for consumers and for edge providers is not technically feasible for mobile carrier networks."[325]

The engineering study, carried out by CTC Technology and Energy, acknowledges that because of unpredictable and localized surges in demand, such as a major sporting event, the dynamic prioritization of delay-sensitive applications like video chat and VoIP calls can be a reasonable means of ensuring quality of service in a capacity-constrained

[323] Comments of NCTA, GN Docket No. 14-28, GN Docket No. 10-127 (July 17, 2014), at 70; *cf.* Comments of Center for Digital Technology, GN Docket No. 14-28, GN Docket No. 10-127 (July 17, 2014), at 28 (Similarly, the Center for Digital Technology suggested that "the best approach is to account for any such considerations in the rules' *application*, not in substantive differences") (emphasis added).
[324] OTI & CTC, "Mobile Broadband Networks Can Manage Congestion While Abiding by Open Internet Principles," CTC Technology & Energy and Wireless Future Project/Open Technology Institute (Nov. 13, 2014) ("CTC Study"), available at https://s3.amazonaws.com/www.newamerica.org/downloads/OTI_CTC_Wireless_Network_Neutrality_Engineering_Study_FINAL_111314.pdf.
[325] *OTI/CTC Ex Parte* (Nov. 17, 2014), at 1-4.

network. Nevertheless, and contrary to the claims of mobile carriers at that time, the study demonstrates that LTE technology has the capability now to manage even situations of severe network congestion by ***treating like applications alike, without favoring carrier-sponsored or carrier-affiliated applications, content or services.***[326] The study concluded that Long Term Evolution (LTE, or 4G) technology is capable of managing *moderate* congestion through prioritization protocols that are application-agnostic (e.g., user-directed prioritization) and is capable, when faced with *severe* congestion, of prioritizing delay-sensitive traffic while avoiding discrimination among like applications, content, or services, and also without favoring carrier-sponsored or carrier-affiliated applications, content or services.[327]

If the Commission determines it is "reasonable network management" to prioritize delay-sensitive applications at times of severe congestion, the study shows that the Commission can also confidently determine that LTE network providers can do this in a manner that "treats like applications alike." The study outlines an approach that can be implemented using standards-compliant LTE technologies that could maintain both

---

[326] Ex Parte Letter from Michael Calabrese, Open Technology Institute, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 14-28, 10-127 (filed Nov. 17, 2014), at 2-3 (emphasis in original). OTI's *ex parte* letter summarizing the study further stated:

> Of course, at most times and places, the capacity of mobile broadband networks is ***not congested*** and there is little if any need to prioritize any user or use . . . The study shows that ***moderate congestion*** can be handled with application-agnostic prioritization, such as by "throttling" certain categories of users, or by offering user-directed prioritization that allows consumers to choose to pay for a premium speed tier . . . Even when faced with ***severe congestion***, the study details how LTE networks have the capability to dynamically prioritize delay-sensitive applications in a completely non-discriminatory fashion that does not favor carrier-affiliated content or services.

[327] *Ibid*.

adherence to a common regulatory framework and ensure a level playing field among mobile BIAS providers.[328]

Finally, a common regulatory framework must also define and enforce what is "reasonable" network management in a manner that clearly distinguishes technical necessity from business models and motivations. Mobile carriers, like any commercial ISP, may *prefer* to discriminate among users for *business* reasons—e.g., as AT&T did when blocking the FaceTime application only for its less profitable "unlimited" plan subscribers—but we concur with commenters suggesting that only *technical* necessity should be considered to be "reasonable" network management.

In sum, we firmly believe that the Commission's existing exception for reasonable network management provides sufficient flexibility to accommodate the unique *technical* constraints or challenges of any particular network technology, whether fixed or mobile, and that the same fundamental principles and obligations should apply to *all* broadband ISPs, even if the resulting rules are *applied* differently based on what is reasonable network management for a particular Internet access technology.[329]

IX. Conclusion

The 2015 Order was a prudent and necessary step to protect the American people from growing threats to net neutrality and internet freedom. The core framework of the

[328] *See CTC Study* at 5-6 (For example, the CTC study suggests that standards bodies, or another industry-wide process approved by the FCC, create generic QoS profiles related to latency sensitivity or other attributes that need similar QoS treatment, and make them open to all like applications, such as toll-quality voice and video communications).
[329] *Id.* at 4.

order, which includes bright-line "rules of the road," new oversight over interconnection and mobile broadband, and Title II legal authority, provides a strong foundation to ensure that the open internet continues to thrive for decades to come. The NPRM does not make the case for destroying this foundation, nor does it offer any effective or legally sustainable alternative. Instead, the Commission's proposal jeopardizes the internet's future as an open platform. It abandons all of the progress made towards protecting consumer privacy and closing the digital divide. And it risks leaving the American people vulnerable to the whims of BIAS providers like Comcast, AT&T, and Verizon. All of these risks contravene the Commission's mission to protect and promote the public interest. In proposing to dismantle the 2015 Order, the Commission has already created one thing disliked by markets and investors alike: uncertainty. With the future of net neutrality in doubt, venture capital firms are less likely to invest in risky new startups. Businesses are less likely to make long-term investments in online infrastructure. The Commission has manufactured this crisis by unleashing such a poorly conceived and unnecessary NPRM. But as easily as the Commission created this problem, it can also fix it by reaffirming its support for the 2015 Order and the open internet. We urge the Commission to rescind this NPRM.