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
	)	

COMMENTS OF THE OPEN TECHNOLOGY INSTITUTE AT THE NEW AMERICA FOUNDATION AND BENTON FOUNDATION

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Executive Summary

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. Preserving net neutrality contributes to the economic well-being of the United States and the continued growth of the American technology industry. It also ensures that the Internet can continue to exist as a digital public square that fosters free expression, political participation, and access to information, and be the resource that the nation's schools, libraries, and other public institutions need to continue to play a vital role in 21st century communities.

While the Commission's 2010 Open Internet Rules provide an appropriate starting place for evaluating potential network neutrality harms, the threats to the Open Internet have also evolved since those rules were enacted four years ago. The Open Technology Institute at New America Foundation, along with Benton Foundation[1] urge the Commission to clearly define the harms it is seeking to avoid and to implement new rules that protect against the full scope of those harms, which include blocking lawful content, discrimination on the basis of content or type of content or application, and the imposition of access fees by ISPs on edge providers or other content creators. It is critical that the Commission consider all of these potential harms as it crafts new rules, particularly any new harms that have emerged in the wake of the 2010 *Open Internet Order* but which nonetheless would lead to the same effects on a subscriber's experience. We argue that the rules should protect against all of the harms that exist as a result of the terminating access monopoly that ISPs hold with regard to their end users. Specifically, the Commission's rules should address the following types of behavior:

[1] The Benton Foundation is a nonprofit organization dedicated to promoting communication in the public interest. These comments reflect the institutional view of the Foundation and, unless obvious from the text, are not intended to reflect the views of individual Foundation officers, directors, or advisors.

- **Blocking**: The Commission's rules should adequately protect against the ability of an ISP to prevent its end-users from accessing the content, application or service of their choosing.
- **Discrimination**: The core harms related to discrimination on which the Commission based its 2010 rules remain relevant today, including discrimination via throttling and direct manipulation of the end-user's experience, as well as consumer-facing pricing discrimination to differentiate product offerings. The Commission's rules should ban application-specific discrimination and allow application-agnostic discrimination.
- **Access fees**: Access fees – whether in the form of tolls for charged by last-mile Internet Service Providers to edge companies or the networks hosting their traffic for access to an ISP's subscribers, or for network upgrades, or in the form of fees for the prioritized delivery of content to end users – are extremely harmful to consumers and entrepreneurs. To the extent that the fees that last-mile ISPs are charging to edge providers or other service providers are not related to actual costs of interconnection and instead are merely tolls for access to the last-mile ISPs subscribers, they should be banned under the Commission's rules.

The Commission's proposed rules are based on an unworkable standard that will be impractical to implement, will lead to greater market uncertainty, and are not legally sound. The problem with the Commission's proposed approach relying on Section 706 as its basis for authority is not that it does not go far enough; it is that it cannot, by design and by inherent limits to the authority recognized by the D.C. Circuit, adequately protect against the full scope of the harms related to the last-mile terminating access monopoly. Indeed, the "commercial reasonableness" standard that the Commission proposes to identify prohibited conduct would be

an unworkable standard for edge companies, non-profit content creators, and consumers. The complicated, multi-part commercial reasonableness test the Commission has proposed is legally risky and would result in years of costly litigation rather than clearly defining at the onset what behavior would or would not be permissible. Moreover, Section 706 has the added challenge of being overly broad with respect to the potential behavior it would cover, going beyond the scope of harms created by the terminating access monopoly.

We therefore conclude that the Commission should instead rely on the clearest authority possible to implement legally sound rules that achieve meaningful network neutrality protections. This requires reclassifying broadband Internet access services as Title II services. Title II would allow the Commission to protect against the full scope of harms, and the Commission could implement a bright-line rule that creates a presumption against discrimination as well as either banning access fees outright or requiring that such fees be applied in a manner that is consistent for all parties. While we do not outline a full list of sections from which the Commission should forebear as part of a Title II approach, forbearance from many provisions would be an essential element of this reclassification approach.

We further argue that the Commission's Open Internet rules, including the non-discrimination rule, must be technology neutral and apply to all broadband Internet access service providers. The public interest is best served by a common regulatory framework for both mobile and fixed broadband, and we believe that this proceeding presents a critical opportunity to return to this fundamental principal and avoid the evolution of two competing Internets. Individuals are and will increasingly be connecting to the Internet primarily using untethered devices that will traverse a variety of fixed and mobile carrier networks depending on location and need. Consumers should have the same freedom to access Internet resources whether their

device is connected over Wi-Fi to a wired LAN or to a mobile carrier's network. In fact, a major change since 2010 is the rapid convergence of mobile and wireline networks and the emergence of hybrid business models that could soon minimize the practical distinctions between the two types of networks. Special rules favoring mobile ISPs would distort competition as advanced mobile services and Wi-Fi networks are marketed as and become potential substitutes for fixed broadband service. The need for a common regulatory framework and strong consumer protections for all Internet access is particularly important considering the increasing and disproportionate dependency of young, low-income, minority and rural populations on mobile devices and mobile networks for their primary Internet access. And to the extent that temporary capacity limitations in a particular area or some other operational constraint creates a legitimate need to slow or prioritize certain traffic, the "reasonable network management" exception proposed by the Commission is flexible enough to account for differences among the various fixed and mobile architectures and technologies.

Title II offers the best source of authority to achieve a comprehensive framework for strong network neutrality rules that protect against all harms and across all platforms, including mobile and wireless networks. However, in addition to the strong authority under Title II, the Commission has clear and independent authority under Title III of the Communications Act to adopt open Internet rules for mobile broadband service providers, including a non-discrimination rule and basic *Carterfone* protections against blocking. Thus, while the Commission should classify broadband Internet access over both fixed and mobile networks as a Title II service, the Commission could also rely on its concurrent authority under Title III to impose open Internet protections as public interest obligations on carrier use of spectrum. We also urge the Commission to explicitly apply open Internet protections to commercial operations on

unlicensed spectrum by *any* "broadband Internet access service" (whether primarily fixed or mobile).

I. Introduction

Communications policy is at a critical crossroad, and the Federal Communications Commission ("Commission") has the opportunity to demonstrate clearly its strong commitment to enforceable, legally sound network neutrality protections. The D.C. Circuit Court of Appeals, in its decision in *Verizon v. FCC*, left the Commission with a clear roadmap to achieve that goal. While we appreciate the Commission's efforts to develop the strongest rules possible under an approach grounded in § 706 authority, it is clear from the Notice of Proposed Rulemaking ("NPRM") that a different approach is required in order to effectively reinstate the Commission's protections against blocking, discrimination, and access fees.

And millions of others agree. There can be no doubt that the public cares about the future of the Internet. The scale of comments in this proceeding and the scope of constituencies they represent are incredible. Everyone from everyday Internet users to innovative content creators to startups to the country's biggest Internet companies have called on the Commission to move forward with strong open Internet protections that protect against a wide range of evolving harms.

We support these calls for action, and offer the comments below as an opportunity to reflect on the tentative conclusions outlined in the *NPRM* and to provide guidance on the best path forward for stronger rules. To that end, we acknowledge and lift up the diversity of comments already submitted in the above-referenced dockets that illustrate the immediate threat of an Internet that is subject to pay-to-play arrangements for the delivery of content to end-users, and the challenges that an ecosystem governed by a presumption of discriminatory behavior would present for many companies and individuals.

In addition, we ask the Commission to consider the full scope of harms that exist in the context of last-mile Internet access. These include harms that result from blocking or

discriminating against content delivered to last-mile subscribers, as well as harms that arise out of the imposition of access fees—in the form of tolls or payment for prioritized access—on edge providers attempting to deliver content sought by those subscribers. Failure to address the full scope of harms within the context of this proceeding will only cause the behaviors that lead to those harms to migrate into the unregulated gaps in the law.

It is not enough, however, for the Commission to simply identify harms; it must also enact strong, enforceable rules to protect against them. To that end, it is clear from the record that the current rules are not sufficient to afford the level of protection that would lead to regulatory clarity and market certainty, particularly for smaller companies and other not-for-profit content developers who cannot afford to pay for access to users or absorb the costs related to navigating the proposed regulatory landscape.

Instead, the time has come for the Commission to recognize that it needs stronger legal footing for its rules than § 706 can provide, and it should promptly reclassify broadband Internet access as a telecommunications service under Title II of the Telecommunications Act. It should also immediately forbear from provisions that are inapplicable or unworkable for Internet service providers. While politically challenging, this process is legally sound, based on clear precedent and, most importantly, is the only path forward to strong network neutrality protections. While some have criticized Title II reclassification, we explain why it is a narrow, bounded approach that is based on longstanding principles that have guided our communications policy for over a century—and would avoid many of the uncertainties about the potential reach of § 706.

Finally, we reiterate the need for parity across broadband platforms, and call on the Commission to reconsider its 2010 *Open Internet Rules* for mobile as it considers new rules for

fixed broadband access. While the distinction between mobile and fix continues to blur, the need for network neutrality protections across all platforms continues to grow.

II. Network neutrality protections are still necessary

A. 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 users.

The Commission seeks comment on how the Internet's openness provides value to the U.S. economy, fosters free speech and civic engagement, and promotes a healthier and more competitive broadband market.[2] Simply put, openness is critical to ensuring that the Internet can continue to serve as a widely-available platform for vibrant commerce and free expression — and without strong net neutrality protections, this role could be severely diminished. As telecommunications scholar Barbara van Schewick explains, "[N]etwork neutrality rules are intended to preserve the Internet's ability to serve as an open, general-purpose infrastructure that provides value to society over time in various economic and non-economic ways."[3] She highlights three specific types of benefits from an open Internet: (1) enabling application innovation; (2) protecting users' fundamental ability to choose how they want to use the network; and (3) promoting democratic discourse and providing an open, inclusive, and decentralized environment for social and political interaction. The survival of strong net neutrality protections is a key component of all three and critical to the future of the open Internet.[4]

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[2] *Protecting and Promoting the Open Internet*, GN Docket No. 14-28 (May 15, 2014) at ¶34, 35 ("NPRM").

[3] Barbara van Schewick, "Network Neutrality and Quality of Service: What a Non-Discrimination Rule Should Look Like," *Stanford Law Review 67:1* (2015) at 11 ("van Schewick (2015)").

[4] A key concern articulated by a number of prominent Internet experts about the future of the open Internet in the next decade is whether or not net neutrality survives — and what weak or nonexistent protections would mean for both users and businesses online (Janna Anderson and Lee Rainie, *Net Threats*, Pew Research Center, (July 2014) at 9-10, 31-33, *available at* http://www.pewinternet.org/2014/07/03/net-threats/). *See also* Marvin Ammori, "The Case for Net Neutrality," *Foreign Affairs* (July/August 2014), *available at* http://www.foreignaffairs.com/articles/141536/marvin-ammori/the-case-for-net-neutrality; Clarissa Ramon, "Will

B. *Strong open Internet protections have broad economic benefits, particularly for entrepreneurship and startups.*

Strong network neutrality protections also contribute to the economic well-being of the United States and the continued growth of the American technology industry. A variety of economic analyses suggest that the Internet's openness is a key driver of its value, and that without rules that clearly prevent blocking and discrimination, there would be less incentive to produce online content or develop new applications, thus reducing the overall worth of the network.[5] Other economic studies have found that non-neutral conditions in the broadband market might maximize profits for ISPs but would ultimately minimize consumer welfare.[6] The docket in this proceeding is replete with evidence presented by technology and business leaders about the harms that would result from weak or non-existent net neutrality protections. As a letter signed by over 150 leading technology companies to the Commission emphasized, "Over the past twenty years, American innovators have created countless Internet-based applications, content offerings, and services that are used around the world. These innovations have created

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the FCC Create an Internet for the 1%?" *Public Knowledge* (April 29, 2014), *available at* https://www.publicknowledge.org/news-blog/blogs/will-the-fcc-create-an-internet-for-the-1.

[5] According to a Dalberg Global Development Advisors study on the economic impact of Internet openness, the principle of non-discrimination "prevents market distortion and promotes competitiveness, and thus innovation," and is a key piece of an open Internet that facilitates economic growth in countries around the world ("Open For Business? The Economic Impact of Internet Openness," *Dalberg Global Development Advisors* (March 2014) *at* 14, *available at* http://www.dalberg.com/documents/Open_for_Business_Dalberg.pdf.) Van Schewick explains that "whether the Internet can fulfill its economic, social, cultural, and political potential, depends not only on the availability of applications, but also on the way in which the architecture of a network shapes the environment for the use of the network." She also highlights the positive externalities created by an open Internet for non-Internet users (Barbara van Schewick, *Internet Architecture and Innovation*, The MIT Press: (2010) *at* 361). A Free Press study finds that "Network Neutrality will not deter ISP investment, and will promote edge economy Investment. This in turn will feed the virtuous cycle where ISPs will continue to Invest in network infrastructure as the Internet economy grows" (*See* Derek Turner, "Net Neutrality: Investment and Economics," *Free Press* (August 2010), *available at* http://www.savetheinternet.com/sites/default/files/resources/Net_Neutrality_Investment_and_Economics.pdf). *See also* Inimai M. Chettiar & J. Scott Holladay, "Free to Invest: The Economic Benefits of Preserving Net Neutrality," *New York University School of Law* (January 2010) http://policyintegrity.org/documents/Free_to_Invest.pdf; M. Chettiar, J. Scott Holladay & Jennifer S. Rosenberg, "The Value of Open: An Update on Net Neutrality," *New York University School of Law* (September 2010) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1991425.

[6] Nicholas Economides & Benjamin Hermalin, "The economics of network neutrality," *RAND Journal of Economics, 43:4,* (Winter 2012) 602 - 629.

enormous value for Internet users, fueled economic growth, and made our Internet companies global leaders. The innovation we have seen to date happened in a world without discrimination."[7] There is significant evidence that a vibrant and neutral online economy is critical for a healthy technology industry, which is a significant creator of jobs in the U.S.[8]

In the absence of strong net neutrality rules, investment in the tech industry could easily suffer.[9] The Internet has been a "fertile platform for innovation and investment"[10] in the past decade, and over 100 leading venture capital firms wrote a letter to the Commission in May 2014 explaining that in a world without strong open Internet protections, "investors like us will be wary of investing in anything that access providers might consider part of their future product plans."[11] Because of greater uncertainty about the potential for future discrimination or the threat of rising fees extracted by ISPs that hold a terminating access monopoly, entrepreneurs and investors would be more cautious about investing in companies or offering backing to new

[7] Notice of *Ex Parte* filed by Julie Samuels on behalf of 150 technology companies, GN Docket No. 14-28 (May 7, 2014).

[8] In New York City, for example, the burgeoning technology industry contributes $30 billion annually in wages to the local economy and is a huge driver of economic growth. It added 26,000 jobs — totaling $5.8 billion dollars in wages — during a period of general economic decline between 2007 and 2012. Using a conservative estimate, the tech/information boom was responsible for roughly one-third of private sector job creation in New York City since 2007. (Michael Mandel, "Building a Digital City," *Bloomberg Technology Summit* (Sept. 30, 2013), *available at* http://www.mikebloomberg.com/files/buildingadigitalcity.pdf.) Leaders of the city's tech community, including Kickstarter, Tumblr, and Meetup, have warned that weak open Internet rules "would stifle innovation and entrepreneurship" and "could inflict grave harm on the New York technology sector" (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)). For broader evidence of the role of the technology sector in job creation in the United States, *see* Ian Hathaway, "Tech Starts: High-Technology Business Formation and Job Creation in the United States," *Ewing Marion Kauffman Foundation* (August 2013), *available at* http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2013/08/bdstechstartsreport.pdf.

[9] Comments of Open Media and Information Companies Initiative (OpenMIC) et al, GN Docket No. 14-28 (July 14, 2014) ("OpenMIC Comments").

[10] Nick Grossman, "Defending the Open Internet," *The Slow Hunch* (May 8, 2014), *available at* http://nickgrossman.is/post/85128984454/defending-the-open-internet.

[11] 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/.

ventures, which could lead to an overall decline in the growth of the tech sector.[12] Startups are particularly vulnerable to these shifts, and thus weak rules could make it harder for young companies to survive or could deter them from getting off the ground altogether.[13] The CEO of Contextly, a media-focused startup founded in 2012, has said that he would never have started the company if open Internet rules that allowed technical discrimination and paid prioritization were in place at the time.[14] Kickstarter, a funding platform for creative projects, warns that weak or non-existent net neutrality protections "would incentivize entrepreneurs to divert resources away from their customers and staff so that they could make paid deals with Internet Service Providers," arguing that "[t]rading healthy competition for deep pockets is a terrible way to create an innovative, competitive economy."[15]

C. Strong open Internet protections help promote free expression and civic engagement.

In addition, the Internet has also become a critical platform for the exchange of ideas and civic innovation. Preserving net neutrality helps ensure that the Internet can continue to exist as a digital public space that fosters free expression, political participation, and unfettered access to information.[16] "The open Internet is our main conduit for freedom of expression and information. It is our library, our printing press, our delivery truck and our town square," wrote several dozen free speech, open government, and public interest organizations in March 2014. "The issue is

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[12] Comments of Engine Advocacy, GN Docket No. 14-28 (April 24, 2014) at 6 ("Engine Comments").
[13] Engine, an organization which represents a community of tech startups and entrepreneurs, explains, "Startups rely on not being blocked, discriminated against, or subject to fees for access and preference." (Engine Comments at 4.) *See* Comments of Etsy, Inc., GN Docket No. 14-28 (July 8, 2013) ("Etsy Comments"); Comments of Contextly, GN Docket No. 14-28 (June 3, 2013) ("Contextly Comments"); Comments of Meetup, Inc., GN Docket No. 14-28 (July 14, 2014) ("Meetup Comments").
[14] Contextly Comments at 4. The filing highlights the myriad challenges that startups already face and how vague standards and loopholes that favor well-resourced competitors could put small startups out of business — by forcing them, among other things, to devote time and money to negotiating with ISPs or hiring lawyers.
[15] Comments of Kickstarter, Inc., GN Docket No 14-28 (July 10, 2014) at 2.
[16] *See, e.g.* Statement of former FCC Commissioner Michael Copps, "FCC Must Act to Preserve Open Internet," *Common Cause* (January 14, 2014), *available at* http://www.commoncause.org/press/press-releases/fcc-must-act-to-preserve-open-internet.html.

clear: Free speech depends on access to open and nondiscriminatory platforms for that speech."[17] The letter highlights the potential chilling effects of a world without net neutrality, particularly for the survival of new and independent media outlets. Similarly, the Writers Guild of America East (WGAE) warns that under the Commission's proposed rules, "[t]he enormous democratic potential of digital media would be squandered in favor of a narrowly commercialized world controlled by huge, deep-pocketed gatekeepers."[18]

D. Strong open Internet protections help public institutions, including public and school libraries, research libraries, and colleges and universities.

Finally, the open Internet is necessary for schools, libraries, and other public institutions — which play an increasingly important role in bridging the digital divide in the United States — to continue to serve as 21st century hubs of connectivity.[19] As Barbara Stripling, the head of American Library Association (ALA), wrote after the 2010 Open Internet Rules were vacated, "the court's ruling will negatively affect the daily lives of Americans in a number of ways, particularly children in K-12 schools."[20] Stripling highlighted that libraries across the country rely on publicly available, open, and affordable Internet access for distance education, school

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[17] "42 Free Speech, Open Government, and Public Interest Groups Urge the FCC to Protect Net Neutrality," *Free Press* (March 20, 2014), *available at* http://www.freepress.net/press-release/106000/42-free-speech-open-government-and-public-interest-groups-urge-fcc-protect-net.

[18] Comments of the Writers Guild of America, East, GN Docket No. 14-28 (July 9, 2014) at 1 ("WGAE Comments"). WGAE's comments also express concern about the power of a terminating access monopoly in a network without strong neutrality protections: "Permitting powerful gatekeepers to control and prioritize what flows through this single pipe, and at what rate and quality, would have an enormous effect on what Americans watch and read and learn and write and communicate."

[19] For more on the roles of schools, libraries, and public institutions as hubs for connectivity, *see* "Building Digital Communities: A Framework for Action," *The Institute of Museum and Library Services*, *available at* http://www.imls.gov/assets/1/AssetManager/BuildingDigitalCommunities_Framework.pdf; Jonathan Shrem, "Informational Brief: Impact of Public Libraries on Students and Lifelong Learners," *New York Comprehensive Center* (October 2012), *available at* http://www.nysl.nysed.gov/libdev/nyla/nycc_public_library_brief.pdf; Benjamin Lennett, Sarah J. Morris & Greta Byrum, "Universities as Hubs for Next-Generation Networks," *New America Foundation* (April 2012), *available at* http://newamerica.net/sites/newamerica.net/files/policydocs/Universities%20as%20Hubs%20for%20Next-Generation%20Networks_3.pdf.

[20] Barbara Stripling, "Why Net Neutrality's Demise Hurts the Poor the Most," *Wired* (January 16, 2014), *available at* http://www.wired.com/2014/01/killing-net-neutrality-means-killing-economic-equality-access/. *See also* "ALA troubled by court's net neutrality decision," *American Library Association* (January 14, 2014), *available at* http://www.ala.org/news/press-releases/2014/01/ala-troubled-court-s-net-neutrality-decision.

work and research, government services, job application and training, and many other critical services. Without net neutrality, existing divides between the haves and have nots could grow even wider. "Network neutrality is actually an issue of economic access," she wrote, "because those who can't afford to pay more for internet services will be relegated to the "slow lane" of the information highway."[21] A less open Internet could similarly have a negative impact on students of all ages — particularly in low-income and disadvantaged communities — as well as the development of new educational technologies that could help level the playing field or teach new skills like coding.[22] President Obama's pledge to make college education more affordable by relying on innovative new services and technologies could be seriously undermined if the Commission does not enact strong net neutrality rules.[23]

III. Threats to network neutrality have evolved, and the Commission's rules must address the full scope of harms, or the harms will just migrate into the unregulated space.

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. While many argue that the harms noted below were all contemplated in the 2010 *Open Internet Order*,[24] to the

[21] Stripling (January 16, 2014).

[22] In a letter to Education Secretary Arne Duncan, Lisa Guernsey writes, "Students need the ability to connect to information quickly and share data and projects with each other without having to wonder if the information will be 'waiting in line' for viewing or sharing because of the platform through which it was sent… This could be particularly important for students in low-income families or for non-traditional college students" (Lisa Guernsey, Letter to Education Secretary Arne Duncan (July 1, 2014), *available at* http://www.edcentral.org/wp-content/uploads/2014/07/Letter_to_Dept_of_Ed_from_New_America_on_Net_Neutrality_070114.pdf). Four education startup companies also explain how their businesses could not have succeeded without strong net neutrality protections. *See* Comments of CodeAcademy, GN Docket No. 14-28 (June 23, 2014); Comments of Code Combat, GN Docket No. 14-28 (June 23, 2014); Comments of General Assembly, GN Docket No. 14-28 (July 1, 2014); Comments of Open Curriculum, GN Docket No. 14-28 (June 25, 2014).

[23] "FACT SHEET on the President's Plan to Make College More Affordable: A Better Bargain for the Middle Class," *The White House*, (August 22, 2013), *available at* http://www.whitehouse.gov/the-press-office/2013/08/22/fact-sheet-president-s-plan-make-college-more-affordable-better-bargain-.

[24] Barbara van Schewick, "The FCC changed course on network neutrality. Here is why you should care," *Internet Architecture and Innovation*, (April 25, 2014), *available at* https://netarchitecture.org/2014/04/the-fcc-changed-

extent that any confusion remains, the Commission should clearly define the harms it is seeking to protect and implement new rules that protect against the full scope of harms. Barbara van Schewick put this well when she wrote that "[w]hile the debate originally focused on the need for rules against blocking and discrimination, it has since evolved into a number of sub-debates. Each sub-debate focuses on a specific way in which a network provider could exploit its ability to control or interfere with the applications on its network and discusses whether rules that are needed to address the problems this particular practice may cause."[25]

These harms include blocking lawful content, discrimination on the basis of content or type of content or application, as well as the imposition of access fees by ISPs to edge providers or other content creators in order to access an ISP's end users or fees to deliver content to an ISP's end-users with priority over other content.[26] It is critical that the Commission consider the full scope of these potential harms as it crafts new network neutrality rules, as all behaviors risk the same damaging effect—ISPs, functioning as gatekeepers, get to decide what content their subscribers can access, and on what terms. The Commission's rules should clearly and comprehensively protect people's ability to access the content of their choosing.

This point illustrates what all of these harms have one thing in common—they all exist as a result of the terminating access monopoly that ISP's hold with regard to their end users. The D.C. Circuit acknowledged that Commission has "convincingly detailed how broadband providers' position in the market gives them the economic power to restrict edge-provider traffic

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course-on-network-neutrality-here-is-why-you-should-care/ ("van Schewick (April 25, 2014)"). Van Schewick notes that,"[w]hile the Open Internet Rules themselves do not address access fees, the text of the order roundly rejects both types of access fees."; Michael Mooney, "Chicken: A Game Played as a Child and by some ISPs with the Internet," *Beyond Bandwidth: Level 3 Communications Blog* (March 18, 2014), *available at* http://blog.level3.com/global-connectivity/chicken-game-played-child-isps-internet/; Reed Hastings, "Internet Tolls And The Case For Strong Net Neutrality," *Netflix US & Canada Blog* (March 20, 2014), *available at* http://blog.netflix.com/2014/03/internet-tolls-and-case-for-strong-net.html.

[25] van Schewick (2015) at 7.

[26] *See* van Schewick (April 25, 2014).

and charge for the services they furnish edge providers."[27] The Court goes on to explain that "[b]ecause all end users generally access the Internet through a single broadband provider, that provider functions as a 'terminating monopolist,' with power to act as a 'gatekeeper' with respect to edge providers that might seek to reach its end-user subscribers."[28] Limiting consideration to harms associated with the last mile terminating access monopoly ensures that the scope of the Commission's regulations is bounded and clearly defined, remaining focused at the root cause of those harms.

A. While the harms outlined below would have been protected under the 2010 Open Internet Order, any new rules must be clear about precisely what behavior is prohibited, and the rules should address all harms comprehensively.

The Commission's rules should address the following:

Blocking:

Blocking presents a very real and grave threat to Internet openness, and it is critical that the Commission's rules adequately protect against the ability of an ISP to prevent its end-users from accessing the content of their choosing. As van Schewick notes, a rule to protect against blocking "is part of all network neutrality proposals; this is the one rule on which all network neutrality proponents agree."[29] Indeed, the 2010 *Open Internet Order* notes that even "[b]roadband providers generally endorse openness norms—including the transparency and no blocking principles—as beneficial and in line with current and planned business practices…"[30] The *Order* further explains, "[t]he freedom to send and receive lawful content and to use and provide applications and services without fear of blocking is essential to the Internet's openness

[27] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014) *at* 38.
[28] *Id.*
[29] van Schewick (2015) at 7.
[30] *Preserving the Open Internet*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd 17905, 17910 ("Open Internet Order") at ¶39.

and to competition in adjacent markets such as voice communications and video and audio programming."[31]

Although blocking is clearly identified as a significant harm, many have argued that the risk of blocking actually occurring is quite low, as carriers have incentives to protect access to the full range of content online in order to please their subscribers.[32] However, as the broadband market is poised to become increasingly consolidated,[33] the business lines between broadband service providers, content providers, and providers of other communications services are blurring and the incentives for ISPs to restrict access to services that compete with their offerings in other sectors increase.[34] This is true both in the context of vertical integration, which provides greater incentive to block competitors, and through increasing horizontal consolidation, which increases the power of large ISPs and their resulting leverage as gatekeepers. There is therefore an even greater need for explicit protections against the blocking of lawful content online.

Discrimination:

Although threats to network neutrality continue to evolve, the core harms related to discrimination on which the Commission based its 2010 rules remain relevant today.[35] In many instances, discrimination can look similar to blocking, such as discrimination via throttling or

[31] Open Internet Order at ¶62.
[32] Queena Kim, "Verizon says net neutrality ruling won't change anything," *Marketplace.org* (January 14, 2014), *available at* http://www.marketplace.org/topics/tech/verizon-says-net-neutrality-ruling-wont-change-anything; Josh Lowensohn, "Comcast, Verizon, and others promise net neutrality ruling won't hurt customers," *The Verge* (January 14, 2014), *available at* http://www.theverge.com/2014/1/14/5309268/comcast-verizon-and-others-promise-net-neutrality-ruling-wont-hurt.
[33] Sam Becker, "Is It Consolidate or Die for TV and Broadband Companies?" *Wall St. Cheat Sheet* (May 13, 2014), *available at* http://wallstcheatsheet.com/business/is-it-consolidate-or-die-for-tv-and-broadband-companies.html/?a=viewall.
[34] For example, some have argued that a merged Comcast and Time Warner Cable would have significant market power in both the cable television and broadband markets. Given the vertically integrated nature of both companies, "[p]ost-merger, Comcast will have the ability to impede the quality of services offered by new competitors, artificially raise the costs of doing business for such competitors, or both." Testimony of Gene Kimmelman Before the U.S. Senate Committee on the Judiciary (April 9, 2014), *available at* https://www.publicknowledge.org/assets/uploads/documents/ComcastTWCTestimony.pdf.
[35] Open Internet Order at ¶ 22-26.

other mechanisms against applications that compete directly or indirectly with an offering from an ISP.[36] Such behavior was at the crux of the Commission's 2010 Open Internet Rules and remains problematic both because it often requires some form of invasive deep packet inspection to determine whether an underlying application is a competitor to the ISP's offering,[37] and also because it is a direct manipulation of the end-user's experience. This type of discrimination can make a service completely unworkable for a subscriber.

In addition to the actual discrimination of traffic in the delivery of that traffic to the end user, ISPs could also use consumer-facing pricing discrimination to differentiate product offerings. For example, allowing "the use of video conferencing only for users of [an ISP's] premium Internet service," but "not for users of its basic Internet service."[38] Again, this type of behavior puts ISPs, and not consumers, in the role of determining what content can be accessed and under what terms over the ISP's last mile network. This also could lead to a scenario where access to content online begins to look more like access to content over a cable television market, with consumers making decisions about their broadband subscriptions based on the content they would be permitted to access, not simply based on the speeds required to access the *types* of content they expect to consume.[39]

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[36] *See* Notice of *Ex Parte* filed by Barbara van Schewick, GN Docket No. 14-28 (March 4, 2014) at 8, citing her book at 222-264, which details the incentives to block or discriminate to increase profits.

[37] Jared Newman, "BitTorrent throttling in U.S. creeps back up," *PCWorld* (January 24, 2014), *available at* http://www.pcworld.com/article/2090834/bittorrent-throttling-in-u-s-creeps-back-up.html. *See also* "First Evidence Of Iranian Internet Throttling as a Form of Censorship" *MIT Technology Review* (June 24, 2013), *available at* http://www.technologyreview.com/view/516361/first-evidence-of-iranian-internet-throttling-as-a-form-of-censorship/ (discussing throttling as a mechanism for censorship in other countries).

[38] van Schewick (March 4, 2014) at 8, citing her book at 275-278 and Wu's book at 151-152; We also saw this behavior on the mobile side, in the Apple Facetime dispute. In the ex parte, van Schewick also lists "[d]iscriminating among applications by charging different Internet transport prices for different applications (e.g., charge higher Internet-service fees for an e-mail packet than for a packet of Web content of equal size)" as well as [o]ther forms of blocking or discrimination that increase profits (e.g., stripping out ads, inserting ads, search hijacking)" as potential harmful discriminatory practices.

[39] For visuals of what such a world might look like, *see* "One Frightening Chart Shows What You Might Pay For Internet Once Net Neutrality Is Gone," *Huffington Post* (January 17, 2014), *available at*

Access Fees:

In addition to risks of blocking and discrimination, a new variation of harmful behavior has emerged. Rather than simply throttling applications based on type or content, there is now a very real and immediate risk that Internet service providers will charge fees for access to their last-mile subscribers. And these access fees – whether in the form of tolls for network upgrades or access or in the form of fees for the prioritized delivery of content to end users – are extremely harmful for consumers and entrepreneurs. The costs of access fees will inherently be passed on to consumers, likely in the form of higher costs for the edge providers' services.[40] In addition, "access charges disproportionately affect a certain type of innovators – innovators with little or no outside funding. Large companies will usually be able to pay access fees. By contrast, start-ups or other innovators without significant outside funding would not be able to pay these fees, putting them at an immediate competitive disadvantage to established companies that can pay."[41] And even well-resourced companies that nonetheless operate on thin margins have noted that they would not be able to absorb the added costs for access to end-users.[42]

For years, tier-one service providers like Level 3 have argued that last-mile ISPs were charging unfair fees for access to subscribers.[43] In a recent blog post, Level 3 explains that in the wake of increased network demand, some ISPs "have refused to augment their networks UNLESS the content providers they connect to agree to pay them to do so. Viewed in the light

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http://www.huffingtonpost.com/2014/01/17/net-neutrality-gone_n_4611477.html; "Join the Fastlane," *JoinTheFastLane.com, available at* http://jointhefastlane.com/.

[40] *See e.g.* Casey Johnston, "Netflix comes through with price hike after struggles with Comcast, Verizon," *Ars Technica* (May 9, 2014), *available at* http://arstechnica.com/business/2014/05/netflix-comes-through-with-price-hike-after-struggles-with-comcast-verizon/. (Regarding Netflix's decision to raise the cost of its subscriptions for new users.)

[41] van Schewick (April 25, 2014).

[42] *See* Etsy comments; Contextly Comments; Engine Comments.

[43] *See, e.g.* Nate Anderson, "How Comcast became a toll-collecting, nuke-wielding hydra," *Ars Technica* (November 30, 2010), *available at* http://arstechnica.com/tech-policy/2010/11/how-comcast-became-a-toll-collecting-hydra-with-a-nuke/.

most favorable to these ISPs, they want content suppliers to pay not only for their own increased costs of supplying more robust Internet content, but also for any increased network costs of the ISPs too."[44] However, a later post from the company describes the fees using less charitable terms, noting that the ISPs use the "monopoly over the only connection to [their subscribers] to degrade the quality of Internet content providers unless they agree to pay the ISP arbitrary access tolls."[45]

While we cannot be sure that these fees amount to tolls that are not based on reasonable costs or other market-based factors (these types of arrangements are generally cloaked behind non-disclosure agreements), other companies have echoed Level 3's concerns. Cogent noted a similar concern in its March filing in this proceeding,[46] and Netflix has been quite vocal in its criticism of similar fees for the collocation of their content on the ISPs last-mile network, even after agreeing to pay those fees in certain instances.[47] In reference to a specific dispute with Comcast, Netflix notes that "Comcast is not charging Netflix for transit service. It is charging Netflix for access to its subscribers."[48]

Some, including the Commission in its *NPRM*, would consider these fees to be part of a bucket of "interconnection" disputes, and therefore outside the scope of this proceeding.[49] However, if the fees that last-mile ISPs are charging edge providers and other service providers are not related to actual costs of interconnection and are instead merely tolls for access to the last-mile ISPs subscribers, then prohibiting them should fall squarely within this proceeding's

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[44] Mooney (March 18, 2014).
[45] Michael Mooney, "Heads ISPs Win, Tails You Lose (And a way to fix it)," *Beyond Bandwidth –Level 3 Communications Blog* (July 7, 2014), *available at* http://blog.level3.com/global-connectivity/heads-isps-win-tails-you-lose/.
[46] Comments of Cogent Communications Group, Inc., GN Docket No. 14-28 (March 21, 2014).
[47] Reed Hastings, "Internet Tolls And The Case For Strong Net Neutrality," *Netflix*, (March 20, 2014), *available at* http://blog.netflix.com/2014/03/internet-tolls-and-case-for-strong-net.html.
[48] *Id.*
[49] *See* NPRM ¶ 59.

scope. That is to say, rules governing the specific negotiations related to interconnection and peering may indeed fall outside of the scope of this proceeding. However, access fees that are driven not by infrastructure costs or upgrades, but are instead driven by an abuse of the underlying terminating access monopoly, *should* fall within the scope of the rules at issue in the current proceeding. This is consistent with the 2010 *Open Internet Order*, which noted that, "[s]ome concerns have been expressed that broadband providers may seek to charge edge providers simply for delivering traffic to or carrying traffic from the broadband provider's end-user customers."[50] The Order further stated unequivocally that "[t]o the extent that a content, application, or service provider could avoid being blocked only by paying a fee, charging such a fee would not be permissible under these rules."[51] Failing to upgrade networks only if a company would pay a fee that is unrelated to network upgrade costs would amount to such a fee.

In addition to access tolls, many have identified fees for the prioritization of content as an imminent harm in an ecosystem without strong network neutrality protections.[52] The proposed rules represent a departure from the presumption against such fees found in the 2010 *Open Internet Order*. As Public Knowledge notes in its March filing, "the issue is not that broadband ISPs are charging commercially unreasonable rates to edge providers when they should be charging them commercially reasonable ones; the issue is that any charges or differential treatment between a broadband ISP and a pure edge provider (as opposed to an interconnecting network) are unreasonable. A 'commercial reasonableness' rule would change this norm by giving formal FCC blessing to the very kinds of arrangements the open Internet rules sought to

[50] Open Internet Order at ¶ 67.
[51] *Id*.
[52] *See* "Letter to FCC from over 100 Internet companies" *available at* http://engine.is/wp-content/uploads/Company_Sign_On_Letter_051414.pdf; Contextly Comments at 2-5; Etsy Comments at 4-5; van Schewick (April 25, 2014).

prohibit."[53] The harms associated with pay-to-play arrangements are very real. Contextly notes that it has "every reason to believe that the cable and phone companies will implement pay-to-play arrangements. This has been obvious since at least late 2005 and early 2006, when executives at AT&T and Verizon declared an intention to charge web companies for using 'their pipes' and eating a 'free lunch.'"[54]

Consumers, not-for-profit content and over-the-top service providers, and for-profit companies alike will all feel the effects of a pay-for-access and pay-for-priority world. As OTI and others have noted[55], the problem with paid prioritization is that it is dependent upon a fast lane that is sufficiently attractive to companies willing to pay for prioritized access. Although Chairman Wheeler has repeatedly stated that the proposed rules will not lead to fast lanes and slow lanes[56], the rules nonetheless create a two-tier Internet, with both "a minimum level of access that ISPs cannot degrade, and a premium lane with plenty of flexibility for deal making."[57] Such arrangements lead quickly to a situation where ISPs can leverage their gatekeeper status, picking winners and losers online; this behavior in turn starts to look like

[53] Comments of Public Knowledge and Common Cause, GN Docket No. 14-28 (March 21, 2014) at 21.
[54] Contextly Comments at 6, citing "Online Extra: At SBC, It's All About Scale and Scope," *BusinessWeek Magazine* (November 6, 2005), *available at* http://businessweek.com/stories2005-11-06/online-extra-at-sbc-its-all-about-scale-and-scope; Arshad Mohammed, "Verizon Executive Calls for End to Google's 'Free Lunch', *Washington Post* (February 7, 2006), *available at* http://washingtonpost.com/wp-dyn/content/article/2006/02/06/AR2006020601624.html.
[55] Sarah Morris & Danielle Kehl, "Why surfing the Web could become as dreadful as flying economy class," *Fortune* (May 28, 2014), *available at* http://fortune.com/2014/05/28/why-surfing-the-web-could-become-as-dreadful-as-flying-economy-class/; Michael Weinberg, "How The FCC's Proposed Fast Lanes Would Actually Work," *Public Knowledge* (May 16, 2014), *available at* https://www.publicknowledge.org/news-blog/blogs/how-the-fccs-proposed-fast-lanes-would-actually-work.
[56] Brian Fung, "FCC chair: An Internet fast lane would be 'commercially unreasonable,'" *Washington Post* (May 20, 2014), *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2014/05/20/fcc-chair-an-internet-fast-lane-would-be-commercially-unreasonable/.
[57] Weinberg (May 16, 2014).

blocking very quickly, as those without the resources to pay (or those who are not offered the opportunity to pay) are left behind.[58]

An additional consequence of paid prioritization arrangements is that it is unclear how they would scale well internationally. To simply negotiate prioritization among existing U.S. providers is a daunting challenge, and one that many companies with fewer resources would likely not be able to absorb. But 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 little resources remaining for actual innovation. The difficulty of a transaction-based market can also be seen in the case of retransmission in the cable industry. In an interview with the Washington Post, Reed Hastings explains how streaming television content delivered over the Internet may be subject to negotiations that happen in the cable television market between broadcasters and cable companies. He notes, "the danger is that it becomes like retransmission fees, which 20 years ago started as something little and today is huge, with blackouts and shutdowns during negotiations."[59]

IV. The Commission's proposed rules are based on an unworkable standard that will be impractical to implement, will lead to greater market uncertainty, and are not legally sound; the Commission should instead rely on the clearest authority possible to implement legally sound rules that protect against the full scope of harms related to the last-mile terminating access monopoly.

With regard to fixed broadband Internet access service, the Commission tentatively concludes to update its 2010 prohibition against blocking lawful content, applications, services,

[58] *See* Stripling (January 16, 2014). (noting that, "[n]etwork neutrality is actually an issue of *economic access*, because those who can't afford to pay more for internet services will be relegated to the "slow lane" of the information highway.")

[59] Cecilia Kang, "Netflix CEO Q&A: Picking a fight with the Internet service providers," *Washington Post* (July 11, 2014), *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2014/07/11/netflix-ceo-qa-picking-a-fight-with-the-internet-service-providers/.

or non-harmful devices, subject to reasonable network management, to "make clear that the no-blocking rule would allow individualized bargaining above a minimum level of access to a broadband provider's subscribers."[60] In addition, it tentatively concludes to replace the 2010 nondiscrimination rule with a rule that "may permit broadband providers to engage in individualized practices, while prohibiting those broadband provider practices that threaten to harm Internet openness."[61] For reasons explained more fully below, such an approach will not be effective at protecting against the full scope of harms outlined above. Indeed, the "commercial reasonableness" standard that the Commission proposes to assess whether or not certain conduct would be prohibited would be an unworkable standard for edge companies, non-profit content creators, and consumers.

The Commission did not pluck the commercial reasonableness standard out of thin air, but instead is relying on what it believes to be its strongest path forward using § 706 as its basis for authority. The problem with the Commission's approach is not that it does not go far enough; it is that it cannot, by design and by inherent limits to the authority recognized by the D.C. Circuit, adequately protect against the full scope of harms outlined above. In order to achieve meaningful network neutrality protections, the Commission must reclassify broadband Internet access services as Title II services. As others have noted, "[d]espite having concluded in its early analyses that broadband Internet access service offered by a facilities-based provider constituted two separate services (a telecommunications service and an information service or suite of information services), the Commission reversed this conclusion in the *Cable Modem Order* when it decided that cable modem service as a unitary information service."[62] The time has come for the Commission to reverse that decision, and the Commission has the authority from a legal

[60] *NPRM* at ¶95.
[61] *NPRM* at ¶111.
[62] Comments of Free Press, GN Docket 10-127 (July 15, 2010) ("Free Press Comments") at 82.

standpoint to reclassify the service, in light of the *Brand X* decision and as a result of drastic changes in the way that broadband Internet access services now function vis-à-vis the content and services offered over the Internet access services.

In *Verizon v. FCC*, the Court accepted the Commission's theory "that its regulations protect and promote edge-provider investment and development, which in turn drives end-user demand for more and better broadband technologies, which in turn stimulates competition among broadband providers to further invest in broadband."[63] The Court only then rejected the *Open Internet Order* rules after finding that the Commission, through the prohibitions against blocking and discrimination, had impermissibly imposed common carriage regulations on non-common carriers. The obvious outcome in light of that ruling is therefore not that the Commission must change the rules that the Court found to be a good solution to a real problem, but instead that the Commission should reclassify broadband access service providers as common carriers for the purpose of such regulation.

A. Any "commercially reasonable" standard under a §706 basis of authority would be unmanageable and impractical for companies and consumers alike.

The Commission tentatively concludes that it "will adopt a case-by-case approach, considering the totality of the circumstances, when analyzing whether conduct satisfies the proposed commercially reasonable legal standard."[64] While the Commission goes on to note that it believes "that, in conjunction with the factors listed…, this approach will provide the advantage of certainty and guidance to broadband providers and edge providers – particularly smaller entities that might lack experience dealing with broadband providers,"[65] the record thus far does not support that belief.

[63] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014) at 31.
[64] NPRM ¶ 136.
[65] *Id.*

In addition, an approach grounded in § 706 is legally risky.[66] As a source of authority it would be subject to a case-by-case analysis of whether or not each individual application of the "commercially reasonableness" test would lead to a prohibition of behavior that amounts to impermissible common carriage regulation. Thus, rather than clearly defining at the onset what behavior would or would not be permissible, the test set out by the Commission would result in years of costly litigation before the limits of the its application would be defined, one challenge at a time. Not only will each company or consumer who believes it has been discriminated against in a commercially unreasonable way have to make its case to the Commission under the complicated multi-part test, it will then have to wait months or likely years to determine if the Commission's assessment was within the scope of its authority and did not violate the prohibition of common carriage regulation as applied in that particular case.

As Etsy notes, their "early investors … had confidence that [they] could build market share *because* the [2010 Open Internet Rules] prohibited discrimination or paid prioritization,"[67] and that "in the absence of that guarantee, they would likely have made very different decisions."[68] With regard to the "commercial reasonableness" standard they explain that because they have a small legal team of only four attorneys, "this standard creates an unacceptable level of uncertainty for small companies and will be too costly to enforce."[69] Because they would be up against broadband access providers' legal teams of nearly limitless resources, they state that, "even if [they] believed [they] were being unfairly discriminated against, there is almost no chance [they would risk the capital and time required to bring a successful complaint before the FCC."

[66] van Schewick (April 25, 2014).
[67] Etsy Comments at 5.
[68] *Id*.
[69] Etsy Comments at 7.

And Etsy is not alone. Another low-margin business, Contextly, is also clear that the company would have never started in a world governed by the Commission's proposed rules. CEO Ryan Singel expressed his frustration with the standard, explaining that the Commission "should not make it even harder to create a company by adopting its proposal to authorize 'commercially reasonable' discrimination rather than to forbid 'unreasonable discrimination.'"[70] Even providers who are subject to the standard in other contexts have been vocal about their frustrations with its applications. 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.

B. *Section 706 is not narrowly targeted and opens the door to regulation not just of ISPs, but also of applications and services at the top of the Internet protocol stack as well.*

Section 706 has the added challenge of being overly broad with respect to potential behavior that it would cover. As we have noted, 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. As one commentator notes, "[s]o long as the FCC can argue that a company is hindering the rollout of broadband or broadband competition (a pretty vague definition), the agency may be able to regulate ISPs, content intermediaries, and possibly Web services like Google and Netflix themselves."[71]

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[70] Contextly Comments at 3.

[71] Brian Fung, "This small loophole could give the FCC much greater control of the Internet," *Washington Post* (January 28, 2014), *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2014/01/28/this-small-loophole-could-give-the-fcc-much-greater-control-of-the-internet/. Others note that "the court has very nearly given the FCC — and state utility commissions, to boot — *carte blanche* to regulate the entire internet." Berin Szoka & Geoffrey Manne, "The Feds Lost on Net Neutrality, But Won Control of the Internet," *Wired* (January 16, 2014), *available at* http://www.wired.com/2014/01/one-talking-comes-net-neutrality/

While the use of alternative authority for network neutrality protections does not fully negate the expansive scope of § 706, using § 706 as a grant of authority for network neutrality leaves the door for additional regulation wide open. The Commission could demonstrate its reluctance to rely on § 706 for additional regulations of the application layer by instead using the narrower, more targeted authority for network neutrality protections over Internet access service providers under Title II.

C. Title II provides the only ground of authority on which the Commission could base strong, legally sound prohibitions against the full scope of harms that result from ISP's terminating access monopolies in the last mile.

The Court's decision in *Verizon v. FCC* was unequivocal in its determination that Commission cannot prohibit most kinds of discriminatory conduct under a legal theory grounded solely in § 706 authority, and can only prohibit blocking if it also allows the worst kinds of discrimination, and perhaps then even not at all.[72]

As to the a no-blocking rule, the Court explained that, "[i]n requiring that all edge providers receive this minimum level of access for free, these rules would appear on their face to impose *per se* common carrier obligations with respect to that minimum level of service."[73] However, the Court also noted that "if the relevant service that broadband providers furnish is access to their subscribers generally, as opposed to access to their subscribers at the specific minimum speed necessary to satisfy the anti-blocking rules, then these rules, which perhaps establishing a lower limit on the forms that broadband providers' arrangements with edge providers could take, might nonetheless leave sufficient 'room for individualized bargaining and discrimination in terms,'"[74] such that they would still withstand the test for common carrier treatment under *Cellco*. However, the Court goes on yet again to dismiss such a construct, given

[72] van Schewick (April 25, 2014).
[73] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014*)* at 60.
[74] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014) at 60.

the Commission had not advanced such a claim.[75] It is on this theory—at best *dicta* in the context of the larger Opinion—that the Commission rests a major portion of the theory underlying its proposed rules.

Thus, as others explain, "[t]he majority opinion in Verizon v. FCC suggests the Commission might at least be able to justify a 'no blocking' rule, but to do so that opinion speculates about an argument the Commission failed to make properly in court."[76] Rather, "[t]he majority asserts nonetheless that the Commission might guarantee edge providers an 'effectively usable' or 'minimum' carriage service that could survive Section 706, so long as broadband providers had license to 'charge an edge provider . . . for high-speed, priority access' or 'negotiate separate agreements with each individual edge provider.'"[77] Moreover, Judge Silberman's partial dissent viewed this argument with great skepticism, and he reasoned that even with room for discrimination on top a basic service plan, the basic service itself under such a rule would "still have to be offered as common carriage, at a regulated price of zero." It is therefore unclear whether the Judge Tatel interpretation or a Judge Silberman interpretation or some other interpretation would ultimately guide review of such a rule. Given this uncertainty, "there's no reason for the Commission to take such chances in the first place when it has a clearer legal path."[78]

It is not clear that the Commission's proposed no blocking rule would survive a challenge, even with the Commission's proposed changes designed to accommodate language in the majority opinion of the D.C. Circuit Court of Appeals decision. Importantly, however, is what is implicit in the above-referenced section. The baseline test for not running afoul of the statutory

[75] *Id.*
[76] Notice of *Ex Parte* filed by Free Press, GN Docket No. 14-28 (May 5, 2014).
[77] *Id.*
[78] Notice of *Ex Parte* filed by Free Press, GN Docket No. 14-28 (May 5, 2014) at 4.

prohibitions on common carrier treatment set forth in *Cellco* is leaving "room for individualized bargaining and discrimination in terms."[79] This leaves room only for the *opposite* of a nondiscrimination rule.

It *is* therefore clear that the Commission cannot implement clear rules that protect against *both* blocking and discrimination. Under a § 706 theory of authority, in order to protect against blocking, any resulting rules must allow sufficient room for negotiation and discrimination among similarly-situated entities, and even then it is not clear that such a test would survive. Moreover, any bright-line prohibition against discriminatory practices would fail because it imposes the very definition of common carriage *per se*.

Access fees, particularly in the form of paid prioritization, receive similarly stark treatment by the D.C. Circuit. The Court calls the *Open Internet Order*'s presumption against paid prioritization "ominous," and declares that "[i]f the Commission will likely bar broadband providers from charging edge providers for using their service, thus forcing them to sell this service to all who ask at a price of $0, we see no room at all for "individualized bargaining."[80] In the same way that rules that would prevent other discriminatory practices would amount to quintessential common carriage regulation, so too then would prohibitions against paid prioritization.[81]

Title II, on the other hand, *would* allow the Commission to protect against the full scope of harms identified above, including blocking, discrimination, and access fees. The Commission could, by reclassifying broadband access service under Title II, implement a bright-line rule that

[79] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014) at 61, citing *Cellco*, 700 F.3d at 548.
[80] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circ.2014) at 60.
[81] The Commission appears to be using a *Southwestern* approach in prohibiting specific behaviors, such as perhaps narrow prohibitions against prioritization in very specific instances. However, Free Press explains that the "Verizon decision makes clear" that "those Supreme Court precedents suggest only that the Commission can compel carriage of a specific content channel – not compel facilities to be held out 'indifferently for public use.' Of course the very nature of an Open Internet requires that it be open to all members of the public, not just a chosen few that the Commission decides to protect." (Notice of *Ex Parte* filed by Free Press, GN Docket No. 14-28 (May 5, 2014) at 4.)

creates a presumption against discrimination under § 201, which requires that all charges, practices classifications, and regulations of communications services be just and reasonable.[82] Such a rule could specify in advance the types of unjust or unreasonable discriminatory conduct that such a rule would prohibit. Under § 201, the Commission could also prohibit access fees outright by determining that certain access fees would be presumptively unreasonable or require that such fees be applied in a manner that is consistent for all parties or all similarly situated parties.[83] In short, under Title II, the Commission would have the authority to implement clear rules that afford concrete, prescribed protections against unreasonable discrimination and access fees. It cannot do so under section 706 and a case-by-case application of a test for commercial reasonableness.

D. Title II, when combined with appropriate forbearance is a targeted, narrow approach to achieving network neutrality protections.

Title II offers a bounded framework for targeted, narrow regulation, particularly when it is combined with appropriate forbearance from sections of the Act that are either inherently inapplicable in the context of broadband access service, or because they would lead to undesirable policy outcomes. When compared to an approach under § 706 that could, by design and under the interpretation of the D.C. Circuit court of appeals, encompass regulation of both connectivity and content, Title II reclassification of broadband Internet access service would provide certainty to both Internet access service providers and to content providers about what conduct would be regulated and how, and would limit the potential for regulatory overreach. As

[82] 47 U.S.C. § 201 (b).
[83] *See* Notice of *Ex Parte* filed by Public Knowledge, GN Docket No. 14-28 (May 2, 2014), where Public Knowledge notes that, Title II "does not, as some seem to insist *require* reasonable discrimination," and that "where the Commission found conduct ***inherently*** unjust, unreasonable, or subject to abuse, it has affirmatively prohibited this conduct with no allowance for exception."

Free Press has noted, "[a]n approach that recognizes the distinct markets, technologies, and purposes of these services should provide greater clarity for all parties."[84]

Moreover, regulation under a Title II approach allows the Commission to ground its oversight in this context on fundamental, longstanding principles that have guided our communications networks for over a century, rather than on a theory of authority of largely untested and unbounded scope. As OTI noted in its March 2014 comments, "[t]he Commission has a clearly defined framework for policy interventions at its disposal, built on the fundamental principle of common carriage that has underscored communications policy in the United States for over a century."[85] The core principle of common carriage is nondiscrimination. Treating Internet access service providers as common carriers for the purposes of protecting against discriminatory behavior makes sense, and the Commission has the tools within the Act to do so.

Forbearance from many provisions would be a necessary next step following reclassification of broadband access as a Title II service. Precedent for such forbearance already exists, most notably in the wireless telephone service market and discussed in detail below.[86] While we do not underestimate the importance of forbearance in the context of reclassification of broadband access service, and we acknowledge that it creates an additional regulatory step in the process of implementing strong network neutrality protections, it is clear from the Commission's history that determining the scope of appropriate forbearance is an achievable task.[87]

[84] Free Press Comments (July 15, 2010) at 85.
[85] Comments of the Open Technology Institute at New America Foundation, GN Docket No. 14-28 (March 23, 2014) at 2.
[86] *See also* Comments of Public Knowledge et al., WT Docket No. 05-625 (July 10, 2014) at 3.
[87] Comments of Public Knowledge, GN Docket No. 10-127 (July 15, 2010).

V. The commission's open Internet rules, including the non-discrimination rule, must be technology neutral and apply to all broadband Internet access service providers.

The public interest in open and non-discriminatory Internet access is platform agnostic. While the metes and bounds of what constitutes reasonable network management can differ depending on the broadband platform and technology, the regulatory framework for an open Internet should not. Although the Commission decided in 2010 that it was premature to subject mobile Internet access to the full scope of its *Open Internet Order*, it did endorse the principle of platform parity, emphasizing that "[c]onsumer choice, freedom of expression, end-user control, competition, and the freedom to innovate without permission are as important when end users are accessing the Internet via mobile broadband as via fixed."[88] This basic presumption that the public interest is best served by a common regulatory framework and technological neutrality for all broadband Internet access was also the basis of the 2007 *Wireless Broadband Declaratory Ruling*[89] and an approach the Commission had adopted consistently in its series of broadband deregulatory orders.[90]

This proceeding presents a critical opportunity to return to this fundamental principal and avoid the evolution of two competing Internets – one wired and open, the other wireless and closed. It is critical to both consumer protection and the social and economic value of the Internet that its functionality and "rules of the road" not change based on the technology used to gain access. Individuals are and will increasingly be connecting to the Internet primarily using

[88] Open Internet Order at ¶ 53.
[89] *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks,* WT Docket No. 07-53, Declaratory Ruling, 22 FCC Rcd 5901, 5902, 5925, ¶¶ 55, 70 (*Wireless Broadband Declaratory Ruling); see also* Concurring Statement of Commissioner Michael J. Copps, *id.* at p. 27 ("Now that IP-based wireless services are classified as Title I information services, the inescapable logical implication of our 2005 decision is that the right to attach network devices – as well as the other three principles of our policy statement – now applies to wireless broadband services.")
[90] "The Commission emphasized technological neutrality and regulatory parity in the 2002 *Cable Modem Order*, the 2005 W*ireline Broadband Order*, the 2006 *Broadband over Power Lines Order*, and, most recently, the 2007 *Wireless Broadband Declaratory Ruling*." *Ex Parte* Letter from Free Press to Acting FCC Chairman Michael Copps, WC Docket No. 07-52 (April 3, 2009), at 2 [citations omitted].

untethered devices – laptops, smartphones, tablets and more – that will traverse a variety of fixed and mobile carrier networks depending on location and need. End users should have the same freedom to use and access Internet resources whether their device is connected over Wi-Fi to a wired LAN or, moments later, connected over a mobile carrier's network. In fact, among the circumstances that have changed in the years since the 2010 *Order* is the rapid convergence of mobile and wireline networks and the emergence of hybrid business models – for both wireless and wireline network providers – that could soon minimize the practical distinctions between the two types of networks.

Consumers will increasingly neither know nor care whether they are communicating on a "mobile" or a "wireline" connection – and, in fact, on mobile devices they will soon be alternating between those connections even during the same voice call, video download, or web-browsing session. It would be a historic blunder if the Commission used this proceeding to impose divergent regulatory paths on a converging communications platform that is itself increasingly central to both commercial and civic life. The public interest in a common regulatory framework and strong consumer protections for *all* Internet access is particularly salient considering the increasing and disproportionate dependency of young, low-income, minority and rural populations on mobile devices and mobile networks for their primary Internet access.

A. Mobile ISPs have demonstrated they have an incentive and ability to block applications and discriminate among competing edge providers, which deters innovation, investment and consumer benefits.

Despite the fact that the *Open Internet Order* has been in place until recently, and a *de facto* set of protections for much longer, mobile carriers have demonstrated on multiple occasions that they have both the incentive and the inclination to engage in blocking and

throttling to favor their own services or profit margins to the detriment of the public.[91] In the *NPRM*, the Commission identifies two recent and flagrant examples of blocking behavior harmful to consumers by the two dominant mobile providers: The Commission fined Verizon $1.25 million for blocking tethering applications on its network that utilizes 700 MHz C Block spectrum subject to *Carterfone*-like open platform conditions; and AT&T blocked the iPhone's *FaceTime* video chat application from access to its mobile network, backing off only after FCC intervention and a threatened formal complaint by consumer groups.[92]

These are not the only examples that demonstrate that the dominant mobile carriers are likely to take advantage of a preferential exemption from open Internet protections in order to exploit or disadvantage competing edge providers of applications, content and services. In 2009 AT&T blocked the SlingMedia video streaming application (SlingPlayer)[93] from accessing its 3G network on iPhones, citing concerns about bandwidth demands and network capacity. But during that same period, AT&T allowed other streaming video applications, such as those from Major League Baseball, to access its 3G network.[94] Under FCC pressure, AT&T eventually removed the block and allowed the SlingPlayer application access to its 3G networks.[95] More

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[91] Open Internet Order at ¶¶ 35, 36 (citing, among other examples, AT&T's efforts to block VoIP applications and MetroPCS blocking movie downloads and peer-to-peer file sharing). *See also Ex Parte* Letter by Free Press to Acting FCC Chairman Michael Copps, WC Docket No. 07-52 (April 3, 2009); Skype Communications S.A.R.L., Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, submitted to FCC Feb. 20, 2007, *available at* http://download.skype.com/share/skype_fcc_200702.pdf; Tim Wu, *Wireless Net Neutrality: Cellular Carterfone and Consumer Choice in Mobile Broadband*, New America Foundation, Wireless Future Program, Working Paper #17 (February 2007), *available at* http://www.newamerica.net/files/WorkingPaper17_WirelessNetNeutrality_Wu.pdf; Robert M. Frieden, *Wireless Carterfone--A Long Overdue Policy Promoting Consumer Choice and Competition*, New America Foundation, Wireless Future Program, Working Paper #20 (January 2008), *available at* http://www.newamerica.net/events/2008/free_my_phone.

[92] NPRM at ¶ 41

[93] *See* "SlingPlayer for Mobile Devices," Slingbox.com, *available at* http://www.slingbox.com/go/spm.

[94] Comments of Sling Media, Inc., GN Docket 09-191 WC Docket 07-52 (January 14, 2010)("Sling Media Comments"), at 5. Sling Media reported that AT&T never provided them with analysis of how their application caused congestion. Indeed, Sling Media's own analysis found that their application used less bandwidth than other streaming video services (Sling Media Comments at 7).

[95] Open Internet Order at ¶ 35, n. 107.

recently mobile carriers blocked access to the innovative Google Wallet e-payment application, claiming that this was justified by technical security concerns.[96] But this carrier behavior raised anticompetitive concerns when AT&T, Verizon and T-Mobile later unveiled their own mobile payment application, a competitor to Google Wallet, titled ISIS Mobile Wallet.[97]

B. *Developments since the 2010 Open Internet Rules strongly reinforce the rationale for a single set of rules to ensure an open and nondiscriminatory Internet.*

1. *The mobile economy is thriving but could stall if increasing consolidation and an exemption from network neutrality permits rent-seeking from adjacent market innovators and providers.*

The public interest in mobile market competition is not limited to the competition among wireless ISPs for market share and average revenue per user. Increasingly more important to the economy and consumer welfare are the adjacent markets for applications, devices, online commerce, and advertising that are growing rapidly with mobile broadband connectivity as their fuel. Unfortunately, even where the dominant national wireless carriers compete vigorously for customers – exerting some discipline on the price and quality of service of Internet access – they simultaneously limit competition and consumer choice in the *adjacent markets* for mobile devices, applications and web-based content and services. Unlike wireline ISPs, which have rarely sought to leverage their "terminating access monopoly" to dictate the design, capabilities and control of the devices and applications that run over their networks, mobile carrier ISPs have attempted to make this vertical integration a central feature of their business model. Irrespective of intra-industry competition, which is limited and declining due to ongoing consolidation, the dominant carriers have a common interest in leveraging their collective control over network

[96] *Ex Parte* Letter by Barbara van Schewick to Chairman Genachowski, GN Docket 09-191 (December 19, 2011). The technical security concerns that carriers raised are that Google Wallet application requires access to the secure elements of a consumer device.

[97] Sarah Perez, "Isis, The Mobile Payments Initiative From AT&T, Verizon & T-Mobile, Launches Across The U.S." *Techcrunch* (November 14, 2013), *available at*: http://techcrunch.com/2013/11/14/isis-the-mobile-payments-initiative-from-att-verizon-t-mobile-launches-across-the-u-s/

access to limit consumer choice and extract rents from firms seeking to compete in the adjacent markets for devices, applications, online content and services.

The stakes for the economy are high. Although mobile apps did not even exist in 2007, by 2012 they were an $18 billion industry, and Mobile Future predicts that the market will be worth $46 billion by 2016. [98] As Chairman Wheeler recently acknowledged in a speech, the apps economy has created more than 750,000 new jobs in just six years.[99] The mobile device market is growing rapidly as well, and smartphones sales in the U.S. will generate $41 billion in revenue in 2014 while sales of tablet devices are projected to generate over $27 billion.[100] The growth of tablets in particular will drive more and more eCommerce activity to mobile devices. By 2018, eCommerce transacted over smartphones and tablets is predicted to top $293 billion and become a majority of all online eCommerce activity in the U.S.[101] This shift will be accompanied by changes in advertising markets. Forrester Research expects spending on mobile advertising in the U.S. to quadruple within the next few years, reaching $40 billion by 2019.[102]

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[98] "Economic Opportunity – Why We Care," Mobile Future, *available at* http://mobilefuture.org/issues/economic-opportunity; The consulting group APPNATION predicts the U.S. app economy will be even larger, growing to $151 billion by 2017. *See* "APPNATION State of the App Economy Report Forecasts App Economy to Reach $151B by 2017," APPNATION, *available at* http://appnationconference.com/main/research/.

[99] "Prepared Remarks of FCC Chairman Tom Wheeler," Wireless Spectrum and The Future of Technology Innovation Forum, The Brookings Institution (March 24, 2014), *available at* https://www.fcc.gov/document/chairman-wheeler-remarks-brookings-institution.

[100] "CE Industry Revenues to Reach Record High of $208 Billion in 2014, According to CEA Sales and Forecast Report," CEA Press Release, *available at* http://www.ce.org/News/News-Releases/Press-Releases/2013-Press-Releases/CE-Industry-Revenues-to-Reach-Record-High-of-$208.aspx. CTIA also states that "[t]here are currently more than 790 different handsets and devices offered to American consumers by facilities-based carriers, MVNOs, and more than 50 different device manufacturers." *See Ex Parte* Letter from CTIA, GN Docket No. 09-191, WT Docket No. 13-135 (November 13, 2013) at 15. Emerging new technologies, like health monitoring devices, Bluetooth wireless speakers and smart watches are also expected to generate over $6 billion in revenue in 2014 and forecast to be a major source of growth in the future.

[101] "US Mobile and Tablet Commerce To Top $293B by 2018; Total eCommerce To Hit 414B," Forrester Press Release, *available at* http://www.forrester.com/US+Mobile+And+Tablet+Commerce+To+Top+293B+by+2018+Total+eCommerce+To+Hit+414B/-/E-PRE7004.

[102] Jitender Miglani, "US Mobile Advertising Spending To Reach $40 Billion By 2019," *Jitender Miglani's Blog* (May 8, 2014), *available at* http://blogs.forrester.com/jitender_miglani/14-05-08-us_mobile_advertising_spending_to_reach_40_billion_by_2019.

In short, ensuring open mobile platforms and markets that are not suppressed or distorted by carrier incentives to ration capacity, extract rents and favor affiliated content, applications and services will be critical for continued innovation, economic growth and consumer welfare.

2. *Special rules favoring mobile ISPs will create an 'Open Internet Divide' that harms young, low-income, minority and rural populations who rely disproportionately on mobile Internet access.*

Ensuring a 'level playing field' among Internet access platforms is critical not merely because of the impacts on competition, innovation and economic productivity. The Internet is rapidly becoming the nation's common communications platform and leading source of information. There is a strong public interest in ensuring that all Americans have largely the same expectations, opportunities and access to content and services no matter how they connect to the Internet. As a result, platform parity – or the lack of it – will have an enormous social and economic impact on the disproportionate share of young, lower-income and minority populations who rely primarily – and often exclusively – on mobile devices to connect to the Internet.

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

According to the most recent data released by the Pew Research Center's Internet & American Life Project, as of May of last year 70 percent of American adults had fixed broadband Internet access at home, but this access varies widely by income, education, race and ethnicity.

College graduates, higher-earning households, suburban residents, and white residents are far more likely to have access.[103] While nearly nine in ten college graduates have fixed broadband connections at home, just 57 percent of high school graduates have access, a share that plunges to 37 percent among adults without a high school diploma. Similarly, 88 percent of households earning over $75,000 have a fixed broadband connection at home, compared to only 54 percent of households earning less than $30,000. Only 62 percent of rural residents have fixed broadband at home, compared to 73 percent of suburbanites. And among racial and ethnic groups, only 53 percent of Hispanic and 64 percent of Black households have fixed broadband access at home, far lower than the 74 percent of white households.

Although large numbers of low-income and minority adults lack broadband access entirely, the Pew surveys also show that a disproportionate and rising share compensate by relying on mobile broadband connections as their exclusive or at least primary means of accessing the Internet. The share of Americans relying *exclusively* on their smartphone to access the Internet is far higher among Hispanics, Blacks, adults aged 18-29, and households earning less than $30,000 a year.[104] African Americans and Hispanics are also much more likely to be "*cell-mostly* internet users."[105]

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[103] 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.

[104] *Id.* While 10% of American adults rely exclusively on their smartphone to access the Internet, the numbers are much higher for specific portions of the population: Hispanics (22%), Blacks (15%), adults aged 18-29 (15%) and households earning less than $30,000 (13%). Exclusive reliance on a smartphone for Internet access is far lower among Whites (6%), college graduates (4%) and adults in households earning over $75,000 (7%).

[105] 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/. According to the survey, "[o]ver half of all adults (56%) now own a smartphone, and 93% of these smartphone owners use their phone to go online." Among smartphone owners, "one third (34%) of cell internet users say that they *mostly use their cell phone* rather than some other device such as a desktop or laptop computer," a group the Pew study refers to as "cell-mostly Internet users."[105] However, the share of "cell-mostly Internet users" among youth, minority and low-income groups is higher than among non-minority and middle-to-high income adults. 43% of Blacks and 60% of Hispanics rely primarily on their smartphone for Internet access. For those earning less than $30,000 a year Pew found that 45% report primarily using their smartphones to go online. This compares to only 27% of Whites and 27% of households earning more than $75,000 who report going online mostly with their smartphone. Similarly, young adults are more likely to be

These demographic disparities concerning broadband access mirror the much longer-term trend among households relying on wireless-only telephone subscriptions.[106] If broadband Internet cord-cutting follows this trend, these groups could be permanently relegated by the Commission to second-class Internet access. An earlier Pew survey (2010) found that 43 percent of "Americans view those without broadband access as being most disadvantaged when it comes to job and career opportunities."[107] A 2013 survey from Joint Center for Political and Economic Studies reported similar results, finding that African Americans and Latinos view smartphones as an important part of the job search process. A significantly higher proportion of African Americans and Latinos said they used a smartphone to search for a job compared to whites surveyed.[108]

For disadvantaged groups who cannot afford *both* a high-capacity fixed broadband subscription *and* a mobile data plan, it is only logical that the trend will be increasing reliance on the more versatile mobile data platforms that individuals can access wherever they go.[109] While access to the Internet through a mobile device is far from a complete solution to closing the

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"cell-mostly Internet users," with 50% identifying as such. It should be noted, however, that the Pew survey focuses on device use. The survey does not report to what extent smartphones are used on a mobile network or in conjunction with a home Wi-Fi network.

[106] Stephen Blumberg and Julian Luke, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2013*, National Center for Health Statistics – Center for Disease Control and Prevention (July 2014), *available at* http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201407.pdf. Cellphone-only households are far more likely to be low-income, young and/or members of minority populations.

[107] Aaron Smith, *Home Broadband 2010*, Pew Research Center (August 2010), *available at* http://www.pewinternet.org/files/old-media//Files/Reports/2010/Home%20broadband%202010.pdf; The survey reported that a lack of broadband at home is viewed as a "significant disadvantage" with respect to getting health information (34%), using government services (31%) and "learning new things that might improve or enrich one's life (29%)." It also found that "African-Americans and English-speaking Latinos are significantly more likely than whites to say that a lack of broadband access is a 'major disadvantage' when it comes to finding out about job opportunities; getting health information; learning new things to improve or enrich one's life; using government services; and keeping up with local community happenings" (at 14).

[108] John Horrigan, *Broadband and Jobs: African Americans Rely Heavily on Mobile Access and Social Networking in Job Search*, Joint Center for Political and Economic Studies (October 2013), *available at* http://jointcenter.org/sites/default/files/Broadband%20and%20Jobs.pdf. Among those surveyed, 47% of African Americans and 36% of Latinos, said they used a smartphone to search for a job, compared to 24% of whites.

[109] Pew's 2013 survey notes that "smartphones do offer a potential source of online access to individuals who might otherwise lack the ability to go online at all from within the home, even if that access is somewhat limited in comparison." *See* Pew Research Center's *Home Broadband 2013* survey at 4.

digital divide, access to the wireless ecosystem represents a critical first step. A failure to adopt a common regulatory framework for both fixed and mobile platforms will have a disparate impact that deepens the disadvantages faced by precisely the same demographic groups (minorities, low-income households, youth and rural dwellers) who are already struggling to overcome existing digital divides. If these communities are to take full advantage of the opportunities afforded to them on the Internet, the Commission must not eliminate protections nor create different sets of rules for broadband Internet users that connect to the Internet wirelessly.

3. Wireline and mobile networks are converging in ways that will make a separate set of rules favoring mobile ISPs confusing and harmful to consumers and to competition.

The trends of the past four years make this precisely the wrong time to create two different regulatory frameworks for Internet access. From the perspective of both consumers and industry competitors, the traditional distinctions between wireline and wireless networks will continue to blur. Devices consumers use to access the Internet are increasingly mobile, but they will rely for connectivity on both mobile carrier and (primarily) wireline networks – often moving back and forth between the two seamlessly during the same web session without interrupting the connection to a call, streaming video or other application or service. Or at least that is the sort of pervasive connectivity that will greatly benefit consumers – and spur greater innovation and competition among and between Internet platforms – *if* the Commission does not decide to bifurcate the Internet and distort the marketplace by giving mobile carriers a competitive advantage.

a. The vast majority of mobile Internet traffic will be carried over wireline networks and devices that toggle between fixed and mobile carrier networks.

Four years ago the inherent limitations on the capacity of a mobile carrier business model premised on macro cells, exclusively-licensed spectrum and carrier-provisioned infrastructure occasioned fears of a "spectrum crisis" that could choke off rising mobile data demand and make an open Internet unmanageable. Instead, four years later, the landscape has radically shifted. The rapid convergence of mobile and fixed networks has not only accommodated a nearly 60 percent year-over-year growth rate in mobile data traffic,[110] but it is spawning new hybrid network business models, such as Republic Wireless and France's Free Mobile, that offer the promise of increasing inter-platform innovation and competition.

Of course, this very recent revolution in spectrum efficiency and in wireline/wireless network convergence is attributable primarily to the use of Wi-Fi to offload an increasingly large share of mobile device traffic onto fixed (mostly wireline) networks.[111] Cisco's Virtual Networking Index estimates that Wi-Fi offloaded 57 percent of U.S. mobile data traffic onto fixed networks last year and projects that 64 percent of U.S. mobile data traffic will be offloaded

[110] 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 "2013 Year in Review."

[111] As Sprint explains, Wi-Fi "gains its efficiency and speeds in part because it only needs to use radio transmission for a very small portion of the end-to-end route taken by data traffic. *The vast majority of the route is along the less traffic-sensitive wired network*." (Comments of Sprint Nextel Corporation, WT Docket No. 12-4, at 5 [February 21, 2012][emphasis added]). *See also* Reply Comments of Sprint Nextel Corp., WT Docket No. 12-4, at 10 (March 26, 2012), ("Wi-Fi networks that are easily – even seamlessly – accessible by customers of wireless carriers can provide users with advantages of higher-speed connections without wireless data limits."). One of the many proven benefits of Wi-Fi is that it facilitates spectrum frequency re-use over very small areas (a home, business, or school). Ruth Milkman, during her tenure as chief of the FCC's Wireless Bureau, observed that the aggregate capacity of the world's Wi-Fi networks "is 28 times greater than the capacity of the world's 3G and 4G networks, which use licensed spectrum." "WTB Chief Ruth Milkman's Remarks at Georgetown Spectrum Policy Workshop," Federal Communications Commission, transcript (June 14, 2013), at p. 2, *available at* http://www.fcc.gov/document/wtb-chief-ruth-milkman-remarks-georgetown-spectrum-policy-workshop.

onto fixed networks via Wi-Fi by 2018.[112] European trends suggest that small cell offload will play an even larger role and could account for as much of 80 percent of mobile device traffic across Western Europe by the end of 2016.[113] Industry estimates similarly suggest that despite the ongoing rollout of LTE services, offloading to Wi-Fi will continue to grow significantly.[114]

A separate 2013 Cisco survey of 620 U.S. mobile users reported that mobile device users are rapidly increasing their reliance on a combination of mobile carrier and Wi-Fi connected to fixed networks. Wi-Fi now dominates connectivity for tablets, laptops and e-readers, with roughly 80 percent of users relying exclusively on Wi-Fi rather than on a carrier network.[115] More critically, smartphones have become truly hybrid network devices, with consumers toggling back and forth between fixed and mobile networks in order to optimize trade-offs between connectivity, speed and cost. In 2013, only 20 percent of smartphone owners were using their devices exclusively on a mobile carrier network, a dramatic drop from 30 percent just one year earlier.[116]

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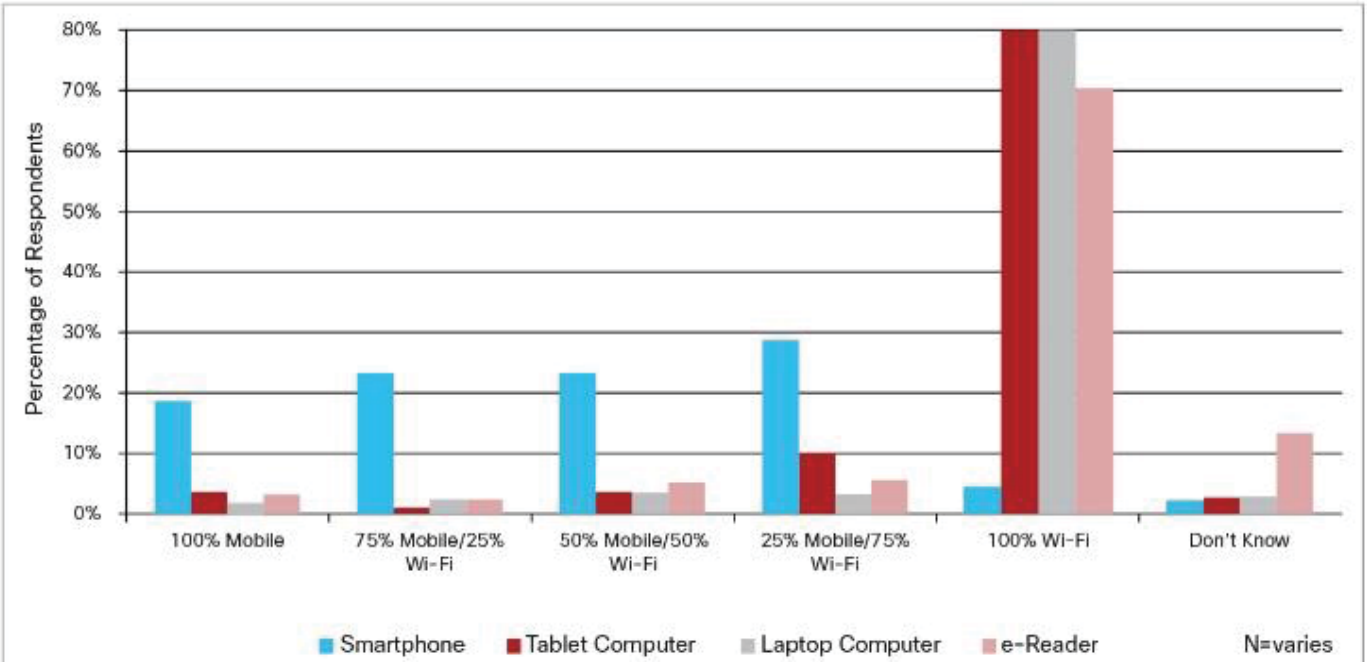
[112] Cisco Inc., *Visual Networking Index*, Mobile Forecast Highlights, 2013-2018 (February 2014), *available at* http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country. Specific projections for the United States are available by selecting the filters "United States" and "Device Growth/Traffic Patterns."

[113] 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. The study used data from surveys that monitored the actual activity of thousands of mobile devices to project offload rates for the U.K., France, Spain, Germany and Italy. Even today, the study concluded, "we believe that a majority of traffic that would otherwise be present on the macro cellular traffic is already being off-loaded, primarily to Wi-Fi in the home." Among the data sets used was a 2013 survey by Informa and Mobidia finding "that at least two-thirds of mobile data for Android phones is already being off-loaded to 'self-provisioned' Wi-Fi, which equates roughly to private Wi-Fi. . . . [T]he same Informa analysis found *only 2% of otherwise mobile traffic from Android smart phones to be transmitted over managed (i.e. public) Wi-Fi hotspots*, although this fraction varied greatly from one country to the next." *Id.* (emphasis in original). *See* Informa, "Understanding the Role of Managed Public Wi-Fi in Today's Smartphone User Experience: A global analysis of smartphone usage trends across cellular and private and public Wi-Fi networks," (February 2013).

[114] *Next Generation Hotspot Whitepaper: Maintaining the Profitability of Mobile Data Services*, Wireless Broadband Alliance (October 2012) at 5. Wi-Fi offload is predicted to rise from roughly 40-to-60% today to as much as 60-to-80% of the total traffic that would otherwise be on 3G and 4G networks over the next few years.

[115] Stuart Taylor and Tine Christensen, *Understanding the Changing Mobile User: Gain Insights from Cisco's Mobile Consumer Research*, Cisco (November 2013), at 3.

[116] Last year, nearly 50% of smartphone users reported that they connect to the Internet over Wi-Fi rather than over their mobile carrier's network at least 50% of the time. Overall, the average smartphone user is connected to the Internet over a fixed Wi-Fi network 44% of the time. "This is a remarkable increase from just one year ago, when



27. In a typical week, what is the split in your total mobile data usage across all of your devices between mobile/cellular networks (i.e., 3g or 4G/LTE) and Wi-Fi networks (e.g., a home, work or school Wi-Fi network, or a Wi-Fi hotspot) on each of your mobile devices?

Source: CCS 2013

To understand why consumers rely on devices that access the Internet over both fixed and mobile carrier networks, it is critical to distinguish between truly *mobile* broadband Internet access (on the go) and *nomadic* Internet access (indoors or outdoors near a wired connection). Americans are spending an increasing share of their time online using a mobile device – but increasingly they use high-bandwidth applications (video chat, video streaming, social media) indoors or in another stationary location where connecting over a faster and less expensive fixed LAN via Wi-Fi is most popular.[117] Moreover, Cisco found that the application driving data

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one-third of the total smartphone data usage was through a Wi-Fi connection, rather than a mobile network," according to the Cisco report. Stuart Taylor and Tine Chirstensen, *Understanding the Changing Mobile User: Gain Insights from Cisco's Mobile Consumer Research*, Cisco (November 2013), at 3.

[117] According to the 2012 Cisco survey, users report that two-thirds of their mobile device use for broadband applications is at home or work, while only 10-to-15 percent is "on the go" or outside of retail and public locations that are increasingly wired for Wi-Fi access. Stuart Taylor, Andy Young and Andy Noronha, *What do Consumers Want from Wi-Fi? Insights from Cisco IBSG Consumer Research* (May 2012), at 5; Stuart Taylor, *What do Mobile Business Users Want from Wi-Fi? Insights from Cisco IBSG Consumer Research* (November 2012), at 6. "While two-thirds of people still use their devices on the go, the world of mobile devices is changing from a 'mobile,' on-

demand – video – is the most nomadic and its use increasing the fastest.[118] Surveys of user behavior show that nearly 85 percent of video on mobile devices is watched at home (50 percent), at work (15 percent), or at other indoor locations. Only 15 percent is watched outdoors or "in transit," and no doubt much of this is or soon will be covered by Wi-Fi hotspots as well.[119]

As high-capacity wireline LANs and Wi-Fi become ubiquitous, the possibility of hybrid fixed and mobile networks that could hardly be imagined four years ago come into focus. Although the most significant examples today are ISPs leveraging extensive wireline assets (see the next subsection), the recent launch of upstart carrier Republic Wireless and Scratch Wireless are additional indicators of the coming convergence. Founded in 2011, Republic Wireless has differentiated itself by adopting a "Wi-Fi first" business model. Data, text messages and voice calls are routed over Wi-Fi networks wherever possible. Republic Wireless is a MVNO, with Sprint's cellular network serving as a back-up, providing coverage if no Wi-Fi network is available, and only if the subscriber's plan includes mobile network coverage. Republic Wireless devices are also able to maintain a voice call as the user devices transitions from a Wi-Fi to cellular network.[120]

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the-go world (average usage of 0.5 hours per typical day) to a 'nomadic' world dominated by the home (2.5 hours)," the study stated. Similarly, the 2013 Cisco survey report states: "The 'nomadic' use of mobile devices continues to evolve, as many people now use their mobile devices in 'mobile stationary' locations" that are increasingly served by fixed Wi-Fi access. Stuart Taylor and Tine Christensen, *Understanding the Changing Mobile User: Gain Insights from Cisco's Mobile Consumer Research*, Cisco (November 2013) at 4.

[118] Verizon reports that already at least 50% of its mobile traffic is online video, a share the company projects will increase to two-thirds of all mobile broadband traffic by 2016. Sue Marek, "Verizon CEO: 50% of Our Wireless Traffic is Video," *Fierce Wireless* (April 10, 2013), *available at* http://www.fiercewireless.com/story/verizon-ceo-50-our-wireless-traffic-video/2013-04-10?utm_source=rss&utm_medium=rss. *See* Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2011–2016, Executive Summary, *available at* http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html.

[119] 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.

[120] Walt Mossberg, "Smartphone With Wi-Fi Smarts," *AllThingsD* (November 26, 2013), *available at* http://allthingsd.com/20131126/smartphone-with-wi-fi-smarts/. Scratch Wireless is another Sprint MVNO with a similar Wi-Fi first business model. Customers do not sign any contracts, and only pay for calls or data usage that occurs outside of Wi-Fi coverage on mobile networks.

b. Cable and other wireline carriers are developing hybrid networks that integrate Wi-Fi and could soon offer hybrid fixed and mobile services.

Although most Wi-Fi offload is self-provisioned by individuals at home and by business establishments, both wireline and mobile carriers are increasingly building out massive small cell networks with a goal of seamlessly integrating fixed and mobile Internet access. In Western Europe wireline ISPs have created clouds of connectivity by turning more than 12 million residential and business subscribers into Wi-Fi hotspots.[121] The largest of these hybrid networks, built out by British Telecom, broadcasts an open Wi-Fi connection from more than 5.5 million residential and business wireline subscribers.[122] In France, the wireline provider Iliad leveraged Wi-Fi connectivity to more than 4 million of its wireline subscribers to launch Free Mobile, a disruptive "Wi-Fi first" mobile carrier.[123] Free Mobile has been able to offer a far less expensive mobile broadband service by offloading a large share of its mobile device traffic over Iliad's fixed network, while also provisioning its own mobile carrier spectrum and infrastructure to ensure ubiquitous coverage.[124] After just nine months of operation, Free had 4.4 million mobile

[121] *See* Michael Calabrese, *Solving the 'Spectrum Crunch': Unlicensed Spectrum on a High-Fiber Diet*, Time Warner Cable Research Program on Digital Communications (Fall 2013), at 10-12. The FON Wi-Fi consortium is the world's largest, with more than 9 million hotspots that are increasingly provided free to subscribers by major wireline telecoms that include the BT Group (British Telecom), Vivendi's SFR (France), ZON (Portugal), Belgacom (Belgium) and Deutsche Telekom (Germany).

[122] "BT Wi-Fi," BT Group, *available at* https://info.btopenzone.com:442/. BT gives each of its wireline customers a wireless router (a "Home Hub") that enables both a private and a public Wi-Fi network, each with a separate SSID. Subscribers value the ability to connect at not only 5.5 million hotspots across the U.K, but an additional 3.5 million in the other countries participating in the FON consortium. Connecting is quick and easy, since BT customers use automated login technology standardized through the global Wireless Broadband Alliance. Since BT is such a ubiquitous wireline provider in U.K. cities, the map of BT Wi-Fi hotspots shows a nearly seamless cloud of free wireless coverage in many neighbourhoods and congested retail areas, including more than 500,000 wireless hotspots in London alone ("Find a Hotspot," BT Group, *available at* http://btopenzone.hotspot-directory.com/.).

[123] Kevin Fitchard, "France's Wi-Fi Gates Swing Open: Free Mobile Activates 4M Hotspots," *GigaOm* (April 19, 2012), *available at* http://gigaom.com/2012/04/19/frances-wi-fi-gates-swing-open-free-mobile-activates-4m-hotspots/. Free's phone customers had almost immediate access to more than 4 million residential Wi-Fi hotspots created by its parent, Iliad, which opens up the home wireless routers it installs for its wireline customers.

[124] *See* Om Malik, "How France's Free Will Reinvent Mobile," *GigaOm* (Jan. 9, 2012), *available at* http://gigaom.com/2012/01/09/how-frances-free-will-reinvent-mobile/. "We will go to wide area network (3G and 2.5G) when we are not in Wi-Fi coverage," Iliad and Free.fr founder Xavier Neil told Malik. "We are trying to be the cheapest mobile service in France." *Id.*

subscribers and 6.4 percent of France's mobile market.[125] Free takes the Republic Wireless and Scratch Wireless "Wi-Fi first" model a big step further, demonstrating that a purely wireline ISP can leverage its subscriber base to create a Wi-Fi network, enter the mobile broadband market, and offer a potentially successful and disruptive hybrid fixed/mobile broadband product.

While this trend toward hybrid fixed/mobile networks is more advanced in Europe and Asia, over the past two years it has emerged in the U.S. as well. A consortium of the nation's largest cable companies – Comcast, Time Warner Cable, Cablevision, Cox and Brighthouse – have rapidly built out a network of more than 250,000 hotspots that blanket large portions of the New York, Philadelphia, Los Angeles, Chicago and other major metro areas with a shared Wi-Fi network.[126] These extensive metronets, deployed primarily outdoors in congested areas, give cable subscribers the ability to access content away from home and over the mobile device of their choice.

A more recent development is Comcast's "neighborhood hotspot initiative," which is designed to turn millions of residential and business cable Internet connections into shared Wi-Fi hotspots using a dual-use wireless home gateway. As the nation's largest wireline broadband provider,[127] Comcast's initiative could quickly leverage unlicensed spectrum to put clouds of connectivity over a dozen or more major metro areas. A hybrid network on that scale would create the opportunity to enter the mobile data market through an MVNO partnership with a

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[125] Kevin Fitchard, "Free Mobile nabs 60% of France's new mobile subscribers," *GigaOm* (November 19, 2012), *available at* http://gigaom.com/2012/11/15/free-mobile-nabs-60-of-frances-new-mobile-subscribers/. "In just nine months of operation, Free has attracted 4.4 million customers, or 6.4 percent of the country's mobile market, putting enormous pressures on France's big three." *Id.*

[126] *See* CableWiFi Internet Access, *available at* http://www.cablewifi.com/; *see also* Calabrese, *Solving the 'Spectrum Crunch,' supra* note 120, at 11-12.

[127] Comcast has more than 20 million Internet access subscribers clustered in particular geographic areas, and would have more than 30 million if its merger with Time Warner Cable is approved – roughly 40% of the US wireline Internet access market, (Chris Meyer "I Want a Bigger Cable Company, Said No One Ever," *Huffington Post*, (April 15, 2014), *available at* http://www.huffingtonpost.com/chris-meyer/i-want-a-bigger-cable-com_b_5154069.html.)

mobile carrier, as Republic Wireless and Scratch Wireless have done with Sprint, [128] or even by acquiring mobile carrier assets, similar to France's Free Mobile. In either case, a "Wi-Fi first" mobile data offering would result in consumers whose Internet connections will even more frequently shift back and forth seamlessly between fixed and mobile networks – consumers who will likely not even know which network they are on at any given time.

c. Mobile carriers are developing hetnets that will integrate cellular, wireline and Wi-Fi, including seamless handoffs such that consumers may not know what network they are on.

Another new and emerging turn toward converging mobile/fixed Internet access networks are mobile carrier hetnets that will both incorporate – and potentially control – Wi-Fi offload over fixed LANs. Hetnets potentially allow wireless providers to integrate access to "carrier-grade" Wi-Fi networks, enabling seamless connections and hand-offs between licensed and unlicensed bands (and between carrier and fixed networks). A combination of automatic authentication and handoffs between the core network and Wi-Fi will allow consumers to maintain their video stream or other Internet session as they move from an indoor (nomadic) Wi-Fi, or other small-cell network, to the wide-area macro network.

As these hybrid network technologies mature, it is likely that many consumers will not necessarily realize (or care) whether they are communicating over the cellular or fixed portion of the network at any particular time – and they may frequently traverse both in rapid succession, depending not just on location, but possibly on the application or service they are attempting to utilize and its cost. In traditional Wi-Fi hotspot deployments, a consumer would have to be aware

[128] Tammy Parker, "Sprint MVNO Scratch Wireless crafting Wi-Fi-centric service for cable operators," *FierceWireless* (April 20, 2014), *available at* http://www.fiercewireless.com/tech/story/sprint-mvno-scratch-wireless-crafting-wi-fi-centric-service-cable-operators/2014-04-20 "Scratch Wireless is developing a version of its Wi-Fi-centric service specifically for cable operators that want to leverage Wi-Fi so they can compete against cellular carriers. Scratch co-founder and CEO Alan Berrey revealed during a webcast presented jointly with *Multichannel News* that Scratch is in 'active discussions' with cable operators. He said pilots of a tailored 'Wi-Fi First' service could begin this summer, followed by actual deployments in the fall." *Id.*

the service was available in the area, search for the network, and then manually connect their device to the network. The Wi-Fi Alliance has been leading an effort to automate Wi-Fi hotspot connectivity. The solution is Passpoint, an industry standard for device-side technologies also known as Hotspot 2.0.[129] Hotspots with Passpoint equipment enable compatible consumer devices to locate, authenticate and connect to affiliated Wi-Fi access points automatically without any deliberate action by the individual. Passpoint-certified equipment is already part of the ongoing Next Generation Hotspot (NGH) trial led by the Wireless Broadband Alliance.

In addition to the device-side advances of Passpoint, the NGH trial is also coordinating provider-side engineering of seamless session transfer (SST) for devices between networks.[130] The goal of SST is not simply to maintain a user's data session while traveling between different Wi-Fi hotspot access points, but to also maintain data sessions when transitioning between fixed Wi-Fi hotspot networks and mobile cellular networks.[131] In addition, the emergence of massive Wi-Fi hotspot aggregators that wholesale fixed hotspot access to mobile carriers, such as Devicescape (which boasts a virtual network of 20 million curated Wi-Fi hotspots), fuels this mobile carrier/fixed Wi-Fi convergence, as does the emergence of Voice over Wi-Fi technology from Taqua and other innovators.[132] Some industry experts expect that this will better enable carriers to apply certain attributes of centralized network management to Wi-Fi offload as well,

[129] "Wi-Fi CERTIFIED Passpoint," Wi-Fi Alliance, *available at* http://www.wi-fi.org/discover-wi-fi/wi-fi-certified-passpoint.
[130] *Seamless Session Transfer White Paper*, Wireless Broadband Alliance (February 2013), at 3.
[131] *Id.*, at 4. "[T]here are two points of reference framing the motivation and consideration for SST: a. To prevent the user from having to consciously disconnect and reconnect their network services when moving about. … b. To prevent the users from noticing that there has been a session transfer occurring in the first place."
[132] Joan Engebretson, "Carrier Wi-Fi Offload Gets a Boost from Devicescape, Taqua," *Telecompetitor* (February 6, 2014), *available at* http://www.telecompetitor.com/carrier-wifi-offload-gets-boost-devicescape-taqua/.

allowing the monetization of what today is primarily consumer-provisioned Wi-Fi over public access (unlicensed) spectrum.[133]

4. Mobile carrier broadband Internet access is being marketed and used as a fixed wireless solution for the home, further blurring any fixed/mobile regulatory dichotomy.

The *Open Internet Order* attempted to create a bifurcated regulatory regime based on an allegedly clear distinction between "fixed" and "mobile" broadband Internet access networks and providers. However, over the past several years it has become clear that what we think of as mobile networks will increasingly be used to provide the equivalent of "fixed" service – and, whether marketed as a separate offering or not, an increasing share of consumers are likely to choose to substitute 4G (and in the future 5G) mobile offerings for their fixed service (so-called "broadband cord cutting"). As noted above, this will be most likely among lower-income and rural households that either cannot afford two separate subscriptions or who cannot obtain (or don't see the value of) a fiber or other very high-capacity wireline Internet service.

One example is "AT&T Wireless Home Phone and Internet," which claims to bring "ultra-fast 4G LTE" to people who "live in an area with limited broadband options."[134] Another example of this trend is Verizon's *HomeFusion*, which the company describes as "a home Internet service that delivers the speeds of Verizon's 4G LTE to your broadband router" and as a

[133] *See, e.g., Five Emerging Innovations in Carrier Wi-Fi,* Alepo (2012), *available at* http://www.wirelessinnovationalliance.org/files/dmfile/5_emerging_innovations_in_carrier_wi_fi_2012_updated.pdf. Industry surveys by the Wireless Broadband Alliance also document that over 50% of carrier respondents are more confident in investing in public Wi-Fi infrastructure as part of network architecture than they were 12 month ago. Caroline Gabriel, *Wireless Broadband Alliance Industry Report 2013: Global Trends in Public W-Fi,* Wireless Broadband Alliance (November 2013), at 16.

[134] "AT&T Wireless Home Phone and Internet," AT&T Wireless, *available at* http://www.att.com/shop/wireless/devices/att/wireless-home-phone-and-internet-black.html#fbid=8Px4FK35O7w . According to AT&T's website: "Wireless Home Phone and Internet ("WHPI") is a Commercial Mobile Radio Service and a mobile broadband Internet access service. It is mobile and may be used in the U.S. with home phone equipment, computers, and other Wi-Fi compatible devices."

substitute for "dial-up or DSL Internet service."[135] Although *HomeFusion* appears to fit the definition of a "fixed" service (it requires a router connected to an externally-mounted antenna), the connection is over the Verizon Wireless LTE/4G network. And this is merely one of dozens of potential variations on a hybrid mobile/fixed network. Another Verizon offering marketed as a LTE/4G substitute for DSL ("Verizon 4G LTE Broadband Router with Voice") is less easily categorized, since it is a small integrated unit with no separate antenna or other installation required.[136] A review in *Gotta Be Mobile* describes the product as a DSL substitute, but also notes it can be used in the field by mobile workers.[137]

AT&T and Verizon are not the only mobile carriers developing, testing or selling products that will market "4G" or soon "5G" mobile network connectivity as a substitute for wireline broadband – and, potentially, as an all-in-one fixed/mobile subscription (thereby matching parallel fixed/mobile services in the future by cable companies). For example, Sprint and DISH Network are presently testing a primarily fixed wireless product that leverages the

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[135] "HomeFusion Broadband FAQs," Verizon Wireless, *available at* http://www.verizonwireless.com/support/faqs/WirelessService/faq_homefusion.html. "HomeFusion Broadband is a solution for customers who do not have Internet access or have dial-up or DSL Internet service. You can take advantage of high speeds from America's fastest 4G network. The service will bring the power of our 4G LTE network to tablets, computers, laptops, gaming consoles and other Wi-Fi® capable devices as well as up to four wired Ethernet connected devices. . . . Customers can expect an average 5-12 Mbps for downloading and 2-5 Mbps for uploading"

[136] "Verizon 4G LTE Broadband Router with Voice," Verizon Wireless, *available at* ,http://www.verizonwireless.com/wcms/consumer/home-services.html?tab=2. "When you need high-speed Internet and phone connectivity at home or away, the Verizon 4G LTE Broadband Router with Voice has you covered."

[137] Chong Neguyen, "Verizon LTE 4G Broadband Router with Voice (MiFi Home) Review," *Gotta Be Mobile* (Oct. 21, 2013), *available at* http://www.gottabemobile.com/2013/10/21/verizon-4g-lte-broadband-router-voice-mifi-home-review/. "[T]he new 4G LTE Broadband Router with Voice, also branded as the *MiFi Home*, is not designed to be used as a truly mobile product. Instead, Verizon is showcasing its latest *MiFi Home* as an affordable, convenient way to either allow users to cut the cord with traditional home telephone and DSL lines, or bring fast broadband speeds to areas not wired for cable or DSL service, particularly customers living in rural geographies. . . . Voice calls are handled over Verizon's 2G network while data is piped through 3G and 4G LTE.." *Id.*

former company's plentiful 2.5 GHz spectrum and the latter company's subscriber base and rooftop installation expertise.[138]

5. Special rules favoring mobile ISPs will distort competition as advanced mobile services and Wi-Fi networks become potential substitutes.

As it considers whether to create a common regulatory framework, the Commission must anticipate that in the relatively near future, so-called "fixed" and "mobile" broadband Internet access networks will be both converging *and* competing. The Commission anticipated this in the National Broadband Plan, which stated that emerging advanced wireless services had the potential to be a substitute for and competitor with wireline broadband at lower speed tiers.[139] As the section above describes, the competition between 4G/LTE and at least low-end wireline offerings (e.g., DSL) is underway.

If anything, over the past four years both the deployment of high-speed 4G/LTE networks and advances in anticipated "5G" mobile broadband networks, together with the enhanced capacity of integrated Wi-Fi offload technologies (such as automated authentication and seamless session transfer), has made it clear that mobile carrier networks will be competing directly with fixed/wireline ISPs – and not only in underserved areas.

Mobile network speeds have increased dramatically since the Commission's last Open Internet proceeding.[140] In just a two-year span from 2012 to 2014, the Commission reported a

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[138] Phil Goldstein, "Sprint, Dish to launch trial of fixed TD-LTE service on 2.5 GHz in mid-2014," *FierceWireless* (December 17, 2013), *available at* http://www.fiercewireless.com/story/sprint-dish-launch-trial-fixed-td-lte-service-25-ghz-mid-2014/2013-12-17

[139] *Connecting America: A National Broadband Plan for Our Future*, GN Docket 09-51, at 41 (2010) ("National Broadband Plan"). The plan also recommends that the FCC "take specific steps to make more spectrum available to ease entry into broadband markets and reduce the costs for current wireless providers to offer higher-speed services that can compete with wireline offers for a larger segment of end-users" (see recommendation 4.1).

[140] In the Internet Access Services report released in June 2012, the Commission reported 4.3 million mobile connections capable of at least 6 Mbps download and 1.5 Mbps upload, which represented 3.6% of all mobile connections nationally at the time (Federal Communications Commission, *Internet Access Services: Status as of June 30, 2011*, Industry Analysis and Technology Division, Wireline Competition Bureau (June 2012) ("Internet Access Services Report"), at 21). According to the Commission's June 2014 report, there are now 52.3 million

1100 percent (twelvefold) increase in the number of mobile broadband connections with speeds well in excess of the current definition of "broadband" as 4 Mbps download and 1 Mbps upload. Moreover, in 2012 the Commission did not even report the number of mobile connections capable of at least 10 Mbps download.[141] In 2014, the Commission's *Internet Access Services Report* documented 38 million mobile connections capable of download speeds of at least 10 Mbps.[142] The latest *Internet Access Report* also documents that mobile broadband connections are increasingly comparable to DSL-based wireline broadband services. Approximately 45.8 percent of asymmetrical DSL connections nationally provide download speeds of at least 6 Mbps.[143] Mobile connections are not far behind, with 35.7 percent of all mobile connections are capable of at least 6 Mbps download.[144] Third-party field testing of mobile networks by *PC Magazine* also report robust mobile connection speeds.[145]

There have been media reports that the Commission may revisit its 4/1 Mbps definition of broadband in the near future, potentially proposing a new threshold of 10 Mbps download and 2.9 Mbps upload.[146] Based on the speed-testing results published by *PC Magazine*, the 4G/LTE offerings of most major U.S. mobile providers would continue to be considered broadband even if the Commission were to adopt the hypothetical new speed threshold. Of course, mobile

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mobile connections capable of at least 6 Mbps download and 1.5 Mbps upload, which represents 28.8% of all mobile connections nationally (Federal Communications Commission, *Internet Access Services: Status as of June 30, 2013*, Industry Analysis and Technology Division, Wireline Competition Bureau (June 2014)("Internet Access Services Report"), at 22).

[141] *Internet Access Services Report* (June 2012), at 31.

[142] *Id.* at 30.

[143] *Id.* at 30.

[144] *Id.* at 7.

[145] Sascha Segan and PCMag Staff, "Fastest Mobile Networks 2014," *PC Magazine* (June 11, 2014), *available at* http://www.pcmag.com/article2/0,2817,2459186,00.asp. The results are based on network speed tests in 30 major American cities. They reported the following average speeds for 4G/LTE service from the four mobile network operators: Verizon – download 19.6 Mbps, upload 9.3 Mbps; T-Mobile – download 16.8 Mbps, upload 9.7 Mbps; AT&T – download 11.9 Mbps, upload 6.3 Mbps; Sprint – download: 6.8 Mbps, upload 3.3 Mbps.

[146] Brian Fung, "The FCC may consider a stricter definition of broadband in the Netflix age," *Washington Post: The Switch* (May 30, 2014), *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2014/05/30/the-fcc-may-consider-a-stricter-definition-of-broadband-in-the-netflix-age/.

networks continue to have certain other limitations that make them imperfect substitutes for a high-capacity wireline service from a consumer perspective, including reliability and pricing (particularly due to data caps). Nonetheless, it is clear that fully built-out LTE networks (soon to be LTE Advanced networks with at least four times the capacity), coupled with extensive Wi-Fi offload, are no longer immature or low-capacity. The broadband ecosystem has changed radically since 2010. The Commission must consider a common regulatory framework with an eye to the future, not to the past.

C. The Commission has multiple sources of authority to enforce its Open Internet Rules on mobile Internet access irrespective of the authority used for fixed line Internet access.

The Commission has previously determined that establishing a common regulatory framework for all broadband access providers serves the public interest,[147] and we have made clear in this filing and others that Title II offers the best source of authority to achieve a comprehensive framework for strong network neutrality rules that protect against all harms and across all platforms. However, in addition to the strong authority available under Title II, the Commission has clear and independent authority under Title III of the Communications Act to adopt open Internet rules for mobile broadband service providers, including a non-discrimination rule and basic *Carterfone* protections against blocking. Thus, while the Commission should classify broadband Internet access over both fixed and mobile networks as a Title II service, the Commission could also rely on its concurrent authority under Title III to impose open Internet protections as public interest obligations on carrier use of spectrum.

[147] *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks,* WT Docket No. 07-53, Declaratory Ruling, 22 FCC Rcd 5901, 5902, 5925, paras. 55, 70 (*Wireless Broadband Declaratory Ruling)*. The Commission had previously emphasized technological neutrality and regulatory parity in the 2002 *Cable Modem Order*, the 2005 *Wireline Broadband Order* and the 2006 *Broadband over Power Lines Order*. *See Ex Parte* Letter by Free Press to Acting FCC Chairman Michael Copps, WC Docket No. 07-52 (April 3, 2009), at 2.

1. Title III provides independent and unequivocal authority to ensure the public interest in open and non-discriminatory Internet access over the public airwaves.

We strongly concur with the *NPRM*'s conclusion that Title III of the Communications Act provides an independent basis of "authority for the Commission to adopt open Internet rules for mobile broadband service providers."[148] Both the Supreme Court and other recent precedents have affirmed that Title III delegates "expansive powers" to the Commission, including a "comprehensive mandate to 'encourage the larger and more effective use of radio in the public interest.'"[149] As the *NPRM* observes, section 303(b) of the Act specifically gives the Commission wide-ranging authority, consistent with the public interest, to "[p]rescribe the nature of the service to be rendered by each class of licensed stations and each station within any class."[150] Reinforcing this authority, section 303(r) empowers the Commission to "[m]ake such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this chapter."[151]

The *NPRM* also correctly observes that public interest obligations on spectrum licensees (and on spectrum use more generally) can be adopted at any time and apply regardless of when or how a party acquired its license. Even after licenses are granted, section 316 of the Act authorizes "new conditions on existing licensees" "if in the judgment of the Commission such action will promote the public interest, convenience, and necessity."[152] As the *NPRM* states, the

[148] NPRM at ¶ 157.
[149] *CNBC v. United States*, 319 U.S. 190, 219 (1943) (quoting 47 U.S.C. § 303(g)); *see also Cellco Partnership*, 700 F.3d 534, 542 (D.C. Cir. 2012) (upholding the Commission's authority to require licensees to offer data roaming agreements on commercially reasonable terms and conditions).
[150] 47 U.S.C. § 303(b). *See also Cellco Partnership v. FCC*, 700 F.3d at 542.
[151] 47 U.S.C. § 303(r). *See also Cellco Partnership v. FCC*, 700 F.3d at 542.
[152] 47 U.S.C. § 316.

Commission may exercise this authority at any time on a license-by-license basis, or apply it generally through a rulemaking, "even if the affected licensees were awarded at auction."[153]

The Title III authority described in the *NPRM* is, of course, the Commission's longstanding position – and the same rationale and conclusion it reached in the *Open Internet Order*. There the Commission further noted that it had previously "required wireless licensees to comply with open Internet principles"[154] when it modified the service rules for 700 MHz band C Block licenses "to allow customers, device manufacturers, third-party application developers, and others to use or develop the devices and applications of their choosing . . . so long as they . . . comply with reasonable conditions related to management of the wireless network (*i.e.*, do not cause harm to the network)."[155]

The Commission should therefore have no difficulty, from a legal authority standpoint, in implementing strong network neutrality protections across both fixed and wireless platforms, as it would have not only clear authority under Title II through the reclassification of broadband Internet access as a Title II service, but also independent authority under Title III to enact similar rules.

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[153] NPRM at ¶ 156, citing 47 U.S.C. § 309(j)(6). *See, e.g.*, *Celtronix Telemetry v. FCC*, 272 F3d 585 (D.C. Cir. 2001) (stating that the Commission "always retained the power to alter the term of existing licenses by rulemaking" and finding that the Commission may exercise this authority even if the licenses were awarded at auction); *WBEN, Inc. v. U.S.*, 396 F.2d 601, 618 (2d Cir. 1968) (stating the Commission may modify licenses by rule making "when . . . a new policy is based upon the general characteristics of an industry"). *See also* 47 U.S.C. §§ 301, 304. Section 301 states that the Act provides for "use, under federally-issued licenses of limited duration, of channels of radio transmission," "but not the ownership thereof," and that "no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license." Section 304 states that "[n]o station license shall be granted by the Commission until the applicant therefore shall have waived any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise."

[154] Open Internet Order at ¶ 134.

[155] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands et al*., Second Report and Order, 22 FCC Rcd at 15363 (2007), ¶ 201.

2. If the Commission does not reclassify, it must consider if any particular Open Internet protections could be prohibited under Section 332

In its decision affirming the Commission's 2011 Mobile Data Roaming Order, the D.C. Circuit Court of Appeals specifically upheld the Commission's interpretation of its broad Title III authority and agreed it provided affirmative authority. Although the Commission had set forth alternative sources and theories for its authority, the court stated its own review would "begin—and end—with Title III" as authority for a data roaming mandate and rules.[156]

However, the court also found that because the Commission in 2007 classified commercial mobile broadband services as a "private" and not a "commercial" mobile service, "treatment of mobile broadband providers as common carriers would violate section 332."[157] Therefore, if the Commission does not decide to reclassify all "broadband Internet access service" as a telecommunications service (and thus mobile Internet access as a "commercial" broadband service), we urge the Commission to determine if Section 332(c)(2) would preclude any particular open Internet principle or protection as being tantamount to common carrier regulation.

Section 332(c)(2) provides that "a private mobile service shall not . . . be treated as a common carrier for any purpose under this chapter." Although the court in *Cellco* gave its own interpretation of what Congress may have intended, the Commission has never actually interpreted the definition and scope of what it means to be "treated as a common carrier" under Section 332(c)(2). Because the Commission determined that the data roaming rules did not rise to the level of a common carrier obligation – an interpretation ratified by the court in *Cellco* – the Commission did not need to consider whether Section 332(c)(2) prohibits *any* common carriage regulation, let alone whether very specific consumer protections imposed as licensing conditions

[156] *Cellco Partnership*, 700 F.3d at 541.
[157] *Verizon v. FCC*, 740 F.3d 623 (D.C. Circuit 2014), citing *Cellco*, 700 F.3d at 538. Section 332(c)(2) provides that "[a] person engaged in the provision of a service that is a private mobile service shall not, insofar as such person is so engaged, be treated as a common carrier for any purpose under this [Act]." 47 U.S.C. § 332(c)(2).

would amount to "treat[ing]" providers as "common carriers."[158] Indeed, nothing prevents the Commission from fully addressing the question of whether a "common carriage prohibition" exists at all, particularly with respect to what would be license conditions to protect consumers (and not the sort of carrier-to-carrier interconnection requirements adopted in the Data Roaming Order upheld in *Cellco*).[159]

The Commission took precisely this course when it overruled the Ninth Circuit and determined that cable modem service was an information service, not a telecommunications service. In *AT&T Corp. v. City of Portland*, the Ninth Circuit found that cable modem service was a telecommunications service as a matter of law.[160] The Ninth Circuit affirmed that holding when it reversed the *Cable Modem Order*.[161]

On Appeal the Supreme Court found that the FCC was free to interpret the statute without regard to the Ninth Circuit's opinion in *City of Portland*, and that this interpretation deserved deference. The Court found that because the Ninth Circuit had made its initial decision without the benefit of the agency's expert determination, the court's interpretation of the law was not binding on the agency.[162] The Court reasoned that Congress expressly delegated the interpretation of the statute to the expert agency, and the Ninth Circuit could not provide "the best" or "the only" possible interpretation absent the agency's express consideration of the

[158] *Data Roaming Order* at ¶66 ("we do not need to determine that a mobile service should be classified as CMRS"). This distinction appears to have been lost on the D.C. Circuit. *Compare Cellco Partners*, 700 F.3d at 545 ("The Commission concedes that, in keeping with *Midwest Video II*, it has no authority to treat mobile-data providers like Verizon as common carriers") *with Data Roaming Order* at ¶68 n.205 ("We also note that, although we do not treat non-interconnected commercial mobile data providers as common carriers here, Section 332 does not provide an absolute prohibition on imposing common carrier regulation on a provider of private mobile radio service.").
[159] *City of Arlington v. FCC*, 133 S. Ct. 1863, 1874, 185 L. Ed. 2d 941 (2013); *Brand X Internet Services v. FCC*, 454 U.S. 967 (2005).
[160] *AT&T Corp. v. City of Portland*, 216 F.3d 871 (9th Cir. 2000).
[161] *Brand X Internet Services v. FCC*, 345 F.3d 1120, 1128-32 (9th Cir. 2003).
[162] *Brand X*, 454 U.S. at 982-83.

meaning and scope of the statute.[163] A court's interpretation of a provision such as Section 332 is binding on the expert agency only where a statute is so unambiguous that no other possible interpretation is permissible.[164]

The Commission should follow the same course here that it followed in the *Cable Modem Order*. The D.C. Circuit's interpretation in *Cellco*, based entirely on a "concession" the Commission did not actually make, hardly constitutes the "best" or "only" interpretation of a statute the very same court describes as "ambiguous."[165] Given the vital importance of the common carriage prohibition not merely to this proceeding, but to the Commission's broadband policy generally, the Commission has an obligation to actually consider the meaning and applicability of Section 332(c)(2)'s statement that a provider of Private Mobile Radio Service (PMRS) "shall not, insofar as such person is so engaged, be treated as a common carrier." As the court in *Cellco* stated, "the Commission has significant latitude to determine the bounds of common carriage in particular cases."[166]

3. Open Internet protections should apply to broadband Internet access service operating on unlicensed spectrum and as a general condition in Part 15

Unlicensed spectrum is a free public good and it is entirely appropriate to ensure it is not used to end-run open Internet consumer protections. We suggest 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.[167] At a minimum, the definitions that determine any difference in the scope of open Internet protections

[163] *Id.* at 983-86.
[164] *Id.*
[165] *See Verizon v. FCC*, 740 F.3d at 651.
[166] *Cellco v. FCC*, 700 F.3d at 547.
[167] *See* 47 C.F.R. § 15.5, "General Conditions of Operation."

between different technologies or types of networks should state that a broadband connection over Wi-Fi, or any other incidental capabilities operating on unlicensed spectrum, 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.

This belt and suspenders approach to protecting open and non-discriminatory communication over the nation's free, public access spectrum will be increasingly important as fixed and mobile networks both converge (as described above) *and* as ISPs (both fixed and mobile) seamlessly incorporate unlicensed spectrum into their hetnets. 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.

With respect to "mobile" ISPs, it is critical that any lesser protections justified by the capacity of cells relying on licensed spectrum (whether by exemption or because of more flexible network management discretion) not be leveraged to deny consumers the *de facto* Internet freedom they enjoy today when communicating over public access (unlicensed) spectrum. The rules must ensure no possibility that a mobile carrier can both expropriate the free use of unlicensed spectrum and, by doing so, deny its customers the ability to freely communicate over public and shared bands that have only beneficial (and no adverse) impacts on the capacity or management of the underlying licensed carrier network.

a. Any "broadband Internet access service" over unlicensed frequencies should be defined as "fixed" and subject to the full scope of network neutrality protections

The Commission asks how the definitions of "fixed" and "mobile" services should be applied to a fixed broadband provider's commercially deployed Wi-Fi service.[168] With respect to regulatory classifications, it should make no difference if a subscriber to a "fixed" broadband Internet access service interfaces with the ISP's wireline access point over unlicensed spectrum (e.g., Wi-Fi). Whether Wi-Fi is used as wireless Ethernet in the home or outside the home, the characteristics of the ISP's network and service is no different. It 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.

The fact that the Commission asks this question suggests, as argued in the sections above, 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. Putting aside the fact that an increasing majority of end-user connections and data consumption is via "mobile stations" (laptops, netbooks, tablets, smartphones) that use unlicensed spectrum and Wi-Fi to reach "fixed" backhaul networks, this definitional dichotomy threatens to leave an increasing majority of communication over the Internet in limbo. For that and other reasons noted just above, we urge the Commission to amend Part 15 to include the strongest open Internet access conditions as General Conditions of Operation on unlicensed spectrum for any broadband Internet access service that is provided for a fee to third parties.

b. Strong open Internet protections should be among the General Conditions of Operation in Part 15 by only "broadband Internet access providers"

[168] NPRM at ¶ 62.

Whether or not the Commission adopts a common regulatory framework for "fixed" and "mobile" broadband Internet access, we urge the Commission, as part of this proceeding, to incorporate the strongest possible open Internet protections in Part 15 of the Commission's rules as a general condition of operation.[169] Since this condition can be limited to uses of unlicensed spectrum for commercial "broadband Internet access services," there should be no concern that it would impose any new restriction or burden on license-exempt access for individuals or other entities using unlicensed spectrum for any other commercial or non-commercial purposes.

D. What constitutes reasonable network management can vary depending on mobile network technology and capacity while adhering to a common regulatory framework and nondiscrimination standard

The *NPRM* tentatively concludes that the Commission will not apply its no unreasonable discrimination rule to mobile broadband providers, as it did in the 2010 *Open Internet Order*, based on considerations that include "operational constraints that put greater pressure on the concept of reasonable network management for mobile broadband services."[170] To the extent that the *NPRM* proposes to apply the "no blocking" protections to mobile services, the prohibition would be "subject to reasonable network management."[171] Alternatively, the *NPRM* requests comment on whether the Commission should "account for different characteristics of mobile service as a factor in its application of the commercially reasonable standard, subject to mobile providers' reasonable network management."[172]

We agree that regardless of its source of statutory authority, the Commission should apply its open Internet protections "subject to reasonable network management." In addition,

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[169] *See* 47 C.F.R. § 15.5, "General Conditions of Operation."
[170] NPRM at ¶ 140. *See* Open Internet Order at ¶¶ 93-98.
[171] NPRM, Appendix A, § 8.5, at 66. "A person engaged in the provision of mobile broadband Internet access service, . . . shall not block consumers from accessing lawful websites, subject to reasonable network management; nor shall such person block applications that compete with the provider's voice or video telephony services, subject to reasonable network management." *Id.*
[172] NPRM at ¶ 140.

OTI urges the Commission to go further and adopt a common regulatory framework that "tak[es] into account the particular network architecture and technology of the broadband Internet access service"[173] and applies this approach to both fixed and mobile carrier networks.

The *NPRM* offers no substantive reason why what it terms a highly "flexible" approach to reasonable network management is incapable of taking into consideration "the particular network architecture and technology" of *mobile* broadband providers just as it takes these same factors into consideration concerning *fixed* broadband providers using technologies and network architectures as divergent as fiber-to-the home, coaxial cable, DSL, satellite and fixed wireless over unlicensed spectrum (e.g., WISPs). The *NPRM* also fails to explain why a no-blocking prohibition, subject to reasonable network management, is feasible for video telephony applications (which are both high-bandwidth and latency-sensitive), but is somehow not feasible for other applications (except voice telephony). In fact, as discussed further below, with the full-scale deployment of advanced LTE networks, mobile carriers are in a far better position to manage their networks to accommodate both a no blocking rule and an "unreasonable discrimination rule" with a scope that is no different than the rule applied to satellite, unlicensed, wireline and other "fixed" networks. A "flexible" approach to defining "reasonable network management" can accommodate exceptions appropriate to different technologies and platforms (from satellite to fiber to cellular) without creating an arbitrary distinction and preference for "mobile" networks.

1. *It is feasible to implement non-discriminatory Internet access and open platform conditions on mobile networks, as Verizon's successful deployment of LTE on 700 MHz C Block spectrum has demonstrated*

There is nothing about the technology of today's increasingly prevalent 4G wireless data networks that should preclude compliance with open Internet protections, including the extension

[173] *Id.* at ¶ 61; Open Internet Order at ¶ 82; 47 C.F.R. § 8.11(d).

of basic *Carterfone* protections to mobile broadband Internet access networks. Although mobile 4G/LTE technologies have advanced considerably since 2010, they have evolved in a manner that make open platforms and a non-discrimination rule far more feasible to implement than the Commission anticipated four years ago. Indeed, Verizon Wireless ("America's largest and most reliable 4G LTE network")[174] has already been able to successfully and profitably deploy a nearly nationwide 4G network relying on 700 MHz C Block spectrum subject to openness conditions, a test case the *Open Internet Order* correctly identified as bearing on the feasibility of revisiting the extent to which open Internet protections could be extended to mobile providers.[175] And to the extent that temporary capacity limitations in a particular area or some other operational constraint creates a legitimate need to slow or prioritize certain traffic, the "reasonable network management" exception proposed by the Commission is flexible enough to account for differences in technology – just as the *Open Internet Order* anticipated for differences between fixed network technologies.

As the New America Foundation and other public interest commenters demonstrated in comments[176] and in an engineering report[177] filed in the Open Internet docket in 2010, it is technically feasible for the Commission to adopt open platform and non-discrimination rules that

[174] "For Best Results Use Verizon," Verizon Wireless, *available at* http://www.verizonwireless.com/wcms/consumer/4g-lte.html. Verizon advertises that its 4G network (which operates on 700 MHz C Block spectrum) is 100% LTE, covers 97% of the U.S. population ("2X the LTE coverage of any other network") and now has far faster peak speeds and higher capacity with the introduction of its "XLTE" upgrade. *Id.*

[175] Open Internet Order at ¶ 95. The open access license conditions that apply to the cornerstone of Verizon's "4G LTE" network has apparently not hobbled the carrier: Wall Street analysts report the company has the largest share of wireless industry revenues (38%) despite holding only 19% of the industry's spectrum capacity. *See* Jonathan Chaplin, et al., *What is Next for DISH?*, New Street Research (May 30, 2014), at 14.

[176] *See* Comments of New America Foundation, Columbia Telecommunications Corporation, Consumers Union, Media Access Project, and Public Knowledge, GN Docket No. 09-191, WC Docket No. 07-52 (filed Jan. 14, 2010) ("NAF/CTC Comments").

[177] *See* Andrew Afflerbach, Ph.D., P.E. and Matthew DeHaven, Columbia Telecommunications Corporation, "Any Device and Any Application on Wireless Networks: A Technical Strategy for Evolution" (Jan. 13, 2010), attached as Appendix A to NAF/CTC Comments ("*Any Device and Any Application*"), *available at* http://wirelessfuture.newamerica.net/sites/newamerica.net/files/profiles/attachments/NAF_CTC_NN_Comments.pdf.

put the choice of devices, applications, content, and services in the hands of consumers. That report, *Any Device and Any Application on Wireless Networks,* described how the same technologies in use in today's non-interoperable wireless environment can become almost completely interoperable within a relatively short timeframe,[178] assuming that the Commission adopts open Internet principles properly mandating such an evolution. The report also described the feasibility of application-neutral network management practices that can address problems of periodic congestion in particular cells or sectors primarily through demand-side pricing tiers and premium-service offerings that prioritize uses based on consumer choice, rather than discriminating among web-based content, applications, or services based on carrier preferences.

The report defined an "Any Application" environment as fundamentally application neutral: no data traffic receives different priority than any other, subject to the consumer's ability to purchase a premium or guaranteed level of service. Any prioritization or congestion management techniques should place such choices on the demand side, allowing consumers to make choices rather than permitting broadband Internet access service providers to make unreasonable network management choices or otherwise impede basic end-to-end Internet access service. The use of demand-side price discrimination on two levels – macro (charging more for more total consumption over a period of time) and micro (charging more for a guaranteed data rate that matches the customer's preference for application QOS) – were presented as examples of feasible traffic management practices consistent with the open Internet principles.[179]

Of course, the consumer-side prioritization suggested in our *Any Device and Any Application* study is not the only approach to reasonable network management that can reconcile the potential trade-offs between network congestion and quality of service. This trade-off

[178] *See* NAF/CTC Comments at 6; *Any Device and Any Application* at 36.
[179] *Any Device and Any Application* at 44-48.

becomes most acute – and credible as a rationale for exemption from open Internet protections – when considering applications or services that cannot tolerate delay or buffering, such as interactive video and VoIP or, in the near future, VoLTE.[180] The Commission could decide that a mobile carrier's policy of prioritizing latency-sensitive applications is "reasonable network management" provided, of course, that all reasonably similar applications and traffic are accorded equal priority, regardless of their affiliation or any other business arrangement with the mobile network provider. Although allowing ISPs – rather than consumers – to determine the prioritization among categories of applications and services is suboptimal, it would at least ensure a common regulatory framework of open platforms and non-discrimination that would protect consumers and create incentives for mobile providers to expand capacity to a far greater degree than would a preferential exemption from the rules.

2. The exception for 'reasonable network management' should be defined flexibly, but must also include a per se violation for discriminatory treatment of edge providers within the same category of service regardless of any competing provider offering

As noted just above, it is entirely feasible for the Commission to adopt a common regulatory framework that also allows network providers to engage in "reasonable network management" practices that could vary to accommodate legitimate differences in technology, capacity and operating constraints. We agree with the approach described in the *Open Internet Order*, which stated that "in determining whether a network management practice is reasonable, the Commission will consider technical, operational, and other differences between wireless and other broadband Internet access platforms, including differences relating to efficient use of

[180] As the NPRM observes, mobile broadband providers using Voice over LTE (VoLTE) technology have the ability to "deliver VoLTE traffic with higher priority than other typies of traffic sharing the same LTE channel" and that this might even be necessary to ensure quality of service. NPRM at ¶ 52, n. 117.

spectrum."[181] The *Order* then "conclude[s] that our definition of reasonable network management is flexible enough to accommodate such differences" between mobile and fixed networks, yet the Commission nevertheless limited its no-blocking prohibition, as applied to mobile networks, to web browsing and to voice and video telephony.[182]

We urge the Commission to go further than protecting applications that compete with a mobile provider's voice and video telephony services. The approach taken in the *Open Internet Order* should be extended to all mobile network applications, content and services, regardless of whether it is voice or video telephony, and regardless of whether it competes with a comparable provider offering. The Commission's open Internet rules should state explicitly that a network management practice that either prioritizes or degrades the functionality of one or more edge providers, while treating comparable traffic differently, should be a *per se* violation. Even if the Commission determines that quality of service prioritization could be a reasonable mobile network management practice (e.g., to ensure latency-sensitive applications function as expected), any disparate treatment of comparable or competing applications, content or services must be considered unreasonable on a *per se* basis.

E. The commission should at a minimum expand the scope of the no-blocking rule to include all devices, applications or services consistent with the successful 700 MHz C Block open platform conditions

In the *NPRM*, as in its *Open Internet Order*, the Commission proclaims that "the freedom to send and receive lawful content and to use and provide applications and services without fear of blocking is essential to the Internet's openness and to competition in adjacent markets such as voice communications and in video and audio programming."[183] The *Open Internet Order*

[181] Open Internet Order at ¶ 103.
[182] *Id.*
[183] NPRM at ¶ 89.

further observed that since its seminal *Carterfone* decision, "[t]he Commission has long protected end users' rights to attach lawful devices that do not harm communications networks."[184] Accordingly, the *NPRM* proposes to adopt the text of the no-blocking rule in the *Open Internet Order* – yet it fails to extend this most minimal and basic consumer protection to "mobile" broadband providers.

We urge the Commission to adopt a no-blocking rule that is platform and technology neutral, subject to reasonable network management. As noted above, Verizon Wireless has successfully and profitably deployed its nationwide 4G/LTE network relying on 700 MHz C Block spectrum subject to *Carterfone*-like open platform conditions, a test case the *Open Internet Order* correctly identified as bearing on the feasibility of revisiting the extent to which open Internet protections could be extended to mobile providers.[185] When Verizon blocked competing tethering applications on its LTE network, the Commission fined the company $1.25 million.[186] And yet, although it must now permit tethering (and other non-harmful applications), Verizon's LTE network operating on this open access spectrum remains robust and highly profitable. Indeed, Wall Street analysts report the company has the largest share of wireless industry revenues (38 percent) despite holding only 19 percent of the industry's spectrum capacity.[187]

We have no doubt that just like tethering apps – and just like AT&T's failed attempt to block Apple's Facetime app on the iPhone – the extension of the full scope of the Commission's no blocking prohibition to mobile carriers will prove to be entirely feasible.

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[184] Open Internet Order at ¶ 62, n. 196, and citing *Use of the Carterfone Device in Message Toll Telephone Service*, 13 FCC 2d 420, 424 (1968); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Final Decision, 77 FCC 2d 384, 388 (1980); *see also* Kevin Werbach, "The Federal Computer Commission," 84 *North Carolina Law Review*, 1, 21 (2005).
[185] Open Internet Order at ¶ 95.
[186] NPRM at ¶ 41.
[187] *See* Jonathan Chaplin, et al., *What is Next for DISH?*, New Street Research (May 30, 2014), at 14.

VI. Conclusion

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. We urge the Commission to craft new rules that protect against the full scope of harms described above, 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. Implementing legally sound rules that achieve meaningful network neutrality protections requires reclassifying broadband Internet access services under Title II of the Telecommunications Act, which would allow the Commission to protect against the full scope of harms and implement clear, bright-line rules. The new rules must also be technology neutral and apply to all broadband Internet access service providers, whether fixed or mobile. 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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