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

In the Matter of	)	
	)	
Nineteenth Annual Report on the State of Mobile Wireless Competition	)	WT Docket No. 16-137
	)	

COMMENTS OF T-MOBILE USA, INC.

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T-Mobile USA, Inc. ("T-Mobile")[1] submits these comments in response to the Wireless Telecommunications Bureau's Public Notice regarding the state of mobile wireless competition in the United States.[2]

I. INTRODUCTION AND SUMMARY.

Since the Federal Communications Commission ("FCC" or "Commission") released the *Eighteenth Mobile Competition Report Public Notice*,[3] T-Mobile has continued its campaign to disrupt its competitors and shake up the wireless industry through its Un-carrier moves.[4] In the last 12 months, T-Mobile introduced numerous industry-first initiatives, such as Un-carrier Amped! ("Amped!"); Enhanced Voice Services ("EVS"); and Un-carrier X ("Binge On"), and

[1] T-Mobile USA, Inc. is a wholly owned subsidiary of T-Mobile US, Inc., a publicly traded company.

[2] *Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, Public Notice, WT Docket No. 16-137, DA 16-450 (rel. Apr. 29, 2016).

[3] *See Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, Public Notice, 30 FCC Rcd 5062 (2015).

[4] *See, e.g., 3 years of #Uncarrier with CEO @JohnLegere #TweetJohn*, T-MOBILE (Mar. 28, 2016), http://t-mo.co/258FYHA (stating that "130 million Americans have been freed from service contracts" thanks to the Un-carrier 1.0 initiative T-Mobile started in 2013).

later this year will announce additional consumer-friendly policies. Building on T-Mobile's previous Un-carrier initiatives,[5] Amped! allows customers to upgrade their phones for free three times a year.[6] EVS is available to improve voice call quality and reliability.[7] And T-Mobile expanded its popular Music Freedom service to include more than 40 music services such as Google Music, Radio Disney, Spotify and TIDAL, and unveiled its Binge On service, which allows T-Mobile subscribers to stream videos from more than 80 video providers, including ESPN, HBO, Hulu, NBC and Univision, without taxing the user's monthly data allotment.[8] Each of these pro-consumer moves is designed to make T-Mobile an attractive alternative to its competitors, and that strategy is working.[9] In the first quarter of 2016, T-Mobile added 2.2 million net customers, bringing its total customer count to more than 65.5 million.[10] This was the twelfth consecutive quarter in which the company has generated more than one million net

[5] *See* Press Release, T-Mobile, T-Mobile Announces Boldest Moves Yet as America's Un-carrier (July 10, 2013), http://t-mo.co/1OyGh72.

[6] *See* Press Release, T-Mobile, T-Mobile Unveils All-New 'JUMP! On Demand' - a Whole New Way to Get a Phone Whenever You Want (June 25, 2016), http://t-mo.co/1TVLBxa (also removing the $10 monthly program fee to participate in the program); *see also Lifetime Coverage Guarantee™ Fact Sheet*, T-MOBILE (Sept. 9, 2015), http://t-mo.co/1stolRJ (announcing a "Lifetime Coverage Guarantee" program, where T-Mobile would reimburse up to a full month of a customer's service and completely refund a device if the customer is not pleased with T-Mobile's coverage).

[7] Press Release, T-Mobile, Patent-Pending: T-Mobile's Next Network Upgrade With Enhanced Voice Services (Apr. 6, 2016), http://t-mo.co/1oCfQkh (announcing new HD Voice and Voice over LTE offerings).

[8] *See* Press Release, T-Mobile, T-Mobile's Binge On Brings More Cowbell: Now Over 80 Video Services Stream Free Without Using Your Data (May 17, 2016), http://t-mo.co/1TdV74U ("*T-Mobile's Binge On Brings More Cowbell*").

[9] *See Id.*

[10] *See* T-MOBILE, T-MOBILE INVESTOR FACTBOOK Q1 2016: A REVOLUTION DRIVING RESULTS 2 (2016), http://bit.ly/25cGBfW ("*T-Mobile Factbook*").

customer additions, and the sixth time in the past seven quarters with more than two million net customer additions.[11]

During this same period, T-Mobile also has enhanced the scope and scale of its 4G LTE network, expanded its LTE coverage footprint by nearly 250 percent, and deployed 4G LTE to almost one million new square miles of the U.S.[12] T-Mobile now covers 308 million Americans with 4G LTE and covers 194 million POPs across more than 340 markets with "Extended Range LTE" service.[13] Extended Range LTE uses Lower 700 MHz Band spectrum to deliver fast LTE service deeper into buildings and farther outside of metropolitan areas. Extended Range LTE not only pushes LTE coverage further out into suburban and rural areas, but also enhances the network experience of T-Mobile customers already covered by T-Mobile's existing mid-band LTE network.

T-Mobile aggressively acquired Lower 700 MHz A-Block spectrum in markets across the country in 2015, and worked to quickly clear neighboring broadcast stations from channel 51 and deploy LTE. For example, T-Mobile cleared channel 51 encumbrances affecting more than 75 million POPs within one year of acquiring Lower 700 MHz A-Block spectrum from Verizon.[14] Most recently, T-Mobile turned up its Extended Range LTE service in the Boston, Rochester,

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[11] *See* Press Release, T-Mobile, T-Mobile Delivers Unparalleled Financial Results – Tops Revenue and Adjusted EBITDA Estimates (Apr. 26, 2016), http://t-mo.co/1TvuUJU.

[12] *See* Colin Gibbs, *T-Mobile: LTE Network Expanded by 250% Last Year, Largely Thanks to 700 MHz Spectrum*, FIERCEWIRELESS (Jan. 6, 2016), http://bit.ly/1PhqO5f.

[13] *See T-Mobile Factbook* at 2.

[14] Colin Gibbs, *T-Mobile: We'll Cover 30M to 40M New POPs in 12-18 Months*, FIERCEWIRELESS (Mar. 3, 2016), http://bit.ly/1QnRAMH; *see also* Neville Ray, *Taking America's Fastest 4G LTE Even Further*, T-MOBILE (Dec. 23, 2015), http://t-mo.co/25iGXF8.

and the Jersey Shore markets in May 2016.[15] T-Mobile has learned valuable lessons about streamlining the broadcast-relocation process and forged important relationships with key vendors through its recent experiences deploying LTE over its Lower 700 MHz spectrum. This experience will provide a roadmap for efficiently clearing broadcasters following the close of the Broadcast Incentive Auction within the prescribed 39-month timeframe.

But these gains and other similar marketplace innovations are not self-perpetuating. While the retail wireless market is generally competitive, it remains highly concentrated and subject to the danger that those with market power will exercise their dominance in a manner that increases prices, limits innovation and impairs consumer choice. Indeed, the markets for several key inputs such as spectrum and infrastructure remain uncompetitive and there is significant risk that the largest incumbent carriers will leverage their dominant positions to foreclose access to these critical inputs.

Offering wireless service requires substantial, upfront fixed-cost capital investment. These investments are generally economic only to the extent that the wireless provider has sufficient scale to realize operating efficiencies in the planning, design, operation, marketing and management of this complex business. To achieve scale, service providers must typically overcome costly and time-consuming barriers to entry, including (1) limited access to high-

[15] Press Release, T-Mobile, T-Mobile Lights Up Greater Boston Area With Extended Range LTE (May 20, 2016), http://t-mo.co/1svstjD; Press Release, T-Mobile, T-Mobile Lights Up Greater Rochester Area With Extended Range LTE (May 11, 2016), http://t-mo.co/1rGu99O; Press Release, T-Mobile, Just in Time for Summer, T-Mobile Lights Up the Jersey Shore With Extended Range LTE (May 24, 2016), http://t-mo.co/24661JM. T-Mobile also recently announced that it had reached an agreement to acquire the Lower 700 MHz A-Block license covering the Chicago, Illinois market. T-Mobile will use this spectrum to deliver Extended Range LTE coverage to an additional 10.9 million people. *See* Press Release, T-Mobile, T-Mobile to Bolster Extended Range LTE Coverage with Chicago-area Spectrum Agreement (May 25, 2016), http://t-mo.co/1TX0sI9.

quality spectrum; and (2) limited access to infrastructure, such as base station locations and backhaul connections. Constraints on the availability of spectrum and infrastructure, which often exist due to incumbent control of these critical input resources, have unduly limited competitors' ability to challenge the dominance of the Big Two wireless carriers in the United States.

Further, the threat of foreclosure to critical inputs also exposes adjacent markets to the anti-competitive duopoly that has attempted to stifle competition whenever possible. Thanks to their dominant financial positions and their control of access to inputs, the incumbent carriers have a head start and built-in advantage over competitive carriers as they expand into new lines of business, such as M2M services, Internet of Things solutions, mHealth offerings and the support of mobile education, among others. But by promoting competition in critical wireless input markets like spectrum and infrastructure, the FCC can help ensure that these and other nascent industries which rely on wireless networks can enjoy the benefits of robust competition.

To sustain and advance competition in the delivery of wireless broadband services and in adjacent markets, the Commission should:

- Ensure the integrity of the Broadcast Incentive Auction and the timeliness of the post-auction process for freeing up the spectrum;
- Expand access to spectrum and other critical input resources for fifth generation ("5G") wireless services;
- Refrain from adopting practices or rules that discriminate against next-generation unlicensed services such as unlicensed LTE ("LTE-U");
- Exercise regulatory restraint when considering network neutrality and Internet privacy and security policies;
- Adopt policies that ensure that in non-competitive markets dominant incumbents cannot raise costs by leveraging their market power in the provision of business data services;
- Ensure that data roaming services are available on reasonable, pro-competitive terms and conditions;

- Establish clear and reasonable rules for deploying new facilities and reduce barriers to deployment; and

- Develop policies that provide mobile wireless service providers with more opportunities to access video programming at reasonable terms and conditions.

Taking these actions would encourage competition in the wireless marketplace.

II. QUICKLY PROVIDING ACCESS TO CRITICAL SPECTRUM ASSETS WILL PROMOTE COMPETITION AND HELP DRIVE INNOVATION AND INVESTMENT.

A. The FCC should use its administrative tools to detect anticompetitive tactics and protect fair bidding during the Incentive Auction.

In the latter half of 2015, the Commission adopted comprehensive bidding and application procedures for the 600 MHz Incentive Auction.[16] In adopting its rules, the FCC took several steps to protect the integrity of the pro-competitive spectrum reserve and to prevent gamesmanship that could have endangered the efficacy of the reserve. For example, in its *Bidding Procedures Public Notice* the FCC ruled that in markets where fewer, less encumbered Category One blocks would be available than the nationwide clearing target, the FCC would determine the maximum number of reserved blocks based on the total number of Category One *and* Category Two blocks offered in the market.[17] The Commission also allocated only Category

[16] *See Broadcast Incentive Auction Scheduled to Begin on March 29, 2016; Procedures for Competitive Bidding in Auction 1000, Including Initial Clearing Target Determination, Qualifying to Bid, and Bidding in Auctions 1001 (Reverse) and 1002 (Forward)*, Public Notice, 30 FCC Rcd 8975 (2015) ("*Bidding Procedures Public Notice*"); *Application Procedures for Broadcast Incentive Auction Scheduled to Begin on March 29, 2016; Technical Formulas for Competitive Bidding*, Public Notice, 30 FCC Rcd 11034 (Oct. 15, 2015).

[17] *See Bidding Procedures Public Notice* ¶ 176.

One blocks to the spectrum reserve in markets with both Category One and Category Two blocks.[18]

In addition, the Commission adopted rules that direct auction staff to "carefully monitor bidding activity for foreclosure bidding" and to act swiftly to prevent improper bidding activity.[19] The auction staff, for example, may change clock price increments on a PEA-by-PEA basis to respond to undesirable strategic bidding.[20] The FCC further protected the spectrum reserve against gaming and promoted greater opportunities for smaller carriers by adopting a 20 megahertz cap on the amount of reserve spectrum that any reserve-eligible bidder can acquire in less-densely populated PEAs.[21] The FCC should not hesitate to use these and other administrative tools to root out anticompetitive tactics and protect fair bidding during the 600 MHz Incentive Auction.[22]

B. The Commission's 39-month transition period is reasonable and any delay in the transition process would impose grave harm on consumers.

Immediately following the close of the 600 MHz Incentive Auction, the Commission should work swiftly to free the auctioned spectrum for wireless broadband use. The FCC has established a 39-month transition process for the band. While some incumbent broadcast

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[18] *See id.* ¶ 177.

[19] *See id.* (Statement of Commissioner Mignon L. Clyburn).

[20] *See id.* ¶ 165.

[21] *See id.* ¶ 185.

[22] As a result of the FCC's extensive outreach to eligible broadcasters, enough stations filed to participate in the auction to enable the agency to set a 126 megahertz initial spectrum clearing target, comprised almost entirely of Category One licenses. The FCC's clearing target is a positive indication that forward auction bidders will have a robust amount of both reserved and unreserved spectrum on which to bid. *See Initial Clearing Target of 126 Megahertz Set for the Broadcast Television Spectrum Incentive Auction; Bidding in the Clock Phase of the Reverse Auction (Auction 1001) Will Start on May 31, 2016*, Public Notice, DA 16-453, GN Docket No 12-268 and AU Docket No. 14-252 (Apr. 29, 2016).

interests have raised questions about the merits or feasibility of the 39-month transition process,[23] the 39-month transition is reasonable in light of the extensive record on the anticipated demand and supply of resources. T-Mobile and others have exhaustively documented how the broadcasting ecosystem can meet the demands of the broadcast-relocation process within the 39-month timeframe the FCC has adopted for clearing the 600 MHz band.[24] This documentation includes hard numbers regarding resource availability and is grounded in fact, not hypothetical guesstimates. T-Mobile's extensive and successful experience in clearing broadcasters from other spectrum bands, including broadcasters occupying channel 51, supports this empirical data.

Any delay in the transition process would impose grave harm on wireless broadband consumers. Every year that wireless carriers cannot access the spectrum they acquire at auction represents a "lost year" of unrealized net wireless broadband revenue and consumer surplus.[25] Economists estimate the *annual* loss of consumer surplus for delayed access to spectrum is

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[23] *See, e.g.*, DIGITAL TECH CONSULTING, INC., BROADCAST SPECTRUM REPACKING TIMELINE, RESOURCE AND COST ANALYSIS STUDY 3 (Oct. 2015), *attached to* Letter from Myra Moore, President, Digital Tech Consulting, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-268 (filed Nov. 6, 2015) (claiming that the transition would take at least 10 years and cost more than $3 billion); *see also Nat'l Assoc. of Broadcasters v. FCC*, 789 F.3d 165 (D.C. Cir. 2015) (challenging the 39-month deadline in court).

[24] *See generally* T-MOBILE ET AL., ON TIME AND ON BUDGET: COMPLETING THE 600 MHZ INCENTIVE AUCTION REPACKING PROCESS WITHIN THE FCC'S 39-MONTH RELOCATION DEADLINE AND THE BUDGET ESTABLISHED BY CONGRESS (Feb. 17, 2016), *attached to Ex Parte* Letter from Steve Sharkey, Vice President, Government Affairs Technology and Engineering Policy, T-Mobile USA, Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-268 and AU Docket No. 14-252 (filed Feb. 17, 2016); T-MOBILE ET AL., ON TIME, ON BUDGET: A RESPONSE TO DTC'S MARCH 2016 PRESENTATION ON THE STATE OF BROADCASTER RELOCATION RESOURCES (May 11, 2016), *attached to Ex Parte* Letter from Trey Hanbury, Counsel to T-Mobile USA., Inc. to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-268 and AU Docket No. 14-252 (filed May 11, 2016).

[25] COLEMAN BAZELON & GIULIA MCHENRY, STAYING ON TRACK: REALIZING THE BENEFITS FROM THE FCC'S INCENTIVE AUCTION WITHOUT DELAY 13 (Feb. 20, 2015), *reproduced in* Comments of LocusPoint Networks, LLC, AU Docket 14-252 (filed Feb. 20, 2015) ("BAZELON & MCHENRY").

roughly equivalent to auction revenue,[26] which in the case of the 600 MHz band may translate to approximately $40-80 billion for each year of delay.[27] Worst of all, these economic and consumer losses can never be recovered.[28]

While exceptional circumstances may merit waiver of the deadline on a case-by-case basis, the Commission must press forward with a timely transition of the 600 MHz spectrum to power greater competition, innovation and investment in wireless broadband services. The available quantitative and qualitative evidence about the transition process demonstrates that the broadcasters can be cleared from the 600 MHz spectrum within the 39-month transition period the Commission has adopted.

C. Mobile wireless carriers need access to low-, mid- and high-band spectrum to deploy robust, next-generation networks.

Expanding access to licensed spectrum and other critical input resources for 5G wireless broadband services promises to improve the competitive dynamic in the wireless market and benefit consumers. Perhaps more so than any prior standard, 5G will require network operators to deploy different, complementary network architectures and secure access to new input resources to compete in the marketplace.[29] Failing to acquire the necessary inputs to offer 5G

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[26] *Id.*at 9.

[27] *Id.*; *see* GREENHILL & CO., LLC, INCENTIVE AUCTION OPPORTUNITIES FOR BROADCASTERS 2 (Oct. 2014) (citing estimates that forward auction proceeds could approach $45 billion); KAGAN MEDIA APPRAISALS, CAN THE FCC ATTRACT A FULL HOUSE FOR THE 2016 BROADCAST INCENTIVE AUCTION? 8 (Feb. 11, 2015) ("Our analysis assumes the receipts from all bidders in the 600 MHz auction could well be in the $60 billion-$80 billion range, depending on how many megahertz are being sold once the final stage of the auction is reached.").

[28] *See* BAZELON & MCHENRY at 13.

[29] *See* Ian King & Scott Moritz, *5G Networks Will Do Much More Than Stream Better Cat Videos*, BLOOMBERG TECHNOLOGY (May 2, 2016), http://bloom.bg/1rO6ox0.

services will prove far more detrimental to the network operators and, ultimately, to consumers than a single misstep in device acquisition or marketing.

The Commission must act quickly to allocate adequate high-band spectrum for 5G. The Commission has already proposed a framework for 5G services in several high-frequency bands that will prove useful for offering high-capacity Extreme Mobile Broadband services.[30] Next-generation, 5G infrastructure will consume immense resources and require long-term investments in standardization, network equipment development, site acquisition, zoning approvals, infrastructure construction and end-user equipment sales and distribution. Acting quickly to make the spectrum the FCC has tentatively identified for 5G available will promote investment and allow for the timely deployment of next-generation data services. The FCC also should expand the scope of frequencies under consideration for 5G services to include 23.15-23.6 GHz; 24.25-27.5 GHz; 28.35-29.5 GHz; 31-31.3 GHz; 31.8-33.4 GHz; 40-40.5 GHz; 40.5-42.5 GHz; 42.5-43.5 GHz; 45.5-47 GHz; 47.2-50.2 GHz; 50.4-52.6 GHz; 57-64 GHz; 71-76 GHz; and 81-86 GHz.[31] While T-Mobile supports the Commission's tentative decision to include both licensed and unlicensed allocations in these bands, a more equitable balance

[30] *See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, et al.*, Notice of Proposed Rulemaking, 30 FCC Rcd 11878 ¶¶ 25-59 (2015). The bands potentially available include: (i) the 27.5-28.35 GHz (28 GHz band); (ii) the 38.6-40 GHz (39 GHz band); (iii) the 64-71 GHz band; (iv) the 37-38.6 GHz band (37 GHz band); and (v) certain Local Multipoint Distribution Service ("LMDS") bands between 27.5 and 31.3 GHz.

[31] *See* Comments of T-Mobile USA, Inc., GN Docket No. 14-177, at 6 (filed Jan. 27, 2016) ("*5G Comments*"); Letter from Steve B. Sharkey, Vice President, Government Affairs Technology and Engineering Policy, to Marlene Dortch, Secretary, FCC (May 9, 2016) ("*5G ex parte*").

between the two with a larger allocation of licensed spectrum than currently proposed would help accelerate deployment and investment.[32]

At the same time, the FCC needs to take steps now to avoid excessive concentration of spectrum for 5G services in the hands of the two dominant providers. Excessive concentration of the input resources necessary for 5G promises long-term harm to competition and consumers in the form of reduced investment, higher prices, less consumer choice, lower economic growth and diminished innovation. As the Antitrust Division of the U.S. Department of Justice has repeatedly explained, the mobile communications market in the United States already exhibits all the hallmarks of a market susceptible to the exercise of market power: high market concentration; significant barriers to entry; vast margins between price and the incremental cost of providing service to an additional customer; and highly concentrated holdings of the critical input resource of spectrum by the two largest providers.[33] The advent of 5G will further increase the opportunities and incentives for anti-competitive conduct by creating new opportunities for the two dominant carriers to exercise control over critical input resources necessary to provide 5G services. Protecting consumers and competition in this environment will require "thinking beyond the Gs" to ensure that more than just one or two service providers can offer a wide range of 5G services.[34]

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[32] *5G Comments* at 14-15; *5G ex parte*, attach. at 7.

[33] *See Policies Regarding Mobile Spectrum Holdings et al*., Report and Order, 29 FCC Rcd 6133 ¶ 62 (2014) ("*MSH Order*"); *see also* Letter from William J. Baer, Assistant Attorney General, US Dep't of Justice, to Marlene H. Dortch, Secretary, FCC (May 14, 2014), http://1.usa.gov/21SX9Yg.

[34] Dipankar Raychaudhuri, Director, Rutgers University Wireless Information Network Laboratory, Presentation at the IEEE 5G Workshop, 5G Network Architecture and the Future Mobile Internet (May 26, 2015), http://bit.ly/1T7CCM4.

To prevent excessive concentrations of high-band spectrum in the hands of the largest carriers, the Commission should establish a high-band spectrum screen. Each competitor hoping to offer 5G services will need access to substantial quantities of high-band spectrum to support the types of use cases envisioned for 5G. Unlicensed spectrum and shared spectrum bands in the higher frequency ranges will no doubt play a role in satisfying the need for spectrum access, but the foundation of reliable 5G wireless service offerings will depend on the use of dedicated, licensed spectrum.[35] For low-band frequencies, the Commission continues to wrestle with the consequences of two providers holding more than two-thirds of the available spectrum and has had to adopt numerous safeguards to check the disproportionate market power associated with extreme spectrum concentration.[36] For high-band spectrum, however, the Commission has an opportunity to prevent the excessive concentration of these critical input resources before it starts. Time is of the essence. The dominant players are moving swiftly to secure high-band resources. Verizon, for example, has already moved to acquire substantial quantities of 5G-capable spectrum in the 27.5 GHz and 31.3 GHz range.[37] To prevent the excessive concentration of high-band resources from impairing the growth and development of 5G services, the Commission should adopt a policy of applying additional regulatory scrutiny for any proposed transaction that would result in a carrier holding more than one-third of 5G-capable spectrum in

[35] *See, e.g.*, SALAH EDDINE EL AYOUBI ET AL., PRELIMINARY VIEWS AND INITIAL CONSIDERATIONS ON 5G RAN ARCHITECTURE AND FUNCTIONAL DESIGN 2 (Patrick Marsch & Icaro Da Silva eds., Mar. 8, 2016), http://bit.ly/1SZCgbF.

[36] *See MSH Order* ¶ 214. *See generally Promoting Interoperability in the 700 MHz Commercial Spectrum, et al.*, Report and Order and Order of Proposed Modification, 28 FCC Rcd 15122 (2013).

[37] *See generally Applications Filed for the Transfer of Control of XO Communications, LLC to Verizon Communications Inc.*, Public Notice, WC Docket No. 16-70, DA 16-393 (rel. Apr. 12, 2016); Petition to Deny of Dish Network Corporation, WC Docket No. 16-70 (filed May 3, 2016).

a band or more than one-third of all high-band spectrum used or useful for 5G services. Adopting a spectrum-screen for high-band spectrum holdings would help promote competition by preventing the two dominant providers from securing the kind of durable power over the delivery and pricing of 5G services that would harm consumers.

Finally, as it examines the use of a spectrum screen for high-band spectrum, the Commission must begin to strictly enforce its previously adopted low-band spectrum screen in light of the limited prospects for additional low-band spectrum following the 600 MHz Incentive Auction. In its *Mobile Spectrum Holdings Report and Order*, the Commission acknowledged the danger of excessive concentration of low-band spectrum and adopted rules to address that risk.[38] Applying a special level of scrutiny to low-band spectrum-acquisitions that exceed one-third of the "suitable and available" low-band spectrum was intended to "protect against the risk that further concentration of spectrum, particularly low-band spectrum, [which] would have significant effects on competition in the marketplace in the foreseeable future."[39] The growth and development of 5G – combined with the limited availability of low-band spectrum following the 600 MHz Incentive Auction – makes the risk of anti-competitive foreclosure even more likely because potential competitors to the dominant carriers will need a mix of low-, mid- and high-band spectrum to offer the kinds of immersive, high-reliability, high-capacity services that 5G makes possible. While much of the attention for 5G has focused on the vast quantities of high-band spectrum necessary to support high-capacity broadband connections, mobile operators

[38] *See MSH Order* ¶ 4.

[39] *Id.* ¶ 5.

also need access to low-band spectrum to offer 5G services.[40] Indeed, the "backbone" of 5G – and one of the fundamental prerequisites for the Internet of Things – is a robust coverage layer that can connect devices dispersed over wide areas and in hard-to-service locations that lack local area network connectivity. Mid- and high-band spectrum cannot cost-effectively offer the types of wide-area and in-building coverage necessary to support these types of 5G offerings.[41] Following the 600 MHz Incentive Auction, the opportunities to acquire additional low-band spectrum appear quite limited. The FCC will need to redouble its efforts to prevent the further concentration of low-band spectrum on which 5G will depend.

D. A policy of technology neutrality in unlicensed bands enhances competition among wireless providers and with other communications platforms.

The Commission should refrain from adopting practices or rules that discriminate against next-generation unlicensed services such as LTE-U. LTE-U can coexist with other unlicensed services such as Wi-Fi without causing harmful interference.[42] Policies and procedures that deny new technologies the same access to unlicensed bands that others have enjoyed frustrate competition and deny consumers the benefits of the "permissionless innovation" that these bands allow.

The Commission's management of unlicensed spectrum has been a great success story. Standardized and non-standardized technologies that consumers use every day have flourished in

[40] *See id.*¶ 59 ("We find that a service provider holding a mix of low- and high-band spectrum licenses would have greater flexibility and would be better able to optimize its network costs for a given quality level, thus promoting the efficient and intensive use of spectrum."); *id*. ¶ 61 ("Providers without access to that mix of spectrum that would allow them flexibility to optimize their networks must incur more costly means of expansion and will be unable to compete as robustly or constrain price increases by providers that do have such access.").

[41] *See, e.g., id.* ¶ 60.

[42] *See* Comments of T-Mobile USA, Inc., ET Docket No. 15-105, at 2 (filed June 11, 2015).

spectrum the Commission once considered "junk bands."[43] Products such as cordless telephones and baby monitors and services such as Wi-Fi, Bluetooth and Near Field Communications all operate today using unlicensed spectrum. Unlicensed spectrum also supports important carrier offload and backhaul services. Unlicensed spectrum has played a critical role in allowing T-Mobile to deploy innovative products and services like Wi-Fi calling, Wi-Fi data offloading and the T-Mobile "Personal CellSpot," a device that enables customers to put the capabilities of a personal T-Mobile tower in their home.[44] Given its reliance on unlicensed devices to support its network operations, T-Mobile has no incentive to disrupt the services that are currently operating in unlicensed bands.

LTE-U is based on 3GPP's current standards of Release 10/11/12 of LTE and fully complies with the FCC's Part 15 rules. LTE-U protocols allow LTE-U to share spectrum fairly and efficiently with Wi-Fi and other unlicensed users, and in many cases LTE-U is a better neighbor to Wi-Fi than Wi-Fi is to itself. LTE-U protocols dynamically avoid Wi-Fi through spectrum-sensing capabilities that seek out unoccupied channels within a Wi-Fi band.[45] When the service cannot find an unoccupied channel within the band, LTE-U uses an adaptive duty cycle that allows it to take turns with other unlicensed users without degrading performance.[46] LTE-U is designed to maximize efficiency of unlicensed spectrum and deliver more throughput to consumers while at the same time alleviating the well-documented mobile broadband

[43] *See* Jessica Rosenworcel, Commissioner, FCC, Remarks at the Future of Unlicensed Spectrum Before the Engine Advocacy Gathering 1 (2014), http://bit.ly/1OwWXq3.

[44] *See* Comments of T-Mobile USA, Inc., ET Docket No. 15-105, at 4-5 (filed June 11, 2015).

[45] *See Ex Parte* Letter from Patrick Welsh, Executive Director, Public Policy and Law, Verizon to Marlene H. Dortch, Secretary, FCC, ET Docket No. 15-105, at 1 (filed Oct. 2, 2015).

[46] *See id.* at 2.

spectrum crunch. In testing conducted by Qualcomm, LTE-U provided double the service capacity and range compared to Wi-Fi networks alone.[47] T-Mobile and Qualcomm recently received special temporary authorization from the FCC to begin testing LTE-U as part of a continuing effort to enhance the utility of unlicensed spectrum.[48] LTE-U complies with the Commission's Part 15 rules that govern access to unlicensed bands and should not be subject to special scrutiny simply because licensed wireless carriers see the new standard as especially helpful to managing consumer broadband demand.

The innovation that unlicensed spectrum bands have produced will continue so long as the Commission maintains an even-handed approach to new technologies that comply with Part 15 of the Commission's rules.

III. CARRIERS SHOULD BE EMPOWERED TO ENGAGE IN "PERMISSION-LESS INNOVATION" FREE OF BURDENSOME AND UNNECESSARY REGULATIONS.

The Commission should tread lightly in areas where consumers enjoy ample choice and where vigorous competition drives providers to develop and sustain new and innovative offerings. Two such areas are network neutrality and Internet privacy and security. In both, vigorous retail competition among wireless carriers promises to protect consumers' interests.

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[47] *See* QUALCOMM, BACKGROUND ON LTE-UNLICENSED 8, *attached to Ex Parte* Letter from Patrick Welsh, Executive Director, Public Policy and Law, Verizon, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 15-105 (filed Oct. 2, 2015).

[48] *See* Qualcomm Technologies, Inc., Special Temporary Authorization Grant, ELS File No. 0460-EX-ST-2016 (granted May 3, 2016), http://bit.ly/1YxeMuE.

A. The FCC's open Internet regime should use a "light touch" for mobile broadband services to allow carriers to innovate.

The competitive retail marketplace for mobile broadband services gives consumers the power to easily switch from one carrier to another in response to offerings and network management practices. As the *Eighteenth Mobile Competition Report* recognized, "[i]n today's connected world, consumers are faced with a wide variety of choices in mobile service plans, devices, and applications."[49] Indeed, the Boston Globe and Digital Trends have both described how consumers are "winning" because of the "renaissance of competition" the retail mobile broadband market is currently experiencing.[50]

Mobile providers are using network practices to distinguish themselves and their offerings in the marketplace. Consumers, for example, have embraced T-Mobile's Binge On and Music Freedom programs. Binge On is T-Mobile's consumer-friendly answer to the escalating growth of mobile video.[51] It is a video optimization service that allows users on qualifying plans to stream video at DVD quality without it counting against their high-speed data allotments.[52] Through Binge On, customers may stream more than 80 video services − including YouTube,

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[49] *Implementation of Section 6002(b) of the Omnibus) Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless including Commercial Mobile Services*, Eighteenth Report, 30 FCC Rcd 14515 ¶ 143 (2015) ("*Eighteenth Mobile Wireless Competition Report*").

[50] *See* Jeffrey Van Camp, *Wireless Carriers Are Busting Each Other's Balls, And We Are Winning*, DIGITAL TRENDS (Jan. 26, 2016), http://bit.ly/1Ny0ylG; Hiawatha Bray, *As Phone Contracts Die, Competition Comes to Life*, THE BOSTON GLOBE (Aug. 19, 2015), http://bit.ly/1JjQJ9c.

[51] Cisco reports that mobile video traffic accounted for 55 percent of total mobile data traffic in 2015. Cisco forecasts that mobile video traffic will increase 11-fold during the next five years and account for 75 percent of the world's mobile data traffic by 2020. *See* CISCO, VISUAL NETWORKING INDEX: GLOBAL MOBILE DATA TRAFFIC FORECAST UPDATE, 2015-2020 WHITE PAPER (2016), http://bit.ly/1W26UQo ("*Cisco Visual Networking Index White Paper*").

[52] *See Introducing Binge On*, T-MOBILE (last visited May 24, 2016), http://t-mo.co/1RM06o8.

Netflix, HBO, Hulu, Dailymotion, EPIX, Nickelodeon, Spike, TV Land and more without it counting against their data use. These video services now represent a full 70 percent of all video T-Mobile customers watch on their phones and tablets each month.[53] Recent surveys found that 92 percent of T-Mobile customers watch more video with Binge On, and 93 percent like the idea of having all video optimized to DVD quality so that they can watch up to three times more using the same amount of data.[54] With Binge On, customers on qualifying plans are watching more than twice as much video and have streamed over 377 million hours of video for free.[55] Meanwhile, 69 percent of other carriers' customers would expect to pay extra for this kind of program – even though Binge On is completely free to T-Mobile customers and video providers.[56] Moreover, Binge On offers an easy on/off toggle for customers who want to switch to a higher resolution and provides content providers with an opt-out if they want their service delivered in native resolution. Chairman Wheeler praised T-Mobile's Binge On program as "highly innovative and highly competitive,"[57] and several civil-society organizations, such as the Rainbow PUSH Coalition and the United States Hispanic Chamber of Commerce, have similarly commended the service.[58] In addition to Binge On, T-Mobile's unlimited music program, Music

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[53] *See* Press Release, T-Mobile, T-Mobile Amps Binge On… Again (Mar. 17, 2016), http://t-mo.co/20finhA.

[54] *See* Press Release, T-Mobile, Video Viewing Skyrockets – More Than Doubling – With T-Mobile's Binge On (Jan. 28, 2016), http://t-mo.co/258L5HH ("*Video Viewing Skyrockets*").

[55] *T-Mobile's Binge On Brings More Cowbell.*

[56] *See Video Viewing Skyrockets*.

[57] Todd Shields, *T-Mobile Offering Is 'Highly Innovative,' FCC Chief Wheeler Says*, BLOOMBERG TECHNOLOGY (Nov. 19, 2015), http://bloom.bg/1sdwER3.

[58] *See, e.g.*, John Eggerton, *Rainbow PUSH Talks Up Binge On*, BROADCASTING & CABLE (May 23, 2016), http://bit.ly/1VfSDCg; Press Release, United States Hispanic Chamber of Commerce, USHCC Commends T-Mobile's Partnership with Univision (May 23, 2016), http://mwne.ws/22qPdOj.

Freedom, now includes more than 40 services and has grown to cover 96 percent of all music streamed by T-Mobile customers since its launch two years ago. T-Mobile's Binge On and Music Freedom programs stand out as two innovative offerings that have helped unlock consumer choice and have been wildly popular with T-Mobile's customers. Indeed, one in four new T-Mobile customers report switching to T-Mobile because of services such as Music Freedom.[59] Banning or restricting these innovative, consumer-friendly offerings would undermine carriers' ability to differentiate their services and compete. This type of action would also contradict Chairman Wheeler's stated goal that the Open Internet regime "assures the rights of internet users to go where they want, when they want, and the rights of innovators to introduce new products without asking anyone's permission."[60]

Wireless carriers need flexibility to manage their networks efficiently and provide the innovative products and services that are fueling competition. Mobile broadband networks have different technical needs and constraints than fixed broadband networks and must be treated accordingly. For example, mobile broadband networks' capacity and functioning are limited by the amount of spectrum that is available.[61] Similarly, the shared nature of mobile broadband networks and the role played by customer-selected devices create unique engineering and network management challenges that must be addressed on a dynamic basis.[62] Finally, mobile broadband providers must regularly adapt to rapidly developing network and air-interface

[59] *See* Press Release, T-Mobile, Eleven More Music Services Join T-Mobile's Music Freedom Revolution (Dec. 1, 2015), http://t-mo.co/1rYY90O.

[60] *See* Tom Wheeler, *FCC Chairman Tom Wheeler: This is How We Will Ensure Net Neutrality*, WIRED (Feb. 4, 2015), http://bit.ly/1EGifR4.

[61] *See, e.g.*, Comments of T-Mobile, GN Docket Nos. 10-127, 14-28, at 5 (filed July 18, 2014).

[62] *See, e.g.*, *id.* at 5-6.

technologies. The challenges created by these complexities are compounded by the inherent mobility of wireless broadband: carriers that cannot fully predict how many users will be sharing a network at any particular time or what kinds of demands they will place on the network.[63] The FCC's open Internet regime should use a "light touch" for mobile broadband services to allow carriers to innovate, differentiate themselves from their competitors and accommodate these unique technical attributes.

B. The FCC should follow the FTC's well-established, flexible and comprehensive privacy regime.

The FCC should avoid creating overly burdensome and potentially duplicative or conflicting privacy and cybersecurity regulations.[64] Wireless carriers already have strong incentives to safeguard their customers' personal information. In addition to state and federal privacy and data security laws, mobile broadband providers must meet consumer expectations in the competitive retail market for wireless broadband services. If a wireless carrier mishandles consumer data or does not devote the resources needed to develop and maintain meaningful privacy and security programs, its customers will choose to switch to a competitor that offers more robust safeguards.[65] Given these and other incentives, the FCC should follow the Federal Trade Commission's ("FTC") lead by adopting a flexible, technology-neutral and harm-based approach,[66] so that there is a unified regime for all online actors that focuses on consumer

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[63] *See, e.g., id*. at 6-7.

[64] *See Protecting the Privacy of Customers of Broadband and Other Telecommunications Services*, Notice of Proposed Rulemaking and Order, 31 FCC Rcd 2500 (2016).

[65] *See, e.g., Consumers are Increasingly Aware of Data Privacy Issues*, EFFACTS (Jan. 29, 2016), http://bit.ly/1Vh050e.

[66] *See* FTC, PROTECTING CONSUMER PRIVACY IN AN ERA OF RAPID CHANGE (Mar. 2012), http://1.usa.gov/1SHOpRB.

harms.[67] Such a regime would help preserve a level playing field and would allow wireless carriers the flexibility they need to update their practices, keep up with consumer expectations and demand, innovate and adapt to inevitable changes in technology.

The FTC has authority under Section 5 of the FTC Act to take action against businesses that engage in "unfair" or "deceptive" acts or practices.[68] The FTC's flexible regime ensures that consumers are protected without necessarily placing burdensome regulations on new and emerging service offerings and business models. Under this standard, consumers have come to expect that their data will be protected based on a number of factors including the sensitivity of the data and how the data is being used. The introduction of an additional privacy regime comprised of ex ante regulations adopted by the FCC threatens consumer confusion and may diminish innovation in the wireless broadband sector. Moreover, because the FCC's proposed rules would apply only to Internet service providers ("ISPs"), FCC-imposed rules could skew the market in favor of edge providers that have access to the same information as ISPs but could continue to innovate in response to market conditions under the FTC's more flexible privacy regime. The FCC should not pursue its own ISP-specific privacy rules, but instead defer to the FTC's comprehensive approach. If the FCC elects to pursue its own policies, the agency should harmonize any potential privacy regime with the FTC's privacy framework to minimize the high likelihood of consumer confusion and market distorting effects on businesses competing within the Internet ecosystem.

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[67] T-Mobile is not conceding that the FCC has authority to adopt privacy and security rules for mobile broadband providers. To the extent it is determined that the FCC has such authority, this section is intended to set forth policy suggestions for FCC consideration that would increase mobile broadband providers' ability to compete.

[68] 15 U.S.C. § 45(a)(2).

IV. IMPROVING ACCESS TO CRITICAL INPUT RESOURCES WILL ADVANCE COMPETITION.

T-Mobile and other competitive carriers will be able to effectively compete in the wireless marketplace and meet consumers' growing demand for 5G and other advanced services only if they have access to certain critical inputs. In non-competitive markets, the Commission should prevent the dominant providers of business data services ("BDS") from using their market power to impose rates and terms that artificially constrain competition. The Commission should also take additional steps to ensure that carriers can access data roaming services and video programming at reasonable terms and conditions, and continue to eliminate regulatory barriers that may impede the deployment of distributed antenna systems ("DAS") and small cells.

A. Increased competition in the BDS market will promote deployment and investment in 5G technologies.

Wireless consumers are increasingly demanding access to broadband content. Wireless data use has grown 35-fold since 2009, and use is projected to increase another six-fold by the end of the decade.[69] To meet this growing need for connectivity, carriers are developing next-generation mobile networks that will provide high capacity, high speed and low latency services. These 5G networks will increase carriers' current network capacity, but will require thousands of new cells sites and an increase in dedicated wireline access. As Chairman Wheeler has pointed out, "you can't have cell densification, which makes wireless networks work better, without backhaul, which requires [BDS]."[70]

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[69] Brad Gillen, *Policymakers Across the Board Agree: It's Time to Refuel the Spectrum Pipeline,* CTIA LATEST (Jul. 31, 2015), http://bit.ly/1TFyr7S.

[70] *See Oversight of the Federal Communications Commission: Hearing Before the Subcomm. on Communications and Technology of the H. Comm. on Energy and Commerce*, 114 Cong. 69 (2015) (testimony of The Hon. Tom Wheeler, Chairman, FCC), http://1.usa.gov/1qFGR7C.

Competition in the BDS market is, at best, "uneven."[71] After a time-consuming and searching inquiry, the FCC has identified several terms and conditions of the incumbent providers' existing special access tariffs that qualify as "unjust and unreasonable."[72] According to the Commission, the identified terms "had the effect of . . . decreasing competition and inhibiting the transition to new technologies."[73] As Chairman Wheeler aptly summarized, [w]ithout a healthy BDS market, we put at risk the enormous opportunity for economic growth, job creation and U.S. competiveness that 5G represents."[74]

Access to high capacity BDS at reasonable prices is vital for wireless providers to meet the current demand for wireless broadband services and to build next-generation mobile broadband networks. The two largest providers of BDS are also the two largest providers of mobile broadband services.[75] These providers – Verizon and AT&T – have the ability and incentive to leverage their power in non-competitive BDS markets to harm their competitors in the wireless market. Other providers may prove able to exercise market power as well.

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[71] Press Release, FCC, FCC Seeks Comment on Framework to Advance Competition in the Business Data Services Market (Apr. 28, 2016), http://bit.ly/1qptoR5 ("*Competition in BDS Market Press Release*").

[72] *Id.* Specifically, the FCC determined that "all or nothing" contracts that require a customer to make all of its purchases through a single supplier plan during the term of commitment are "unjust and unreasonable." The FCC further stated that "[t]hese contracts can last up to seven years and may contain excessive penalties to punish customers when they fall short of their volume commitments or when those customers terminate their agreements." *Business Data Services in an Internet Protocol Environment; Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans*, Tariff Investigation Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 16-143, 15-247 (rel. May 2, 2016).

[73] *Competition in BDS Market Press Release.*

[74] Tom Wheeler, Chairman, FCC, Remarks at the INCOMPAS Policy Summit 1-2 (Apr. 11, 2016), http://bit.ly/1stprg8.

[75] *See, e.g.*, Sean Buckley, *BT Americas' Burger Says AT&T, Verizon Have Too Much Control Over Special Access Pricing*, FIERCE TELECOM (Aug. 24, 2015), http://bit.ly/1Tv2a7s ("According to industry estimates, AT&T and Verizon own nearly 80 percent of the special access market.").

Preventing dominant providers from abusing their market power over BDS will eliminate artificial and costly constraints on service and promises to spur greater competition in the downstream markets for wireless broadband.

B. The ability to negotiate reasonable data roaming terms is essential to competition and the provision of next-generation services.

Data roaming is crucial to promoting competition and providing consumers with ubiquitous mobile broadband services. To deliver services that consumers expect, carriers must be able to negotiate reasonable roaming agreements.[76] Unfortunately, the two "must-have" carriers – AT&T and Verizon – possess the incentive and ability to establish anti-competitive and unreasonable rates and terms as a method of raising their rivals' costs and diminishing their rivals' quality of service.[77] Commercially unreasonable agreements forced on T-Mobile have resulted in reduced services for consumers, including constraints on data roaming in some areas.[78] Other carriers have reported similar concerns.[79] In an effort to address these issues, the Commission granted T-Mobile's 2014 petition for Declaratory Ruling, which offered clarification and guidance on how to evaluate data roaming agreements between carriers.[80] In the Declaratory Ruling, the Commission confirmed that the "availability of roaming capabilities

[76] *See e.g., Eighteenth Mobile Wireless Competition Report* ¶ 8 (noting that coverage areas usually are supplemented through roaming agreements).

[77] *See* Petition for Expedited Declaratory Ruling of T-Mobile USA, Inc., WT Docket No. 05-265, at 3 (filed May 27, 2014).

[78] *See id.* at 13.

[79] *See* Comments of Competitive Carriers Association, WT Docket No. 13-135, at 17 (filed June 17, 2013).

[80] *See Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Declaratory Ruling, 29 FCC Rcd 15423 (2014) ("*Data Roaming Declaratory Ruling*").

is and will continue to be a critical component enabling consumers to have a competitive choice of facilities-based providers offering nationwide access to mobile data services."[81]

The Commission has made important steps to strengthen its data roaming rules; however, additional vigilance by the Commission is needed to help determine whether a data roaming agreement is reasonable and to help quickly resolve roaming negotiations that have reached an impasse. And while the Commission's decision to reclassify broadband Internet as a Title II service is currently subject to appellate review, if that decision is upheld the Commission should promptly commence a proceeding to reclassify data roaming as a Title II service, subject to the same standards as voice roaming, and promulgate new rules to ensure competitive access to this essential service.[82]

C. Continuing to eliminate barriers to deployment will help facilitate the emergence of DAS, small cells and the 5G networks that rely on these technologies.

As carriers progressively deploy DAS and small cells over high-band spectrum to support advanced 5G services, it becomes increasingly important to eliminate unnecessary regulatory barriers to wireless infrastructure deployment. Industry analysts have predicted carriers will deploy some 16 million DAS nodes by 2018.[83] The number of microcells (small cells with a range of up to several hundred meters) is projected to grow from 2.5 million to 54.5 million sites over the next five years.[84] As the Commission has recognized, "non-tower and non-building

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[81] *Id.* ¶ 13.

[82] *See Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd. 5601 ¶¶ 523-526 (2015).

[83] *See 16 Million DAS Noes to be Deployed Through 2018,* ANTENNAS SYSTEMS & TECHNOLOGY (Sept. 26, 2013), http://bit.ly/1rQstdZ.

[84] *See id.* (citing INFONETICS RESEARCH, FEMTOCELL EQUIPMENT REPORT (2013)).

structures are vitally important to the deployment of broadband and other services, particularly via DAS and small-cell facilities."[85] Thus, for both DAS and small cells, timely and reasonable access to structures is critical.

To be sure, over the past decade the Commission has made the process of deploying wireless infrastructure significantly more efficient through various means, including: (1) "shot clocks" requiring action by localities on siting applications within reasonable timeframes;[86] (2) "deemed granted" provisions for collocation applications if localities fail to act;[87] and (3) pole attachment rules that reduce potentially excessive costs and establish a timeline for negotiating access to poles.[88] However, more needs to be done to ensure that carriers can continue to meet the growing demand for ubiquitous mobile broadband. T-Mobile urges the Commission to adopt the streamlined historical preservation review procedures for small facility installations such as DAS and small cells, which the Wireless Bureau recently proposed.[89] The Commission should also encourage states to follow the agency's lead in establishing nondiscriminatory access to

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[85] *See Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, Report and Order, 29 FCC Rcd 12865, 12957 ¶ 56 (2014) ("*Wireless Infrastructure Order*").

[86] *See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance*, Declaratory Ruling, 24 FCC Rcd 13994 (2009), *recon. denied*, 25 FCC Rcd 11157 (2010), *aff'd sub nom*, *City of Arlington Tex. v. FCC*, 668 F. 3d 229 (5th Cir. 2012), *aff'd*, 133 S. Ct. 1863 (2013).

[87] *Wireless Infrastructure Order* ¶ 216.

[88] *See, e.g., Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240 (2011); *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Order on Reconsideration, 30 FCC Rcd 13731 (2015).

[89] *See Wireless Telecommunications Bureau Seeks Comment on Proposed Amended Nationwide Programmatic Agreement for the Collocation of Wireless Antennas*, Public Notice, WT Docket No. 15-180, DA 16-519 (rel. May 12, 2016).

utility poles, mandatory timelines for action by utility companies, just and reasonable rates for wireless pole attachments and an effective complaint process.[90]

D. Mobile wireless service providers will need opportunities to access quality video programming at reasonable terms and conditions to remain competitive in the future.

Mobile video is now the number one way people use their mobile data, and mobile video usage is projected to increase 11-fold by 2020.[91] Rules that promote the deployment of new and innovative mobile video services and encourage reasonable access to video content will stimulate additional competition in the mobile wireless market.

Targeted updates to the Commission's video programming rules would increase non-traditional service platform providers' access to video content and promote competition in the wireless market. For example, most favored nation ("MFN") and alternative distribution method ("ADM") clauses in contracts between content creators and existing content distributors (such as multichannel video programming distributors) can make it difficult for mobile and over-the-top providers to get access to content.[92] MFN clauses oftentimes lock a programmer into contract terms it has negotiated with a large MVPD and prevent newer distribution platforms from negotiating opportunistic carriage deals with the programmer, while ADM clauses restrict a programmer's ability to distribute its programming on an alternative platform entirely.[93] MFN

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[90] Twenty states and the District of Columbia currently choose to "reverse preempt" under Section 224. *See* 47 U.S.C. § 224(c); *States That Have Certified That They Regulate Pole Attachments*, Public Notice, 25 FCC Rcd 5541 (WCB 2010).

[91] *Cisco Visual Networking Index White Paper* at 3; John Legere, *Music Freedom, Binge On: Our Doors Are Open to Everyone!*, T-MOBILE (Nov. 10, 2015), http://t-mo.co/25iCCly.

[92] *See* Reply Comments of T-Mobile USA, Inc., MB Docket No. 16-41 at 4-6 (filed Apr. 19, 2016).

[93] *See id.*at 4-5.

and ADM clauses can be competitive distortions, particularly when demanded from a party that traditionally has held significant market power compared to the distributor. The Commission has opened a *Notice of Inquiry* into these and other issues affecting the availability of video programming.[94] This proceeding should analyze the benefits of measures that would afford wireless operators access to quality video content on reasonable terms and conditions.

V. CONCLUSION

The Commission can take several targeted steps to protect and increase the level of competition in the wireless market. Adopting and enforcing rules that promote competitive access to low-, mid- and high-band spectrum at auction and in the secondary market will help guard against anticompetitive foreclosure, as will rules that prohibit the two dominant wireless carriers' wireline affiliates from setting unreasonable rates and conditions for business data services and data roaming services. The Commission should also adopt light-touch regulatory regimes that allow mobile broadband Internet service providers to manage their networks and secure the privacy of their subscribers' data without closing off innovative products and services. Finally, improving siting rules for small cells and other targeted infrastructure and establishing technologically neutral rules for mobile broadband services will increase the competitive market for 5G, mobile video and other next-generation services consumers want and need to enjoy the benefits of a mobile-connected society.

[94] *See generally Promoting the Availability of Diverse and Independent Sources of Video Programming*, Notice of Inquiry, 31 FCC Rcd 1610 (2016).

Respectfully Submitted,

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