Before the
Federal Communications Commission
Washington, DC, 20554

In the Matter of	)	
	)	
Framework for Broadband Internet Service	)	GN Docket No. 10-127
	)	
Protecting and Promoting the Open Internet	)	GN No. 14-28
	)	

REPLY COMMENTS OF THE OPEN TECHNOLOGY INSTITUTE AT NEW AMERICA

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Executive Summary

In order to preserve the Internet as a force for innovation, economic growth, and unfettered access, the Federal Communications Commission ("Commission") must create robust and enforceable rules that protect against blocking lawful content, discrimination on the basis of content or type of content or application, and the imposition of access fees by Internet Service Providers (ISPs) to edge providers or other content creators. In these reply comments, the Open Technology Institute (OTI) at New America reiterates and expands upon our initial comments in this proceeding, emphasizing that relying on Title II as the legal foundation for network neutrality rules is neither radical, nor heavy-handed, and is instead a narrowly tailored and bounded approach grounded in sound principles and historical precedence.

OTI has consistently advocated for clear network neutrality protections against blocking, discrimination, and fees for access to or prioritized or enhanced delivery of content into and over the last mile terminating access monopoly. We argue that the Commission's current proposal does not offer these protections, and as long as the rules are grounded in §706 authority, it cannot adequately protect against these harms. Moreover, §706 is actually the heavy-handed legal approach to network neutrality rules—Title II offers the Commission "light touch" authority for regulation of ISPs, and is based on decades of precedent that is grounded in fundamental principles of common carriage protections. Far from radical, this principle has underscored many industries throughout history, including the communications industry, and reclassification simply allows the Commission to apply common carriage to modern communications networks. Nor will reclassification reduce broadband investment, which actually flourished under

Title II regulation in the 1990s and early 2000s, as well as under the Commission's 2010 Open Internet Rules.

In addition to concerns about discriminatory behavior on last-mile networks, we argue that interconnection disputes present an immediate and serious consumer harm and threaten the open Internet. Preliminary analysis of data collected using the Measurement Lab platform—a public, open data resource for Internet measurement—appears to confirm that high-profile disputes between content providers, transit networks, and the largest ISPs in the United States can lead to massive degradation of Internet service over a period of months and customers held hostage by ISPs in an effort to extract greater fees from edge providers. Consumers pay the price when conflicts between major network providers and their interconnection peers arise, yet the Commission has neither fully considered nor remedied the problem. We therefore urge the Commission to address the risks of harms *into* the last mile terminating access monopoly as it considers the parallel harms *over* the terminating access monopoly—which requires reclassifying broadband Internet access services.

In spite of the arguments made by some large ISPs, strong network neutrality rules grounded in sound legal authority will not cause a worldwide upset. Rather, in light of the debates about net neutrality occurring around the world from Europe to Latin America, the Commission has an opportunity to demonstrate U.S. leadership by adopting clear, bright-line rules grounded in a sound legal framework. We argue that any claims that bright-line rules that protect against blocking and discriminatory behavior would make it easier for foreign governments to justify censorship and greater control over the network are without merit. Nor would strong network neutrality rules encourage other

types of heavy-handed "over-regulation" of the Internet by foreign countries or diminish American credibility internationally. To the contrary, the policies related to access fee tolls that OTI and others have proposed are actually consistent with what Internet service providers have advocated for in the international context before, particularly in response to a "sender-party pays" proposal made by the European Telecommunications Network Operators prior to the 2012 World Conference on International Telecommunications in Dubai.

Finally, we emphasize that the record demonstrates diverse and widespread support for a common regulatory framework that applies equally to fixed and mobile broadband providers and subject to a reasonable network management exception. It will be increasingly incoherent and unworkable to maintain distinct regulatory frameworks for mobile and fixed broadband access networks, and the record suggests that the only parties opposing a common regulatory framework for network neutrality are the mobile carriers and some of their suppliers. There is a clear consensus among commenters that the Commission's proposal to largely exempt mobile carriers from open Internet rules would have a disparate and negative impact on minority, low-income and rural communities that rely disproportionately on wireless Internet access. The data and the record in this proceeding are clear that traditionally disadvantaged groups – tens of millions of Americans – are not only much less likely to have a high-speed fixed broadband connection at home, they are also more than twice as likely to rely either solely or primarily on wireless broadband networks for their primary Internet access

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I. Introduction

As recent events have clearly demonstrated, the stakes in the open Internet proceeding are incredibly high. In the coming months, the Federal Communications Commission ("Commission" or "FCC") must decide whether to clearly demonstrate a strong commitment to enforceable, legally sound network neutrality protections, or to follow a path that will lead to weaker rules implemented on shaky legal authority. Based on the comments in the docket, however, the choice is obvious: in order to preserve the Internet as a force for innovation, economic growth, and unfettered access, the Commission must create robust and enforceable rules that protect against blocking lawful content, discrimination on the basis of content, type of content, or application, and the imposition of access fees by ISPs to edge providers or other content creators.

Millions of Americans agree. An analysis of the public comments submitted to the FCC prior to the initial comment deadline indicate that more than 99 percent of the comments filed were in favor of strong net neutrality rules, with an overwhelming majority speaking out against the idea of "fast lanes" and urging the Commission to reclassify broadband as a Title II telecommunications service.[1] The high level of individual engagement—as reflected by the number of comments that were submitted by individuals that were not part of a form or campaign—demonstrates just how critical this issue is to many Americans.[2] More recently, hundreds of thousands of individuals joined a wide range of major tech companies and content creators in an "Internet Slowdown day" to demonstrate the potential harms if the FCC chooses a

[1] Bob Lannon and Andrew Pendleton, "What can we learn from the 800,000 public comments on the FCC's net

[2] Harold Feld, "What Do We Learn From Big Data Visualizations of Net Neutrality Comments?" *Tales from the Sausage Factory*, August 18, 2014, http://www.wetmachine.com/tales-of-the-sausage-factory/what-do-we-learn-from-b"ig-data-visualizations-of-net-neutrality-comments/. "Briefly, the volume of individual comments and the analysis shows a high level of engagement. More importantly, the comments do not simply reflect the talking points we see in the mainstream media and debated in DC policy circles. A lot of people are actually ***thinking*** about this issue and deciding why it is important to them personally, and it has nothing to do with cat videos or Netflix. For a lot of people, this debate goes to fundamental values of basic fairness, opportunity, the American Dream, and the preserving free expression and diversity of views."

path that allows Internet Service Providers (ISPs) to divide the Internet into "fast lanes" and "slow lanes."[3] There can be no doubt that the public cares about the future of the Internet, and their message is clear: the Commission must implement strong open Internet protections that protect against a wide range of evolving harms.

In these reply comments, the Open Technology Institute at New America (OTI) reiterates and expands upon our initial comments in this proceeding,[4] emphasizing that relying upon Title II as the legal foundation for network neutrality rules is neither radical nor heavy-handed, and is instead a narrowly tailored approach grounded in sound principles and historical precedence. Preliminary analysis collected on the Measurement Lab platform, appears to confirm how the interconnection disputes between ISPs and large transit providers have harmed consumers and therefore should be included in the scope of the Commission's rules under Title II. We also discuss the international implications of Title II reclassification, demonstrating how strong network neutrality rules would not weaken the United States' international Internet policy objectives but instead would bolster them. And finally, we highlight the growing consensus around the need for platform parity in the new rules, eliminating the distinction between fixed and mobile Internet access service that the Commission created in the 2010 Open Internet Rules and which threatens to have a disproportionate impact on underserved and minority communities if maintained in the new rules the Commission is considering.

[3] Barbara Van Schewick, "Is the Internet about to get sloooooow?" *CNN*, September 10, 2014, http://www.cnn.com/2014/09/10/opinion/van-schewick-internet-slowdown/index.html.
[4] Comments of New America Foundation's Open Technology Institute, GN Docket No. 14-28, GN Docket No. 10-127 (July 17, 2014) ("OTI Comments").

II. Using Title II as the legal foundation for network neutrality rules is neither radical nor heavy-handed, and is instead a narrowly tailored approach grounded in sound principles and historical precedence.

While those who argue against a Title II approach in favor of the Commission's current proposal use heated rhetoric to portray it as "radical,"[5] "disastrous,"[6] "draconian,"[7] and even "calamitous and devastating,"[8] their characterizations misstate history and ignore the careful, thoughtful analysis that has gone into years of advocacy and a commitment by network neutrality proponents to helping the Commission find the best path forward for strong protections that are grounded in sound legal authority. OTI does not take lightly the charge of getting network neutrality rules right this time. Its prior and present recommendations to the Commission are based on the conclusion that §706 simply cannot achieve the result that advocates, millions of Americans, and the Commission want.

OTI has consistently advocated for clear network neutrality protections against blocking, discrimination, and fees for access to or prioritized or enhanced delivery of content into and over the last mile terminating access monopoly. The Commission's current proposal[9] does not offer these protections, and as long as the rules are grounded in §706 authority, it cannot adequately protect against these harms. Moreover, §706 is actually the heavy-handed legal approach to network neutrality rules—it is Title II that offers the Commission "light touch" authority for regulation of Internet service providers, and it is based on decades of precedent that is grounded in fundamental principles of common carriage protections.

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[5] Comments of AT&T Services, Inc., GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) at 39 ("AT&T Comments").
[6] Anna-Maria Kovacs, "The Internet Is Not a Rotary Phone," <*re/code*>, May 12, 2014, http://recode.net/2014/05/12/the-internet-is-not-a-rotary-phone/
[7] Comments of Comcast Corporation, GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) at 53 ("Comcast Comments")
[8] Comments of National Cable and Telecommunications Association, GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) at 17 ("NCTA Comments").
[9] Protecting and Promoting the Open Internet, GN Docket No. 14-28 (May 15, 2014).

A. The principle of common carriage is bedrock and has guided the careful regulation of many industries, and notably the communications industries, for over a century.

Far from radical, the principle of common carriage has underscored many industries throughout history, including the communications industry. Reclassification under Title II of the 1996 Telecommunications Act simply allows the Commission to apply common carriage to modern communications platforms.[10] As Public Knowledge explains in its comments, "[w]hile common carriage is often mistaken for a set of regulations, it is actually a description of a type of service," and this description "can help frame the type of protections that are best suited to advance the public interest."[11] Public Knowledge goes on to note that "Title II of the Communications Act is an application of the common carriage framework to a specific circumstance: electronic telecommunications," and that it "empowers the FCC to determine, as a matter of policy, how to apply the basic common carriage framework to various situations involving telecommunications networks."[12]

Said simply: Title II is the legal basis for a regulatory framework based on longstanding principles that have guided communications policy throughout its history. It need not lead to regulatory overreach and, as many have argued, any application of rules under Title II should include a careful assessment of the Title's current provisions to ensure that the Commission is forbearing from sections that are impractical or unworkable for modern communications networks.[13] Grounding network neutrality rules in Title II authority is *not* a sweeping change, as

[10] Comments of New America Foundation's Open Technology Institute, GN Docket No.14-28, GN Docket No. 10-127 (March 24, 2014) at 5. "Title II of the Telecommunications Act is a carefully constructed implementation of the common carriage framework that has guided communications policy for over a century."
[11] Comments of Public Knowledge, Benton Foundation, Access Sonoma Broadband, GN Docket No. 14-28, GN Docket No. 10-127, GN Docket No. 09-191, WC Docket No. 07-52 (July 15, 2014) at 4 ("Public Knowledge Comments").
[12] Public Knowledge Comments at 8.
[13] *See e.g.*, Comments of COMPTEL, GN Docket 14-128 (July 15, 2014) at 21 ("COMPTEL Comments"); OTI Comments at 26-26.

the ISPs have argued.[14] Rather, it requires merely a common sense shift of regulatory classification to reflect changes in the way that broadband services are offered now, compared with the ways in which they were offered in the era of AOL's walled gardens of the early 2000s.[15]

In contrast, §706 is the source of legal authority that affords the greatest risk of regulatory overreach. As OTI explained previously, "the ISP's terminating access monopoly should define the appropriate scope of harms that should be protected by network neutrality rules. However, the potential reach of §706 is much broader. The Commission could, in theory, use §706 to regulate any number of behaviors by publishers, bloggers, non-profits, and the world of regular people who create content every day."[16] In fact, assuming that the Commission continues to find that broadband is not being deployed in a timely fashion in the United States, it could use §706 to do any number of things, and apply rules based on §706 authority to all sorts of contexts—except, notably, rules to protect against blocking, discrimination, and access fees. Thus, it is not Title II that would lead to "a slippery slope that would provide the Commission sweeping authority to regulate all Internet-based companies an offerings"[17]; it is, instead §706.

B. The protections that public interest advocates, consumer groups, companies, and millions of Americans are advocating are reasonable, tailored rules based on very real threats to Internet openness.

AT&T notes that the 2010 rules "successfully balanced concerns about Internet openness with the need to maintain incentives for Internet service providers to continue investing in

[14] *See* footnotes 5-8, *supra*.
[15] For an explanation of this shift, *see e.g.* Comments of Netflix, Inc., GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) at 21 ("Netflix Comments"); Comments of Free Press, GN Docket No. 14-28, GN Docket No. 10-127, GN Docket No. 09-191 (July 17, 2014) at 71-75 ("Free Press Comments"); and Comments of Ad Hoc Telecommunications Users Committee, GN Docket No. 14-28 (July 18, 2014) at 6-7 ("Ad Hoc Telecommunications Users Committee Comments").
[16] OTI Comments at 21.
[17] Letter to Chairman Wheeler and Commissioners Clyburn, Rosenworcel, Pai, and O'Rielly, from Broadband for America, GN Docket No. 14-28 (filed May 13, 2014).

advanced networks. The Commission should do nothing in this proceeding to upset that balance," and that "nothing in the court's decision requires a wholesale rethinking of the Commission's approach to the open Internet."[18] OTI agrees. The 2010 rules need only modest adjustments to accounts for changes in the Internet ecosystem and address some residual concerns, and both the D.C. Circuit and the Supreme Court of the United States have laid the legal groundwork for a Title II approach to strong network neutrality protections similar to the 2010 rules.[19] By contrast, it is the Commission's current proposal that would undermine the protections ensured under the 2010 rules and puts in place an entirely novel framework based on an ambiguous standard and cumbersome multi-part test that "creates an unacceptable level of uncertainty for small companies and will be too costly to enforce."[20] As OTI previously explained, after noting the range of comments from Internet companies already in the record, "a vague, multi-part test does not create certainty in the market; it creates the opposite—uncertainty—and adds transactional costs that many companies large and small cannot absorb."[21]

The Commission should therefore listen to the voices of millions of Americans and follow the roadmap laid out by the courts to implement strong network neutrality rules that provide clear legal certainty and protect against the wide range of potential harms in today's broadband ecosystem. Attempting to craft new rules under §706 instead of reclassifying would only lead to further uncertainty and ambiguity, as the record makes clear.[22] As CCIA notes, "Continued reliance on section 706 would all but guarantee an overload on Commission

[18] AT&T Comments at 1.
[19] As OTI explained in its initial comments, "the 2010 Open Internet Rules provide an appropriate starting place for evaluating potential network neutrality harms. However, the 2010 Rules are not the end of the analysis, and the threats to an Open Internet have evolved since those rules were enacted." (At 8)
[20] Comments of Etsy, Inc., GN Docket No. 14-28, GN Docket No. 10-127 (July 8, 2014) at 7 ("Etsy Comments").
[21] OTI Comments at 21.
[22] *See, e.g.,* Netflix Comments at 20-21; COMPTEL Comments at 24; Free Press Comments at 128; Public Knowledge Comments at 33, 129-131.

resources, with tremendous delay, and a prolonged regulatory vacuum… And, as the *Verizon 2014* and *Comcast* decisions taught us, a section 706-based rule is not likely to survive appeal."[23]

C. A Title II approach will not reduce investment in broadband infrastructure.

The most common criticism of reclassification of broadband service as a Title II service is that it will lead immediately to a dramatic reduction in broadband investment.[24] However, the reality is evident from history—investment in infrastructure actually flourished under Title II regulation during the 1990s and early 2000s, as well as under the Commission's 2010 Open Internet Order (which, while not grounded in Title II authority, is much closer to the scope and nature of rules for which network neutrality advocates advocate than the Commission's current proposal).

Free Press offers an expansive counterargument to this concern in its initial comments in this proceeding, and we will not fully reiterate that argument here. However, a few points are worth repeating. First, Title II has a demonstrated positive correlation with investment—the opposite of what broadband providers are claiming. "We can say with extreme confidence that a return to Title II would not harm investment because we lived through a period of time that saw the greatest level of investment in the telecom industry that our country has ever seen, with most of that investment coming from the companies subjected to the full force of the law."[25] Notably, the time period to which Free Press refers is actually one in which the full weight of Title II was

[23] CCIA Comments at 12.
[24] *See e.g.,* Comments of America Cable Association, GN Docket No. 14-28, GN Docket No. 10-127 (July 17, 2014) at 65-66 ("ACA Comments"); AT&T Comments at 5; Comments of Charter Communications, GN Docket No. 14-128 (July 18, 2014) at 4 ("Charter Comments"; Comcast Comments at 43-50; Comments of Frontier Communications, GN Docket No. 14-28 (July 18, 2014) at 4 ("Frontier Comments").
[25] Free Press comments at 98. Free Press goes on to demonstrate that, "[d]uring the period from 1996 to 2014, the telecommunications sector saw the imposition of substantial regulation followed by equally substantial deregulation. In examining investment patterns over these years, it appears that the implementation of the expanded version of Title II may have actually helped encourage investment – and that deregulation and consolidation might have decreased investment."

applied in the regulatory context, a much heavier application than the "light touch" approach that advocates are calling for in the context of the current proceeding.

Second, as recently as this summer, the investment community has indicated that "We think investors are overly concerned about … the consequences on the sector if [Title II reclassification] were likely to occur."[26] This reaction is consistent with what we have heard in previous rounds of debates about network neutrality: "the collective yawn from investors in 2014 mirrors the reaction to reclassification in 2010 from investors as well as providers, including incumbents, new entrants, and established non-incumbents."[27] Part of this reaction is due again to what history tells us—that the most recent applications of Title II, have occurred in a light-touch manner to impose minimal and necessary government oversight.[28]

Finally, the record demonstrates one important investment impact that the carriers largely ignore when they issue their dire warnings against Title II—the impact on investment in applications and content companies if the Commission were to move forward with its current proposal. Startups, large companies, and investors have made clear the negative impact that the Commission's current proposal would have on investment in new, innovative offerings online.[29] Strong and clear net neutrality protections, on the other hand, can provide incentives for investment and encourage a cycle which breeds innovation and content creation.[30]

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[26] Paul de Sa *et al.*, "U.S Internet and U.S. Telecoms: Why the Current Net Neutrality Debate Does Not Matter for Investors," Bernstein Research, July 9, 2014.
[27] Free Press Comments at 96 (internal citations omitted).
[28] *See* Free Press Comments at 97.
[29] Notice of *Ex Parte* filed by Julie Samuels on behalf of 150 technology companies, GN Docket No. 14-28 (May 7, 2014); Notice of *Ex Parte* filed by Marvin Ammori on behalf of Kickstarter, Meetup, Tumblr, Engine Advocacy, and the New York City Tech Meetup, GN Docket No. 14-28 (May 6, 2014); Notice of *Ex Parte* filed by Nick Grossman on behalf of 100 investors, GN Docket No. 14-28 (May 8, 2014). *See also* Tim Sampson, "Tech's biggest investors to FCC: Your net neutrality plan would kill startups," *The Daily Dot* (May 8, 2014), *available at* http://www.dailydot.com/politics/tech-investors-venture-capitalist-fcc-net-neutrality/.
[30] Inimai M. Chettiar and J. Scott Halladay, "Free to Invest: The Economic Benefits of Preserving Net Neutrality," *Institute for Policy Integrity at New York University School of Law,* January 2010.

D. *Contrary to assertions from Internet service providers, rules based on §706 authority cannot adequately protect against blocking, discrimination, or access fees.*

AT&T asserts that under §706, "the Commission has legal authority to adopt new no-blocking and nondiscrimination rules that are precisely tailored to prohibit any practices that could pose a threat to the 'virtuous circle.'"[31] This statement is simply not true, and its falseness is perhaps most clearly evidenced by the fact that the NPRM does not even contemplate protections against discriminatory behavior. Whereas the 2010 rules specifically protected against blocking and discrimination (while also requiring a degree of transparency about network management practices), the current proposal does not even have a *section in the NPRM* that would contemplate such protections.

Whereas the NPRM has sections titled "Transparency Requirements to Protect and Promote Internet Openness" and "Preventing Blocking of Lawful Content, Applications, Services, and Nonharmful Devices," it includes only "Codifying an Enforceable Rule to Protect the open Internet That Is Not Common Carriage *Per Se*" as its parallel to what should be a section on nondiscrimination protections. The Commission could not include "nondiscrimination" in the title of that section because the *Verizon* Court recognized that the fundamental characteristic of common carriage is nondiscrimination. That is to say, an "enforceable rule to protect the open Internet that is not common carriage *per se*" cannot, by definition, include a bright-line protection against discrimination.

Moreover, while the NPRM at least includes a section dedicated to protecting against blocking, the actual substance of the proposed rule falls far short of the 2010 no-blocking rule and may not be legally sound as drafted. Free Press notes that the "Commission might at least be able to justify a 'no blocking' rule" based on the majority opinion in *Verizon v. FCC*, if the

[31] AT&T Comments at 1.

Commission crafts such a rule in a way that sets a minimum baseline while allowing carriers to charge edge providers for high-speed, priority access beyond that baseline. However Free Press goes on to point out—a point OTI echoes in its own comments—that Judge Silberman "viewed this argument with great skepticism," and "reasoned that even with room for discrimination on top of it, the basic service 'that most users receive[d] under this rule would still have to be offered as common carriage, at a regulated price of zero.'"

Thus, without reclassification, the legality of the present no-blocking rule—let alone a stronger prohibition against blocking that would be in line with the 2010 Rules—is far from clear. It is also complicated to apply. Free Press adds that "we see from the plain language of *Verizon* that any no-blocking rule would be completely meaningless, because it would permit a broadband provider to tell every content provider (including non-commercial speakers) that there is 'better' treatment to be had, but *only* if the content provider first negotiates for what that individualized treatment will entail," and that the NPRM "suggests this convoluted process because a simple and effective duty to deal imposed on the broadband provider would be a common carrier obligation."[32]

Finally, not only can the Commission *not* prohibit discrimination using §706 authority, it must also allow individualized negotiations and bargaining among broadband providers and content providers, per the *Verizon* decision. Inherent in this allowance is the reality that the Commission cannot protect against tolls for access into the last mile terminating access monopoly or against fees for prioritized or enhanced delivery of content into and over the last mile. For reasons we detail below in our discussion of harms related to interconnection disputes,

[32] Free Press Comments at 132.

negotiations and bargaining over access fees have already resulted in consumer harms, and as many have pointed out in this docket, may lead to a widespread decline in innovation.[33]

As Public Knowledge so clearly explains, the current proposal "allows discrimination on its face, thus running counter to the fundamental tenets of network neutrality rules," and "prolongs the legal purgatory that began with the 2010 Open Internet Order and was perpetuated by the *Verizon* decision in January because it is unclear whether its attempt to create a baseline within its discriminatory framework would be considered a common carriage rule."[34] At its core, §706 is an inadequate tool to deal with the realities of protecting an open Internet. "The simple reality is that any rules not adopted under Title II *must* either authorize massive network discrimination and individualized bargaining, and thus are antithetical to meaningful network neutrality, or else will be struck down again."[35]

III. Interconnection disputes present an immediate and serious consumer harm and threaten the open Internet.

The recent, high-profile disputes between Netflix, Cogent, Level 3 and the largest ISPs in the United States (including Comcast, Time Warner Cable, Verizon and AT&T) raise a set of issues that are essential for the Commission to consider in the open Internet proceeding. These disputes among content and network business relations over revenues and costs can lead to significant degradation of Internet service over a period of months. The result is discriminatory routing, throttled Internet content, and "slow lanes" for content, followed by confusion among consumers about why some of the most popular Internet applications will not function properly on an expensive, high-capacity Internet access product. Preliminary analysis of extensive data collection through OTI's Measurement Lab (M-Lab) project appears to confirm that when

[33] *See e.g.* Public Knowledge Comments at 39, which note that "a tired network system undermines the entire 'virtuous' cycle' of broadband and content innovation."
[34] Public Knowledge Comments at 42-43.
[35] *Id*. at 43.

business disputes among major network operators and their interconnection peers arise, consumers pay the price.[36] This market failure is new, and it results in a distortion of Internet traffic flows generated by artificial congestion that harms millions of consumers. In addition, it is not clear that consumers currently have an avenue for redress for these harms. The Commission has neither fully considered nor addressed the problem and its authority to do so is questionable under the proposed framework of regulation under §706 in this proceeding. Yet, as we explain below, the problem is real, and the Commission must address the risks of harms *into* the last mile terminating access monopoly as it considers the parallel harms *over* the terminating access monopoly.

A. The Commission should consider the very real impacts that interconnection disputes have on consumers.

In the present rulemaking, the Commission should identify, clearly define, and implement a remedy for these consumer harms. Although some believe this kind of "interconnection discrimination" does not fit the classic profile of discrimination over the last mile, others, including OTI,[37] have noted its growing relevance in the context of network neutrality: the consumer effectively experiences discrimination between different content and services over an Internet connection. Notably, the discrimination and quality of service disruptions were not limited to Netflix traffic, despite the press coverage of that particular episode. In fact, the disputes impacted a broad array of Internet services, including telework virtual private networks for small and medium-sized enterprises. In addition, the degradation of traffic that the data reveals to be happening at the interconnection point ultimately reduces the bandwidth available to *all* traffic flowing from a particular interconnection partner from particular data centers. The

[36] Full analysis of the M-Lab data is forthcoming.
[37] OTI Comments at 13-14. OTI continues to believe that access tolls and fees for prioritized and enhanced delivery of service are harms that the Commission should remedy in this proceeding. *See also* www.circleid.com/posts/20140407_interconnection_disputes_are_network_neutrality_issues/

result is a significant drop in the quality of service for consumers on a wide variety of applications.

The Commission should analyze the available data on exactly what happened in these interconnection disputes and the scope of the resulting consumer harm. But more broadly, the Commission should note that for many years, and again in this proceeding, ISPs have argued that they would never violate the principles of network neutrality because to do so would result in declines in quality of service for Internet content and services.[38] Such a decline would—according to this logic—result in consumer dissatisfaction, complaints, and ultimately *en masse* shifts to other service providers. They argue that any incentives to increase revenues by selling "fast lanes" would never overcome their primary desire to guarantee the consumer a quality Internet experience.[39]

The interconnection disputes expose the emptiness of this argument. When faced with a business dispute over pricing and interconnection, several network operators appear to have chosen to throttle all of the content and services coming from a very large transit provider in order to put pressure on Netflix to pay a fee to the ISP. There is no indication that significant and sustained impairment to the user experience of millions of consumers led them to alter their behavior by switching providers. And the degree of service impairment was striking. The quality of service for all applications and services entering the access networks from these transport providers declined sharply. Figures 1 and 2 below demonstrate this decline in throughput for the Comcast and Time Warner Cable networks in several markets for traffic originating from particular interconnection partners. These data points are derived from M-Lab, referenced above, which is a public, open data resource for Internet measurement that is a partner on the FCC's

[38] AT&T Comments at 17; Comcast Comments at 6; NCTA Comments at 14; Comments of Verizon and Verizon Wireless, GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) ("Verizon Comments").
[39] *See, e.g.* NCTA Comments at 16.

Measuring Broadband America project.[40] The data contained in these charts is also available in the Commission's own raw data collection from this period over the M-Lab network.[41]

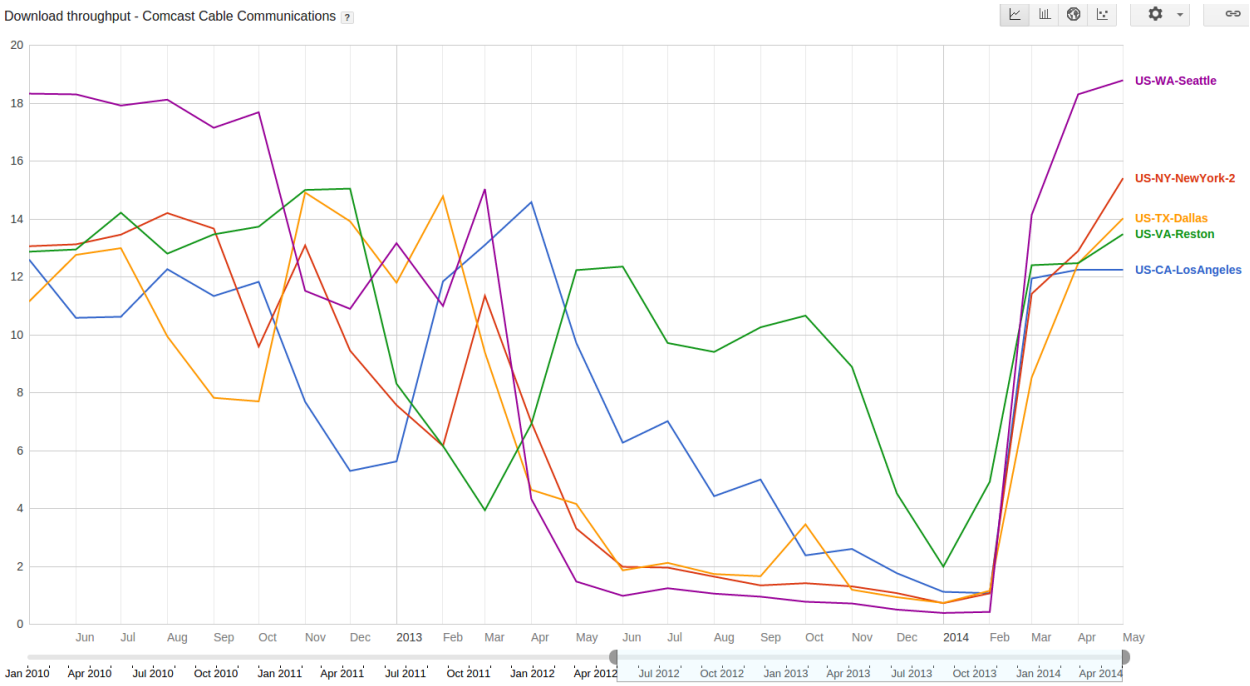

Figure 1 - Comcast: Average Download Throughput

[40] For more information on Measurement Lab, see http://www.measurementlab.net/.

[41] Note, however, that the Commission determined not to include these data points in the analysis of the published reports.

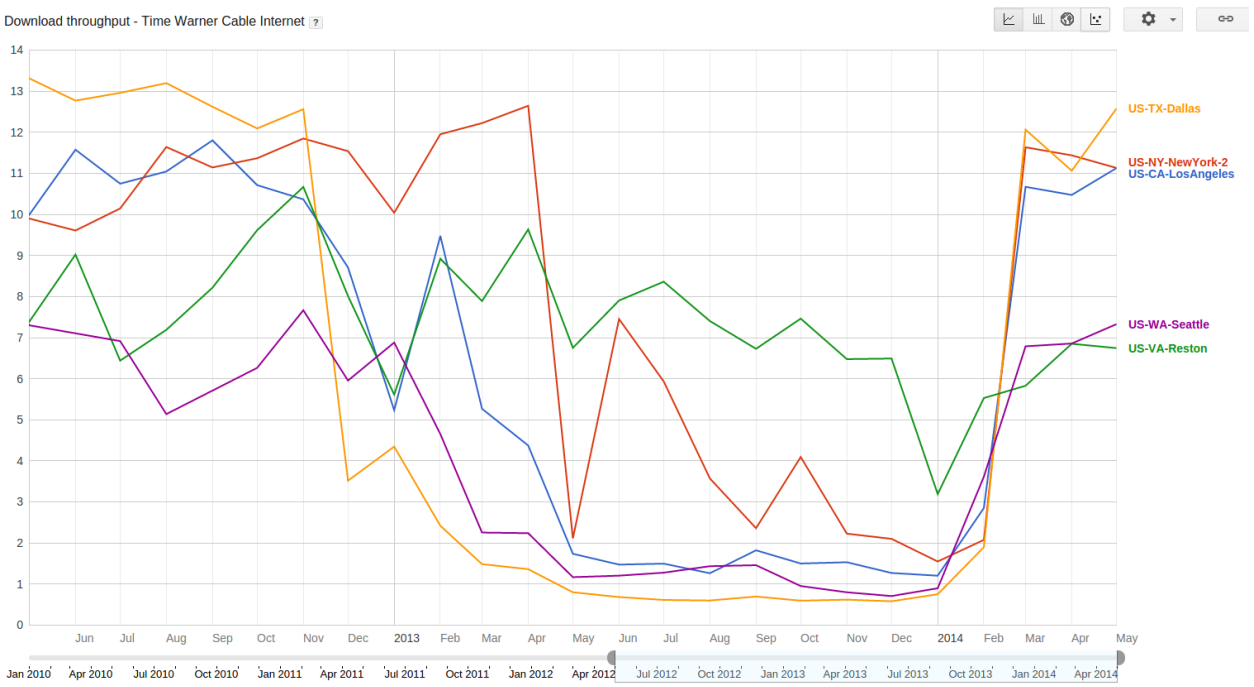

Figure 2 - Time Warner Cable: Average Download Throughput

These figures reveal the sharp and sustained drop in average throughput for customers of Comcast and Time Warner Cable during a period of months coinciding with the dispute between Netflix and its transit providers. Customers who had purchased cable modem service that promised 20-50 Mbps were instead experiencing speeds of less than 2 Mbps for weeks and months. The data also reveal that in the days following the resolution of the business dispute, the average throughput spiked back to normal levels. This fluctuation does not appear to be explained through any normal patterns of network traffic flow. The data do not reflect a congestion problem due to insufficient physical capacity in the network, but instead appear to reflect intentionally created artificial congestion designed to significantly degrade the quality of service of a popular application for millions of consumers in order to generate pressure on one company to pay more money. Irrespective of who is right or wrong in the business dispute, using consumers as pawns in this conflict cannot be an acceptable outcome for the Commission. The scale of the disruption to consumer services is noteworthy. The data reveal that the four largest

ISPs in the United States, representing 68% of all American Internet users, were the principal actors in this episode.[42]

And the episode resulted in significant customer dissatisfaction, with archives of consumer complaint forums and technology blogs packed with the submissions of thousands of angry customers.[43] Many complained that streaming video on Netflix would not function, but many others noted that a wide variety of other services were being reduced to a trickle of bandwidth. And the responses from customer service representatives at the ISP were at best uninformed or at worst misleading, ultimately leading many consumers to believe that the declines in quality of service were due to user error. These providers encouraged customers to check their own equipment,[44] sent technicians to a customer's home for a fee,[45] or pointed to the language in the Terms and Conditions of the service.[46] Comcast's policy, for example, states: "Comcast makes no representation regarding the speed of the Internet Service."[47] In the face of such misleading information, customer dissatisfaction levels in the consumer comments rose steadily—an impressive feat for the lowest rated industry in customer satisfaction.[48] The scope of

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[42] Press Release, Leichtman Research Group, Aug. 14, 2014, *available at* http://www.leichtmanresearch.com/press/081514release.html; *cf.* Jon Brodkin, Netflix performance on Verizon and Comcast has been dropping for months, ArsTechnica, Feb. 10, 2014, *available at* http://arstechnica.com/information-technology/2014/02/netflix-performance-on-verizon-and-comcast-has-been-dropping-for-months/

[43] As one user stated on a Comcast business customer forum:
"Please for the love of God stop trying to side step your responsibility in this and stop tellings us that we're all stupid and delusional. This thread has gotten massive and it's not due to everyone watching at prime time, my Netflix connection through Comcast sucks ALL DAY EVERY DAY but tethering to an ATT phone immediately resolves the issue." http://forums.comcast.com/t5/Basic-Internet-Connectivity-And/Is-Comcast-blocking-Netflix/td-p/1885277/page/9

[44] http://forum.square-enix.com/ffxiv/threads/92953-Ping-higher-for-US-Data-center-than-other-centers-%28picture-of-test-results%29

[45] http://forums.comcast.com/t5/Basic-Internet-Connectivity-And/Is-Comcast-blocking-Netflix/td-p/1885277/page/7

[46] http://forums.businesshelp.comcast.com/t5/Connectivity/Is-Comcast-throttling-Usenet-Access-for-business-customers/td-p/10197;

[47] Comcast Business Services Customer Terms and Conditions, Section 2.2:
http://business.comcast.com/docs/default-source/terms-conditions/bus-svcs-ver-21-published-131107-pdf
http://bgr.com/2014/05/20/comcast-twc-customer-satisfaction-survey-study/

[48] Brad Reed, Massive survey finds Comcast and TWC are the two most hated companies in America – period, BGR, May 20, 2014, *available at* http://bgr.com/2014/05/20/comcast-twc-customer-satisfaction-survey-study/.

these comments highlights just how slow these connections became. A business user relied on tethering to a mobile connection to achieve better service than his cable modem. Lacking adequate means to complain to the FCC, users even resorted to petitioning the President to gain a full explanation for the degraded service.[49]

B. The Commission should address these consumer harms to the open Internet in the present proceeding.

The interconnection dispute described here is a serious example of discrimination where a network operator appears to have made a conscious choice to reduce quality of service for its own customers if they use some applications and services versus others based on the willingness of the service providers to pay discriminatory fees. All the available evidence suggests the ISPs have done this by creating artificial scarcity in their own networks (resulting in major degradation to quality of service for popular applications) and leaving consumers caught in the middle, presumably in order to extract rents from business partners and competitors.

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. An analog exists in the retransmission consent disputes between cable and broadcast companies.[50] 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. The Commission should put an end to these interconnection abuses through action in this proceeding. It already has a strong factual record in this docket concerning the abuses, including

[49] https://www.change.org/petitions/comcast-provide-customers-with-the-real-explanation-as-to-why-they-can-no-longer-use-netflix-in-the-evening-hours-work-with-netlix-to-resolve-the-problem; http://forums.comcast.com/t5/Home-Networking-Router-WiFi/Netflix-router-problem/td-p/1978799

[50] *See* OTI Comments at 17.

filings by Cogent, Netflix, and Level 3.[51] The issues raised at the entry point into the last mile are nearly identical to those concerning discrimination and fees within the carriers' access networks *over* the last mile: discrimination among applications and services, charging access fees, and incentives to under-provision capacity if payment were an option, and abuse of the termination access monopoly.

OTI believes that the clearest and surest way to address this matter requires the Commission to treat broadband Internet access as a "telecommunications service." Upon reclassifying, the Commission should ban blocking and unreasonable discrimination in interconnection with companies that have terminating access monopolies. While the Commission could attempt to ensure that fees are cost-based and reasonable, it has also acknowledged in the recent Intercarrier Compensation Order that setting such costs is complicated and the price of $0 has worked well in the Internet context. Banning blocking, unreasonable discrimination, and access fees over and into the access market is necessary because if the Commission only bans such practices *over* the access network, the carriers will continue implement manipulate traffic at the interconnection point *into* the access network. It does not matter either to consumers or to applications providers if the carriers abuse their power through interference that takes advantage of deep packet inspection in routers in their network or through interconnection abuse—the resulting harms are the same. And, as we have detailed above, Title II provides the clearest—if not only—authority to address these harms.

[51] *See generally* Netflix Comments at 10-16; Comments of Cogent Communications Group, Inc., GN Docket No. 14-28, GN Docket No. 10-127 (July 15, 2014) at 8-10 ("Cogent Comments"); Comments of Level 3 Communications, LLC, GN Docket No. 14-28 (July 15, 2014) at 2 ("Level 3 Comments").

IV. Strong network neutrality rules grounded in sound legal authority will not cause a worldwide upset.

A. Implementing strong network neutrality protections would demonstrate that the United States is an international leader in technology policy, and would not lead to worldwide censorship online or other disastrous outcomes.

The precedent set by the United States in the network neutrality debate has profound implications worldwide. Governments around the world, from Latin America to Europe, are currently considering how to best implement network neutrality rules in their own countries, and many are looking to the U.S. as a model for the types of protections that they will adopt.[52] Accordingly, the Commission has an opportunity to dictate norms in this global debate and demonstrate U.S. leadership by adopting clear, bright-line rules grounded in a strong legal framework.

Bizarrely, several ISPs suggest that Title II reclassification could actually undermine American international policy objectives, claiming that it would encourage foreign governments to enact similarly "restrictive" regulations over the Internet.[53] Comcast and Verizon suggest that reclassification would undercut the State Department's Internet Freedom agenda, making it more difficult for the United States to push back against Internet-censoring countries like China and Russia and to preserve the current multi-stakeholder model of Internet governance. These assertions are largely without merit, conflating interest from countries around the globe in the precedent set by the U.S. with fears about a United Nations takeover of the Internet. Simply put, implying that bright-line rules that protect against blocking and discriminatory behavior would make it easier for foreign governments to justify censorship and greater control over the network

[52] Danielle Kehl, "Why the US net neutrality debate matters globally," *The Hill*, August 28, 2014, http://thehill.com/blogs/pundits-blog/technology/216107-why-the-us-net-neutrality-debate-matters-globally. *See also* Cyrus Rassool, "The United States Must Lead in Upholding Net Neutrality," *The Huffington Post*, August 15, 2014, http://www.huffingtonpost.com/freedom-house/the-united-states-must-le_b_5681846.html.
[53] AT&T Comments at 69; Comcast Comments at 49-50; Verizon Comments at 56.

does not make sense. Nor would strong network neutrality rules encourage other types of heavy-handed "over-regulation" of the Internet by other countries or diminish American credibility internationally.

Indeed, as OTI explained previously, the opposite is true: "to the extent that federal policy in the United States would lead to a scenario where pay-for-priority is the norm, it is likely that other countries would follow suit, leading to an unworkable ecosystem driven entirely on contractual negotiations of international scale, with few resources remaining for actual innovation."[54] It is the lack of protections against paid prioritization that would undermine the United States internationally, rather than a narrowly-tailored solution to paid prioritization under Title II.

B. The policies related to access tolls that OTI and others are proposing are actually consistent with what Internet service providers have advocated for in the international context.

In addition, there is some irony inherent in some carriers' position on how and if the Commission should resolve challenges at the point of interconnection into the last mile. The Commission should take note of the fact that discriminatory fee structures for interconnection to access networks has been proposed in international markets and soundly rejected by both the United States government and a united front of U.S. industries (including both network operators and content companies).[55] In the period before the World Conference on International Telecommunications (WCIT) of 2012 in Dubai, an association of European Telecommunications Network Operators (ETNO) proposed that the International Telecommunications Union (ITU) change global regulations to permit the implementation of a "sending party pays" regime for the

[54] OTI Comments at 17.
[55] Declan McCullagh and Larry Downes, "U.N. could tax U.S.-based Web sites, leaked docs show," *CNet*, June 7, 2012, http://www.cnet.com/news/u-n-could-tax-u-s-based-web-sites-leaked-docs-show/; Richard Adhikari, "Leaked Proposals Set Stage for UN Squabble Over Internet Freedom," *TechNewsWorld*, June 22, 2012, http://www.technewsworld.com/story/75460.html.

Internet.[56] The proposal recommended that network operators be authorized to break peering agreements and charge discriminatory fees for interconnection to access networks.[57]

Then-U.S. Ambassador to the EU (and former FCC Chairman) William Kennard was one of the leading opponents of the ETNO proposal. Ambassador Kennard spoke frankly at an ETNO conference:

> At the upcoming WCIT meeting in December, the United States will oppose efforts to amend the ITRs to give new jurisdiction over the Internet to the ITU. This means that we will oppose the ETNO proposal to amend the ITRs.
>
> I appreciate this opportunity to explain why we have taken this decision. But first, I want to say that this is the unanimous view of the United States government. It represents the position of the Obama Administration, the Federal Communication Commission, both houses of Congress—our Senate and our House of Representatives—and remarkable unity of all stakeholders outside of government. Those in business and civil society have all come together, showing remarkable unanimity of support for this position.[58]

Ambassador Kennard was correct that ETNO's proposal was opposed by the entire U.S. tech and telecom industry—including the network operators, and the concerns of the U.S. government and industry are warranted. Yet this fight is far from settled at the international level, and any demonstration that the U.S. will permit such practices at home (either by default of inaction or the proactive permission of the regulator) could undercut our economic foreign policy.

Similarly, a former U.S. Coordinator for International Communications and Information Policy for the Department of State, Ambassador David Gross, presented a very sharp analysis of the ETNO proposal at the time. Ambassador Gross described the problem as follows:

> The concept of "sender party pays" is unclear. But in essence, it appears that what they want to do is say that, if my customer — if I'm a carrier — my customer makes a query, sends out a search for certain information, and they access a website because of that, that the party associated with a website that has the content that is responding to that search,

[56] https://www.etno.eu/datas/itu-matters/etno-ip-interconnection.pdf.
[57] See "Radical Proposal Now on the Table at the ITU," *Center for Democracy and Technology*, June 21, 2012, https://cdt.org/blog/radical-proposal-now-on-the-table-at-the-itu/.
[58] http://useu.usmission.gov/etno2.html.

> that the content provider must pay for transmitting that content to the requester. This is a completely new economic concept to the Internet. And it could have a radical and profound impact on the economics of the Internet, especially in the developing world.[59]

Thus, the policies related to access tolls that OTI and others are proposing are actually consistent with what Internet service providers have advocated for in the international context, and it is the carriers whose behavior appears inconsistent.

V. The record demonstrates diverse and widespread support for a common regulatory framework that applies equally to fixed and mobile broadband providers and subject to a reasonable network management exception.

The comments filed in this proceeding reflect diverse and widespread support for a common regulatory framework that applies open Internet protections, including the non-discrimination rule, equally to both mobile and fixed broadband Internet access providers. A number of commenters emphasized, as OTI did in its comments, that it will be increasingly incoherent and unworkable to maintain distinct regulatory frameworks for mobile and fixed broadband access networks.

The record suggests that the only parties opposing a common regulatory framework for network neutrality are the mobile carriers and some of their suppliers (and even then, not with much conviction). This should not be a surprise, since the record is also clear that mobile broadband ISPs have the capability and strong incentives to block, throttle, and degrade Internet traffic and third-party applications, as well as a recent track record of doing so. At the same time, a diverse range of commenters agree that LTE mobile broadband networks are now sufficiently established, robust and flexible enough to support strong open Internet protections, even if they are not yet full substitutes for fixed broadband.

[59] Andrew Couts, "Interview: US Ambassador David Gross Explains UN 'Takeover' of the Internet," Digital Trends, August 9, 2012, *available at* http://www.digitaltrends.com/web/fmr-us-ambassador-david-gross-explains-un-takeover-of-the-internet/2/.

There is also widespread support for the view that 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. Many commenters suggested that while technological differences might be relevant in *applying* the open Internet rules, the many differences among various fixed and mobile networks should not have any bearing on whether a given obligation applies in the first place.

Finally, a clear consensus among commenters addressing this issue is that the Commission's proposal to largely exempt mobile carriers from open Internet rules would have a disparate and negative impact on minority, low-income and rural communities that rely disproportionately on wireless Internet access. The data and the record in this proceeding are clear that traditionally disadvantaged groups—tens of millions of Americans—are not only much less likely to have a high-speed fixed broadband connection at home, they are also more than twice as likely to rely either solely or primarily on wireless broadband networks for their primary Internet access.

A. Mobile carriers have strong incentives to block or discriminate among applications, content and service providers regardless of the limited degree of competition in a steadily consolidating industry.

With the exception of certain mobile carriers and their suppliers, the record reflects a diverse and widespread consensus that mobile broadband ISPs have both the capability and strong incentives to block, throttle and degrade Internet traffic and third-party applications.[60]

[60] *See, e.g.,* Comments of Microsoft Corporation, GN Docket No. 14-28 (July 18, 2014) at 22-25 ("Microsoft Comments") (citing its international experience with mobile carriers throttling and effectively blocking Skype VoIP services); Comments of Cox Communications, Inc., GN Docket No. 14-28, GN Docket No. 10-127 (July 18, 2014) at 10, fn 18("Cox Comments") ("the Commission has focused primarily on questionable practices by mobile broadband providers in justifying the need for new Open Internet rules)." *See also* NCTA Comments at 70; Comments of i2Coalition, GN Docket No. 14-28, GN Docket No. 10-127, GN Docket No. 13-5, GN Docket No. 09-51, WT Docket No. 13-135, WC Docket No. 07-52 (July 15, 2014) at 36-37 ("i2Coalition Comments Comments of Electronic Frontier Foundation, GN Docket No. 14-28 (July 15, 2014) at 23-24 ("EFF Comments"); Public

NCTA is one of several commenters who observes that "the few incidents since 2010 that have raised potential Internet openness concerns have been concentrated in the mobile wireless sector."[61] Whereas wireline ISPs have generally not attempted to block or degrade consumer access to devices, applications or services over the Internet, mobile carriers have done so repeatedly in recent years.[62] Among the examples on the record are two cited by the D.C. Circuit Court of Appeals in its *Verizon v. FCC* decision this year: "a mobile broadband provider block[ed] online payment services after entering into a contract with a competing service; [and] a mobile broadband provider restrict[ed] the availability of competing VoIP and streaming video services."[63]

Comments filed by the cellular industry and their suppliers generally make the argument that unlike the market for wireline broadband services, "robust" competition among mobile ISPs renders open Internet protections completely unnecessary. Verizon asserts that the mobile ISP market is "extraordinarily competitive," since 82 percent of American consumers can choose from among at least four wireless broadband providers.[64] T-Mobile opines that because of this competition, "providers have little ability or incentive to block or degrade Internet traffic or otherwise undermine the consumer experience."[65]

First, even if there were effective competition in the market for mobile broadband services, that fact would not diminish the rationale for basic "rules of the road" for network

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Knowledge Comments at 25; Comments of Future of Music Coalition, GN Docket No. 14-28 (July 15, 2014) at 12 ("Future of Music Coalition Comments").

[61] NCTA Comments at 70. *See also* Time Warner Cable Comments at 27 ("the few incidents reflecting potential violations of Internet openness principles have been localized in the wireless sector").

[62] *See, e.g.*, EFF Comments at 23-24 ("examples of discriminatory practices by mobile providers abound").

[63] *Verizon v. FCC*, 740 F.3d 623, 648 ("[T]he Commission established that the threat that broadband providers would utilize their gatekeeper ability to restrict edge-provider traffic is not, as the Commission put it, 'merely theoretical.'").

[64] Verizon Comments at 41. In discussing investments in mobile broadband networks, AT&T opines on the "intensely competitive marketplace for mobile broadband Internet access services." AT&T Comments at 21.

[65] T-Mobile Comments at 3.

neutrality. Internet freedom and open Internet protections—for both consumers and edge providers—is too important to be left to the vagaries of the market. As Cox Communications pointed out, consumers "would be no less harmed when such blocking or discrimination occurs on a mobile platform."[66] Moreover, as NCTA argues, the fact that most consumers have more choices for mobile ISPs than for fixed service has questionable relevance "given the Commission's determination [in the NPRM] that the open Internet rules do not hinge on a market power theory."[67] FCC Chairman Wheeler made a similar point in his speech this month at the CTIA Show when he stated that the recent history of the mobile industry demonstrates that "competition does not assure openness."[68]

Second, even if there was "robust" competition among mobile carriers to attract and retain retail subscribers, 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. As Microsoft observes, "mobile broadband access providers today can be an edge provider's only option for reaching a particular end user."[69] The leverage that mobile ISPs have over the adjacent markets for devices, applications, content, and services over the Internet—and the potential impact of that leverage on innovation, productivity, and consumer welfare in the broader economy—is justification in itself for network neutrality rules.

Finally, and most importantly, the factual predicate of mobile carrier claims about an "intensely competitive" industry is unfounded. The mobile broadband market has grown steadily

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[66] Cox Communications Comments at 10.
[67] NCTA Comments at 74, citing *NPRM* at ¶ 49.
[68] Prepared Remarks of FCC Chairman Tom Wheeler, 2014 CTIA Show, Las Vegas, NV (Sept. 9, 2014), *available at*: http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0909/DOC-329271A1.pdf. The Chairman stated; "I remember when the industry was united around the walled garden, where the only apps that reached the consumer were those which the carrier approved, usually in return for a payment. . . . [I]t is instructive that the walled garden existed despite multi-carrier competition. At least in the short run, this suggests that competition does not assure openness."
[69] Microsoft Comments at 23.

more concentrated and less competitive since 2010, as the Commission has concluded each year since 2010 in its mobile market competition reports (declining to find "effective competition"),[70] as the Antitrust Division has concluded,[71] and as virtually every mobile ISP other than Verizon and AT&T has stated repeatedly in pleadings before the Commission.[72] Measures of industry consolidation suggest an industry that is highly concentrated.[73] Regional, rural, and pre-paid competitive carriers are disappearing as the industry consolidates.[74] Most recently the Commission has approved the acquisition of MetroPCS by T-Mobile and the acquisition of Leap Wireless by AT&T,[75] further reducing the number of mobile operators available to consumers. As Microsoft correctly states, "[s]ince the Commission adopted its 2010 open Internet rules, mobile broadband access providers have become more horizontally and vertically integrated, reducing competition in the mobile broadband access marketplace and, therefore, making robust open Internet rules even more important."[76]

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[70] *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, WT Docket No. 11-186, Sixteenth Report ¶ 2 (2013) ("16th Competition Report") (declining to issue a formal finding as to whether there is "effective competition" in the marketplace, consistent with its decision not to issue such findings in the Fourteenth and Fifteenth Mobile Competition Reports.).

[71] *Ex Parte* Submission of the United States Department of Justice, WT Docket No. 12-269 (April 11, 2013) at 8. ("Carriers do have the ability and, in some cases, the incentive to exercise at least some degree of market power, particularly given that there is already significant nationwide concentration in the wireless industry.")

[72] The Competitive Carriers Association has emphasized the anti-competitive effects of ongoing industry consolidation in several recent filings: "Consolidation in the wireless industry, as measured by the Herfindahl-Hirschman Index ('HHI') increased from 2,151 in 2003 to an alarming 2,848 in 2010 (where an HHI of greater than 2,500 indicates a 'highly concentrated' market)." Comments of Competitive Carriers Association, Policies Regarding Mobile Spectrum Holdings, WT Docket No. 12-269 (Nov. 28, 2012) ("CCA Comments in 12-269") at 4.

[73] The Herfindahl-Hirschman Index ("HHI") for the wireless industry has increased from 2811 in 2009 to 2873 on 2011. *See* 16th Competition Report at ¶54-61.

[74] As the Competitive Carriers Association described in recent comments, "the number of nationwide wireless carriers has declined from six in 2003 to four in 2012, and during that span, several 'regional and rural facilities-based providers have exited the marketplace through mergers and acquisitions [citation omitted].'" CCA Comments in 12-269 at 4.

[75] *See* Memorandum Opinion and Order and Declaratory Ruling, WT Docket No. 12-301, DA-13-384 (Mar. 12, 2013), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DA-13-384A1.pdf; *See* Memorandum Opinion and Order, WT Docket No. 13-193, DA-14-349 (Mar. 13, 2014). https://apps.fcc.gov/edocs_public/attachmatch/DA-14-349A1.pdf.

[76] Microsoft Comments at 22-23.

Moreover, as Chairman Wheeler stated in recent remarks to the Competitive Carriers Association (September 8, 2014), even where consumers can choose among four carriers, high switching costs undermine the sort of consumer choice and market discipline normally associated with competitive markets, such as long-distance calling two decades ago.[77] Commenters in this proceeding, including Consumers Union and Microsoft, have similarly highlighted how switching costs continue to impact competition, with practices such as two-year contracts, early termination fees and group family plans making it difficult for consumers to change providers.[78]

Increasing consolidation and the dominance of the two largest mobile carriers has been lamented by competitive carriers and consumer advocates alike. In the period between the 14th and 16th Mobile competition reports, AT&T and Verizon's combined share of total wireless industry revenue rose from 60 percent to 67 percent,[79] while their combined share of the lucrative post-paid market is even greater. In the recent spectrum holdings proceeding, both the Competitive Carriers Association (CCA) and the two smaller, national mobile carriers (Sprint and T-Mobile) emphasized how increasing market consolidation, low-band spectrum dominance, the ability to over-charge for special access backhaul and data roaming, among other factors, hamper their ability to compete effectively with the two largest mobile carriers.[80] And this year T-Mobile filed a petition with the Commission asking for greater protections against

[77] "Keynote Remarks by FCC Chairman Tom Wheeler," RCR Wireless News YouTube page (Sept. 8, 2014), *available at*: https://www.youtube.com/watch?v=mweWx9x_qWI#t=634.
[78] Consumers Union Comments at 13; Microsoft Comments at 24. *See also* Spencer E. Ante and Ryan Knutson, "Good Luck Leaving Your Wireless Phone Plan: Only About 1% of Contract Customers Switch From Top Wireless Carriers; 'It Kind of Feels Like a Trap'," *The Wall Street Journal* (July 31, 2013**),** *available at* http://online.wsj.com/news/articles/SB10001424127887323971204578630202425653338.
[79] *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, WT Docket No. 09-66, Fourteenth Report (2010) at ¶30; 16th Competition Report at ¶2.
[80] *See, e.g.,* CCA Comments in 12-269 at 6-7 ("The Commission must recognize that control of the lion's share of prime broadband spectrum by one or two carriers makes it increasingly difficult for new entrants or other carriers to gain access to spectrum, which in turn prevents access to all other critical inputs, which in turn inhibits effective competition in the industry.").

unreasonable data roaming charges, an anti-competitive practice that T-Mobile said harms not only its customers but also results in higher prices for Verizon and AT&T customers. T-Mobile stated that the dominant market position of AT&T allows it "to dictate commercially unreasonable roaming rates on terms highly unfavorable to the requesting provider."[81]

The Competitive Carriers Association suggested last December that competition has deteriorated to the point that the Commission urgently needs to create a "Wireless Competition Task Force" to specifically address the barriers to competition in the wireless marketplace.[82] According to CCA President Steve Berry: "Just a few years ago, the US wireless industry enjoyed robust competition …. Unfortunately, the market has changed, and the FCC's most recent wireless competition report confirmed that the wireless industry is in imminent danger of reverting back to the duopoly of its early days."[83]

B. Mobile carriers provide no basis for claims that 'unique operating constraints' would render neutral network management practices impossible, yet permit compliance with no blocking rules limited to video and voice telephony.

1. Mobile Internet access is no longer an emerging technology and provides the same underlying functionality as fixed networks.

A diverse range of commenters agree that mobile broadband networks are now sufficiently established, robust and flexible enough to support strong open Internet protections.[84] Although the first LTE network became operational just days before the 2010 Open Internet

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[81] Petition for Expedited Declaratory Ruling of T-Mobile USA, Inc., *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265 (May 27, 2014) at 4. ("Indeed, AT&T's recent acquisition of Leap Wireless International, Inc., including its Cricket brand, has further reduced the number of competitors in the wireless market and increased AT&T's market share, thereby also further limiting AT&T's need for roaming and reducing the number of roaming providers in the marketplace"). *Id.* at 8.

[82] Steven Berry, "FCC: Act Now as Wireless Duopoly Looms," *LightReading*, (December 6, 2013), *available at* http://www.lightreading.com/fcc-act-now-as-wireless-duopoly-looms/a/d-id/706840.

[83] *Id.*

[84] *See, e.g.,* Internet Association Comments at 21; CDT Comments at 27-28; NCTA Comments at 70-71, 73-74; Microsoft Comments at 19-20; Public Knowledge Comments at 24-26; Cox Communications Comments at 9-10; Comcast Comments at 40-41; i2 Coalition Comments at 36; EFF Comments at 23-24; Time Warner Cable Comments at 27-28.

Order,[85] today the four major mobile carriers have fully deployed 4G LTE nationwide, each with coverage expected to exceed 250 million Points of Presence (POPs) by year-end (and Verizon already exceeding 300 million POPs).[86] In the coming years, upgrades to LTE-Advanced will represent incremental improvements in capacity and spectral efficiency, reinforcing the fact that LTE networks provide a technologically stable and increasingly mature platform for broadband Internet access.

As the Internet Association correctly stated, "wireless broadband has matured as a platform, with 58 percent of adults in the United States owning a smartphone," and more than a third of these adults accessing the Internet primarily on their phone.[87] Smartphones and tablets are no longer "feature phones," but untethered computers with the same basic functionality and demand for true broadband Internet access as the laptops and desktops of 2010. "[T]he mobile Internet experience ever more resembles the fixed broadband experience," the Center for Democracy & Technology (CDT) observed, while "the trends toward the convergence of fixed and mobile user experiences and increased mobile Internet usage have only accelerated" since 2010.[88]

Many other commenters noted, as OTI did, that mobile network speeds have also increased dramatically since 2010, with 45 million mobile connections providing download speeds of at least 10 Mbps.[89] NCTA noted that AT&T Wireless offers mobile broadband speeds exceeding 50 Mbps, with other carriers "promising to leapfrog to 200 Mbps in the near future."[90]

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[85] CTIA Comments at 24-25.
[86] Cisco Comments at 21. Microsoft notes that LTE subscriptions in the U.S. more than doubled, to 47 million, over a mere six-month period between September 2012 and March 2013 (Microsoft Comments at 20).
[87] Internet Association Comments at 21 (citations omitted); CDT Comments at 27-28.
[88] *See* CDT Comments at 27 ("…people are increasingly using mobile Internet access in much the same ways as wireline access.").
[89] *See* Public Knowledge Comments at 25, citing trends documented in the FCC's 2014 Internet Access Services report (as of June 30, 2013).
[90] NCTA Comments at 73 [citations omitted].

As NCTA also observes, "mobile providers have begun advertising their services as a substitute for fixed broadband services …"[91] Comments filed by the National Hispanic Media Coalition (NHMC) on behalf of Internet Freedom Supporters, a civil rights coalition, similarly notes that in rural areas Verizon and AT&T advertise connections running on their 4G LTE networks as substitutes for fixed broadband in the home.[92]

Consumers Union, NCTA and other commenters also point to the Commission's own recent report that more than a third of all Americans live in wireless-only households.[93] Although wireless networks lack the capacity and reliability that is useful for certain high-capacity applications (e.g., live high-definition teleconferencing), the typical consumer increasingly finds that mobile data devices—and toggling back and forth between mobile carrier networks and Wi-Fi where available—can meet most of their day-to-day online communication and social media needs. More importantly, as discussed further below, many commenters expressed concern that tens of millions of Americans who simply cannot afford (or choose not to purchase) *both* a high-capacity wireline connection at home *and* a more versatile, increasingly high-capacity mobile data plan will be relegated to a second-class Internet experience that undermines other important public policy objectives.

Verizon and CTIA emphasize that the projected growth rate for mobile data traffic in North America between 2013 and 2018 will be three times the growth rate for fixed IP traffic.[94] However, although mobile data traffic is growing faster, Cisco projects that mobile carriers will

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[91] *Id.* at 74 (citations omitted).
[92] Internet Freedom Supporters Comments at 26-27.
[93] *See* Consumers Union Comments at 12; NCTA Comments at 74, citing *Policies Regarding Mobile Spectrum Holdings*, WT Docket No. 12-269, Report and Order, FCC 14-63, ¶ 23 (rel. June 2, 2014).
[94] *See* Verizon Comments at 40; CTIA Comments at 24. Both cite Cisco's *Visual Network Index Mobile Forecast Highlights, 2013-2018* (Feb., 2014), *available at* http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#-Country (select "Filter by Region," select "North America").

still represent only 7 percent of total IP traffic in North America by the end of 2018.[95] A big reason is that a rapidly growing majority of data traffic on mobile *devices* is offloaded via Wi-Fi onto wireline/fixed networks—and impose no burden on mobile *networks*.[96] Cisco projects that Wi-Fi will offload 64 percent of U.S. mobile data traffic onto fixed networks by 2018, a share the European Commission estimates will exceed 80 percent across Europe by the end of 2016.[97]

Moreover, the consumption of data on mobile devices will be driven by IP video Cisco projects that "[t]he sum of all forms of IP video … will continue to be in the range of 80 to 90 percent of total IP traffic."[98] But, according to a separate Cisco survey of smartphone users, IP video is the most nomadic, not mobile, of applications, with more than 85 percent of viewing done indoors at home, at work, or in another location where the traffic can be readily offloaded by Wi-Fi onto a fixed network.[99] An increasingly shrinking share of mobile data demand is used "on the go."

In sum, the record demonstrates that mobile carrier technologies, deployments and consumer behavior since 2010 have changed substantially. 4G LTE networks—augmented by Wi-Fi offload—are well established, robust and flexible enough to adhere to basic open Internet protections.

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[95] Cisco's *Visual Network Index Mobile Forecast Highlights, 2013-2018* (Feb., 2014), *available at* http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#-Country (select "Filter by Region," select "North America").

[96] OTI Comments at 36-39.

[97] Cisco Inc., *Visual Networking Index*, Mobile Forecast Highlights, 2013-2018 (February 2014), *available at* http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country. Specific projections for the United States are available by selecting the filters "United States" and "Device Growth/Traffic Patterns"; J. Scott Marcus and John Burns, *Study on the Impact of Traffic Off-Loading and Related Technological Trends on the Demand for Wireless Broadband Spectrum*, European Commission (August 2013), at 3.

[98] *The Zettabyte Era: Trends and Analysis*, Cisco White Paper (June 2014) at 1, *available at* http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.pdf.

[99] Stuart Taylor, *A New Chapter for Mobile? How Wi-Fi Will Change the Mobile Industry as we Know It*, Cisco Internet Business Strategy Group (November 2011) at 6.

2. Flexibility in the application of a reasonable network management exception can address any legitimate differences among networks, as it has with video and voice telephony applications.

There is widespread support for the view that 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.[100] NCTA 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."[101] Therefore, as CDT suggested, "the best approach is to account for any such considerations in the rules' *application*, not in substantive differences."[102]

Since the harm to consumers is the same whether the ISP is classified as "fixed" or "mobile," there is widespread support for the notion that the same fundamental principles and obligations should apply to *all* broadband ISPs.[103] As Public Knowledge observed, the Communications Act defines a telecommunications service as "the offering of telecommunications for a fee directly to the public, *regardless of the facilities used*."[104]

The Commission recognized in the 2010 *Order* that the policy rationale for open Internet protections was as relevant for mobile as for fixed broadband service.[105] The 2010 *Order* also adopted a definition of "reasonable" network management that could accommodate any unique

[100] *See, e.g.,* Internet Association Comments at 21 ("the Commission's existing exception for reasonable network management provides sufficient flexibility"); NCTA Comments at 70; CDT Comments at 28; Public Knowledge Comments at 29-31; Microsoft Comments at 19, 27.
[101] NCTA Comments at 70.
[102] CDT Comments at 28.
[103] *See* Internet Association Comments at 21.
[104] Public Knowledge Comments at 24; 47 U.S.C. § 153(46) (2014).
[105] *See 2010 Open Internet Order* at ¶ 49.

constraints faced by mobile carriers, particularly with respect to managing congestion.[106] The only issue would seem to be whether *all* ISPs should be required to alleviate congestion *in a neutral manner* and whether there is a reasonably feasible way for mobile carriers to do so.[107]

For example, due to the challenges of spectrum limitations, mobility and interference, mobile carriers may need to manage congestion by periodically prioritizing latency-sensitive applications (e.g., video telephony) over less real-time applications (e.g., video downloads).[108] LTE technology is certainly capable of enforcing algorithms that manage this prioritization in a *neutral* manner that treats *like applications alike*. And there is no evidence in the record, to our knowledge, that demonstrates LTE broadband network operators are *technically* unable to manage and prioritize traffic in a neutral manner.

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.

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[106] *Id.* at ¶ 82 ("A network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband internet access service").
[107] *See* Public Knowledge Comments at 30.
[108] *See* Public Knowledge Comments at 30-31 (suggesting "the Commission may deem it reasonable to prioritize low bandwidth communications in emergency situations, or in natural disasters that leave only a few cell sites functioning").

C. *A two-tier Internet would further disadvantage low income, minority, and rural Americans for whom mobile devices are the sole or preferred form of Internet access.*

The Commission requests comment on "[h]ow would treating mobile broadband differently from fixed broadband affect consumers in different demographic groups, including those who rely solely on mobile broadband for Internet access?"[109] In response, a clear consensus among commenters addressing this issue is that the Commission's proposal would have a disparate and negative impact on minority, low-income and rural communities that rely disproportionately on wireless Internet access.[110] As OTI, civil rights advocates and others warned, the Commission's proposal will impose an "open Internet divide" on disadvantaged groups still struggling to overcome existing digital divides.[111]

The data and the record in this proceeding are clear that traditionally disadvantaged groups—tens of millions of Americans—are not only much less likely to have a high-speed fixed broadband connection at home, they are also more than twice as likely to rely either solely or primarily on mobile Internet access.[112] The Commission itself has recently reported that more than a third of all Americans live in wireless-only households[113] and that fixed broadband

[109] NPRM at ¶ 106.
[110] *See e.g.*, Internet Freedom Supporters Comments at 21 ("Open Internet rules, no matter how robust, will be futile without parity between treatment of mobile and fixed networks, particularly for communities of color"); Public Knowledge Comments at 29 ("The trend of wireless serving as a connection of last resort for many traditionally disadvantaged communities is unlikely to change soon, further increasing the need for robust open internet protections for those who rely on wireless connections."); Comments of Asian Americans Advancing Justice, GN Docket No. 14-28 (July 17, 2014) ("AAAJ Comments") at 3 ("Because communities of color are more likely to access the internet via their mobile devices, the Commission must ensure the ability of minority communities to access, produce, and freely distribute diverse content regardless of the technology").
[111] *See, e.g.*, Public Knowledge Comments at 27 ("'unneutral' open Internet rules … protect only a portion of all Internet users – those fortunate enough to be using wireline – while the remainder are left to languish in a degraded 'second class' wireless world").
[112] *See, e.g.*, OTI Comments at 32-33 ("only 53 percent of Hispanic and 64 percent of Black households have fixed broadband at home"); Internet Freedom Supporters Comments at 22; Public Knowledge Comments at 27-28.
[113] NCTA Comments at 74, citing FCC, *Policies Regarding Mobile Spectrum Holdings*, WT Docket No. 12-269, report and Order, FCC 14-63, ¶ 23 (rel. June 2, 2014).

networks do not even reach 19 million Americans.[114] Although all of these more than 100 million individuals will be negatively impacted by the Commission's proposal, the record is clear that failure to adopt open Internet protections for wireless Internet access will disproportionately harm traditionally disadvantaged groups. As NHMC noted, "[n]otably, 47 percent of African Americans and 60 percent of Latinos rely on mobile phone as their primary Internet access points."[115] As a result, these communities use mobile access to meet civic, economic, social, and educational communication needs.[116] Libraries and schools are implementing programs to provide devices with mobile connectivity to students and those who lack broadband access at home.[117]

Paid prioritization and throttling of mobile Internet access to these resources will also undermine a host of other important government goals, from education to health care to civic engagement. In its comments, Microsoft describes several examples of public-purpose mobile apps—by FEMA, the National Weather Service, the Red Cross, local public safety agencies and others—that could be blocked or throttled under the Commission's proposal.[118] While the Commission may remain confident that government agencies have the power to mandate neutral or even prioritized delivery of emergency and public safety communication, tens of thousands of other nonprofits, small businesses, local governments and other app and content providers will not have this option.

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[114] Public Knowledge Comments at 28, citing FCC, Eighth Internet Access Service Report: Status as of June 30, 2013 (June 2014), at ¶ 5.
[115] Internet Freedom Supporters Comments at 22, citing Maeve Duggan and Aaron Smith, *Cell Internet Use 2013*, Pew Research Center (September 2013), *available at* http://www.pewinternet.org/2013/09/16/main-findings-2/
[116] Internet Freedom Supporters Comments at 24-25 ("communities of color often rely on mobile devices to complete a growing variety of tasks, including making childcare arrangements, receiving health advice, accessing social services, participating in political issues, finding employment, and engaging with friends and family.").
[117] *Id*. at 26, 28.
[118] Microsoft Comments at 21-22.

Moreover, as both NHMC and Asian Americans Advancing Justice (AAAJ) point out, minority communities use Internet access to create and share independent, diverse, and community-specific content online, content that typically would not be found in mainstream media outlets.[119] They, as well as OTI, concur with Public Knowledge that "[r]ural, low-income, and minority communities have generally had less access and disproportionately low representation in all forms of media …. As such, weak protections for wireless pose the greatest threat to populations for whom the Internet has arguably been the most benefit."[120]

The record is clear: More than 100 million Americans do not regularly access the Internet on high-capacity fixed lines at home or work. Among these, 22 percent of Hispanics, 15 percent of Blacks and 13 percent of households earning less than $30,000 rely *exclusively* on smartphones to access the Internet—more than three times the percentage of whites and higher-earning households.[121] In addition, 47 percent of African Americans and 60 percent of Hispanics rely *primarily* on smartphone for Internet access.[122] The fact that tens of millions of Americans will not be able to afford to pay for both high-capacity wireline access at home and a separate mobile broadband data plan will not change any time soon. Thus, the failure to extend open Internet protections to mobile networks will relegate these tens of millions of individuals to second-class Internet access and inevitably perpetuate and aggravate existing digital divides.

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[119] AAAJ Comments at 3-4 ("This issue is particularly important to Asian Americans because mainstream media outlets often do not cater to our community, nor do they accurately portray Asian Americans or depict positive Asian stereotypes [citation omitted]. Shunned by mainstream media, Asian Americans have flocked to the Internet . . . Due in part to a lack of relevant content for our community, Asian Americans collectively have the highest rates of broadband adoption and Internet usage"); Internet Freedom Supporters Comments 15-17 ("The Open Internet has allowed communities of color to organize for change and participate in our democracy in meaningful and unprecedented ways. Organizations that serve people of color, . . . have achieved incredible results by mobilizing communities to create positive social change and holding those in power accountable. They have also shed light on a number of issues that would have otherwise gone unnoticed by mainstream media.").

[120] Public Knowledge Comments at 28.

[121] Katheryn Zickuhr and Aaron Smith, *Home Broadband 2013*, Pew Research Center (August 2013), *available at* http://www.pewinternet.org/files/old-media//Files/Reports/2013/PIP_Broadband%202013_082613.pdf.

[122] Maeve Duggan and Aaron Smith, *Cell Internet Use 2013*, Pew Research Center (September 2013), *available at* http://www.pewinternet.org/2013/09/16/main-findings-2/.

D. Ongoing convergence between wired and wireless networks and consumer access to the Internet would render a two-tier Internet increasingly incoherent and untenable.

With the exception of mobile carriers and their suppliers, comments filed reflect diverse and widespread support for a common regulatory framework that extend the core open Internet principles equally to fixed and mobile broadband access services. As Microsoft states: "We live in a 'Mobile First' world."[123]

A number of commenters emphasized, that it will be increasingly incoherent and unworkable to maintain distinct regulatory frameworks for mobile and fixed broadband access networks. Since 2010 the mass adoption of mobile computing devices (smartphones, tablets) and higher-speed mobile data connections have changed everything.[124] In practice, the distinctions between wireline and wireless broadband networks are disappearing as both incorporate Wi-Fi at scale and as consumers on untethered devices move seamlessly between the two, often during the same online session and increasingly without even knowing whether at that moment they are on a fixed or mobile network.[125]

As Cox Communications put it: "Not only will licensed mobile broadband services and unlicensed Wi-Fi services increasingly serve as competitive substitutes going forward, but the notion that different rules might apply to a single stream of communications as it hops back and

[123] Microsoft Comments at 19-20 ("mobile broadband has transformed the way American companies do business and reach their customers. . . . The productivity of U.S. individuals and businesses increasingly depends on mobile broadband networks").
[124] *See* EFF Comments at 24 ("[s]martphones and tablets are computers that are used to access the Internet").
[125] *See, e.g.*, Microsoft Comments at 26 ("the line between fixed and mobile broadband access services is increasingly blurring"); CDT Comments at 23 ("trends toward the convergence of fixed and mobile user experiences and increased mobile Internet usage have only accelerated"); Comcast Comments at 41 ("a given user may be accessing the Internet over a licensed mobile broadband network one minute and over an unlicensed Wi-Fi network the next with the same device").

forth between licensed and Wi-Fi networks is simply unworkable."[126] CDT noted that "mobile carriers and standards bodies are actively developing technologies for seamlessly switching between Wi-Fi and mobile connections, even further blurring the line between fixed and mobile access."[127]

NCTA goes further, stating 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."[128] Although cable industry commenters focused primarily on the "arbitrariness" of subjecting Wi-Fi access networks and mobile carrier networks to divergent regulatory standards, many other commenters agreed with the general point that mobile computing devices (smartphones, tablets, netbooks) and hybrid access networks are rapidly blurring the distinction between mobile and fixed networks from a consumer perspective.

E. Internet access over Wi-Fi is properly regulated as a fixed service and not a mobile cellular service regardless of the provider.

One indication of the sort of market and regulatory distortions that would result from the Commission's proposed industrial policy favoring mobile carriers is the passionate outcry from cable industry commenters demanding that Wi-Fi networks should also be exempted from open Internet rules.[129] As noted just above, NCTA argues that it would be "incoherent" and "almost

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[126] Cox Comments at 11. *Accord* NCTA Comments at 75 ("[t]he incoherence of such a regime is evident from the fact that a single data stream could be subject to different regulatory standards depending on whether it is being delivered via the mobile provider's licensed wireless service or had been offloaded to an unlicensed Wi-Fi service").
[127] CDT Comments at 28, citing the FCC Open Internet Advisory Committee Mobile Broadband Working Group, "Openness in the Mobile Broadband Ecosystem" (Aug. 20, 2013).
[128] NCTA Comments at 76 ("today's marketplace realities make it untenable to maintain regulatory distinctions between fixed and mobile broadband providers"). *See also* Comcast Comments 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); Cox Communications Comments at 11.
[129] *See, e.g.*, Cox Communications Comments at 11 (the Commission should "ensure that licensed and unlicensed wireless services are subject to the same rules"); Time Warner Cable Comments at 28 ("Wi-Fi and licensed wireless services plainly should be treated the same"); Comcast Comments at 41-42.

certainly arbitrary and capricious" to subject Wi-Fi services to open Internet rules that exempt a technically similar and increasingly close substitute.[130]

The cable industry is correct about the problem—and the need for a common regulatory framework—but they are wrong to propose a false equivalence between mobile cellular networks and Wi-Fi as a 'second best' solution. It would be the worst possible outcome for consumers if the Commission exempted *all* wireless broadband services (both licensed cellular and unlicensed Wi-Fi) from open Internet protections. Whether Wi-Fi is used as wireless Ethernet in the home or in hotspots outside the home, the characteristics of the ISP's underlying network and service is no different. Cable broadband services should be treated for regulatory purposes as a single "fixed" network, unless portions are physically carrying data traffic over a mobile cellular network and licensed spectrum.

In our initial comments, OTI proposed that the Commission explicitly apply open Internet protections to commercial operations on unlicensed spectrum by *any* "broadband Internet access service" (whether primarily fixed or mobile) *and* adopt the same protections in Part 15 of the Commission's rules as a general condition of operation.[131] Because an increasing majority of connections to the Internet will be made using mobile devices (laptops, tablets, smartphones, etc.) that are backhauled over "fixed" networks, it is critical that a consumer's choice to use public access spectrum (unlicensed) as wireless Ethernet does not create the ability of wireline ISPs to evade open Internet protections by blocking or discriminating at the interface between the device and the wireline router—or, less plausibly, to claim the Wi-Fi service is a separate "mobile" broadband service.

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[130] NCTA Comments at 75-76.

[131] *See* 47 C.F.R. § 15.5, "General Conditions of Operation." At a minimum, the definitions that determine any difference in the scope of open Internet protections between different technologies or types of networks should state that a broadband connection over Wi-Fi that is integrated into a fixed *or mobile* ISP's offering is nomadic (not mobile) and should be subject to the same open Internet protections as a "fixed" service.

Explicitly applying open Internet protections to Part 15 operations is particularly important at a time when wireline ISPs are providing their broadband subscribers with dual access routers that double as Wi-Fi hotspots for access by other customers and even the general public (for a fee).[132] While this trend toward more ubiquitous Wi-Fi offload and coverage is a positive development that increases both consumer welfare and potential direct competition between wireline and mobile ISPs, exempting "Wi-Fi services" from network neutrality protections would create a powerful incentive for cable companies to end-run open Internet rules. If the mere use of wireless Ethernet over unlicensed spectrum is the ticket to an exemption from network neutrality obligations, then we would expect wireline ISPs to architect all of their services so that it is difficult for a consumer to access the Internet (even at home) over anything but a "mobile" Wi-Fi connection.

Finally, the Commission must consider that if Wi-Fi "services" are classified as a "mobile" service exempt from most open Internet rules, as the cable industry proposes, there would be no coherent way to distinguish when Wi-Fi is "fixed" Internet access and when it is "mobile"—and this is particularly true since Wi-Fi is inherently short-range and nomadic. For example, should entirely different open Internet rules apply if one plugs a device directly into a cable modem (with an Ethernet cable) or, instead, use a router and unlicensed spectrum to extend the range of one's cable connection? Should consumers be at least 100 feet away from the wireline access point before their "fixed" service magically transforms into a Wi-Fi "mobile" service (and thereby loses open Internet protections)? Would the consumer's own home or business Wi-Fi connection be "fixed"—and subject to open Internet rules—but their guests or others accessing the Internet over the same router and the same connection, but with a different

[132] Bob Fernandez, "Comcast aims for 8 million WiFi hotspots," *Philadelphia Inquirer*, (April 30, 2014) *available at: http://articles.philly.com/2014-05-02/business/49555320_1_comcast-corp-national-wireless-network-neil-smit.*

password (via the dual SSID that major cable companies are integrating into new dual access routers), be "mobile" users denied the benefit of open Internet protections?

In short, cable industry commenters are correct that there is a rapid evolution toward hybrid networks that will render any regulatory bifurcation of open Internet protections for "fixed" and "mobile" networks increasingly arbitrary, unfair, and confusing. However, just as there should continue to be only one Internet, a common regulatory framework that applies strong network neutrality protections equally to all fixed and mobile broadband access services. Chairman Wheeler put it best when he said that there must simply be "ONE Internet. Not a fast Internet, not a slow Internet; ONE Internet."[133]

VI. Conclusion

The record in this proceeding is clear: technology companies, public interest advocates, and millions of Americans are united behind the idea that strong open Internet protections are needed to ensure that the Internet can continue to serve as a platform for innovation, economic growth, and unfettered communication among all users. The Commission should listen to these calls and craft new rules that protect against the full scope of harms articulated by commenters in this proceeding, including blocking lawful content, discrimination on the basis of content or type of content or application, and the imposition of access fees by ISPs to edge providers or other content creators. Achieving this goal requires reclassifying broadband Internet access services under Title II of the Telecommunications Act, which would allow the Commission to implement clear, bright-line rules that are narrowly tailored and legally sound. The Commission must also ensure that the new rules are technology neutral and apply to all broadband Internet access service providers, regardless of whether they offer fixed or mobile service, a consensus reached by virtually every constituency in this proceeding aside from the largest wireless carriers

[133] *NPRM*, Statement of Chairman Tom Wheeler, at 1.

themselves. We respectfully ask the Commission to adopt the recommendations set forth above in order to achieve strong open Internet protections that promote a healthy Internet ecosystem.

Respectfully submitted,

/s/

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