
**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

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

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

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To: The Commission

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION[®]

CTIA – The Wireless Association[®] (“CTIA”) responds to the Federal Communications Commission’s (“Commission’s”) Notice of Proposed Rulemaking¹ seeking comment on how it should proceed in the wake of the U.S. Court of Appeals for the District of Columbia Circuit’s decision in *Verizon v. FCC*² and the Wireline Competition Bureau’s Public Notice seeking to refresh the record in the *Framework for Broadband Internet Service* docket.³

CTIA and its members are committed to delivering an open mobile Internet, and are proud that the U.S. mobile wireless industry continues to deploy world-leading mobile broadband networks, enabling a diverse array of operating systems, devices, and innovative applications and services that consumers are adopting and using at an exponential pace.

¹ *Protecting and Promoting the Open Internet*, Notice of Proposed Rulemaking, 29 FCC Rcd 5561 (2014) (“Notice”).

² *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014). See *New Docket Established to Address Open Internet Remand*, Public Notice, 29 FCC Rcd 1746 (rel. Feb. 19, 2014).

³ *Wireline Competition Bureau Seeks to Refresh the Record in the 2010 Proceeding on Title II and Other Potential Legal Frameworks for Broadband Internet Access*, GN Docket No. 10-127, Public Notice, DA 14-748 (rel. May 30, 2014), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0530/DA-14-748A1.pdf (“Broadband Framework PN”).

The wireless and wired broadband markets have flourished under the Commission’s carefully balanced approach, and the Commission should retain that framework going forward. Importantly, the Commission has correctly recognized the multiple factors that warrant a unique and flexible approach to mobile broadband services. From that basic foundation, the Commission should:

- Recognize that competition in the U.S. mobile broadband market is delivering an open mobile Internet, providing world-leading mobile broadband networks, and creating an innovative mobile ecosystem that benefits U.S. consumers and businesses;
- Acknowledge the technical, operational, economic, developmental and other factors that continue to make mobile wireless services different and warrant a mobile-specific regulatory approach; and
- Decline invitations to apply backward-looking Title II public utility regulation, which would undercut investment, stifle innovation, and give rise to great uncertainty, all of which would harm consumers.

I. INTRODUCTION AND SUMMARY

Nearly four years ago, in the *Open Internet Order*,⁴ the Commission rejected calls for imposing Title II mandates on broadband networks and concluded that mobile broadband services differed in critical ways from their fixed analogues, and thus warranted mobile-specific regulatory treatment. In particular, the Commission recognized that mobile broadband services were flourishing in a competitive marketplace, were evolving in dynamic fashion, and presented unique technical issues not applicable to fixed services. For these reasons, the *Open Internet Order* subjected mobile broadband to the transparency rule but applied only a limited version of the no-blocking rule and exempted mobile broadband services entirely from its nondiscrimination mandate.⁵

⁴ *Preserving the Open Internet*, Report and Order, 25 FCC Rcd 17905 (2010) (“*Open Internet Order*”), *rev’d in part Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

⁵ See *Open Internet Order*, 25 FCC Rcd at 17962 ¶ 104.

Since then, the mobile broadband marketplace has continued to thrive as providers race to meet consumers' demands. Competing providers have deployed 4G networks at a breakneck pace, have rolled out new offerings and service plans, and have maintained network openness. Indeed, there have been no demonstrated consumer harms in the mobile ecosystem, notwithstanding the *Open Internet Order*'s light touch-approach to mobile services. Instead, U.S. consumers have increased their adoption and usage of mobile broadband services at an exponential pace, and have embraced the profusion of new applications and services that have developed since the Commission first adopted its *Open Internet Order*. That same regulatory framework has also helped facilitate over 90 billion dollars in investment by providers in advanced wireless networks since 2010,⁶ and billions more in investment by application providers, vendors, and device manufacturers.

Throughout, mobile broadband providers have repeatedly and publicly committed to preserving an open Internet. In the mobile broadband marketplace, competition and the (still-in-effect) open Internet transparency rule work together to deter any harmful practices, as no provider wants to adopt practices that could be deemed objectionable in the court of public opinion and drive customers to their competitors.

Against this backdrop, if the Commission takes any additional action here it should continue to recognize that mobile wireless networks are fundamentally different – given their unique technical, operational, and other characteristics – and retain the light-touch mobile broadband rules reflected by the *Open Internet Order*. The *Notice* appropriately proposes to take this course – it tentatively concludes that the Commission should again limit application of the

⁶ See Robert Roche and Liz Dale, *CTIA's Wireless Industry Indices, Annual Wireless Survey Results: A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry*, rel. June 2014, at p. 96, Table 29.

no-blocking rule as it applies to mobile broadband, and that mobile services should be excluded from the successor to 2010's nondiscrimination rule.⁷ CTIA agrees. There is no legal or factual basis to radically depart from the regulatory approach the FCC adopted in 2010. To this end, these comments make the following points:

- The U.S. wireless industry is committed to an open mobile Internet and to delivering value to consumers. Competition in the market for mobile broadband services continues to drive investment, innovation, and value, as evidenced by a marketplace teeming with successful third-party applications and devices and the absence of any demonstrated harm relating to mobile broadband practices. These facts call for retaining a mobile-specific light-touch approach to regulation.
- The mobile broadband ecosystem faces unique technical and operational issues arising from limited spectrum resources and the challenges of mobility, rendering network management over finite spectrum resources especially important. This too calls for a mobile-specific light-touch approach.
- To the extent that the Commission adopts additional rules, it should adhere to the course it set in the *Open Internet Order* with respect to mobile broadband services: It should limit any blocking restrictions to lawful websites and applications that compete with the mobile provider's voice or video telephony offerings; it should refrain from applying any successor to the nondiscrimination requirement to mobile services; and it should retain, but not expand, the existing transparency rule.
- The Commission cannot subject mobile broadband providers to Title II, because mobile broadband is a "private mobile service" under Section 332 of the Act, and that provision bars the Commission from applying common carrier requirements to such services under any circumstances. Moreover, there is no factual predicate for any broadband "reclassification," and Congress has made clear its intention that wireless services be subjected to a light touch.
- Application of Title II to broadband services would undercut investment and innovation and give rise to great uncertainty, all of which will harm consumers and the Commission's broader objectives.

The Commission should proceed cautiously, consistent with its own factual and legal findings, to ensure that mobile broadband services can continue to serve customers' evolving

⁷ Notice, 29 FCC Rcd at 5583 ¶ 62.

needs, and that the American mobile wireless sector remains the envy of the world. Indeed, this remarkable innovation and growth from the infrastructure suppliers, to the carriers' networks, to the handset developers, to the applications and content creators, did not happen by chance. It was the product of an investment-friendly regulatory environment. Countries and companies around the world are attempting to find ways to replicate the environment that has led to such significant mobile investment and innovation and that has placed the United States squarely in the lead of the mobile revolution. To ensure continued expansion of opportunities for U.S. consumers, the Commission should continue to provide the entire mobile ecosystem with the incentive and flexibility to innovate, experiment, invest, and enhance their networks and services.

II. THE U.S. MOBILE BROADBAND MARKET IS CHARACTERIZED BY INTENSE COMPETITION, ROBUST INVESTMENT, AND RAMPANT INNOVATION, ALL OF WHICH BENEFIT CONSUMERS

Beyond the industry's commitment to and track record of openness, the competitive, innovative mobile broadband ecosystem has irrevocably embraced Internet openness, and these principles have become part of consumer expectation and carrier behavior. The facts overwhelmingly demonstrate that U.S. mobile broadband providers compete aggressively to acquire and serve consumers. In order to do so, they constantly must invest and innovate to attract and retain customers. In this marketplace, mobile broadband providers must maintain and promote openness on their networks, for if they do not, their customers will choose a competitor's offering instead. Thus, competition has promoted and will continue to promote innovation and openness on the mobile Internet, even in the absence of prescriptive open Internet rules. Consumers are benefiting from this investment, innovation, and competition, as evidenced by the continued and rapid growth in mobile broadband adoption and usage, and the emergence of a mobile ecosystem that is the envy of the world.

A. Competition in the U.S. Mobile Broadband Market Continues to Drive World-Leading Investment and Deployment to the Benefit of U.S. Consumers.

The United States is the global leader in mobile broadband. Providers compete on the basis of their networks, service quality, plans and services, and rates. This market, in turn, embraces dynamic growth throughout the ecosystem, including apps and devices.

Mobile Broadband Availability. According to the Commission's most recent *Mobile Competition Report*, 82 percent of U.S. consumers have access to service from four or more mobile broadband providers, nearly 92 percent of U.S. consumers have access to three or more mobile broadband providers, and nearly 98 percent of consumers have access to two or more.⁸ In terms of LTE coverage, AT&T's network now covers 290 million POPs, Sprint's covers 225 million POPs, T-Mobile's covers 230 million POPs, and Verizon's covers 306 million POPs.⁹ Regional providers offering LTE-based service across markets that are home to millions include U.S. Cellular, Appalachian Wireless, Bluegrass Cellular, Cellcom, Chariton Valley, Chat Mobility, Cross Wireless, Custer Telephone Cooperative, Inc., Mid-Rivers Wireless, MTA Wireless, Pioneer Cellular, Thumb Cellular, NorthwestCell, and Strata Networks. Additional

⁸ *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Sixteenth Report, 28 FCC Rcd 3700, 3749-50 ¶ 48 & tbl.8 (2013).

⁹ See AT&T, Press Release, *AT&T Provides Update on Network Transformation, Second-Quarter Trends and Full-Year 2014 Financial Guidance* (June 3, 2014), available at http://about.att.com/story/att_provides_update_on_network_transformation_second_quarter_trends_and_full_year_2014_financial_guidance.html; Sprint, Press Release, *Sprint Accelerates Progress on America's Newest Network, Delivering Faster 4G LTE Speeds to 225 Million People and 41 New Cities* (Apr. 29, 2014), available at <http://newsroom.sprint.com/news-releases/sprint-accelerates-progress-on-americas-newest-network-delivering-faster-4g-lte-speeds-to-225-million-people-and-41-new-cities.htm>; Phil Goldstein, *T-Mobile passes Sprint with 230M LTE POPs while Verizon dominates with 306M LTE POPs*, FIERCEWIRELESS, July 1, 2014, available at <http://www.fiercewireless.com/story/t-mobile-passes-sprint-230m-lte-pops-while-verizon-dominates-306m-lte-pops/2014-07-01>; Verizon Commc'ns Inc., Quarterly Report (Form 10-Q) at 20 (Apr. 24, 2014), available at <http://www.verizon.com/investor/secfiling.htm>.

companies offering or constructing LTE networks include Carolina West Wireless, Copper Valley Telecom, C Spire, KPU (Ketchikan Public Utilities), Nemont Wireless, Ntelos, and S and R Communications.¹⁰

Mobile Broadband Investment. Mobile providers invested more than \$33 billion in their networks in 2013 – four times more per subscriber than the rest of the world.¹¹ And, the annual investments by the wireless industry exceed those of the country’s major oil and gas and auto companies.¹² The wireless industry’s investments have produced generation after generation of cutting-edge networks, offering increasingly higher data speeds and greater throughput. The integration of mobile broadband services into new sectors – such as education, health, transportation, and energy – promises additional opportunities for investment and innovation.

Mobile Broadband Offerings. Mobile broadband providers in this country offer a wide variety of plans and services, including a broad range of data tiers, price points, and service

¹⁰ See e.g., Appalachian Wireless, *4G LTE – Frequently Asked Questions*, <http://www.appalachianwireless.com/?page=ltefaq> (last visited July 12, 2014); Bluegrass Cellular, *In the News*, <http://bluegrasscellular.com/about/news> (last visited July 12, 2014) (multiple listings of expanding LTE coverage); *Carolina West starts 4G buildout*, WILKES J. PATRIOT, Feb. 7, 2014, http://www.journalpatriot.com/news/article_e0100442-9021-11e3-9bc6-0017a43b2370.html; see also Joan Engebretson, *Thirteenth Verizon Rural LTE Network Turned Up*, *Courtesy of Matanuska*, TELECOMPETITOR, Sept. 5, 2013, <http://www.telecompetitor.com/thirteenth-verizon-rural-lte-network-turned-courtesy-matanuska>; Pioneer Cellular, Press Release, *Pioneer Cellular has announced the expansion of 4G LTE service into five additional markets including Alva, Canton, Fairview, Okeene and Woodward* (Apr. 1, 2013), available at http://www.ptci.com/index.php?press-releases&a=view&article_id=134; Scott Webster, *U.S. Cellular leans further into LTE in 2014*, CNET, Apr. 8, 2014, <http://www.cnet.com/news/u-s-cellular-details-major-4g-lte-expansion-plans> (U.S. Cellular plans to expand coverage in 13 states and have 4G speeds in more than 93 percent of its network before the year is out).

¹¹ DIDIER SCÉMAMA, ET AL., 2014 WIRELESS CAPEX: BRICS & EUROPE TO PICK UP THE SLACK, BANK OF AMERICA MERRILL LYNCH, GLOBAL TELECOM EQUIPMENT, TABLE 2 (2014).

¹² See WHITE HOUSE OFFICE OF SCI. AND TECH. POLICY & THE NAT’L ECON. COUNCIL, FOUR YEARS OF BROADBAND GROWTH 2 (2013), available at http://www.whitehouse.gov/sites/default/files/broadband_report_final.pdf.

configurations. These offerings are constantly evolving, offering more value and better pricing.¹³ This intense price competition has resulted in declining prices for consumers, with wireless data prices dropping a whopping 93 percent from 2008 to 2012.¹⁴ Given these favorable prices, it is unsurprising that Americans consume twice as much mobile data as their counterparts in the European Union.¹⁵

Mobile Broadband Ecosystem. The thriving U.S. mobile broadband marketplace has made the United States the hub of the mobile ecosystem. The wireless industry in the U.S. directly or indirectly employs more than 3.8 million Americans, which accounts for 2.6% of all

¹³ See, e.g., AT&T, Press Release, *AT&T's Best-Ever Pricing for Families* (Feb. 11, 2014), available at http://about.att.com/newsroom/espionage_for_best_ever_pricing_for_families_feb.html#sthash.uQ5n1wC.dpuf (announcing a pricing plan offering families 10 GB of data plus unlimited talk and text on four lines for \$160 a month); Sprint, Press Release, *Sprint Introduces One Big Happy Family in New Advertising Campaign* (Jan. 17, 2014), available at <http://newsroom.sprint.com/news-releases/sprint-introduces-one-big-happy-family-in-new-advertising-campaign.htm> (introducing “Framily” plan, allowing friends and family to obtain 1 GB of data plus unlimited talk and text for as little as \$25 per month); T-Mobile, Press Release, *T-Mobile Delivers Contract Freedom for Families By Paying Off Early Termination Fees* (Jan. 8, 2014), available at <http://newsroom.t-mobile.com/news/t-mobile-delivers-contract-freedom-for-families-by-paying-off-early-termination-fees.htm> (announcing an offer to pay the early termination fees incurred by customers switching to its offerings, as well as pay for the devices these customers had used to access rivals’ networks); Verizon, Press Release, *MORE Everything Gives Customers More From Their Wireless Plans* (Feb. 13, 2014), available at <http://www.verizonwireless.com/news/article/2014/02/more-everything-plans.html> (introducing “MORE Everything” plan, which increases data allowances, adds unlimited international messaging, and provides cloud storage for every account-holder, all without any change in rate).

¹⁴ CTIA, THE U.S. WIRELESS INDUSTRY: LEADING THE WORLD IN INVESTMENT, VALUE, INNOVATION, AND COMPETITION 10 (2013) (“*Leading the World*”), attached to Ex Parte Letter from Scott K. Bergmann, CTIA, to Honorable Thomas E. Wheeler, Chairman, FCC, GN Docket No. 09-51, WT Docket No. 13-135 (Nov. 13, 2013), available at <http://apps.fcc.gov/ecfs/document/view?id=7520957610>.

¹⁵ *Id.* at 11.

U.S. employment.¹⁶ In addition, the two leading mobile app marketplaces, the Apple App Store and the Google Play Marketplace, each offer more than 1 million apps,¹⁷ and analysts expect mobile app downloads worldwide to exceed 139 billion this year.¹⁸

The market for mobile broadband devices is also intensely competitive. There are over 790 different handsets and devices on sale in the U.S., built by more than 50 different manufacturers.¹⁹ Consumers can seek the best prices on these devices from a variety of sales channels, including carriers, the manufacturers themselves, and third-party retail outlets such as Best Buy, RadioShack, Wal-Mart, Target, and others. While smartphone penetration continues to grow²⁰ Americans also access mobile broadband services through more than 100 different types of tablets.²¹

These many wireless devices run on more than a dozen different OSs, including Android, Blackberry, Firefox, iOS, and Windows Phone. The two industry leaders, Android and iOS,

¹⁶ ROGER ENTNER, RECON ANALYTICS, *THE WIRELESS INDUSTRY: THE ESSENTIAL ENGINE OF U.S. ECONOMIC GROWTH 1* (2012), available at <http://reconanalytics.com/wp-content/uploads/2012/04/Wireless-The-Ubiquitous-Engine-by-Recon-Analytics-1.pdf>. In addition, wireless employees are paid 65% higher than the national average for other workers. *Id.* at 22.

¹⁷ See Nathan Ingraham, *Apple announces 1 million apps in the App Store, more than 1 billion songs played on iTunes radio*, THE VERGE, Oct. 22, 2013, available at <http://www.theverge.com/2013/10/22/4866302/apple-announces-1-million-apps-in-the-app-store>.

¹⁸ Gartner, Press Release, *Gartner Says Mobile App Stores Will See Annual Downloads Reach 102 Billion in 2013* (Sept. 19, 2013), available at <http://www.gartner.com/newsroom/id/2592315>.

¹⁹ *Leading the World* at 15.

²⁰ Smartphones accounted for almost 93% of handsets sold in the United States in the first quarter of 2014. See Chetan Sharma, *US Mobile Market Update – Q1 2014* (June 2, 2014), available at <http://www.chetansharma.com/blog/2014/06/02/us-mobile-market-update-q1-2014/>.

²¹ *Leading the World* at 15-16.

have traded the leading position by sales market share several times in the past several years.²² The relative market share of each of these OSs has shifted dramatically in that time period.

Consumer Adoption and Usage of Mobile Broadband. The investment, innovation, and competition that characterize the mobile wireless ecosystem continue to benefit U.S. consumers and businesses, as evidenced by the world-leading adoption of mobile broadband and the ever-increasing usage of mobile broadband services.

Indeed, the U.S. is the runaway global leader in 4G deployment: with just 5 percent of the world's wireless connections, we have almost *half* of all LTE connections worldwide.²³ At the end of first quarter 2014, there were 112 million LTE connections in the U.S., representing 30 percent of the total U.S. mobile market.²⁴ Ericsson predicts that LTE will represent the majority of North American subscriptions in 2015 and 85 percent of subscriptions in 2019.²⁵

Similarly, consumer usage continues to expand exponentially. In 2013, U.S. wireless providers handled more than 3.2 trillion megabytes (MB) of usage, a 120 percent increase from the previous year and a 732 percent increase since the FCC's *Open Internet Order* was adopted in 2010. According to Cisco, Ericsson, and other research firms, data usage in the year 2018 will

²² Ben Lovejoy, *iOS/Android market share vs. installed base visualized*, 9TO5MAC, Jan. 10, 2014, <http://9to5mac.com/2014/01/10/nope-android-doesnt-represent-80-percent-of-the-smartphone-market>.

²³ *Leading the World* at 5.

²⁴ 4G Americas, News Release, *LTE Hits 30% Share of Cellular Market in North America* (June 5, 2014), available at <http://www.4gamericas.org/index.cfm?fuseaction=pressreleasedisplay&pressreleaseid=5645>.

²⁵ ERICSSON, ERICSSON MOBILITY REPORT ON THE PULSE OF THE NETWORKED SOCIETY 8 (2014), available at <http://www.ericsson.com/mobility-report> ("*Ericsson Mobility Report*").

be 383 times the traffic delivered in 2008.²⁶ Given these patterns, it is not surprising that a McLaughlin & Associates and Penn Schoen Berland 2013 survey reflects that 91 percent of wireless customers remain “highly satisfied” with their wireless service.²⁷

B. The U.S. Mobile Broadband Market Embraces Internet Openness.

Mobile broadband providers are committed to an open Internet. Moreover, protections such as the transparency requirement, which applies to mobile providers and remains in effect, guarantee that consumers are able to learn about providers’ practices and make their market decisions accordingly. This dynamic has helped ensure an open mobile Internet, even absent a nondiscrimination rule or an all-encompassing no-blocking mandate.

Mobile broadband providers have publicly and repeatedly confirmed their commitment to open networks. CTIA emphasized that the recent D.C. Circuit decision “does nothing to temper CTIA members’ long-standing commitment to an open Internet and a vibrant wireless ecosystem because that’s what wireless customers demand.”²⁸ Individual mobile carriers also reaffirmed their commitment to Internet openness following the court’s decision. For example:

- AT&T stated that it “has been committed to the open Internet since [its] endorsement of the FCC’s statement of Internet freedoms in 2004,” and confirmed that its “commitment to protect and maintain an open Internet will not change.”²⁹

²⁶ See CTIA, ANNUAL YEAR-END 2013 TOP-LINE SURVEY RESULTS 2 (2013), available at http://www.ctia.org/docs/default-source/Facts-Stats/ctia_survey_ye_2013_graphics-final.pdf?sfvrsn=2.

²⁷ MCLAUGHLIN & ASSOCS. & PENN SCHOEN BERLAND, 2013 ANNUAL CONSUMER SURVEY, available at <http://www.mywireless.org/media-center/data-center/2013-national-survey>.

²⁸ Steve Largent, *CTIA Statement on the D.C. Circuit Court’s Decision on Net Neutrality*, CTIA BLOG, Jan. 14, 2014, <http://blog.ctia.org/2014/01/14/ctia-net-neutrality>.

²⁹ J. Cicconi, *AT&T Statement on the U.S. Court of Appeals D.C. Circuit Open Internet Decision*, AT&T PUBLIC POLICY BLOG, Jan. 14, 2014, <http://www.attpublicpolicy.com/fcc/att-statement-on-the-u-s-court-of-appeals-d-c-circuit-open-internet-decision>.

- Sprint said that it “has always supported an open Internet for its customers, and the developers and device manufacturers with which it partners, and we do not anticipate changing that support because of the court’s ruling.”³⁰
- Verizon stated that “One thing is for sure: [the court’s] decision will not change consumers’ ability to access and use the Internet as they do now.” It made clear that the company “remains committed to the open Internet,” and that “[t]his will not change in light of the court’s decision.”³¹

Mobile broadband providers also have publicly published policies supporting Internet openness. For example, Verizon’s policy states that “on any of our Internet access services, wireline or wireless, you and other users of our service can access and use the legal content, applications, and services of your choice, regardless of their source.”³² Similarly, Sprint’s Open Internet policy makes clear that access to lawful content is only limited when needed to protect end users against spam, phishing, viruses, and other threats, and that Sprint-branded applications “are treated just like any other data application on the network and traffic from these applications is subject to the same congestion management controls as any other Internet traffic.”³³ T-Mobile’s online policy sets forth detailed information regarding speeds, latency, network management practices, security measures, and other matters, and states “T-Mobile does not block lawful traffic based on content or subject” unless a customer has requested such

³⁰ Jonathan Make & Jimm Phillips, *Immediate Change to ISPs’ Data Policies Seen Unlikely Post-Net Neutrality Ruling*, COMM. DAILY, Jan. 23, 2014.

³¹ Verizon, Press Release, *Open Internet Ruling: No Change for Consumers’ Ability to Access and Use the Internet* (Jan. 14, 2014), available at <http://newscenter.verizon.com/corporate/news-articles/2014/01-14-verizon-reiterates-commitment-to-open-internet>.

³² Verizon, *Verizon’s Commitment to Our Broadband Internet Access Customers*, <http://responsibility.verizon.com/broadband-commitment> (last visited July 13, 2014).

³³ Sprint, *Open Internet Information*, http://www.sprint.com/legal/open_internet_information.html (last visited July 13, 2014).

blocking.³⁴ AT&T also sets forth detailed performance characteristics and emphasizes that it “does not favor certain Internet applications by blocking, throttling or modifying particular protocols, protocol ports, or protocol fields in ways not prescribed by the protocol standards.”³⁵

The openness of the mobile Internet shows the error of detractors who called for more burdensome regulation back in 2010. For example, Free Press argued that mobile Internet access providers should be subject to the same nondiscrimination requirements as fixed network providers, because “any differences in the regulatory paradigms will likely translate into different network operator behavior, triggering frustration and broken expectations when some applications work through Wi-Fi to a home network, but stop working or are deliberately throttled when the device is connected to a mobile network.”³⁶ What Free Press condemns as “different network operator behavior,” however, the Commission should applaud as competition. In 2010, the Commission wisely declined to heed Free Press’s recommendation, and helped usher in four more years of rapid innovation, investment, and untold new consumer opportunity.

By any measure, then, the U.S. mobile broadband marketplace is an intensely competitive ecosystem that is bringing ever-increasing value to the mobile broadband consumer.

³⁴ T-Mobile, *Company Information: Consumer – Internet Services*, http://www.t-mobile.com/company/companyinfo.aspx?tp=Abt_Tab_ConsumerInfo&tsp=Abt_Sub_InternetServices (last visited July 13, 2014).

³⁵ AT&T, *Broadband Practices: Network Practices*, <http://www.att.com/gen/public-affairs?pid=20879> (last visited July 13, 2014).

³⁶ Reply Comments of Free Press, GN Docket No. 09-191, at 22 (Apr. 26, 2010).

III. MOBILE WIRELESS BROADBAND REMAINS FUNDAMENTALLY DIFFERENT GIVEN ITS UNIQUE TECHNICAL, OPERATIONAL, AND OTHER CHARACTERISTICS

In the 2010 *Open Internet Order*, the Commission recognized that mobile networks’ “operational constraints” differ from those of fixed broadband networks.³⁷ The technical, operational, and other factors that warranted a different regulatory approach to mobile broadband services then continue to apply today.

For example, wireless networks rely on increasingly scarce spectrum resources, are dependent on government for allocation of those resources, and are subject to unique capacity constraints. Moreover, the mobile nature of the wireless consumer base creates unique challenges for network operators. In addition, the integration of devices into wireless broadband networks has no counterpart in the wireline world. As a result of these technical realities, wireless network management is performed in a complex and constantly evolving manner far different from fixed-line operations to ensure a quality user experience. Indeed, the nature of mobile service makes it particularly sensitive to congestion and interference, and network management performs a crucial function to optimize services in the face of growing demand and wireless usage.

Further, the Commission was correct in its 2010 assessment that the mobile broadband ecosystem would continue to evolve rapidly. The ability of wireless ecosystem participants to develop and manage services has resulted in numerous innovative and highly popular product and service offerings, and a marketplace that continues to evolve. For these reasons, any Commission attempt to set network management rules through regulation will always be one innovation away from obsolescence at best, and a hindrance to innovation at worst. These

³⁷ *Open Internet Order*, 25 FCC Rcd at 17957 ¶ 95.

constraints create challenges that are unique to mobile broadband networks, and additional open Internet regulations would only undermine consumer welfare instead of enhancing it, while stifling the continued development of innovative new services.

A. Mobile Networks Rely on Government Allocation of Limited Spectrum Resources.

A key distinguishing factor for mobile wireless broadband providers is that they cannot simply “build their way out” of capacity constraints. Wireless networks, unlike wired networks, are reliant on access to spectrum – a resource that is finite and increasingly scarce. As Chairman Wheeler has observed: “Spectrum is a finite public resource, and ... [t]wenty-first century consumers in both rural and urban areas of our country have a seemingly insatiable appetite for wireless services, and thus, for spectrum.”³⁸ U.S. mobile providers have responded in part by

³⁸ Chairman Tom Wheeler, *Getting the Incentive Auction Right*, FCC BLOG, Apr. 18, 2014, available at <http://www.fcc.gov/blog/getting-incentive-auction-right>. See also Prepared Remarks of FCC Acting Chairwoman Mignon L. Clyburn, UTC Critical Infrastructure Communications Policy Summit (June 20, 2013) (“[S]pectrum is finite, so we have to make sure we are maximizing the value of this limited resource.”), available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-321721A1.pdf; Statement of Commissioner Jessica Rosenworcel, Federal Communications Commission, Before the United States Senate Committee on Commerce, Science, and Transportation, “Oversight of the Federal Communications Commission” (March 12, 2013) (stating that “demand for our airwaves will continue to grow at a breathtaking pace” and that policy-makers must account for this fact), available at <http://www.fcc.gov/document/commissioner-rosenworcel-fcc-oversight-hearing-statement>; Statement of Commissioner Ajit Pai, Federal Communications Commission, Re: *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695–1710 MHz, 1755–1780 MHz, and 2155–2180 MHz Bands*, Report and Order, GN Docket No. 13-185 (May 31, 2014) (stating that, “[C]onsumer demand for mobile broadband services has never been greater, and new commercial spectrum is needed to ‘fuel the investment that has made the United States the world leader in wireless innovation,’”), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0331/DOC-326344A5.pdf; Remarks of FCC Commissioner Michael O’Rielly Before the Hudson Institute (Jan. 27, 2014) (“If, as I hope, the auctions are successful, consumers will benefit enormously as wireless providers use the new spectrum to build next generation networks and provide faster and better service throughout the nation.”), available at <http://www.fcc.gov/document/commissioner-oriellys-remarks-hudson-institute>.

operating as the most efficient users of spectrum in the world.³⁹ Wireless operators will continue to innovate and develop new methods to serve an ever-growing customer base with limited spectrum resources. But, as the Commission recently noted, “spectrum is a limited and essential input for the provision of mobile wireless telephony and broadband services, and ensuring access to, and the availability of, sufficient spectrum is critical to promoting the competition that drives innovation and investment.”⁴⁰

CTIA and others have previously stressed the importance of allocating additional spectrum for wireless broadband services. The FCC is working to address the critical role of spectrum availability in the provision of wireless broadband services.⁴¹ For that reason, CTIA believes that the most important thing the Commission can do to promote access to a robust and open Internet is to focus on the identification and allocation of additional spectrum for mobile broadband services.

³⁹ Comments of CTIA – The Wireless Association, GN Docket No. 09-157, at 21 (Sept. 30, 2009) (“The combination of highly efficient networks and advanced wireless devices has made U.S. carriers the most efficient users of spectrum worldwide – serving more consumers, with less spectrum, and for more minutes of use than any other country”).

⁴⁰ *Policies Regarding Mobile Spectrum Holdings*, WT Docket No. 12-269, Report and Order, DA 14-63, ¶ 67 (2014), available at https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-63A1.pdf.

⁴¹ See, e.g., Statement of Chairman Tom Wheeler, *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd 4610, 4737 (2014) (“[T]he spectrum pipeline is reopening. We recently completed our first auction of mobile broadband spectrum since 2008. ... This Report and Order establishing service rules for AWS-3 moves us closer to holding an auction for 65 megahertz of spectrum this Fall, the most since the 700 MHz auction in 2008. ... [M]ake no mistake, making this spectrum available for auction for commercial use is a home run no matter how you look at it. The new capacity will expand the workhorse AWS-1 commercial wireless band to enable faster wireless speeds and more capacity to help satisfy consumers’ voracious appetite for mobile data. This proceeding represents a step forward in spectrum policy.”).

B. Spectrum is a Challenging Medium that Must Accommodate Shared Services and Users, is Subject to Congestion and Interference Risks, and Requires Flexible Network Practices.

Reliance on limited spectrum resources presents several unique challenges, given that it is a constrained resource, must be shared among users, and is subject to congestion and interference risks. These factors further complicate wireless network management.

Given their dependence on spectrum, even today's most powerful wide-area wireless networks have significantly less capacity than fiber wireline networks due to the constraints of physics. As the wireless engineering firm Rysavy Research has observed, "a single fiber-optic cable has more data capacity than the entire radio spectrum to 100 GHz."⁴² Moreover, collective reliance on dynamically accessed shared spectrum means that even one user can affect the experience of many other users in the same geographic location. Because the information capacity of a wireless cell site is available to all users served by that cell, a wireless user in the cell must share available bandwidth with other users in their vicinity. As a result, mobile broadband users' service quality may be degraded by other users demanding significant capacity that compromises the service quality for others in their vicinity. For example, a consumer using a particularly bandwidth-intensive application can slow or effectively preclude service to other consumers served by the same base station. Network management is therefore necessary to prevent the user of a bandwidth-intensive application from occupying the entire capacity of the base station to which it is connected.

In addition, in some air interface implementations, a cell's capacity is shared by all services running over the network, including both voice and data. As a result, wireless carriers must balance consumer desire for innovative data and video services with the need to ensure

⁴² See Comments of Mobile Future, GN Docket No. 09-191, WC Docket No. 07-52, at 3 (Jan. 14, 2010), available at http://www.rysavy.com/Articles/2010_01_Rysavy_Neutrality.pdf.

high-quality voice service. This balance is critical, as voice data is highly susceptible to latency. By prioritizing voice data over non-voice data packets, wireless carriers optimize the efficiency of their networks – and their value to consumers.

In light of the above, mobile providers rely on aggressive and extremely agile network management that is not amenable to prescriptive rules or extremely granular disclosure requirements. LTE systems, for example, rely on the “E-UTRAN Node B,” or “eNB,” to manage traffic flows associated with each cell. As often as every millisecond, the eNB scheduler considers various factors, including the number of active devices communicating with the cell, the specific capabilities of the user’s device and the eNB, the locations of the devices in a cell (which, along with other factors, determine how much bandwidth they must be allotted), the amount of interference being encountered by each device, the type and amount of traffic for each device, the required quality of service for each service and each user, and the availability of the radio resources. Using this information, the eNB “schedules” delivery of traffic, assigns spectrum resources for the downlink and the uplink, and instructs individual devices to transmit at higher or lower power levels depending on how close they are to the cell site and the degree of interference.⁴³

⁴³ See 3GPP, TS36.300, “Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN): Overall description,” Stage 2, Release 12, V12.0.0, December 2013, *available at* <http://www.3gpp.org/DynaReport/36300.htm> ; 3GPP, TS36.211, “Physical channels and modulation,” Release 12, V12.1.0, March 2014, *available at* <http://www.3gpp.org/DynaReport/36211.htm>; 3GPP, TS36.213, “Physical layer procedures,” Release 12, V12.2.0, July 2014, *available at* <http://www.3gpp.org/DynaReport/36213.htm> ; 3GPP, TS36.321, “Medium Access Control (MAC) protocol specification,” Release 12, V12.2.1, July 2014, *available at* <http://www.3gpp.org/DynaReport/36321.htm> . See also Jeffrey H. Reed & Nishith D. Tripathi, “The Application of Network Neutrality Regulations to Wireless Systems: A Mission Infeasible,” at 30-31 (2010) (“Reed/Tripathi 2010”), *available at* http://www.att.com/Common/about_us/public_policy/Exhibit2_Reed-Tripathi.pdf. To complicate matters still further, the software and other mechanisms used by carriers to manage the eNB – for example, load-management practices and the configurations of routers used to

C. Mobility Itself Heightens the Need for Flexible Network Management.

Mobility itself also complicates the provision of services. Traffic patterns are often hard to predict. The need for “hand off” of sessions from cell site to cell site (and between different carrier frequencies of a given technology and even between technologies), the need to manage interference, and the need to address issues such as signal fading all make the service very complex to engineer and manage. Providers must account for shifting traffic volumes within a cell, changing service types, changing radio channel conditions, varying user mobility, and other factors limiting throughput on a moment-to-moment basis to ensure that all users’ needs are being met satisfactorily.

Mobility thus necessitates complex network resource management, and other engineering challenges not applicable to fixed networks. For example, as a user moves closer to or further from a cell-site, communications between the user’s device and the antenna will suffer from a “Doppler shift” – the phenomenon whereby the frequency being transmitted appears to increase as the user approaches the cell-site, and to decrease as the user moves away from it. The network must constantly account for this factor, which does not arise in the fixed context at all. Likewise, mobile broadband networks face dynamic channel conditions that far outstrip service variations on fixed networks. As users move about and/or the environment surrounding the user changes (due to the movement of people and vehicles), factors such as propagation-based signal attenuation, fading, and interference – which may change thousands of times during even a single session – affect the network resources that must be allocated to a particular communication stream. In addition, mobility means that a provider can never know just how many users will be sharing resources within a particular “cell.” This problem can become

coordinate the eNB’s activities – often are proprietary, undercutting the feasibility of public disclosure regarding the algorithms and other processes used to govern traffic flows.

especially acute when unexpected events – for example, traffic jams or a localized emergency – result in large gatherings of individuals, and large traffic volumes, where such volumes otherwise would not exist. Thus, mobility adds a significant degree of uncertainty, requiring still greater flexibility on the part of network operators.

D. Tight Integration Between Mobile Wireless Networks and the Devices Operating on Them Further Heightens the Need for Flexibility.

Any proposed rules that impact a mobile wireless provider’s ability to manage its networks must also account for the fact that wireless devices are tightly integrated with the network. In wireless networks, how resources are consumed by the end user varies significantly, based on a range of issues, including the device being used, whether voice or data services (or both) are being used, and, of course, the type of data service being used by the device – which can extend from 160-character SMS texts to interactive HD streaming video. A malfunctioning device can impair the network itself, while a well-functioning device can actually improve network performance and the service available to other users.⁴⁴ For this reason, “carriers try to work closely with their handset partners to ensure that devices are optimized to provide service over the network using the least possible bandwidth.”⁴⁵

The need to integrate a large variety of devices with the network raises additional challenges. Devices need to be tightly integrated with the mobile network to ensure a satisfactory user experience. Because a network might support use of many different device types, providers must develop tools to accommodate a wide variety of device capabilities,

⁴⁴ See, e.g., Declaration of Grant Castle ¶ 11 (“Castle Declaration”), *attached to* Comments of T-Mobile, GN Docket No. 09-191 (Jan. 14, 2010) (“In contrast to the wireline network, wireless networks are affected by the types of devices on the network and how they operate, because as devices communicate with the network, they consume network resources in ways that can be more or less efficient and that can affect other users more or less radically.”).

⁴⁵ Comments of T-Mobile, *supra*, at 23.

making sure that they each work individually and optimally and that they do not significantly interfere with each other's performance. This task is complicated by the fact that different devices will require differing shares of network resources, requiring real-time dynamic management (*e.g.*, on the order of milliseconds) to facilitate superior network and user performance within all the cells across the nation. And as noted above, the specific use to which a device is being put also will require dynamic reallocation of network resources – for example, the network will need to dynamically allocate suitable amounts of radio resources to meet the needs of different services, such as video streaming, email, and VoIP.⁴⁶ In general, a multitude of resources and requirements must be balanced. CTIA asks the Commission to consider these critical factors in deciding whether and how to apply new regulations to mobile wireless broadband.

E. As the Commission Correctly Predicted in 2010, the Mobile Market's Ongoing Evolution Calls for Greater Flexibility.

The Commission recognized in 2010 that the mobile broadband marketplace is characterized by constant change, and that mobile broadband is still an emerging service:

The mobile ecosystem is experiencing very rapid innovation and change, including an expanding array of smartphones, aircard modems, and other devices that enable Internet access; the emergence and rapid growth of dedicated-purpose mobile devices like e-readers; the development of mobile application (“app”) stores and hundreds of thousands of mobile apps; and the evolution of new business models for mobile broadband providers, including usage-based pricing.⁴⁷

⁴⁶ See 3GPP, TS23.203, “Policy and charging control architecture,” Release 13, V13.0.0, June 2014, available at <http://www.3gpp.org/DynaReport/23203.htm>. See also Reed/Tripathi 2010, *supra*, at 41-41.

⁴⁷ *Open Internet Order*, 25 FCC Rcd at 17956-57 ¶ 94.

The pace of change in the mobile ecosystem has only accelerated since then. Indeed, in the four years since the *Open Internet Order* was adopted, the U.S. wireless industry has gone from serving 296 million connections to over 336 million.⁴⁸ The number of smartphones has more than doubled, from 78 million to 175 million, and mobile data traffic has grown 732 percent, from 388 million MB to 3.2 trillion MB – all in just four years’ time.⁴⁹ This chart summarizes some of the many ways in which the mobile broadband ecosystem has grown and evolved to meet customer needs since 2010:

MOBILE TRENDS IN THE UNITED STATES, 2010-2013⁵⁰			
	2010	2013	The Delta
Smartphones	78 million	175 million	+124%
Tablets (CMRS only, not Wi-Fi)	14 million	25 million	+86%
Total handsets models available	630	790	+25%
Data Traffic	388 billion MB	3.23 trillion MB	+732%
Minutes of Use	2.24 trillion	2.62 trillion	+17%
Video Traffic	24 PB a month	200 PB a month	+733%
Cumulative Capex	\$310 billion	\$398 billion	+29%

The continued, aggressive deployment of high-speed wireless networks is increasingly enabling the integration of mobile wireless services into other sectors of the U.S. economy,

⁴⁸ *Annual Year-End 2013 Top-Line Survey Results, supra*, at 1 (most recent data shown is year-end 2013).

⁴⁹ *Id.* at 5, 7, 8.

⁵⁰ See CTIA, Press Release, *CTIA’s Annual Survey Says US Wireless Providers Handled 3.2 Trillion Megabytes of Data Traffic in 2013 for a 120 Percent Increase Over 2012* (June 17, 2014), available at <http://www.ctia.org/resource-library/press-releases/archive/ctia-annual-survey-2013>; Cisco, *VNI Mobile Forecast Highlights 2013 – 2018*, http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country (last visited July 13, 2014) (accessed by selecting United States, Mobile Applications).

including the healthcare, education, transportation, finance, energy, agriculture, and entertainment sectors.⁵¹ Smart grids, smart cars, smart fields, and smart children all take advantage of wireless technology. With a bevy of successful digital music services – such as Spotify, Rhapsody, Pandora, Deezer, iHeartRadio, and many others – jockeying for consumers’ attention, it is not surprising that roughly 70 million people in the U.S. listen to music on their mobile devices every month. That number, moreover, is expected to increase by 54 percent by the end of 2017.⁵² The emergence of ubiquitous, high-speed wireless networks has offered – and will continue to offer – these industries incredible opportunities for innovation and new applications and services. In turn, these new applications drive U.S. economic success and consumer value. They also can offer consumers improved health outcomes, new educational opportunities, control of their energy use, and conveniences.

Another important element of the evolution of the mobile Internet is the blossoming importance of machine-to-machine (“M2M”) communications. M2M devices are increasingly important in diverse fields such as energy, health, and agriculture. Cisco projects that the number of mobile-connected M2M devices in the United States will grow nearly eight-fold between 2013 and 2018.⁵³ Across all industries, the “Internet of Things” is rapidly becoming as

⁵¹ Comments of CTIA – The Wireless Association, WT Docket No. 13-135, at 55-60 (June 17, 2013) (providing examples of the benefits of wireless technology in the healthcare, education, transportation, finance, energy, and agricultural industries).

⁵² *See Music Goes Mobile as More Smartphone Users Stream Songs: Over 99% of mobile music listeners tune in on smartphones*, EMARKETER (Aug. 13, 2013), available at <http://www.emarketer.com/Article/Music-Goes-Mobile-More-Smartphone-Users-Stream-Songs/1010126>.

⁵³ Cisco, *VNI Mobile Forecast Highlights 2013 – 2018*, http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html (last visited July 13, 2014) (accessed by selecting United States, Potential M2M Connections).

important as the Internet of people – and mobile broadband networks are a significant part of this evolution.

All told, developments such as these will help drive growth in mobile usage going forward. Cisco projects that “U.S. mobile data traffic will grow 3 times faster than U.S. fixed IP traffic from 2013 to 2018.”⁵⁴ The Commission should take care not to disrupt this tremendous, customer-fueled growth.

F. Enabled by the Nascent 4G LTE Platform, the Wireless Industry Continues to Develop Mobile Broadband Network Technologies and Services.

The Commission recognized in the 2010 *Open Internet Order* that “[m]obile broadband is an earlier-stage platform than fixed broadband, and it is rapidly evolving.”⁵⁵ This statement remains true today, as 4G/LTE mobile broadband remains an early-stage technology, generating rapid innovation and change throughout the mobile ecosystem. The Commission should continue the “measured” approach of the 2010 *Open Internet Order*⁵⁶ to sustain a regulatory environment that enables the deployment of burgeoning new services and the robust growth of the mobile ecosystem.

While millions of U.S. consumers have rapidly embraced mobile broadband service, the Commission should recognize that high-speed mobile broadband, enabled by 4G LTE technology, has been deployed in the U.S. for *just four years*.⁵⁷ Indeed, the first large-scale LTE

⁵⁴ See Cisco, *VNI Mobile Forecast Highlights, 2013 – 2018, United States - 2018 Forecast Highlights*, available at http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country.

⁵⁵ *Open Internet Order*, 25 FCC Rcd at 17956-57 ¶ 94.

⁵⁶ *Id.* 17958 ¶ 96.

⁵⁷ See Sascha Segal, *MetroPCS Launches First LTE Network in U.S.* (Sept. 21, 2010), available at <http://www.pcmag.com/article2/0,2817,2368986,00.asp>.

network was only made operational sixteen days before the December 21, 2010 adoption of the *Open Internet Order*.⁵⁸ Today, wireless providers continue to develop and deploy mobile services and technologies that leverage and build upon the nascent foundation of high-speed mobile Internet service. 4G services are also highly innovative. Ofcom, for example, found in 2011 that early 4G LTE networks were 230% more spectrally efficient than standard 3G networks.⁵⁹

Mobile providers are currently developing and deploying innovative new services and technologies such as high-definition (“HD”) voice, Voice over LTE (“VoLTE”), LTE Advanced, and LTE broadcast, among others. HD Voice will allow telephone calls to more nearly approximate the full range of frequencies embodied in the human voice and bring the technology one step closer to replicating in-person presence; wireless providers have begun introducing this new service to the marketplace.⁶⁰ VoLTE can enable features such as video calling options, changing calls instantly from voice-only to voice and video, and more robust group messaging

⁵⁸ See Verizon, News Release, *Verizon Wireless Launches the World’s Largest 4G LTE Wireless Network on Dec. 5* (Nov. 30, 2010), available at <http://www.verizonwireless.com/news/article/2010/12/pr2010-11-30a.html> (last visited July 15, 2014).

⁵⁹ See Catherine Haslam, *Ofcom reports 230% spectrum efficiency savings with 4G*, FIERCE WIRELESS, May 13, 2012, available at <http://www.fiercewireless.com/europe/story/ofcom-reports-230-spectral-efficiency-savings-4g/2011-05-13>. See also Ofcom, *4G Capacity Gains*, available at <http://stakeholders.ofcom.org.uk/market-data-research/other/technology-research/2011/4G-Capacity-Gains/>.

⁶⁰ See, e.g., AT&T, *AT&T Introduces High-Definition Voice in Initial Markets* (May 15, 2014), available at http://about.att.com/story/att_introduces_high_definition_voice_in_initial_markets.html (last visited July 15, 2014); Sprint, *Sprint’s All New-Network Brings Sprint Spark and HD Voice to Philadelphia and Baltimore* (Feb. 11, 2014), available at <http://newsroom.sprint.com/news-releases/sprints-all-new-network-brings-sprint-spark-and-hd-voice-to-philadelphia-and-baltimore.htm> (last visited July 15, 2014).

and location sharing.⁶¹ As the Commission has recognized, VoLTE services “will soon be widely available on LTE wireless networks.”⁶² While 4G LTE services have been only been deployed since late 2010, wireless carriers are already exploring the *next* generation of capabilities, such as LTE Advanced, which will generate even further investments and new innovations in devices and apps.⁶³ The development of LTE Broadcast technology will generate additional spectral efficiencies and consumer benefits,⁶⁴ and carriers have already begun investigating this new network specification.⁶⁵

Critically, the evolution detailed above has occurred in the absence of a prescriptive nondiscrimination rule, and without an all-encompassing no-blocking requirement. Rather, the Commission’s choice to apply a light touch to mobile wireless has paid dividends, expanding the

⁶¹ See, e.g., Verizon, *Verizon Details VoLTE Rollout Plans* (May 20, 2014), available at <http://www.verizonwireless.com/news/article/2014/05/verizon-wireless-volte-national-rollout-plans.html> (last visited July 15, 2014).

⁶² *Technology Transitions*, Order, Report and Order, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 1433, 1440 ¶ 17 (2014).

⁶³ As discussed above, U.S. wireless carriers are among the world’s most intense and efficient users of spectrum. These network advances are contributing to the effort to achieve the most efficiencies from existing spectrum allocations. LTE technology has boosted the spectral efficiency of voice and data traffic by approximately 50 percent from UMTS/HSPA, and LTE Advanced is expected to double this efficiency yet again. CTIA, *The Misguided Diversion on Spectrum by NAB* (Aug. 1, 2013), available at <http://blog.ctia.org/2013/08/01/nab-spectrum-diversion/> (last visited July 15, 2014).

⁶⁴ See iGR, *Content for All – The Potential for LTE Broadcast/eMBMS* at 1 (Jan. 2013), available at http://www.qualcomm.com/sites/default/files/document/files/igr_qlabs_lte_broadcast_white_paper_final1.pdf (“LTE Broadcast (eMBMS) enables a Single Frequency Network (SFN) broadcast capability within LTE, so that the same content can be sent to a large number of users at the same time, resulting in a more efficient use of network resources than each user requesting the same content and then having the content unicast to each user.”).

⁶⁵ See, e.g., Mike Dano, *AT&T ‘exploring the possibility’ of LTE Broadcast with eMBMS*, FIERCEWIRELESS (April 2, 2014), available at <http://www.fiercewireless.com/story/att-exploring-possibility-lte-broadcast-embms/2014-04-02>.

range of services available and enhancing consumer welfare. The light-touch approach adopted in 2010 has facilitated a robust marketplace that has resulted in 91 percent of U.S. consumers “highly satisfied” with their wireless services,⁶⁶ with no diminution in network openness. Mobile broadband providers are investing heavily in their networks and pursuing market-led Internet openness, and U.S. consumers are benefitting accordingly. Given the mobile broadband ecosystem’s dramatic growth following the *Open Internet Order* and the ongoing development of nascent wireless services and technologies, the Commission should decline invitations to alter course and adopt a more prescriptive and intrusive approach today.

IV. ANY RULES APPLIED TO MOBILE BROADBAND SHOULD REFLECT THE UNIQUE AND RAPIDLY EVOLVING NATURE OF THE MOBILE ECOSYSTEM

Internet openness has become integral to consumer expectations and mobile broadband provider practices. With the transparency rule remaining in effect following the D.C. Circuit decision, no additional rules are necessary. But if the Commission nonetheless determines that it should impose mandates on mobile broadband providers, it should exercise the same caution it used in 2010 and adopt the proposals in the *Notice* that avoid unduly interfering with the open and dynamic mobile broadband marketplace.

In the *Open Internet Order*, the Commission recognized that “mobile broadband presents special considerations that suggest differences in how and when Open Internet protections should apply.”⁶⁷ It based this conclusion on several factors, including not only the competitiveness of the mobile broadband market,⁶⁸ but also mobile-specific operational constraints⁶⁹ and the

⁶⁶ *Leading the World* at 13.

⁶⁷ *Open Internet Order*, 25 FCC Rcd at 17956-57 ¶ 94.

⁶⁸ *Id.* at 17957 ¶ 95.

innovation and change within the mobile broadband segment.⁷⁰ These realities apply at least as much today, and call for a continued “light touch” with respect to mobile broadband. There is no basis for a radical departure from this established foundation.

A. Mobile Broadband Should At Most Be Subject to Very Limited No-Blocking Requirements.

1. Application of the No-Blocking Rule Is Not Necessary.

Mobile broadband customers fully expect access to all lawful content and applications, and providers have strong incentives to meet these expectations by optimizing the delivery of all content or applications that will not harm the network or undercut the experience of other users. Thus, there is no reason for the Commission to apply any no-blocking requirement to mobile broadband providers. Further, market dynamics and the existing transparency rule ensure that customers are able to learn about, and become aware of, their providers’ network practices. In light of the competitive state of the mobile broadband marketplace, consumers can choose another provider if they are concerned about those practices.

2. If the Commission Applies The No-Blocking Rule to Mobile Broadband, It Should Retain the Limited Scope of the 2010 Rule.

If the Commission nevertheless determines that a no-blocking rule should apply to mobile broadband, then it should approve the *Notice*’s proposal to re-adopt the 2010 mobile no-blocking rule – applying the rule to: (1) lawful websites and (2) services that compete with a particular broadband provider’s voice or video telephony offerings, subject to reasonable network management.⁷¹ As the *Open Internet Order* found, “mobile broadband presents special

⁶⁹ *Id.*

⁷⁰ *Id.* at 17956-57 ¶ 94.

⁷¹ *Notice*, 29 FCC Rcd at 5598 ¶ 105. The 2010 rule excluded devices from the no-blocking rule applied to mobile broadband providers. The *Notice* proposes to again exclude devices from the

considerations that suggest differences in how and when open Internet protections should apply.”⁷² The Commission explained that its limited no-blocking rule “appropriately balances protection for the ability of end users to access content, applications, and services through the web and assurance that mobile broadband providers can effectively manage their mobile broadband networks” with respect to other content.⁷³ Moreover, the existing transparency rule will require providers to disclose any limitations they place on their subscribers’ activities online, permitting customers to make informed choices – and this will, in turn, prompt providers to meet customers’ demands.

Wireless apps can consume very large quantities of bandwidth, causing significant problems for the end user or for others seeking to access the network nearby. For example, if a user is downloading a large file, the user-specific buffer at the eNB could overflow, resulting in lost packets and slower throughput. Third-party mobile apps and services can also interfere with a device’s operating system, undermining performance of other applications and services on which the end user relies. Apps often require significant network resources even when the user is not actively sending or receiving data. Some apps repeatedly seek out connections to the network,⁷⁴ even when not being actively used by the consumer, or use bandwidth to send information regarding the user to third parties. Such applications can overwhelm the signaling

mobile no-blocking rule’s scope. *See id.* at 5626-27 app. A (proposed rule § 8.5). Given the substantial ways in which devices interact with the mobile broadband provider’s network, and the strong incentives providers face to make any non-harmful device available to their customers, this exclusion continues to be appropriate.

⁷² *Open Internet Order*, 25 FCC Rcd at 17956-57 ¶ 94.

⁷³ *Id.* at 17960 ¶ 100.

⁷⁴ In LTE, devices are asked by the network to enter the idle mode to save device and network resources. When apps frequently cause idle mode-to-connected mode transitions, the signaling load on the air interface and in the network can increase significantly.

networks used to support data traffic – indeed, some apps can cause up to 2,400 signaling communications per hour.⁷⁵ Thus, the Commission has appropriately found that mobile broadband providers “have legitimate technical reasons to restrict particular non-carrier devices and applications on their networks, specifically to ensure the safety and integrity of their networks.”⁷⁶

To be sure, mobile providers have every incentive to allow their users to access the applications and services of their choice – this is what makes the broadband provider’s service attractive to end users and allows a provider to succeed in the market. Nevertheless, the proposal here will assure that providers will not engage in any blocking where the Commission has determined that the risk of such blocking could be viewed as most acute – *i.e.*, with respect to services that compete against the mobile provider’s core voice and video telephony offerings.⁷⁷

A broader prohibition against blocking any application or service that competes with *any* of the mobile broadband provider’s services would be unwieldy and overinclusive. In the ever-changing mobile broadband ecosystem, providers’ offerings are constantly shifting – most network providers also offer their own applications (often through branded or third-party app stores), as well as other services. As business models shift and expand, a mobile provider may not know whether a particular app competes with one of its services – or a service it might offer in the future. Likewise, apps routinely add new features, and could suddenly compete against the

⁷⁵ See *Industry Insights: Charting the Signaling Storms, Stroke*, available at www.stoke.com/GetFile.asp?f=2e6ae56e0d16c391b4f05fe679dbec8c.

⁷⁶ *Service Rules for the 698-746, 747-762, and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289, 15379 ¶ 216 (2007) (addressing 700 MHz C Block open access requirements).

⁷⁷ Of course, the Commission should retain the “reasonable network management” exception so that mobile providers have latitude with respect to competing services that do, in fact, pose threats to the network.

mobile provider when it previously did not. Defining which applications and services compete with a provider's services would be a complex and murky undertaking in this context.

3. To The Extent the Commission Considers a Minimum Level of Access Standard, It Should Account for the Special Circumstances Provided By Mobile Offerings.

For the reasons discussed above, efforts to establish a set minimal level of access for mobile broadband platforms would be especially problematic, and would undermine rather than promote consumers' interest. Spectrum limitations, interference, and the challenges posed by mobility require complex network management practices to handle traffic on a millisecond-by-millisecond basis. This means that the "level" of service being provided to any particular content stream might vary tremendously – and often does so dozens or hundreds of times per second. Moreover, when a cell becomes unusually crowded, the mobile provider will need to manage limited resources to meet the needs of all customers. A prescriptive minimal service level would limit providers' flexibility to manage their complex networks and provide high-quality service.

Several of the approaches to defining a "minimum level of access" set forth in the *Notice* would therefore undercut consumer interests. First, the Commission should not apply a "minimum quantitative performance" test, which would be unworkable for mobile services.⁷⁸ As detailed above, the "level" of service afforded to wireless data traffic often varies substantially numerous times every second. What matters is the customer's ability to access the content and applications of her choice over robust and well-managed wireless connections, not the level of service provided at any given millisecond. A "minimum quantitative performance" approach would at best put form over substance, forcing providers to forego strategies that are

⁷⁸ *Notice*, 29 FCC Rcd at 5598 ¶ 103.

critical to a robust user experience in order to satisfy arbitrary metrics, and would at worst guarantee that mobile broadband could never satisfy the Commission’s requirements.

Moreover, as the *Notice* observes, “a specific technical definition of minimum access could become outdated as available broadband network technologies change and available broadband speeds improve.”⁷⁹ It thus would be impossible to establish a specific technical definition that could keep up with evolving wireless technologies. Any prescribed quantitative service level could place mobile providers in violation when they are making every effort to provide service at or above the levels their customers have ordered.

Second, the Commission should not mandate that network performance be equivalent to the reasonable expectations of a “typical” end user. The *Notice* claims that this standard would offer flexibility, but it would not provide any certainty to consumers.⁸⁰ Moreover, it would place providers at continual risk, knowing that the Commission could at any time shift its requirements under this standard. Moreover, it is far from “typical” that an end user possesses sufficient knowledge of network engineering and traffic load management concepts to form a “reasonable” expectation that reflects the vicissitudes of wireless traffic flows. Even if the Commission considers a “best effort” standard requiring a “typical” level of service,⁸¹ that standard would need to reflect the typical level of service for mobile wireless and account for the wide variations inherent in the delivery of mobile services, which change on a second-to-second basis based on a number of external factors as described above.

⁷⁹ *Id.*

⁸⁰ *Id.* ¶ 104 (“One possible advantage of this approach . . . is flexibility On the other hand, this approach may create less certainty than other approaches might . . .”).

⁸¹ *Id.* at 5597-98 ¶ 102 (“[B]est-effort delivery would represent the ‘typical’ level of service for that type of traffic—in effect, routing traffic according to the ‘traditional’ architecture of the Internet.”).

B. Mobile Broadband Should Not Be Subject to Regulation Imposing a Commercial Reasonableness Requirement.

The *Notice* proposes an enforceable “commercially reasonable” standard of conduct for broadband provider practices but tentatively concludes that this standard should not apply to mobile broadband providers.⁸² As the *Notice* observes, the Commission did not apply its nondiscrimination rule to mobile broadband providers in 2010 in light of “the rapidly evolving nature of mobile technologies, the increased amount of consumer choice in mobile broadband services, and operational constraints that put greater pressure on the concept of reasonable network management for mobile broadband services.”⁸³ Each of these factors continues to apply today, and CTIA strongly supports the Commission’s tentative conclusion to continue that approach here.

There is no evidence to suggest any greater threat to Internet openness in the mobile context than in 2010. Indeed, the rapid consumer adoption and usage of mobile broadband services and the diversity of innovative services and applications demonstrate that providers’ mobile Internet practices are commercially reasonable. In fact, the competitive nature of the wireless market already applies a *de facto* commercially reasonable standard to every interaction between providers, on the one hand, and consumers, application developers and device manufacturers, on the other. Providers have every incentive to act in commercially reasonable ways, lest they lose customers to competitors who do act reasonably. Indeed, even though the 2010 nondiscrimination rule did not apply to mobile broadband, there is no evidence that mobile providers have acted, are acting, or will act in commercially unreasonable ways. Going forward, consumers’ market choices, facilitated by the existing transparency rule, will ensure that mobile

⁸² *Id.* at 5599-5600, 5609 ¶¶ 110-111, 140.

⁸³ *Id.* ¶ 140 (citing *Open Internet Order*, 25 FCC Rcd at 17956-59 ¶¶ 93-98).

broadband providers act reasonably. Moreover, in the event a provider lapses into purportedly unreasonable behavior, other mechanisms – including multi-stakeholder processes, generally applicable antitrust laws, and other consumer safeguards – are more than sufficient to address a claim of commercial unreasonableness.

In contrast, the overhang of a government-mandated commercial reasonableness standard would chill innovation and investment, actually limiting the options made available to consumers. Providers are best able to serve their customers if they enjoy the flexibility to experiment with new service offerings and new business arrangements over time. Where innovations meet customer needs, they will succeed in the marketplace; where they do not, they will likely fail. But if the Commission imposes a commercial reasonableness standard, many of these innovations might never come to pass – not because they would be unreasonable, but because there would be no way for the provider to know before developing and deploying a new approach whether the Commission would later deem it unreasonable. This risk would be especially acute given Chairman Wheeler’s statement that the proposed rule “establish[es] a high bar for what is ‘commercially reasonable.’”⁸⁴ Given that the mobile marketplace already ensures commercial reasonableness, there is no reason to apply an additional investment-inhibiting regulatory mandate or radically depart from the Commission’s prior framework.

C. Mobile Broadband Should Not Be Subject to Additional Transparency Requirements.

As discussed above, mobile broadband providers support transparency and are committed to informing their customers, edge providers, and others regarding relevant terms, conditions,

⁸⁴ Chairman Tom Wheeler, *Setting the Record Straight on the FCC’s Open Internet Rules*, FCC BLOG, Apr. 24, 2014, <http://www.fcc.gov/blog/setting-record-straight-fcc-s-open-internet-rules>.

and practices.⁸⁵ The *Notice* seeks comment on whether the existing rule is effective in the mobile broadband context.⁸⁶ It is, has been, and will continue to be. Mobile wireless providers already disclose information regarding speeds (with appropriate disclaimers to account for the inherent variability of mobile service), prices, data caps (where applicable), and network management practices. While the existing transparency rule has been in effect, mobile broadband providers voluntarily adopted a best practice of notifying customers on wireless plans with data allowances when they approach and exceed their allowance for data usage and will incur overage charges, without charge and without requiring sign-up to receive the notification. This best practice is now included in CTIA's Consumer Code for Wireless Service, to which all major U.S. wireless providers are signatories.⁸⁷ The Code also specifies that wireless providers should clearly and conspicuously disclose tools or services that enable consumers to track, monitor, and set limits on data usage.⁸⁸ In light of these industry standards, no additional transparency requirements are needed for wireless broadband consumers.

Likewise, there is no need to mandate additional disclosures for edge providers and others in the mobile ecosystem. Mobile broadband providers have every reason to work with edge providers and others in the Internet ecosystem to ensure that their subscribers will have access to the best offerings available. It is what their customers demand, and a broadband provider whose network does not offer access to particular content or a popular application will be less able to compete with providers that do offer such access. Moreover, the statistics set

⁸⁵ *See supra* Part II.

⁸⁶ *Notice*, 29 FCC Rcd at 5591-92 ¶ 84.

⁸⁷ CTIA, *Consumer Code for Wireless Service*, <http://www.ctia.org/policy-initiatives/voluntary-guidelines/consumer-code-for-wireless-service> (last visited July 14, 2014).

⁸⁸ *Id.*

forth above eviscerate any suggestion that mobile providers are inhibiting the development of mobile apps: the number of mobile apps available and the billions of mobile apps downloaded by consumers continue to rise.⁸⁹

The changing real-time challenges and needs associated with the management of mobile networks preclude the disclosure of information at the high level of granularity proposed. For example, service qualities such as packet loss, corruption, latency, and jitter on wireless networks can vary considerably from moment to moment based on spectrum congestion, fading, interference, propagation path loss, and a variety of other factors, making it impractical for mobile broadband providers to offer more detailed prospective disclosures about them.⁹⁰ For example, reliance on Self Organizing Networks (“SON”) that conduct automated load balancing in real-time has broadened the range of management techniques that might be employed at any given time, complicating the use of precise advance disclosures. Similarly, spectrum constraints make measurement and disclosure of more granular information about network congestion particularly complex for mobile broadband providers.⁹¹

With respect to mobile broadband practices, providers require tremendous flexibility to manage their networks, and disclosures that reflect the diversity of tools that are used would either be so vague as to be useless, or so specific that they would provide a roadmap to those seeking to harm consumers or the network. Keeping disclosures up-to-date also would be a challenge as network management practices evolve rapidly on a real-time basis to address changing threats and challenges. Since 2010, wireless networks have seen deployments and

⁸⁹ *See supra* Part II.A.

⁹⁰ *Notice*, 29 FCC Rcd at 5588 ¶ 73.

⁹¹ *Id.* at 5590-91 ¶¶ 81-83.

trials of two extremely critical features – VoLTE and LTE-Advanced. Both of these features have significantly increased the complexity of network management.⁹²

There is no evidence that the existing transparency rule has failed to serve stakeholders' needs with respect to mobile broadband, or that the existing rule has been insufficient to prevent harm to mobile broadband consumers or edge providers. Because the challenges and constraints of mobile networks make it impractical to apply additional transparency requirements, the Commission should continue to rely on the existing rule, under which mobile services have grown dramatically, consumers have enjoyed open networks, and edge providers have achieved dizzying success.

V. THE COMMUNICATIONS ACT PROHIBITS THE COMMISSION FROM APPLYING TITLE II TO MOBILE BROADBAND SERVICE

The Commission lacks legal authority to subject mobile broadband services to Title II (common carrier) requirements. Section 332 of the Act divides mobile services into two distinct regulatory categories, and under the definitions set forth in the Act, mobile broadband cannot be a commercial mobile service (“CMRS”) and must be a private mobile service (“PMRS”). The Act is clear that PMRS offerings “shall not, insofar as such person is so engaged, be treated as a common carrier [service] for any purpose.”⁹³ Mobile broadband thus cannot be subject to Title II. Further, there is no basis for the Commission to reverse its prior determination that mobile

⁹² Enhancing data-centric LTE networks to perform well for VoLTE requires significant changes to the radio network, the core network, and the IMS (IP Multimedia Subsystem) network. LTE-Advanced features such as carrier aggregation significantly increase the complexity of eNB scheduling due to the need to make following additional decisions in real-time (*e.g.*, on the order of milliseconds) for each active LTE-Advanced-capable device: the determination of the carrier frequencies for carrier aggregation, configuration and processing of channel condition feedback across multiple carrier frequencies, and determination of the antenna technique per carrier frequency. The vast differences among LTE, VoLTE, and LTE-Advanced means that network management must be even more flexible and agile now as compared to 2010.

⁹³ 47 U.S.C. § 332(c)(2).

broadband Internet access is an integrated information service and does not include a distinct telecommunications component. Indeed, today’s mobile broadband services are if anything *more* tightly integrated than the equivalent offerings were in 2007, when the Commission made that decision. In any event, and as described below in Section VI, application of Title II to mobile broadband services would have dire consequences for consumers and other stakeholders, deterring investment and innovation and eliminating the flexibility that has made the mobile ecosystem so successful in the first place.

A. Section 332 Bars the Commission from Applying Title II Requirements to Mobile Broadband.

Even if the Commission were to reclassify broadband service as including a distinct “telecommunications service” component, it could not subject mobile broadband service to common carrier regulation, because mobile broadband would still be a private mobile radio service under Section 332, and the Act prohibits it from subjecting PMRS to common carrier requirements.

As noted, Section 332(c) of the Act divides mobile services into two distinct regulatory categories: commercial mobile service (“CMRS”) and private mobile service (“PMRS”). Mobile broadband service cannot be deemed CMRS under section 332 of the Act. Section 332(d)(1) defines commercial mobile service as “any mobile service . . . that is provided for profit and *makes interconnected service available* (A) to the public or (B) to such classes of eligible users as to be effectively available to a substantial portion of the public, as specified by regulation by the Commission.”⁹⁴ In addition to being provided “for profit,” “making interconnected service available” is the *sine qua non* of a CMRS service. For these purposes, the Commission’s regulations define “interconnected service” to mean “a service that is

⁹⁴ *Id.* § 332(d)(1) (emphasis added).

interconnected with the public switched network, or interconnected with the public switched network through an interconnected service provider, that gives subscribers the capability to communicate to or receive communication from all other users on the public switched network.”⁹⁵ The term “public switched network,” in turn, means “[a]ny common carrier switched network, whether by wire or radio, including local exchange carriers, interexchange carriers, or mobile service providers, that uses the North American Numbering Plan in connection with the provision of switched services.”⁹⁶ In contrast, Section 332(d)(3) defines PMRS as “any mobile service . . . that is not a commercial mobile service or the functional equivalent of a commercial mobile service, as specified by regulation by the Commission.”⁹⁷

Mobile broadband service does not fall under the CMRS definition. As the Commission has held, mobile broadband is not “interconnected with the public switched network,” and thus is not CMRS.⁹⁸ The Commission explained that this was so because wireless broadband service “does not give subscribers the capability to communicate with *all other users* on the public switched network.”⁹⁹ It emphasized that mobile broadband service does not use the North American Numbering Plan to access the Internet, “limit[ing] subscribers’ ability to communicate to or receive messages from *all* other users in the public switched network.”¹⁰⁰

Similarly, any attempt to characterize mobile broadband as the “functional equivalent” of CMRS will fail the clear statutory test, which hinges on whether a service is or is not

⁹⁵ 47 C.F.R. § 20.3.

⁹⁶ *Id.*

⁹⁷ 47 U.S.C. § 332(d)(3) (emphasis added).

⁹⁸ *Appropriate Regulatory Treatment for Broadband Access to the Internet over Wireless Networks*, Declaratory Ruling, 22 FCC Rcd 5901, 5917 ¶ 45 (2007) (emphasis in original) (“*Wireless Broadband Order*”).

⁹⁹ *Id.* (emphasis in original) (quoting 47 C.F.R. §20.3).

¹⁰⁰ *Id.* (emphasis in original).

interconnected with the PSTN. “Congress’s purpose,” the Commission has concluded, was to treat as CMRS “a[ny] mobile service that gives its customers the capability to communicate to or receive communication from other users of the public switched network.”¹⁰¹ That is, Congress intended the hallmark of CMRS to be the provision of interconnected service through use of the public switched network.¹⁰² No service lacking this essential attribute could amount to a commercial mobile service equivalent.¹⁰³ Moreover, the fact that VoIP or other applications that ride over mobile broadband Internet service may provide an interconnected service makes no difference, because mobile broadband “*itself* is not an ‘interconnected service’ as the Commission has defined that term.”¹⁰⁴ Given the above, mobile broadband service must be deemed PMRS – a category that includes “any mobile service . . . that is not a commercial mobile service or the functional equivalent of a commercial mobile service.”¹⁰⁵ The Act precludes the Commission from subjecting PMRS to common carrier requirements. Section 332(c)(2) provides that “[a] person engaged in the provision of [PMRS] shall not, insofar as such

¹⁰¹ *Id.*

¹⁰² *See generally Implementation of Sections 3(n) and 332 of the Communications Act*, Second Report and Order, 9 FCC Rcd 1411, 1445-46 ¶ 76 (1994) (“[I]f we conclude that a mobile service does not meet the literal definition of a commercial mobile radio service, we will presume that the service is private and it will be regulated as PMRS unless there is a showing in a specific case that it is the functional equivalent of a service that is classified as CMRS.”) (emphasis omitted) (“*Second CMRS Order*”); *id.* at 1447 ¶ 79 (“[W]e anticipate that very few mobile services that do not meet the definition of CMRS will be a close substitute for a commercial mobile radio service.”).

¹⁰³ In defining “interconnected service” and “public switched network” for purposes of Section 332 in the *Wireless Broadband Order*, the Commission stated that “by using the phrase ‘interconnected service,’ Congress intended that mobile services should be classified as commercial services if they make interconnected service broadly available through their use of the public switched network.” *Wireless Broadband Order*, 22 FCC Rcd at 5917 ¶ 44.

¹⁰⁴ *Id.* at 5917-18 ¶ 45.

¹⁰⁵ 47 U.S.C. § 332(d)(3).

person is so engaged, be treated as a common carrier *for any purpose....*”¹⁰⁶ Thus, to the extent a provider offers a mobile broadband service, its mobile broadband service may not be treated as a common carrier offering.¹⁰⁷ Whether or not reclassification could address the barrier to common carrier regulation posed by Section 3(51) (which states that “[a] telecommunications carrier shall be treated as a common carrier under this chapter only to the extent that it is engaged in providing telecommunications services”),¹⁰⁸ it could *not* overcome the barrier imposed by Section 332(c)(2), because mobile broadband still would not be interconnected. It therefore would remain PMRS, and remain immune from common carrier regulation.

The D.C. Circuit has agreed that Section 332(c)(2) bars the application of common carrier requirements to mobile broadband services. The Commission’s *Data Roaming Order* rejected the argument that this provision prohibited application of the rules it was adopting,¹⁰⁹

¹⁰⁶ *Id.* § 332(c)(2) (emphasis added).

¹⁰⁷ Congress enacted Section 332(c)(4) as part of the Omnibus Budget Reconciliation Act of 1993 (“OBRA-93”), Pub. L. No. 103-66, 107 Stat. 312 (1993), which directed the Commission to take a deregulatory approach to the wireless services. Prior to 1993, the Commission had heavily regulated wireless providers, subjecting them to the same Title II common carrier regulations as it applied to traditional wireline providers. *See Second CMRS Order*, 9 FCC Rcd at 1414 ¶ 3. OBRA-93 rejected that paradigm, and “dramatically revise[d] the regulation of the wireless telecommunications industry.” *Cellnet Communs. v. FCC*, 149 F.3d 429, 433 (6th Cir. 1998). In the Commission’s words, OBRA-93’s “overarching congressional goal” was to “promot[e] opportunities for economic forces – not regulation” – to govern mobile service markets. *Implementation of Sections 3(n) and 332 of the Communications Act*, Third Report and Order, 9 FCC Rcd 7988, 8004 ¶ 29 (1994). Thus, Congress adopted mechanisms meant to limit the extent to which CMRS was exposed to common carrier regulation – most importantly Section 332(c)(3)’s preemption of state jurisdiction over rates and entry and Section 332(c)(1)’s forbearance provisions (which predated the Section 10 forbearance mandate). Section 332(c)(4) effectuated Congress’s desire to go even further with respect to PMRS by simply barring common carrier regulation of such offerings.

¹⁰⁸ 47 U.S.C. § 153(51).

¹⁰⁹ *See* Comments of AT&T Inc., WT Docket No. 05-265, at 10-18 (June 14, 2010); Reply Comments of AT&T Inc., WT Docket No. 05-265, at 7-11 (Jul. 12, 2010); Comments of Verizon Wireless, WT Docket No. 05-265, at 19-23 (June 14, 2010).

stating that its new rules “d[id] not amount to treating mobile data service providers as ‘common carriers’ under the Act.”¹¹⁰ On appeal, the court concurred,¹¹¹ but in doing so it made clear that Section 332(c)(2) *would* prohibit the application of common carrier obligations. Referring to Section 332(c)(2) and Section 153(51), the court observed that “mobile-data providers are statutorily immune, perhaps twice over, from treatment as common carriers.”¹¹² Thus, “[e]ven though wireless carriers ordinarily provide their customers with voice and data services under a single contract, they must comply with Title II’s common carrier requirements only in furnishing voice service.”¹¹³ Likewise, in the 2010 *Open Internet Order*, the Commission conceded that Section 332(c)(2) barred the application of common carrier mandates to mobile broadband, arguing that the provision did not apply because the rules it was adopting did not impose common carriage.¹¹⁴ The court disagreed, and cited Section 332(c)(2) as one basis for overturning the no-blocking rule with respect to mobile broadband, noting that “treatment of mobile broadband providers as common carriers would violate section 332[(c)(2)].”¹¹⁵

¹¹⁰ *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, Second Report and Order, 26 FCC Rcd 5411, 5444 ¶ 59 (2011).

¹¹¹ *Cellco P’ship v. FCC*, 700 F.3d 534 (D.C. Cir. 2012).

¹¹² *Id.* at 538. Notably, in its brief in the *Cellco* case the FCC took the position that Section 332 only prohibits common carriage treatment under the Communications Act of 1934, as amended, and that Section 706 of the 1996 Act is not subject to those limitations. Brief of Appellee-Respondent at 52, *Cellco P’ship v. FCC*, 700 F.3d 534 (D.C. Cir. 2012) Nos. 11-1135 & 11-1136. The D.C. Circuit more recently disposed of this “rather half-hearted argument” in *Verizon v. FCC*, finding that “Congress expressly directed that the 1996 Act . . . be inserted into the Communications Act of 1934.” *Verizon*, 740 F.3d at 650 (internal citation omitted).

¹¹³ *Cellco*, 700 F.3d at 538.

¹¹⁴ *Open Internet Order*, 25 FCC Rcd at 17950 ¶ 79 & n.247.

¹¹⁵ *Verizon*, 740 F.3d at 650 (internal citations omitted).

In short, then, mobile broadband services are PMRS, and the Act prohibits the Commission from subjecting PMRS to common carrier requirements. These facts preclude the Commission from applying Title II requirements to mobile broadband service.

B. There Is No Factual Predicate For Reclassification of Mobile Broadband Services.

In any event, the Commission has correctly concluded that the transmission and information-service components of mobile broadband services are integrated and comprise a single offering, and this remains true today.

As the Supreme Court explained in *Brand X*, the classification of broadband service rests first and foremost “on the factual particulars of how Internet technology works and how it is provided,”¹¹⁶ *not* on the policy goal the Commission wishes to achieve. The Commission has held consistently for more than 15 years that these factual particulars lead to one conclusion: broadband Internet access is an integrated information service. In the 1998 *Report to Congress*, the Commission found that Internet Service Providers “conjoin the data transport with data processing, information provision, and other computer-mediated offerings, thereby creating an information service.”¹¹⁷ The 2002 *Cable Modem Order* confirmed this view: “Internet access service is appropriately classified as an information service, because the provider offers a single, integrated service, Internet access, to the subscriber. The service combines computer processing, information provision, and computer interactivity with data transport, enabling end users to run a variety of applications.”¹¹⁸ The Commission underscored the integration of the service’s

¹¹⁶ *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 991 (2005).

¹¹⁷ *Federal-State Joint Board on Universal Service*, Report to Congress, 13 FCC Rcd 11501, 11540 ¶ 81 (1998).

¹¹⁸ *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities et al.*, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798, 4821 ¶ 36 (2002)

transmission and processing elements, noting that the “integrated information service” designation would hold “regardless of whether subscribers use all of the functions provided as part of the service, such as e-mail or web-hosting, and regardless of whether every cable modem service provider offers each function that could be included in the service.”¹¹⁹ The Commission applied this same logic to wireless broadband services in 2007:

[W]ireless broadband Internet access service offers a single, integrated service to end users, Internet access, that inextricably combines the transmission of data with computer processing, information provision, and computer interactivity, for the purpose of enabling end users to run a variety of applications.... Accordingly, we find that wireless broadband Internet access service meets the statutory definition of an information service under the Act.¹²⁰

Broadband transmission is, if anything, even more integrated with processing functionality today than it was in 2007. For example, in addition to more traditional “information service” functions such as DNS look-up, mobile broadband providers increasingly incorporate features that involve the storage or processing of information. These include security screening, spam protection, anti-virus and anti-botnet technologies, pop-up blockers, protections against denial-of-service attacks, parental controls, online email and photo storage, instant messaging, and the ability to create a customized browser and personalized home page that automatically retrieves games, weather, news and other information selected by the user. Thus, the factors that led the Commission to consistently classify broadband Internet access offerings as integrated information services in the past mandate the same result today.

(“*Cable Modem Order*”) *aff’d sub nom. Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

¹¹⁹ *Cable Modem Order*, 17 FCC Rcd at 4822-23 ¶ 38.

¹²⁰ *Wireless Broadband Order*, 22 FCC Rcd at 5911 ¶ 26.

Reclassification would be especially vulnerable on appeal in light of judicial precedent regarding about-faces of this type. In particular, the Supreme Court’s 2009 decision in *FCC v. Fox Television Stations, Inc.* noted two contexts in which an agency must “provide a more detailed justification” for changing course “than what would suffice for a new policy created on a blank slate”: (1) when “its new policy rests upon factual findings that contradict those which underlay its prior policy” and (2) “when its prior policy has engendered serious reliance interests that must be taken into account.”¹²¹ In those cases, “a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy.”¹²²

Any decision to reclassify mobile broadband service would implicate both of these circumstances, because it would (1) reflect new factual premises contradicting previous premises and (2) disrupt established reliance interests. First, reclassification would directly contravene the Commission’s 2007 decision that mobile broadband service constituted a single, integrated offering rather than the simultaneous provision of a telecommunications service and an information service, which itself reflected three prior Commission decisions regarding other broadband platforms.¹²³ As detailed above, mobile broadband services are *at least* as tightly integrated today as they were before.

¹²¹ 556 U.S. 502, 515 (2009).

¹²² *Id.*

¹²³ See *Wireless Broadband Order; Cable Modem Order; Appropriate Framework for Broadband Access to the Internet over Wireline Facilities et al.*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005); *United Power Line Council’s Petition for Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access Service as an Information Service*, Memorandum Opinion and Order, 21 FCC Rcd 13281 (2006).

Second, reclassification would disrupt “serious reliance interests that must be taken into account.”¹²⁴ Mobile broadband providers have invested aggressively in their networks and services, and for at least seven years now have done so knowing that their broadband offerings will not be subjected to the straight-jacket of Title II regulation. A reversal at this point would terminate the flexibility they have relied upon until now, disrupting business plans and likely stranding investments. These are precisely the results that the Supreme Court has sought to avoid. Reclassification would thus require a heightened level of explanation to survive judicial review.

VI. APPLICATION OF TITLE II TO BROADBAND SERVICES WOULD JEOPARDIZE THE MOBILE MARKETPLACE’S DYNAMISM, DETER INVESTMENT AND INNOVATION, AND HARM CONSUMERS

A. A Title II Regime Would Subject Mobile Broadband to a Host of Inappropriate Regulations, Eviscerating the Ability to Innovate and Suppressing Investment.

Application of Title II to mobile broadband services would be entirely inappropriate. As an initial matter, many of Title II’s provisions are simply incomprehensible in the context of mobile broadband service, demonstrating that Congress never intended for Title II to apply to such offerings. For example, Section 226 sets forth requirements regarding the provision of operator services,¹²⁵ while Section 228 governs pay-per-call services.¹²⁶ Section 210 details the

¹²⁴ *Fox*, 556 U.S. at 515.

¹²⁵ 47 U.S.C. § 226.

¹²⁶ *Id.* § 228.

requirements governing the use of “franks and passes,”¹²⁷ while Section 223 bars obscene phone calls.¹²⁸ These provisions have no bearing on broadband service whatsoever.

Even more troubling are those Title II provisions that *could* be applied to mobile broadband. Title II was implemented 80 years ago to address monopolistic conditions in the wireline voice telephony marketplace of the 1930s. It was based on provisions of the Interstate Commerce Act, which likewise were meant to address conditions in the late 19th Century railroad market. Application of Title II could saddle 21st-century broadband services with prescriptive rate regulation, tariffing requirements, depreciation mandates, expansive entry and exit regulation, resale and interconnection obligations, a host of reporting requirements, and even extensive state regulation. Moreover, reclassification of mobile broadband service would subject related revenues to universal service and other contribution obligations, adding a substantial premium to the price of broadband service.¹²⁹ Reclassification could even lead to the imposition of terminating access charges on American ISPs by foreign last-mile providers.

B. Reclassification Would Upend Congress’ Clear Intent to Subject Mobile Services to a Minimal Regulatory Regime.

Ironically, resort to the Title II approach could result in a scenario in which mobile broadband services were regulated *more heavily* than mobile voice services. The Commission has exercised its Section 332 forbearance authority¹³⁰ to exempt CMRS from prescriptive price regulation, tariffing mandates, entry and exit requirements, and other hallmarks of Title II

¹²⁷ *Id.* § 210.

¹²⁸ *Id.* § 223.

¹²⁹ The universal service fund contribution factor for the third quarter of 2014 is 15.7 percent. *Proposed Third Quarter 2014 Universal Service Contribution Factor*, CC Docket No. 96-45, Public Notice, DA 14-812 (rel. Jun. 12, 2014).

¹³⁰ *Id.* § 332(c)(1)(A).

regulation,¹³¹ and Congress itself barred state regulation of CMRS rates or entry.¹³² But, as discussed above, mobile broadband service is not CMRS.¹³³ Thus, if the Commission were to reclassify mobile broadband service – and were to ignore Section 332(c)(2)’s prohibition against subjecting PMRS to common carriage requirements – mobile broadband services could be subjected to the full panoply of mandates designed to regulate the monopoly telephone system of the 1930s.

Application of such requirements to mobile broadband would have drastic consequences for innovation and investment. The vibrant, competitive mobile ecosystem has developed under a bipartisan “light touch” applied over the past two decades. That light touch has fostered an environment of experimentation and customer-driven advances. It has promoted diversity in the services and business models that have characterized the mobile ecosystem. The Title II approach would change all that, replacing a model favoring differentiation and experimentation with one that favored uniformity and commoditization of service. This approach would sap investment from the mobile Internet, harming *all* stakeholders – network providers, edge providers, applications developers, *and* consumers.

C. Forbearance Associated With a “Third Way” Approach Would Itself Be Extremely Risky.

The Commission has sought to refresh the record in its *Framework for Broadband Internet Service* docket.¹³⁴ In that matter, the Commission proposed a so-called “Third Way” framework, in which it would reclassify broadband Internet access service as including a distinct

¹³¹ See, e.g., *Second CMRS Order*, 9 FCC Rcd at 1418-19 ¶ 16.

¹³² 47 U.S.C. § 332(c)(3)(A).

¹³³ See *supra* Part V.A.

¹³⁴ See *Broadband Framework PN* at 1.

telecommunications service component, but simultaneously forbear from all but six of Title II's provisions – sections 201, 202, 208, 220, 254, and 258.¹³⁵ The Third Way approach raises numerous dangers of its own. The Commission should reject this path.

First, the Third Way would still apply core Title II requirements to mobile (and fixed) broadband services, including Sections 201 and 202 of the Act. These provisions themselves would severely limit the flexibility that allows mobile broadband providers to manage limited network resources and experiment with new business models. Application of Sections 201, 202, and 208 could badly undermine their ability to serve their customers' needs, reducing consumers' welfare and harming the public interest. Mobile broadband providers would be subject to formal complaints filed by any entity that believed that broadband prices or practices were unlawful, allowing individuals or competitors to hold innovation hostage as the Commission worked to resolve disputes. Developments such as these would undermine the public interest.

Second, it is not at all clear that the “limited” class of requirements the Commission has proposed to keep in place will in fact be the only requirements applied to mobile broadband providers. When the Commission sought comment on the Third Way proposal in 2010, several parties sought to expand the list, and asked the Commission to keep in place a more extensive collection of mandates. Among the provisions parties sought to add to the six listed above were Sections 203, 211, 213, 214, 215, 218, 219, 220, 251, 256, 257, and 258.¹³⁶ One can expect

¹³⁵ See generally *Framework for Broadband Internet Service*, Notice of Inquiry, 25 FCC Rcd 7866 (2010).

¹³⁶ See Comments of Public Knowledge, GN Docket No. 10-127, at 39-50 (Jul. 15, 2010); Comments of Free Press, GN Docket No. 10-127, at 67-74 (July 15, 2010).

similar requests in this round of comments. And even if the Commission were to reject such calls, and forbear from all of these additional provisions, there is no way to know whether parties will challenge those forbearance grants – or whether Courts will overturn them. Thus, mobile broadband providers would face substantial uncertainty in the years following any reclassification decision, and the regime that emerges from the inevitable litigation could be much more regulatory than the one the Commission adopts.

D. No Matter How the Commission Effectuated Reclassification, It Would Be Subject to Years of Litigation, Extending Uncertainty and Harming Consumers.

Finally, even if this Commission were largely to forbear from Title II's more aggressive requirements, and even if a reviewing court were to uphold its decision, this would not be the end of the story: Broadband providers and others would *still* face uncertainty, because a three-Commissioner majority could, at any point in the future, seek to un-forbear from one or more requirements, subjecting broadband services to more and more of Title II's mandates.

Setting aside which specific Title II obligations the Commission chose to apply to mobile broadband services, reclassification itself would be subject to years of litigation. As detailed above, and as the D.C. Circuit has held, application of common carrier requirements to mobile broadband offerings would be flatly illegal. Moreover, there is no factual basis for reclassification, and any such effort would be subject to heightened scrutiny because it would be premised on new factual findings and would upset established reliance interests. As such, reclassification of any sort would undoubtedly elicit legal challenge. One could expect the resulting litigation to play out over a period of years. Indeed, when the Commission first classified cable broadband as an integrated information service, it took three years before the

Supreme Court issued its *Brand X* decision upholding that determination.¹³⁷ Likewise, the D.C. Circuit issued its decision overturning parts of the *Open Internet Order* more than three years after that order was released.¹³⁸ There is no reason to believe litigation regarding reclassification would proceed any more quickly. In the interim, the result of such litigation would be ongoing uncertainty, which would harm the mobile ecosystem and, ultimately, consumers. Investors and innovators simply would not know whether mobile broadband offerings would be governed under a flexible, innovation-friendly framework or rather under a prescriptive Title II regime, and would be unable to direct their work accordingly. Thus, reclassification itself would present significant challenges to the mobile broadband ecosystem.

¹³⁷ The Commission released the *Cable Modem Order* on March 15, 2002. The Supreme Court issued its *Brand X* decision on June 27, 2005.

¹³⁸ The Commission released the *Open Internet Order* on December 23, 2010. The D.C. Circuit issued its *Verizon v. FCC* decision on January 14, 2014.

VII. CONCLUSION

In 2010, the Commission recognized that mobile broadband services differed from fixed line offerings in important ways and adopted a “light-touch” approach in the *Open Internet Order*. Since then, the mobile broadband market has continued to thrive, with massive investment in LTE networks, new and nascent offerings, dynamic innovation, and network openness. For the reasons discussed above, should the Commission act here, it should follow the course set forth in the *Notice* that avoids unduly interfering with the open and dynamic mobile broadband marketplace. Moreover, the Commission cannot subject mobile broadband services to common carrier treatment, and doing so would in any case impose high costs on consumers and the mobile ecosystem as a whole by deterring the investment and innovation that characterizes the world-leading U.S. mobile wireless ecosystem.

Respectfully submitted,

CTIA–THE WIRELESS ASSOCIATION®

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