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

In the Matter of	)	
Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993	)	WT Docket No. 15-125
Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services	)	

COMMENTS OF MOBILE FUTURE

I. Introduction

Mobile Future submits these comments in response to the Federal Communications Commission's ("FCC" or "Commission") Public Notice seeking input and data for its Eighteenth Annual Report on the State of Competition in Mobile Wireless.[1] The U.S. wireless market is a world leader in terms of innovation and consumer choice. Our nation is home to no less than 40 companies offering 4G LTE service to consumers. Ongoing price wars have delivered fresh offerings from data rollover plans to contract buyouts and other customer enticements. And competition is coming from an exciting and unexpected range of new entrants – and new sectors. Search engine and advertising companies like Google are now becoming mobile network operators, while aviation companies like Boeing are marketing smart phones, bringing to the US mobile marketplace a range of new offerings, devices, and services – and new competition. And, wireless companies are pouring billions of dollars each year into capital investment to bolster their claims to network supremacy—so much so that our nation is home to five percent of global

[1] Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition, *Public Notice*, WT Docket 15-125 (rel. May 29, 2015).

wireless consumers and nearly 25% of the world's mobile investment. Intense market rivalries are not only present in the U.S. mobile marketplace, they are arguably its defining characteristic. Yet, despite this increasingly competitive reality of the US wireless ecosystem, the FCC has chosen for the past four reports to ignore what is self-evident to so many. Unfortunately, for America's consumers and our economy alike, there are real risks attendant to such willful blindness. It is imperative, at last, that this Commission acknowledge the competitive nature of the U.S. wireless sector, so it can develop constructive policies that effectively advance the interests of consumers and continued U.S. mobile innovation leadership.

Americans consumed 4.1 trillion megabytes of wireless data in 2014, a 26% year-over-year leap.[2] With 139 million U.S. 4G LTE subscribers[3] and more than 400 million mobile connected devices,[4] demand for wireless capacity will continue to rapidly grow. For years, robust private capital investment in mobile infrastructure has stood as an indisputable hallmark of wireless competition. With consumers easily able to "take their business elsewhere," market rivals continually race to improve and expand their networks. In addition to acknowledging that the U.S. wireless marketplace is competitive, the FCC should continue its work ensuring adequate spectrum resources are available to help U.S. wireless networks accommodate the growing demands of bandwidth-hungry consumers. By recognizing the competitive dynamic powering this investment and maximizing the spectrum available to translate this capital into

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[2] CTIA, "Annual Wireless Industry Survey," (June 2015), *available at* http://www.ctia.org/your-wireless-life/how-wireless-works/annual-wireless-industry-survey ("CTIA Annual Wireless Survey 2015").
[3] CTIA, "U.S. LTE Subscriptions Reached Over 139 Million," (Dec. 23, 2014), available at http://www.ctia.org/resource-library/facts-and-infographics/archive/us-lte-subscriptions-reachedover-139-million.
[4] Cisco, "Visual Networking Index Mobile Forecast" (Feb. 2, 2015), *available at* http://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country ("Cisco VNI Mobile Forecast").

continued, world-class infrastructure, the FCC can make a constructive and lasting contribution to our nation's mobile future—one that well serves wireless consumers and innovators alike.

II. The Wireless Ecosystem is Thriving as Mobile Broadband Use Continues to Grow

As consumers continue to use mobile broadband to access the Internet for a variety of uses, the wireless ecosystem is evolving to meet demand. According to Cisco, U.S. mobile data traffic will grow two times faster than fixed IP traffic in the next few years.[5] In a recent study, nearly half of users, 47%, said they couldn't last a day without their mobile device.[6] Mobidia reports that the average U.S. wireless customer uses 1.8 GB of cellular data each month.[7] Cisco quantifies U.S. data use at 2.3 times more than counterparts in Western Europe.[8] American consumers use the most wireless data of anyone on the planet and we pay the least per megabyte for it.[9] Increasing consumer demand brings competition, which is why the wireless marketplace is thriving.

a. *Mobile Broadband Use is Growing.*

Ericsson reports that the average U.S. household owns 5.2 connected devices[10] and that number is expected to grow. A full 87% of millennials say their smartphone never leaves their side.[11] And this growth is not limited to the younger generation; ComScore finds that the fastest

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[5] Cisco, "Visual Networking Index," (May 27, 2015), available at http://www.cisco.com/web/solutions/sp/vni/vni_forecast_highlights/index.html ("Cisco VNI").
[6] "Trends in Consumer Mobility Report 2014," Bank of America, (June 30, 2014), *available at* http://newsroom.bankofamerica.com/sites/bankofamerica.newshq.businesswire.com/files/press_kit/additional/2014_BAC_Trends_in_Consumer_Mobility.pdf ("Bank of America Consumer Mobility Report").
[7] Chris Nelger, "The Average American Uses This Much Wireless Data Every Month. How Do You Compare?," (Jan. 24, 2015), *available at* http://www.fool.com/investing/general/2015/01/24/the-average-american-uses-this-much-wireless-data.aspx.
[8] Cisco VNI Mobile Forecast.
[9] Aaron Smith, "U.S. Smartphone Use in 2015," PEW Research Center, (April 1, 2015), *available at* http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.
[10] Ericsson, "Mobility Report: On the Pulse of Our Networked Society," (Nov. 2014), *available at* http://www.ericsson.com/res/docs/2014/ericsson-mobility-report-november-2014.pdf.
[11] Mary Meeker, "Internet Trends 2015 – Code Conference," (May 27, 2015), *available at* http://www.kpcb.com/internet-trends ("Mary Meeker Internet Trends 2015").

growing segment adopting mobile services are consumers 55 years and older.[12] Overall, 53% of emails were opened on a mobile device as compared to a desktop.[13] 54% of users say they check email on their smartphone right before going to bed and 49% say they do so first thing in the morning.[14] Wireless devices permeate all aspects of everyday life and make it easier for consumers to stay connected.

The app economy is just one facet of the wireless community, but it shows the incredible demand for wireless services – from the 960 million mobile gamers[15] to streaming videos, news and health information. Apple recently announced that 1.2 million apps have been downloaded 75 billion times from its App Store.[16] Countless more utilize the app stores for Android, Amazon, Microsoft and Blackberry, giving users a choice of over three million apps vying for their attention.[17]

Mobile video is another key growth metric for wireless broadband services. Mobile video traffic is expected to grow 8.6 fold from 2014 to 2019, at a compound annual growth rate of 54%.[18] And by 2019, video will account for 75% of all U.S. mobile data traffic.[19] In fact, 29%

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[12] ComScore, "2015 U.S. Digital Future in Focus," (March 26, 2015), *available at* http://www.comscore.com/Insights/Presentations-and-Whitepapers/2015/2015-US-Digital-Future-in-Focus?ns_campaign=US_US_MAR2015_WP_DIGITAL%20FUTURE%20IN%20FOCUS&ns_mchannel=email&ns_source=comscore_elq_US_US_MAR2015_WP_DIGITAL%20FUTURE%20IN%20FOCUS&ns_linkname=text_general&ns_fee=0&link_placement=text_heading&elqTrackId=7AF427073F5BDE8CD5B0E04C9A204D6A&elq=3cb7756b6fb04824842e6a23f379f932&elqCampaignId=1307&elqaid=1909&elqat=4 ("ComScore Digital Future Report").

[13] Corinne Bagish, "How Addicted Are We to Our Phones?," Mashable (April 20, 2015), *available at* http://mashable.com/2015/04/20/phone-use-infographic/.

[14] Id.

[15] "2015 Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, (March 2015), *available at* http://www.theesa.com/wp-content/uploads/2015/04/ESA-Essential-Facts-2015.pdf.

[16] "iTunes App Store Now Has 1.2 Million Apps, Has Seen 75 Billion Downloads to Date," Tech Crunch, (June 2, 2014) *available at* http://techcrunch.com/2014/06/02/itunes-app-store-now-has-1-2-million-apps-has-seen-75-billion-downloads-to-date/.

[17] "Number of Apps Available in Leading App Stores as of May 2015," (last accessed June 22, 2015), *available at* http://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/.

[18] Cisco VNI.

of video, including downloaded and streamed content, is now viewed on a mobile, "vertical," screen compared to just 5% five years ago.[20] Mobile accounts for 55% of all Internet video traffic today.[21] Fifty percent of Facebook users watch at least one video per day and 75% of those views are on a mobile device.[22]

The staggering growth in popularity of mobile video has forced content and other service providers to adapt to changing consumer demands. HBO Go and HBO Now allow subscribers to stream all HBO content on mobile devices.[23] One of many competitors for viewers, HBO is going head-to-head with Amazon Prime, Netflix, Hulu and other service providers that deliver wirelessly accessible content. EPIX and Starz also have TV Everywhere apps that allow streaming video to reach users via their mobile devices.[24] Verizon is planning to launch an ad-sponsored mobile TV service.[25]

b. Mobile is a Key Broadband Pipeline for Minorities and Low-Income Communities.

Low-income and minority communities depend on mobile broadband, often as their only source of Internet connectivity. 56.2% of poor households are wireless only[26] – cutting the cord as a cost saving measure. Meanwhile, 53.1% of Hispanic households are wireless only.[27] Fifty-

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[19] Id.
[20] Mary Meeker Internet Trends 2015.
[21] Id.
[22] Id.
[23] Nicole Aporte, "HBO to Netflix: Bring It On," Fast Company (May 2015), *available at* http://www.fastcompany.com/3044284/bring-it-on.
[24] EPIX, available at http://www.multichannel.com/news/next-tv/epix-launches-android-tv-app/391559. Starz, available at http://www.multichannel.com/news/next-tv/starz-tve-app-plays-amazon-s-fire-tv/391561.
[25] Tim Peterson, "Verizon's Internet TV Service May Let Brands Sponsor Your Binge-Watching," AdAge, (June 23, 2015).
[26] National Center for Health Statistics, "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2013," (July 2014), *available at* http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201407.pdf.
[27] Id.

six percent of African Americans own smartphones and 92% own some kind of mobile phone.[28] African Americans also spend the most time on apps per month – nearly 43 hours.[29] These communities often adopt mobile services at a higher rate than other communities and are more likely to depend on wireless alone for broadband access.

Mobile gives these consumers a way to utilize the many services broadband connectivity provides. For instance, 58% of respondents in a recent Bank of America report used mobile to deposit a check.[30] And of those using mobile banking apps, more than 80% accessed them at least once a week.[31] Wireless access helps streamline the process to apply for government assistance, save time at the passport office or find tax forms from the IRS. A full 30% of respondents in a recent PEW study took a class or found educational content via mobile.[32] Mobile provides access to those critical services and ensures that minority and low-income communities are not left on the wrong side of the digital divide.

c. Competition is Driving the Rise of the Internet of Things.

The Internet of Things ("IoT") harnesses the power of mobile broadband to connect almost everything around us. Consumers aren't just looking for the most competitive deal on a mobile phone anymore. They are also searching for the best products in everything from home automation and security devices, mobile broadband-enabled cars, smart appliances and connected wearables. And this isn't just for individual consumers. Businesses are adopting

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[28] Aaron Smith, "African Americans and Technology Use," PEW Research Center, (Jan. 6, 2014), *available at* http://www.pewinternet.org/2014/01/06/african-americans-and-technology-use/.
[29] "So Many Apps, So Much More Time for Entertainment," Nielsen, (June 11, 2015), *available at* http://www.nielsen.com/us/en/insights/news/2015/so-many-apps-so-much-more-time-for-entertainment.html.
[30] Bank of America Consumer Mobility Report.
[31] Id.
[32] Aaron Smith, "U.S. Smartphone Use in 2015," PEW Research Center, (April 1, 2015), *available at* http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.

connected devices as well. And 94% of all businesses say they have seen a return on their IoT investments.[33]

A leading illustration of IoT growth is the connected car. By 2020, nearly 97% of new cars shipped in the United States will have built-in Internet connectivity.[34] Meanwhile, Google, a leader in driverless vehicles, expects its connected car technology to be ready by 2017.[35] And John Deere already sells self-driving technology for its tractors and other vehicles.[36] Ford CEO Mark Fields recently opined that fully self-driving cars are a mere 15 years away from market.[37]

Another big trend is "wearables." From smart watches to connected clothing and jewelry, to athletic brands and designers, everyone is getting into the game. More than 72 million wearable devices will be shipped in 2015 alone, a 173% increase from last year.[38] Mobile data traffic from wearable devices is expected to grow 19-fold from 2014 to 2019, a compound annual growth rate of 80%.[39]

Cities and other local municipalities are connecting as well. Cities can connect roads, parking meters and traffic lights to sync seamlessly and provide a better user experience.

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[33] Giselle Abramovich, "15 Mind-Blowing Stats About the Internet of Things," CMO, (April 17, 2015), *available at* http://www.cmo.com/articles/2015/4/13/mind-blowing-stats-internet-of-things-iot.html.
[34] John Greenough, "Here's How Big Connected Cars Will Be in Regions Around the World," Business Insider, (April 4, 2015), *available at* http://www.businessinsider.com.au/connected-car-shipments-in-north-america-asia-europe-other-regions-2015-4/.
[35] Steven Rosenbush, "Ford CEO Expects Fully Self-Driving Cars Within 15 Years," Wall Street Journal (April 7, 2015), *available at* http://blogs.wsj.com/cio/2015/04/07/ford-ceo-expects-fully-self-driving-cars-within-15-years/.
[36] Andrea Peterson, "Google Didn't Lead the Self-Driving Vehicle Revolution. John Deere Did.," Washington Post, (June 22, 2015) *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2015/06/22/google-didnt-lead-the-self-driving-vehicle-revolution-john-deere-did/?wpisrc=nl_tech&wpmm=1.
[37] Steven Rosenbush, "Ford CEO Expects Fully Self-Driving Cars Within 15 Years," Wall Street Journal (April 7, 2015), *available at* http://blogs.wsj.com/cio/2015/04/07/ford-ceo-expects-fully-self-driving-cars-within-15-years/.
[38] Phil Goldstein, "IDC: Smart Wearable Shipments to Hit 33M in 2015, Take Off Next Year," FierceWireless, (June 18, 2015), *available at* http://www.fiercewireless.com/story/idc-smart-wearable-shipments-hit-33m-2015-take-next-year/2015-06-18.
[39] Cisco VNI.

Private-public partnerships can help water officials monitor for leaky pipes.[40] Smart streetlights can reduce energy costs by 70%-80%.[41]

Numerous other new connected devices will help revolutionize our lives. Smart grid products and services will help us reduce energy costs. Home automation devices will keep our kitchen well stocked, our laundry machines constantly updated and our security features on, all while allowing consumers to check in from their mobile device. IoT offers endless possibilities.

III. Consumer Choice is Growing as a Result of Intense Marketplace Competition

The mobile community is competing vigorously to offer consumers the most innovative services and products. Because of the ever-increasing demand for mobile connectivity, the wireless landscape is constantly shifting, leaving consumers to reap the benefits.

a. The Marketplace is Constantly Changing.

The wireless community is continually shifting to respond to marketplace demands. This includes a rotating barrage of headlines calling for potential investments, mergers and acquisitions. For instance, several different companies appear to be interested in acquiring T-Mobile. Numerous headlines matched the company with different suitors throughout the past year: *Sprint, T-Mobile Move Closer to $32 Billion Deal*;[42] *Surprise Bidder Enters Battle for T-Mobile U.S.*,[43] referring to French company Iliad; *Dish Network Joins Deal Mania With Bid for*

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[40] Aaron Tilley, "AT&T and IBM Team Up to Connect Water Pipes to the Internet," Forbes, (June 1, 2015), *available at* http://www.forbes.com/sites/aarontilley/2015/06/01/att-ibm-water-leaks/.
[41] Giselle Abramovich, "15 Mind-Blowing Stats About the Internet of Things," CMO, (April 17, 2015), *available at* http://www.cmo.com/articles/2015/4/13/mind-blowing-stats-internet-of-things-iot.html.
[42] Ryan Knutson, "Sprint, T-Mobile Move Closer to a $32 Billion Deal," Wall Street Journal, (June 4, 2014).
[43] Ruth Bender, Dana Mattioli and Dana Cimilluca, "Surprise Bidder Enters Battle for T-Mobile US," Wall Street Journal, (July 31, 2014).

T-Mobile;[44] and, *Deutsche Telekom Talks to Comcast About T-Mobile U.S. Sale: Manager Magazin*.[45]

Meanwhile, several other companies are looking to bolster their offerings with mergers and an array of new business combinations. Google introduced Project Fi, its own wireless service.[46] The company also is working on bringing Internet to the masses via balloons with its Project Loon network.[47] AT&T and DirecTV have a merger pending.[48] DISH, a company currently offering no wireless services, competed vigorously in the last two spectrum auctions and came out a big winner.[49] Verizon recently purchased AOL for its mobile video component.[50] And SpaceX, the rocket company, wants to provide Internet service all over the world using little more than 4,000 small, cheap satellites.[51] Competition drives these business decisions, as it quickly makes what's new look old and companies respond by making unique offerings to win customers.

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[44] Emily Steel and David Gelles, "Dish Network Joins Deal Mania With Bid for T-Mobile," New York Times, (June 4, 2015), *available at* http://www.nytimes.com/2015/06/05/business/dealbook/dish-network-is-said-to-be-in-talks-to-buy-t-mobile-us.html.

[45] Harro ten Wolde, "Deutsche Telekom Talks to Comcast About T-Mobile U.S. Sale: Manager Magazin," Reuters, (June 17, 2015), *available at* http://www.reuters.com/article/2015/06/17/us-tmobile-m-a-comcast-idUSKBN0OX16W20150617.

[46] Conor Dougherty, "Google Introduces Wirelss Service Called Project Fi," New York Times, (April 22, 2015), *available at* http://www.nytimes.com/2015/04/23/technology/google-introduces-phone-service-called-project-fi.html?_r=1.

[47] Martyn Williams, "Google's Project Loon Close to Launching Thousands of Balloons," PC World, (April 17, 2015), *available at* http://www.pcworld.com/article/2911852/googles-project-loon-close-to-launching-thosands-of-balloons.html.

[48] Gautham Nagesh, "AT&T: DirecTV Buyout Only Way To Stay Competitive," Wall Street Journal, (June 11, 2014).

[49] Marguerite Reardon, "Surprise! Dish Network Emerges as Major Wireless Player After FCC Auction," CNet, (Jan. 31, 2015), *available at* http://www.cnet.com/news/surprise-dish-network-emerges-as-major-wireless-player-after-fcc-auction/.

[50] Paul Sawers, "Verizon Completes $4.4B Acquisition of AOL," (June 23, 2015), *available at* http://venturebeat.com/2015/06/23/verizon-completes-4-4b-acquisition-of-aol/.

[51] Cecilia Kang and Christian Davenport, "SpaceX founder files with government to provide Internet service from space," Washington Post, (June 9, 2015), *available at* http://www.washingtonpost.com/business/economy/spacex-founder-files-with-government-to-provide-internet-service-from-space/2015/06/09/db8d8d02-0eb7-11e5-a0dc-2b6f404ff5cf_story.html?hpid=z1.

b. Consumers Benefit from Innovative Service and Product Offerings and Plans.

Consumers are reaping the myriad benefits of mobile innovation. More wireless competition means consumers have multiple choices when it comes to their broadband needs. Ninety-eight percent of Americans have access to 4G mobile broadband.[52] As of June 2015, more than 40 U.S. wireless providers offer 4G LTE services to communities across the nation, giving consumers ample choices. And more households are cutting the cord: 41% of households are wireless only.[53] Smartphone penetration in the U.S. has gone from two percent to 75% in the last decade.[54]

Consumers crave greater connectivity and service providers react and adapt to ensure satisfied customers. For instance, AT&T, Cricket, MetroPCS, Sprint, T-Mobile, Verizon, and Virgin Mobile all offer family share plans to let customers maximize use of their data buckets.[55] This year saw the return of rollover plans at AT&T,[56] T-Mobile[57] and Sprint,[58] letting consumers take their unused data forward to the next month. Google's Project Fi lets customers pay for only the data actually used.[59] Republic Wireless is giving customers their money back for

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[52] "98 Percent of Americans are Connected to High-Speed Wireless Internet," The White House Blog, (March 24, 2015), *available at* https://www.whitehouse.gov/blog/2015/03/23/connecting-america-high-speed-broadband-internet.

[53] National Center for Health Statistics, "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2013," (July 2014), available at http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201407.pdf.

[54] ComScore Digital Future Report.

[55] Cerylnn Low, "Family Plan Face-Off: What's the Best Deal?" (Jan. 16, 2015), *available at* http://blog.laptopmag.com/best-family-data-plans.

[56] Don Reisinger, "AT&T Brings Back the Rollover – But This Time, It's All About Data," CNet, (Jan. 7, 2015), *available at* http://www.cnet.com/news/at-t-brings-back-rollover-but-this-time-its-all-about-data/.

[57] Phil Goldstein, "T-Mobile Brings 'Data Stash' Rollover Data Plan to Prepaid Customers," FierceWireless, (Mar. 16, 2015), *available at* http://www.fiercewireless.com/story/t-mobile-brings-data-stash-rollover-data-plan-prepaid-customers/2015-03-16.

[58] Scott Webster, "Spring Prepaid Adds Rollover Data, With a Catch," CNet, (June 2, 2015), *available at* http://www.cnet.com/news/sprint-prepaid-adds-rolling-data-feature/.

[59] "Google Set to Unveil Wireless Service," Wall Street Journal, (April 21, 2015), *available at* http://www.wsj.com/articles/google-set-to-unveil-wireless-service-1429660082.

unused data.[60] Companies also now offer contract-free phones and flexible device upgrade plans. Verizon Edge lets users pay off devices early so they can upgrade anytime.[61] And AT&T Next[62] and T-Mobile JUMP![63] offer flexible upgrade plans as well.

These consumer-friendly services are just the latest evidence of fierce competition among service providers. Sprint CEO Marcelo Claure boasts his company will have the best network by the end of the year.[64] T-Mobile intends to take the number three spot in terms of wireless customers, threatening to overtake Sprint.[65] T-Mobile claims to have more data capacity per subscriber than Verizon.[66] In discussing T-Mobile's Fourth Quarter 2014 earnings results, the company said, "[O]ur cost of capacity is predicated on the spectrum that we have per customer, which is the superior position to that of AT&T and Verizon."[67]

IV. The FCC Must Promote Continued Infrastructure Investment to Maintain a Competitive Wireless Marketplace

The growth of mobile broadband requires maintaining and upgrading the infrastructure that supports these services. In 2014 alone, wireless providers invested over $32.1 billion.[68] Over the past five years, total investment in mobile technologies has exceeded investment in top

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[60] Marguerite Reardon, "Republic Wireless to Credit Customers for Unused Data," CNet, (April 20, 2015), *available at* http://www.cnet.com/news/republic-wireless-to-credit-customers-for-unused-data/.
[61] Tara Donnelly, "A Guide to Verizon's Edge Early Upgrading Plan," (June 2, 2015), *available at* http://www.whistleout.com/CellPhones/Guides/a-guide-to-verizons-edge-early-upgrading-plan.
[62] AT&T, How AT&T Next Works, *available at* http://www.att.com/shop/wireless/next.html.
[63] T-Mobile, About JUMP!, *available at* http://explore.business.t-mobile.com/phones-devices/phone-upgrade.
[64] Daniel Kline, "You're Not Going to Believe What Sprint's CEO is Claiming About Its Network," The Motley Fool, (June 1, 2015), *available at* http://www.fool.com/investing/general/2015/06/01/youre-not-going-to-believe-what-sprints-ceo-is-cla.aspx.
[65] Phil Goldstein, "T-Mobile's Legere: We're Already No. 3, If You Discount Inactive Sprint MVNO Customers," FierceWireless, (Feb. 20, 2015), *available at* http://www.fiercewireless.com/story/t-mobiles-legere-were-already-no-3-if-you-discount-inactive-sprint-mvno-cus/2015-02-20.
[66] T-Mobile, "The Verdict is in. T-Mobile's Network is Data Strong.," *available at* http://explore.t-mobile.com/4g-lte-network.
[67] T-Mobile US (TMUS) Q4 2014 Results – Earnings Call Transcript, Seeking Alpha (Feb. 19, 2015), *available at* http://seekingalpha.com/article/2932366-t-mobile-us-tmus-q4-2014-results-earnings-call-transcript?page=4&p=qanda&l=last.

[68] CTIA Annual Wireless Survey 2015.

sectors like pharmaceuticals and biotechnology combined.[69] In fact, compared to their global counterparts, American wireless providers' investment represents 24% of the world's total wireless investment, despite having only five percent of the world's mobile users.[70] The top two companies on the Progressive Policy Institute's list of 2014 "Investment Heroes," recognizing companies with the highest levels of domestic capital expenditures, were wireless service providers.[71]

Competition depends on the ability of wireless companies to deploy network infrastructure as the backbone of mobile broadband. The FCC should encourage continued infrastructure investment to support mobile broadband services across the country. This includes a streamlined tower siting process, promoting facilities deployments, supporting build-out in underserved areas through the Universal Service Fund, and promoting facilities-based competition by adopting sound roaming policies.

V. The Commission Should Reallocate Additional Licensed Spectrum to Maintain U.S. Leadership in Wireless

The United States is a leader in mobile services and technology – blazing the trail in 4G LTE and working steadily on next-generation 5G networks. To stay ahead of our global competitors, the Commission must work toward freeing more spectrum for licensed commercial wireless use.

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[69] Boston Consulting Group, "The Mobile Revolution: How Mobile Technologies Drive a Trillion Dollar Impact," (Jan. 15, 2015), *available at* https://www.bcgperspectives.com/content/articles/telecommunications_technology_business_transformation_mobile_revolution/.

[70] CTIA, "Annual Wireless Industry Survey," (June 2014), available at http://www.ctia.org/resource-library/press-releases/archive/ctia-annual-survey-2013.

[71] Progressive Policy Institute, "U.S. Investment Heroes of 2014: Investing at Home in a Connected World," (Sept. 10, 2014), *available at* http://www.progressivepolicy.org/issues/economy/u-s-investment-heroes-2014-investing-home-connected-world/.

According to Cisco, a smartphone generates 58 times more mobile data traffic per month than a basic handset.[72] That number jumps to 89 times more mobile data traffic when comparing tablets to basic handsets.[73] And with increased usage comes the need for additional spectrum resources. The Commission must look beyond next year's incentive auction and work with NTIA and other administrative agencies to find more spectrum that can be reallocated for commercial wireless use. To get this spectrum into the marketplace, the Commission should conduct open and inclusive auctions that allow resources to go the bidders who need it most and are willing to invest in order to provide start of the art service to their customers.

a. Licensed Spectrum is a Valuable Resource.

Spectrum continues to be a highly coveted and scarce public resource. Wireless providers are doing everything possible to acquire more high quality, licensed spectrum – from auctions of repurposed spectrum to acquisitions of spectrum assets on the secondary market. The Commission saw record revenue from AWS-3 auction earlier this year, with more than $41 billion raised.[74] New entrant DISH, which currently provides no wireless service, won 44% of all licensed offered at the auction, outbidding almost all other wireless carriers.[75] Thirty-one entities won licenses and non-nationwide carriers acquired 45.95% of the spectrum auctioned. Secondary market transactions also allow America's wireless companies to get the spectrum – including low band spectrum – they need for continued competition. For instance, T-Mobile

[72] Cisco VNI Mobile Forecast.
[73] Id.
[74] Auction 97 Fact Sheet, http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=97.
[75] Marguerite Reardon, "Surprise! Dish Network Emerges as Major Wireless Player After FCC Auction," CNet, (Jan. 31, 2015), *available at* http://www.cnet.com/news/surprise-dish-network-emerges-as-major-wireless-player-after-fcc-auction/.

bought Verizon assets in the 700 MHz band early last year.[76] The Commission should promote secondary market transactions as a way to efficiently distribute a limited national resource.

b. The FCC Should Ensure Success of the Incentive Auction by Promoting Competition Through Open, Inclusive Rules.

It is critical that the FCC ensure the success of the upcoming incentive auction of broadcast spectrum. Last year the FCC put rules in place to reserve up to 30 MHz of spectrum for "small" carriers in the incentive auction. A set-aside is unnecessary for auction success and the Commission should not raise the set-aside as called for by T-Mobile, Sprint and their allies. As noted above, T-Mobile already boasts of more spectrum capacity than AT&T and Verizon. The FCC should not bow to the interests of a select few companies when cultivating auction rules, especially when those companies are not in need of special treatment.

Claims that a higher reserve is needed to promote infrastructure deployment in rural America are unfounded. A higher reserve will not protect small companies in rural areas, but will instead effectively protect T-Mobile and Sprint in urban areas. As noted in a recent blog post, AT&T's spectrum portfolio will not trigger the reserve in most rural areas, so it will be free to bid against all other competitors for rural spectrum.[77] Instead, the reserve will block large companies like AT&T and Verizon from bidding on the set-aside spectrum in mostly urban areas, the very areas where these companies have the greatest need for additional resources.

Additionally, T-Mobile and Sprint, despite already having spectrum resources in the top five most rural states in the contiguous United States, have chosen not to build out and currently

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[76] Phil Goldstein, "T-Mobile Buys Verizon's 700 MHz A Block Spectrum for $2.4B," FierceWireless, (Jan. 6, 2014), *available at* http://www.fiercewireless.com/story/t-mobile-buys-verizons-700-mhz-block-spectrum-24b/2014-01-06.

[77] Joan Marsh, "T-Mobile's Magenta Herring," (June 15, 2015), *available at* http://www.attpublicpolicy.com/spectrum-2/t-mobiles-magenta-herring/.

provide no service in more than 75% of the counties in those states.[78] Meanwhile, AT&T and Verizon have committed to infrastructure deployment to cover 300 million POPs with LTE over their own networks.[79] A set-aside is unnecessary to promote the goals of the incentive auction and the Commission should not revisit auction rules in an effort to increase the reserve.

c. The Commission Should Look Beyond the Incentive Auction to Find Additional Spectrum for Commercial Mobile Broadband.

There are no major wireless auctions on the horizon following next year's planned 600 MHz auction. To maintain global leadership, the wireless community must have access to critical spectrum resources. The Commission should work with NTIA and other government agencies to examine and reallocate unused and underused government-held spectrum assets for licensed commercial use. Consistent with the Middle Class Tax Relief and Job Creation Act of 2012, agency transition plans should be carefully evaluated to identify candidate bands for reallocation, and that process should be commenced by NTIA in coordination with the FCC. Further, additional incentives to promote more efficient spectrum use by federal entities, such as those proposed in response to the Office of Science and Technology Policy's Request for Information should be implemented to facilitate reallocation.

VI. Conclusion

Mobile innovators, service providers, and wireless technology companies are working to bring consumers innumerable choices when it comes to their mobile broadband needs. The marketplace continues to respond adeptly to consumer demand and cause consumer choice to expand and improve. There is no doubt that the FCC should find the U.S. wireless marketplace competitive. The Commission should focus on those policies that facilitate the growth of

[78] Diane Smith, "The Truth About Spectrum Deployment in Rural America," (March 2015), *available at* http://mobilefuture.org/wp-content/uploads/2015/03/031615-MF-Rural-Paper-FINAL.pdf.
[79] Id.

broadband – including encouraging infrastructure deployment and getting spectrum into the hands of carriers that will use it to efficiently and effectively meet consumer demand.

Respectfully Submitted,

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