

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Implementation of Section 6002(b) of the Omnibus Budget 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 AT&T**

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AT&T Services, Inc. respectfully submits these comments on behalf of itself and its wireless affiliates (collectively, “AT&T”) pursuant to the *Public Notice* released on May 29, 2015 in the above-captioned proceeding.<sup>1</sup>

**INTRODUCTION AND SUMMARY**

The Commission’s latest wireless competition report demonstrates, once again, that the wireless mobile marketplace is extremely competitive. For the period covered, the *Seventeenth Report* provides a vast array of data confirming that output continues to grow, prices continue to decline, penetration is high among all demographics, speeds are faster, innovation continues to increase at a dramatic pace, and quality of service is at record levels.

Over the past year, as any casual observer can attest, competition has gone into overdrive. Mobile providers are competing fiercely on price, offering a wide variety of new data plans and promotions such as shared data plans, equipment installment plans, and offers aimed at providing incentives for customers to switch carriers. Indeed, hardly a week goes by without a provider

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<sup>1</sup> Public Notice, *Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, WT Docket No. 15-125 (rel. May 29, 2015) (“*Public Notice*”).

responding to the latest offers in the marketplace with new and better service plan options, lower prices, and special promotions. One independent analyst recently found that “price cuts drove an 8.9% drop in industry postpaid ARPU” in the first quarter of 2015,<sup>2</sup> and CTIA’s latest survey similarly found a 4.4 percent decline in monthly service ARPU during the calendar year 2014.<sup>3</sup> But even as consumers are paying less, they are getting more for their money. All of the major providers are upgrading and expanding their LTE networks. Faster networks are, in turn, driving rapidly increasing usage. According to CTIA, consumers used an astonishing 4.06 trillion MB of data in 2014, up 26 percent from 2013.<sup>4</sup> Those trillions of MB represent consumers using their wireless connectivity to access an ever-expanding set of applications and services in the broader wireless ecosystem, from video to connected cars to the endless possibilities of the “Internet of Things.”

The Commission can no longer turn a blind eye to these developments in order to expand its regulatory powers. The wireless marketplace is effectively competitive and, indeed, more fiercely competitive than ever. A candid Report to Congress would recognize that.

In Part I of these comments, we briefly discuss the structure of the marketplace, which is inherently open to competition. In Part II, we discuss the many ways in which consumers today are reaping unprecedented benefits from that competition, including through both (1) lower prices and (2) faster networks that facilitate access to a broader set of offerings in the ecosystem.

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<sup>2</sup> UBS, “US Wireless 411: Version 56, Addressing the Key Questions in wireless,” May 14, 2015 (“UBS Report”) at 1, 2.

<sup>3</sup> CTIA – The Wireless Association, “CTIA Survey Documents Dramatic U.S. Wireless Performance” (June 17, 2015), at 3 (“CTIA 2014 Release”).

<sup>4</sup> CTIA 2014 Release at 3.

## I. THE WIRELESS MARKETPLACE IS STRUCTURALLY COMPETITIVE.

The *Seventeenth Report*, along with developments since that report, confirm that the industry structure of the wireless marketplace is fundamentally open and intensely competitive. There are four strong facilities-based nationwide wireless providers today, along with many additional regional and local facilities-based providers that use a combination of their own facilities and roaming arrangements to offer nationwide service.<sup>5</sup> The *Seventeenth Report* documents that Americans have many choices: 97 percent of Americans can choose from at least three wireless providers, and 91.4 percent can choose from at least four.<sup>6</sup> Equally important, the *Seventeenth Report* confirms that mobile *broadband* coverage is expanding rapidly: as of January 2014, 93.4 percent of Americans could choose between at least three wireless broadband providers, and 82.1 percent could choose between at least four.<sup>7</sup> If T-Mobile and Sprint follow through on their announced plans, all four national carriers will have deployed LTE to cover more than 300 million people by the end of 2015 – meaning that about 94 percent of Americans will soon have a choice of at least four *LTE* providers.

The fact that the marketplace is structurally open to competitive rivalry has been dramatically confirmed most recently by the resurgence of T-Mobile. Over the last two years, T-Mobile has made a concerted effort to address its previous missteps and become a more effective competitor. It has acquired a large store of spectrum both in the secondary market and from its acquisition of MetroPCS, giving it substantial holdings in the AWS and PCS bands as well as

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<sup>5</sup> *Seventeenth Report, 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*, 29 FCC Rcd. 15311, ¶¶ 12-14 (2014) (“*Seventeenth Report*”).

<sup>6</sup> *Seventeenth Report* ¶ 47 & Chart III.A.1.

<sup>7</sup> *Seventeenth Report* ¶ 51; see also *id.* ¶ 50 (“Mobile broadband coverage has generally increased since the *Sixteenth Report*.”).

700 MHz A Block spectrum in many major markets. It has rapidly deployed an LTE network that it claims reaches 280 million people as of the end of the first quarter of 2015.<sup>8</sup> It has heavily advertised its “Un-Carrier” service plans and promotions. As a result of these initiatives, T-Mobile has achieved more than one million net adds in each of the last eight quarters – including 1.8 million in first quarter of 2015<sup>9</sup> – bringing its total customer count to 57 million and all but overtaking Sprint as the nation’s third largest carrier.<sup>10</sup>

Moreover, although T-Mobile claims otherwise when it is seeking spectrum set-asides and other regulatory favors, T-Mobile recently told its German parent Deutsche Telekom that its rapid growth in the U.S. marketplace is profitable and can continue.<sup>11</sup> Indeed, it noted that its “spectrum position provides [a] runway for continued growth,” emphasizing that it has more

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<sup>8</sup> Cam Buntun, *T-Mobile now covers 280 million people with LTE, same as Sprint*, TmoNews, May 14, 2015, <http://www.tmonews.com/2015/05/t-mobile-now-covers-280-million-people-with-lte-same-as-sprint/> (“T-Mobile Covers 280M”); *see also* Phil Goldstein, *T-Mobile catches up with Sprint: Both carriers now cover 280 million POPs with LTE*, Fierce Wireless, May 14, 2015, <http://www.fiercewireless.com/story/t-mobile-catches-sprint-both-carriers-now-cover-280-million-pops-lte/2015-05-14> (“T-Mobile Catches Up”).

<sup>9</sup> T-Mobile, Press Release, “T-Mobile US Reports First Quarter 2015 Results,” April 28, 2015, <http://investor.t-mobile.com/file.aspx?IID=4091145&FID=29192161> (“T-Mobile 4/28/15 Press Release”) (“1.8 million total net adds – 8<sup>th</sup> consecutive quarter over 1 million” . . . “1.1 million branded postpaid net adds – 3<sup>rd</sup> consecutive quarter over 1 million”).

<sup>10</sup> *Id.*; *see also* Deutsche Telekom Capital Markets Day 2015, Bonn, Feb. 26-27, 2015, <http://investor.t-mobile.com/Cache/1500068828.PDF?Y=&O=PDF&D=&fid=1500068828&T=&iid=4091145> (T-Mobile Capital Markets Presentation”) T-Mobile Capital Markets Presentation at 7 (noting that T-Mobile has “added 22 million customers over the last two years,” going from 33 million customers to 55 million at the end of 2014); Phil Goldstein, *T-Mobile’s Carter: It’s a ‘myth’ that Sprint needs to fail for us to succeed*, Fierce Wireless, Nov. 13, 2014, <http://www.fiercewireless.com/story/t-mobiles-carter-its-myth-sprint-needs-fail-us-succeed/2014-11-13> (quoting T-Mobile CFO saying “that a ‘common myth’ has emerged in the industry that ‘Sprint has to fail in order for T-Mobile to be successful. Contrary to popular belief, the vast majority of our flow is coming from AT&T and Verizon.’”).

<sup>11</sup> T-Mobile Capital Markets Presentation at 34, 36.

spectrum per customer than any of the other national carriers.<sup>12</sup> T-Mobile crowed that it will “level the network coverage playing field in 2015 by expanding our blazing fast 4G LTE network to 300 million POPs, up from 0 in Q1 2013.”<sup>13</sup> Significantly, that deployment includes considerable low-band spectrum: T-Mobile emphasized that “[c]urrently it own[s] or ha[s] agreements to own low-band spectrum for roughly 190 Million POPs” and, “[o]nce deployed, over 70% of T-Mobile’s existing subscribers will have increased coverage through low-band [spectrum].”<sup>14</sup> T-Mobile has already deployed its 700 MHz A-Block spectrum in major market areas like Washington, D.C., Dallas, and Houston,<sup>15</sup> and it has also used its expanded spectrum portfolio to deploy Wideband LTE in 157 market areas (with a plan to deploy in more than 200 market areas by year-end 2015).<sup>16</sup> T-Mobile’s CEO recently emphasized that “I think we have got huge headroom to grow competitively.”<sup>17</sup>

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<sup>12</sup> T-Mobile Capital Markets Presentation at 26. Indeed, T-Mobile recently touted that its “network has more spectrum capacity per customer than Verizon.” T-Mobile Newsroom, Press Release, “T-Mobile Agrees. Never Settle... for Verizon,” May 5, 2015, <http://newsroom.t-mobile.com/news/news-never-settle-for-verizon.htm>.

<sup>13</sup> T-Mobile Capital Markets Presentation at 5, 23.

<sup>14</sup> T-Mobile Capital Markets Presentation at 24.

<sup>15</sup> Phil Goldstein, *T-Mobile hopes to deploy LTE in all of its 700 MHz A Block spectrum this year*, Fierce Wireless, March 19, 2015, <http://www.fiercewireless.com/story/t-mobile-hopes-deploy-lte-all-its-700-mhz-block-spectrum-year/2015-03-19>.

<sup>16</sup> T-Mobile, T-Mobile US Reports First Quarter 2015 Results, <http://investor.t-mobile.com/Cache/1001197520.PDF?Y=&O=PDF&D=&fid=1001197520&T=&iid=4091145> (“T-Mobile 1Q 2015 Release”).

<sup>17</sup> Ritesh Anan, *T-Mobile CEO Says There’s ‘Huge Headroom To Grow Competitively’*, April 29, 2015, Benzinga, <http://www.benzinga.com/media/cnbc/15/04/5453086/t-mobile-ceo-says-theres-huge-headroom-to-grow-competitively>; *see also* T-Mobile 4/28/15 Press Release (“Raising subscriber outlook for 2015 while maintaining Adjusted EBITDA target: Guidance range for branded postpaid net adds increased to 3.0 to 3.5 million; Maintaining target of \$6.8 to \$7.2 billion of Adjusted EBITDA; Maintaining target of \$4.4 to \$4.7 billion of cash capex”).

Sprint is competing vigorously as well. Japanese giant Softbank acquired Sprint in 2013, giving Sprint a deep-pocketed parent eager to rebuild Sprint as a major competitor.<sup>18</sup> Sprint has the most spectrum of any carrier in the marketplace by far, and it has deployed an LTE network using both 800 MHz and 2.5 GHz spectrum. Sprint's LTE network now covers "nearly 280 million POPs,"<sup>19</sup> and it is beginning deployment of both 2x20 MHz carrier aggregation using 2.5 GHz spectrum and LTE-Advanced.<sup>20</sup>

Sprint, like T-Mobile, clearly believes that it has the ability to compete successfully and grow its customer base in this marketplace. Its new CEO, Marcelo Claure, recently stated that "within two years, Sprint will have the top network among U.S. carriers."<sup>21</sup> Claure said "you can expect in the next 18 to 24 months . . . that our network will be ranked No. 1 or No. 2 [in network performance] in every single market."<sup>22</sup> And Sprint just announced that Softbank has agreed to provide the funding for a "massive network densification program," which would add

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<sup>18</sup> Sue Marek, *Sprint's Claure: T-Mobile should step aside, we are the new industry disrupters*, Fierce Wireless, Sept. 11, 2014, <http://www.fiercewireless.com/story/sprints-claure-t-mobile-should-step-aside-we-are-new-industry-disrupters/2014-09-11> (quoting Sprint CEO Claure saying "that Sprint would no longer sit back and let its competitors take the spotlight. 'We are now the disrupters in the industry'").

<sup>19</sup> Sprint, Presentation, FY4Q14 Results Conference Call, at 9, May 5, 2015, <http://investors.sprint.com/Cache/1500071437.PDF?Y=&O=PDF&D=&FID=1500071437&T=&IID=4057219> ("Sprint Conference Call").

<sup>20</sup> See Dr. John Saw, Sprint, Chief Network Officer, "The Sprint Network is Getting Better Every Day" <http://newsroom.sprint.com/blogs/sprint-perspectives/the-sprint-network-is-getting-better-every-day.htm>; Matt Hamblen, *Sprint to rollout LTE Advanced to Chicago area*, Computer World, March 30, 2015, <http://www.computerworld.com/article/2903874/sprint-to-rollout-lte-advanced-to-chicago-area.html> (Sprint begins its LTE advanced rollout with Chicago in March 2015).

<sup>21</sup> Phil Goldstein, *Sprint's Claure: In 18-24 months, we'll be No. 1 or 2 in network performance*, Fierce Wireless, May 28, 2015, <http://www.fiercewireless.com/story/sprints-claure-18-24-months-well-be-no1-or-2-network-performance/2015-05-28>.

<sup>22</sup> *Id.*; see also *id.* ("He later clarified that he meant No. 1 or 2 in the United States' major markets, according to *CNET*").

thousands of new cell sites (including macrocells and small cells) to “dramatically increase coverage and capacity” in its LTE network.<sup>23</sup>

Other current and potential competitors ensure that the marketplace remains intensely competitive. Strong regional and local competitors, including US Cellular, C Spire, and nTelos, are upgrading to LTE and often hold a substantial share of the market in their service areas. Furthermore, DISH remains a very large potential competitor. It continues to amass a large national spectrum portfolio, holding 40 MHz of AWS-4 spectrum and the 700 MHz E Block in most of the country, and just recently winning more spectrum licenses than any other carrier in the AWS-3 auction (more than 700 licenses valued at more than \$13.3 billion dollars). Although DISH is simply warehousing this spectrum as of today, the clock is ticking on its build-out requirements, and DISH’s spectrum will inevitably enter the competitive fray either through build-out, sale, acquisition, wholesale arrangement, or partnership. And other new entrants are seeking to provide service with new business models, such as Google’s “Project Fi,” an MVNO combining Sprint and T-Mobile’s cellular network with WiFi, which launched in April 2015.<sup>24</sup>

In short, the marketplace is inherently conducive to competition. Given that each carrier has made large investments in extensive networks, those carriers have every incentive to compete fiercely to win customers that will fill those networks with traffic. And given that there

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<sup>23</sup> Phil Goldstein, *Sprint gets OK from SoftBank to move ahead on network densification plan*, Fierce Wireless, June 3, 2015, <http://www.fiercewireless.com/story/sprint-gets-ok-softbank-move-ahead-network-densification-plan/2015-06-03>; *see also* Sprint Conference Call at 16 (Sprint expecting accrued capex of approximately \$5 billion in 2015).

<sup>24</sup> Chris Welch, *Google launches its own mobile network for Nexus 6 owners*, The Verge, April 22, 2015, <http://www.theverge.com/2015/4/22/8467433/google-launches-mobile-service/in/8235510>. Google’s service has a pricing structure of \$10 per gigabyte for cellular data used within the United States and covered international destinations (with unlimited talk and text), and a refund for unused cellular data at a prorated rate on the following month’s bill. Overages are similarly prorated for usage based on \$10 per GB used. Project Fi users incur no line access charges. *Id.*

are so many significant and experienced competitors that have large spectrum positions, substantial customer bases, and the resources to continually invest in network improvements, no single mobile provider could have any hope of achieving a dominant position in today's dynamically changing marketplace.<sup>25</sup>

## **II. CONSUMERS ARE REAPING UNPRECEDENTED BENEFITS FROM TODAY'S ROBUST COMPETITION.**

Competition in the wireless marketplace has intensified considerably in the last year. Wireless providers are competing fiercely on price, and the latest data confirm that consumers are benefiting from lower prices. Wireless providers are also competing to enhance their networks, completing deployments of LTE and moving to enhance those deployments with more advanced technologies and network "densification" efforts. Consumers are reaping the benefits of those improvements, enjoying better offerings for lower prices and using a broader range of applications and services in the wider and ever-expanding wireless ecosystem.

### **A. Consumers Are Benefiting From Intense Competition on Price.**

The *Seventeenth Report* notes that the "Wireless Telephone Service CPI" *decreased* by nearly 43 percent from 1997 to the end of 2013, even though the nation's overall CPI *increased*

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<sup>25</sup> The Commission notes that its special "weighted average" of the Herfindahl-Hirschman Index ("HHI") experienced a "small increase" from the end of 2012 to the end of 2013, partly due to T-Mobile's acquisition of MetroPCS (which the Commission found to be in the public interest). *See Seventeenth Report* ¶ 33. Measures of concentration like the HHI are meaningless by themselves, and it has been "many years since anyone knowledgeable about" competitive analysis "thought that concentration by itself imported a diminution in competition." *Capital Cities/ABC, Inc. v. FCC*, 29 F.3d 309, 315 (7<sup>th</sup> Cir. 1994). Even in the context of a merger review, the HHI is merely an initial screen, to determine whether it would be useful to take a closer look at the actual marketplace facts, and here the competitive facts overwhelmingly confirm that the wireless marketplace is competitive. Moreover, as AT&T has previously explained, the Commission's "weighted average" provides a misleading picture of concentration, allowing rural HHIs to dominate the average and masking the fact that the overall national HHI is far lower and that most Americans live in areas with much lower HHIs. *See Comments of AT&T, In the Matter of The State of Mobile Wireless Competition*, WT Docket No. 10-133, at 16, at 16-23 (July 30, 2010).

by 34 percent over the same period.<sup>26</sup> In the period following the issuance of this report, this trend continued. From January 2014 to January 2015, the Wireless CPI decreased by 4.3 percent, while the national CPI decreased by only 0.1 percent.<sup>27</sup>

These declining prices are reflected in declining ARPU, even as consumption of wireless services continues to increase. As one independent analyst has documented, “price cuts drove an 8.9% drop in industry postpaid ARPU” in the first quarter of 2015, which followed a 7.3 percent decline in the fourth quarter of 2014.<sup>28</sup> CTIA’s latest survey similarly documents a 4.4 percent decline in monthly service ARPU during the calendar year 2014.<sup>29</sup> Consumers are benefitting, not only from declining prices, but from more choices as wireless providers have introduced a wide variety of innovative pricing plans and promotions. Such offers include increased price-plan choices, the addition of more mobile data allotment choices and lower price points, and the continuation of equipment installment plans (with new and innovative terms) combined with a reduction in monthly recurring charges.<sup>30</sup> As consumers embrace these alternatives and shop for

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<sup>26</sup> *Seventeenth Report* ¶ 41 & Table II.D.ii.

<sup>27</sup> See Bureau of Labor Statistics, *CPI Detailed Report, Data for January 2015*, at 27, 36, <http://www.bls.gov/cpi/tables.htm>.

<sup>28</sup> UBS Report at 1, 2. However, as AT&T has previously stated, although ARPU data can be a useful metric, it is neither a measure of price nor quantity but is a function of both, and therefore must be properly examined in context. Thus, if (as in the wireless industry), a growing proportion of a provider’s customers are purchasing more data services, ARPU may increase even if the per unit prices have all declined. See Comments of AT&T, Inc., *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 13-135, at 16 n.66 (June 17, 2013).

<sup>29</sup> CTIA 2014 Release at 3.

<sup>30</sup> See, e.g., Phil Goldstein, *Analysts: Verizon’s new price cuts indicate willingness to take on Sprint, T-Mobile*, Fierce Wireless, Feb. 5, 2015, <http://www.fiercewireless.com/story/analysts-verizons-new-price-cuts-indicate-willingness-take-sprint-t-mobile/2015-02-05>.

deals, many of these innovative pricing plans are fundamentally changing how consumers purchase wireless services.

For example, the *Seventeenth Report* notes that a number of providers debuted “shared” data plans that allow customers to share data allotments across family members and devices,<sup>31</sup> and consumers are accelerating their shift to such plans as providers compete to make them more attractive. All of the major carriers have been increasing the amount of data available to customers via these shared plans and at the same or lower prices. In 2014, AT&T launched its Mobile Share Value plans, which give customers reduced access charges when purchasing a device on Next or at full price, and to customers who bring their own devices to AT&T. Toward the end of 2014 and early 2015, AT&T launched a promotion that cut the price of its top-end 15 GB plan to the previous 10 GB price of \$100 per month, and doubled the amount of data offered on its 15, 20, 30, 40, and 50 GB plans to 30, 40, 60, 80, and 100 GB with no increase in the price of the plans.<sup>32</sup> T-Mobile dropped the price of its largest 4G LTE family plan by 29 percent at the end of 2014,<sup>33</sup> and U.S. Cellular announced in early 2015 that it was dropping prices and adding data to its shared data offerings.<sup>34</sup> In April 2015, after cutting prices across the board in

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<sup>31</sup> *Seventeenth Report* ¶¶ 135-139. Most, if not all, of these shared data plans also include unlimited voice minutes and text messaging.

<sup>32</sup> Phil Goldstein, *AT&T cuts price of 15 GB shared data plan by \$30*, Fierce Wireless, April 24, 2015, <http://www.fiercewireless.com/story/att-cuts-price-15-gb-shared-data-plan-30/2014-11-18>.

<sup>33</sup> See *Seventeenth Report* ¶ 138; see also Steven Musil, *T-Mobile launches new \$100 unlimited shared data plan*, CNET, Dec. 9, 2014, <http://www.cnet.com/news/t-mobile-launches-unlimited-shared-data-for-100/>.

<sup>34</sup> Scott Webster, *U.S. Cellular shakes up prices for shared data plans*, CNET, Feb. 24, 2015, <http://www.cnet.com/news/u-s-cellular-shakes-up-prices-for-shared-data-plans/> (for example, “subscribers can now receive 3GB of data for the same cost as the [previous] 2GB plan”).

February 2015,<sup>35</sup> Verizon Wireless reintroduced “promotional pricing” from November 2014, dropping its 10 GB shared data offering 20 percent and reintroducing a 15 GB offering at the price of its previous 10 GB shared data plan.<sup>36</sup> Carriers are also offering consumers more choices of data allotments, with AT&T offering 10 Mobile Share Value plan allotments, including a mid-tier 6 GB offering.<sup>37</sup> These data plans, particularly with larger data allotments and price cuts, can result in significant consumer savings.<sup>38</sup>

In addition to these initiatives, AT&T announced earlier this year that it was re-launching its “Rollover” concept for mobile data, allowing its Mobile Share Value plan customers to rollover their unused data from their monthly data allotment to the next month.<sup>39</sup> Both AT&T and Verizon announced that tablets and certain connected devices can be added to shared data plans for \$10 per month, and laptops and hotspot devices can be added for \$20 per month, far less than purchasing separate plans for these devices.<sup>40</sup> And T-Mobile has continued its “Un-carrier” strategy by introducing “Data Stash,” which allows unused high-speed data to essentially

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<sup>35</sup> Phil Goldstein, *Verizon cuts prices on most of its More Everything shared data plans, adds new options*, Fierce Wireless, Feb. 4, 2015, <http://www.fiercewireless.com/story/verizon-cuts-prices-most-its-more-everything-shared-data-plans-adds-new-opt/2015-02-04>.

<sup>36</sup> Phil Goldstein, *Verizon reintroduces promotional \$80/10 GB and \$100/15 GB shared data plans*, Fierce Wireless, April 24, 2015, <http://www.fiercewireless.com/story/verizon-reintroduces-promotional-8010-gb-and-10015-gb-shared-data-plans/2015-04-24>.

<sup>37</sup> AT&T, Mobile Share Value Plans, <http://www.att.com/shop/wireless/data-plans.html>.

<sup>38</sup> See, e.g., Zach Epstein, *Wireless price war continues: Verizon data plan price cuts will save you \$120*, BGR, Feb. 4, 2015, <http://bgr.com/2015/02/04/verizon-more-everything-plan-discount/> (noting that Verizon is cutting prices in response to T-Mobile’s “UnCarrier” strategy, and so Verizon customers could save \$120 on MRCs).

<sup>39</sup> AT&T, Press Release, “AT&T Gives More Than 50 Million Mobile Share Value Subscribers Shareable Rollover Data,” Jan. 7, 2015, [http://about.att.com/story/att\\_gives\\_50\\_million\\_customers\\_shareable\\_rollover\\_data\\_at\\_no\\_charge.html](http://about.att.com/story/att_gives_50_million_customers_shareable_rollover_data_at_no_charge.html).

<sup>40</sup> AT&T, Mobile Share Value Plans, <http://www.att.com/shop/wireless/data-plans.html>; Verizon Wireless, 2 Steps to Building Your MORE Everything Plan, <http://www.verizonwireless.com/landingpages/more-everything/#how-it-works>.

roll-over each month for up to a year, and gives each customer 10 GB in their “Data Stash” to start.<sup>41</sup>

Carriers are also offering particularly favorable line access charges to customers who bring their own devices, purchase phones outright, or use providers’ equipment installment plans (EIPs). These EIPs, which AT&T, T-Mobile, Sprint, and Verizon all offer, have become extremely popular in a short amount of time. Indeed, many (if not a majority) of new smartphone activations are based on such plans: “[t]oday, 65% of new postpaid plans with AT&T use their [N]ext plan and Verizon is seeing a 50% rate of Edge sign-ups.”<sup>42</sup> Sprint saw 46 percent of its smartphone lines activated on an EIP program in the fourth quarter of 2014, and *all* of T-Mobile’s Simple Choice plan activations (other than customers who bring their own phones) are on its version of an EIP.<sup>43</sup> Sprint also recently announced a “Lease” option that allows customers to obtain a smartphone at an even lower monthly cost (with a purchase or return option at lease-end).<sup>44</sup> With the advent of these EIPs, two-year contracts and early termination fees are becoming markedly less prevalent.

Pricing competition among prepaid providers is likewise intense. Following Commission approval of the AT&T/Leap transaction in March 2014, Cricket launched its new brand with a line-up of rate plans that include roaming, taxes and other fees for a single “all in” price.

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<sup>41</sup> T-Mobile, Press Release, “T-Mobile Unveils Data Stash – Now Your Unused Data Rolls Forward,” Dec. 16, 2014, <http://newsroom.t-mobile.com/news/uncarrier-8.htm>.

<sup>42</sup> Cherie Ve Ard, *Equipment Installment Plans Become More Prevalent than Contracts with Cellular Carriers*, RV Mobile Internet Resource Center, May 27, 2015, <http://www.rvmobileinternet.com/equipment-installment-plans-become-more-prevalent-than-contracts-with-cellular-carriers/>.

<sup>43</sup> Phil Goldstein, *Analysts: Verizon’s new price cuts indicate willingness to take on Sprint, T-Mobile*, Fierce Wireless, Feb. 5, 2015, <http://www.fiercewireless.com/story/analysts-verizons-new-price-cuts-indicate-willingness-take-sprint-t-mobile/2015-02-05>.

<sup>44</sup> Sam Mattera, *Should you Lease Your Next Sprint Smartphone?*, Daily Finance, April 20, 2015, <http://www.dailyfinance.com/2015/04/20/should-you-lease-your-next-sprint-phone/>.

Cricket's entry level data plans with unlimited talk, text, and data begin at \$40/month with 2.5 GB of high-speed data on AT&T's nationwide 4G LTE network or \$35/month after a \$5/monthly Auto Pay credit. In response, T-Mobile's MetroPCS brand introduced a similar "all in" plan, albeit with less high-speed data (1 GB), for \$30/month.<sup>45</sup> MetroPCS is also offering an unlimited 4G LTE plan for \$60 per month,<sup>46</sup> which undercuts T-Mobile's post-paid offering by \$20 per month.<sup>47</sup> T-Mobile, which has surpassed Sprint as the top prepaid phone provider in the United States,<sup>48</sup> announced a "Simply Prepaid" offering with unlimited talk, text, and unlimited data (with an allotment of high-speed data).<sup>49</sup> Another benefit now being offered to prepaid customers is data allotment rollover. Certain AT&T GoPhone plans allow any unused high-speed data from customers' monthly plan allowance to carry over to the next 30-day renewal period. T-Mobile Simple Choice prepaid plans also offer unused data rollover.<sup>50</sup> And Sprint Prepaid offerings include rollover of up to 30 GB of data that does not expire. In addition, Sprint, through its Virgin Mobile prepaid brand, launched shareable data in the prepaid sphere in

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<sup>45</sup> Lance Whitney, *MetroPCS crafts unlimited phone plan for \$30 a month*, CNET, Mar. 24, 2015, <http://www.cnet.com/news/t-mobiles-metropcs-offers-unlimited-plan-for-30-a-month/>.

<sup>46</sup> MetroPCS, Plan Details, <https://www.metropcs.com/cell-plans/plans/details/GSM60.html>.

<sup>47</sup> See T-Mobile, Plan Details, <http://www.t-mobile.com/cell-phone-plans/individual.html>.

<sup>48</sup> Williams Pelegrin, *T-Mobile Surpasses Sprint to Become the Top Prepaid Phone Service in the U.S.*, Digital Trends, Aug. 7, 2014, <http://www.digitaltrends.com/mobile/t-mobile-now-united-states-top-prepaid-phone-service-provider/>.

<sup>49</sup> Malarie Gokey, *T-Mobile's Simply Prepaid Plans Strengthen Its Lead Over Sprint*, Digital Trends, Jan. 15, 2015, <http://www.digitaltrends.com/mobile/t-mobile-simply-prepaid-plans-news/>; Daniel Kline, *Did T-Mobile Just Introduce the Cheapest Prepaid Wireless Plan From A Major Carrier?*, The Motley Fool, Jan. 20, 2015, <http://www.fool.com/investing/general/2015/01/20/did-t-mobile-just-introduce-the-cheapest-prepaid.aspx>.

<sup>50</sup> *Sprint Prepaid Monthly Rolling Data Now Included on All Plans Starting at \$35/Month, Available Exclusively at Best Buy*, Business Wire, June 2, 2015, <http://www.businesswire.com/news/home/20150602006370/en/Sprint-Prepaid-Monthly-Rolling-Data-Included-Plans#.VXRync9Vi4p>.

January 2015.<sup>51</sup> Total Wireless, a TracFone offering that utilizes the Verizon Wireless network, also now offers shared data.<sup>52</sup>

Device financing options are also enabling wireless providers to help prepaid customers get the latest, premium devices even faster. For example, earlier this year, Cricket announced the availability of device financing through a third-party, making it the first national prepaid wireless carrier to offer three distinct credit financing options, including a rent-to-own leasing option for qualified customers – all with no annual service contract.<sup>53</sup>

Consumers are responding to this competition and face no significant obstacles if they want to change providers. Indeed, even though providers are bending over backward to keep their customers in the face of intense competition, churn rates continue to range from about 1 to 2 percent in the second quarter of 2015 (and higher still for prepaid services).<sup>54</sup> That translates into customer turnover among carriers in the tens of millions each year.<sup>55</sup> These statistics are an obvious real-world demonstration that customers can and do take advantage of the competitive options available to them.

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<sup>51</sup> Phil Goldstein, *Sprint dumps Virgin Mobile Custom brand, but keeps Its Own technology and Walmart partnership*, Fierce Wireless, Jan. 16, 2015, <http://www.fiercewireless.com/story/sprint-dumps-virgin-mobile-custom-brand-keeps-itsown-technology-and-walmart/2015-01-16>.

<sup>52</sup> Dennis Bournique, *TracFone Launches New “Total Wireless” Verizon Based MVNO*, Prepaid Phone News, Feb. 23, 2015, <http://www.prepaidphonenews.com/2015/02/tracfone-to-launch-total-wireless.html>.

<sup>53</sup> Scott Webster, *Cricket Wireless intros financing and leasing options for prepaid phones*, CNET, April 8, 2015, <http://www.cnet.com/news/cricket-wireless-intros-financing-and-leasing-options-for-phones/>.

<sup>54</sup> UBS Report at 8.

<sup>55</sup> See, e.g., *Seventeenth Report* ¶ 27 (noting that churn rates of 2 percent indicates significant changes in a providers customer base).

**B. Consumers Are Also Benefiting from Faster Networks, Which Are Driving Innovation and Dramatically Increased Usage.**

Even as competition is reducing prices, consumers are getting more for their money. Wireless providers in the United States invested billions of dollars to enhance and expand their wireless networks in 2014, including deployment of advanced LTE services throughout the country. Faster networks translate into higher usage, as consumers take advantage of more advanced networks to access a deeper and richer ecosystem of applications and services. That has been the case in the last year, as data usage has continued to skyrocket and consumers use wireless services for a broader range of activities – including, increasingly, the “Internet of Things.”

According to CTIA, wireless carriers made capital investments of about \$32.1 billion in 2014, representing a 29 percent increase over the past four years.<sup>56</sup> U.S. Carriers also invested heavily in “densifying” their networks, with both additional macro cells and small cells.<sup>57</sup> AT&T’s nationwide network covers more than 99 percent of Americans, with more than 308 million people covered by its 4G LTE network.<sup>58</sup> Verizon Wireless’ LTE network also covers more than 300 million people in the United States.<sup>59</sup> T-Mobile reported that it had deployed 4G LTE to about 280 million people nationwide as of May 2015,<sup>60</sup> with a goal of reaching 300

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<sup>56</sup> CTIA 2014 Release at 3.

<sup>57</sup> See, e.g., Phil Goldstein, *Report: LTE infrastructure spending to peak at \$23.3B in 2015, then start declining*, Fierce Wireless, June 5, 2015, <http://www.fiercewireless.com/story/report-lte-infrastructure-spending-peak-233b-2015-then-start-declining/2015-06-05>.

<sup>58</sup> AT&T, Network Featured Stories, <http://about.att.com/news/wireless-network.html>.

<sup>59</sup> Verizon, News Center, <http://www.verizonwireless.com/news/LTE/Overview.html>.

<sup>60</sup> T-Mobile Covers 280M, *see also* T-Mobile Catches Up.

million people by the end of 2015.<sup>61</sup> Sprint announced that, as of May 2015, its LTE network covers about 280 million people nationwide using 800 MHz and 2.5 GHz spectrum.<sup>62</sup> Sprint has stated that it plans to aggressively expand its network, adding up to 20,000 cell sites in addition to having already updated more than 38,000 cell sites as part of its “Network Vision” modernization program.<sup>63</sup>

Regional providers also have improved their networks. US Cellular will reportedly increase its 2015 network capital expenditure more than 7.5 percent to \$600 million,<sup>64</sup> and “plans to cover essentially its entire customer base with LTE by the end of [2015].”<sup>65</sup> C Spire has continued its rollout of 4G LTE, and has announced that it is upgrading its LTE network to 4G LTE+, which includes fiber backhaul between cell sites, twice the number of receivers at each site, content caching, and network extending technologies like femtocells and distributed antenna systems.<sup>66</sup> C Spire’s 4G LTE+ service covers more than 2.1 million people in Mississippi, Alabama, and Florida, and offers “wireless data speeds up to 10 times faster than previously

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<sup>61</sup> See T-Mobile 1Q 2015 Release; compare T-Mobile, 2013 10-K Year End Filing, (noting that LTE deployment covered 200MM POPs).

<sup>62</sup> Sprint, News Release, “Sprint Reports Results for Fourth Fiscal Quarter of 2014” (May 5, 2015), <http://investors.sprint.com/Cache/1500071435.PDF?Y=&O=PDF&D=&fid=1500071435&T=&iid=4057219>.

<sup>63</sup> Phil Goldstein, *Sprint to expand and improve LTE network, may add up to 20,000 cell sites*, Fierce Wireless, Feb. 26, 2015, <http://www.fiercewireless.com/story/sprint-expand-and-improve-lte-network-may-add-20000-cell-sites/2015-02-26>.

<sup>64</sup> John Celentano, *U.S. Wireless CapEx Looking Up, Above Ground Level*, April 2, 2015, <http://www.aglmediagroup.com/u-s-wireless-capital-expenditures-looking-up/>.

<sup>65</sup> Phil Goldstein, *U.S. Cellular to expand LTE network cover 98% of its customers by end of 2015*, Fierce Wireless, April 1, 2015, <http://www.fiercewireless.com/story/us-cellular-expand-lte-network-cover-98-its-customers-end-2015/2015-04-01>.

<sup>66</sup> C Spire Wireless, 4G LTE+ Overview, <http://www.cspire.com/cms/wireless/4Gplus/#overview>.

available.”<sup>67</sup> Regional carrier nTelos is investing \$175 million to roll out LTE across its footprint under its “4G for All” network plan, utilizing its 1900 MHz spectrum.<sup>68</sup>

In addition, a number of carriers have begun to deploy more advanced technologies within their LTE networks to compete on speed, availability, and coverage. AT&T is currently deploying LTE-Advanced, which uses carrier aggregation to achieve much higher data throughput speeds (up to 300 megabits per second).<sup>69</sup> Verizon Wireless is testing its LTE-Advanced deployment,<sup>70</sup> and has already deployed LTE capacity increases via its XLTE product, which uses AWS spectrum, in more than 250 markets.<sup>71</sup> Sprint has also started implementing carrier aggregation across its spectrum bands as part of LTE-Advanced, in addition to continuing its LTE network buildout.<sup>72</sup> T-Mobile announced that it was “deploying Wideband LTE, while

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<sup>67</sup> C Spire Calls Wireless Enhancements “4G+”, Telecompetitor, June 16, 2014, <http://www.telecompetitor.com/c-spire-calls-wireless-enhancements-4g/>.

<sup>68</sup> nTelos Announces “4G for All” Network Expansion Plan, First LTE Launch of 2015, Fierce Wireless, Feb. 2, 2015, <http://www.fiercewireless.com/press-releases/ntelos-announces-4g-all-network-expansion-plan-first-lte-launch-2015>.

<sup>69</sup> Mikael Ricknas, *As LTE-Advanced becomes more common, 4G speeds increase*, Computerworld, Jan. 9, 2015, <http://www.computerworld.com/article/2866944/as-lte-advanced-becomes-more-common-4g-speeds-increase.html>.

<sup>70</sup> Phil Goldstein, *Verizon to launch carrier aggregation, more LTE Advanced features in 2015*, Fierce Wireless, Dec. 4, 2014, <http://www.fiercewireless.com/story/verizon-launch-carrier-aggregation-more-lte-advanced-features-2015/2014-12-04>

<sup>71</sup> Paul Macchia, Verizon News Center, Press Release, “Customers Celebrate One Year of XLTE,” May 19, 2015, <http://www.verizonwireless.com/news/article/2015/05/customers-celebrate-one-year-of-xlte.html>.

<sup>72</sup> Phil Goldstein, *Sprint to bring carrier aggregation to all of its LTE bands in bid to boost performance*, Fierce Wireless, Feb. 5, 2015, <http://www.fiercewireless.com/story/sprint-bring-carrier-aggregation-all-its-lte-bands-bid-boost-performance/2015-02-05>. Sprint also began its LTE-Advanced rollout in March 2015. See Matt Hamblen, *Sprint to rollout LTE Advanced to Chicago area*, Computerworld, March 30, 2015, <http://www.computerworld.com/article/2903874/sprint-to-rollout-lte-advanced-to-chicago-area.html>.

at the same time rolling out 4G LTE on its 700 MHz A-Block and 1900 MHz PCS spectrum.”<sup>73</sup> And C Spire has launched its 4G LTE+ network which includes network upgrades similar to LTE-Advanced.

This focus on mobile data has improved network performance for consumers. For example, a recent analysis by PC Magazine found AT&T’s average nationwide download speeds up 26 percent, to 15 Mbps (similar to many wireline offerings), in 2015 from the previous year.<sup>74</sup> These investments in mobile data services, which have traditionally been the focus of U.S. carriers, have come at the same time as a “voice renaissance,” in which carriers are deploying new voice services including “Voice over LTE, Wi-Fi calling, and HD Voice.”<sup>75</sup> AT&T, Verizon Wireless, and T-Mobile have all deployed Voice over LTE (“VoLTE”), and each carrier has used VoLTE to provide superior voice calls via high definition voice (“HD Voice”).<sup>76</sup> Sprint reported in 2014 that it provided 16 million customers with HD Voice.<sup>77</sup> T-Mobile and Sprint have already launched Wi-Fi calling, and T-Mobile specifically has given its customers incentives to upgrade to Wi-Fi calling-capable handsets.<sup>78</sup> Both AT&T and Verizon Wireless have announced that they plan to offer Wi-Fi calling in 2015.<sup>79</sup>

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<sup>73</sup> T-Mobile 1Q 2015 Release.

<sup>74</sup> See Sascha Segan, *Fastest Mobile Networks 2015*, PC Magazine, June 22, 2015, available at <http://www.pcmag.com/article2/0,2817,2485838,00.asp> (compare Sascha Segan & PCMag Staff, *Fastest Mobile Networks 2014*, PC Magazine, June 11, 2014, available at <http://www.pcmag.com/article2/0,2817,2459186,00.asp>).

<sup>75</sup> Sue Marek, *The voice renaissance: VoLTE, HD Voice and Wi-Fi calling bring innovation to voice*, Fierce Wireless, Feb. 20, 2015, <http://www.fiercewireless.com/story/voice-renaissance-volte-hd-voice-and-wi-fi-calling-bring-innovation-voice/2015-02-20>.

<sup>76</sup> *Id.*

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

Increases in network speeds and capacity have historically led to increased usage, and this latest round of improvements has been no exception. According to Cisco's most recent virtual networking index, in 2014 mobile customers on 4G connections (accounting for 40 percent of mobile data traffic) generated 10 times more traffic than those on non-4G connections.<sup>80</sup> It is thus no surprise that output continues to grow rapidly, by every measure. CTIA reports that the number of mobile wireless connections grew from 335.7 million connections at the end of 2013 to more than 355 million connections in 2014.<sup>81</sup> According to the latest survey data from CTIA, wireless carriers carried 4.06 trillion MB of data traffic in the U.S. in 2014 – an increase of 26 percent from 2013, even as consumers' monthly cost of service declined.<sup>82</sup> Customers in North America, on average, used 60 percent more wireless data per month in 2014 compared to customers in Western Europe.<sup>83</sup> Consumers are also using more

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<sup>80</sup> See Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2014-2019, at 2-3 (Feb. 3, 2015).

<sup>81</sup> CTIA 2014 Release at 2. At the end of 2013, nationwide penetration rate exceeded 100 percent, and the penetration rate was at least 100 percent in 82 of the 172 Economic Areas ("EAs") in the United States, as compared to 60 EAs at the end of 2012. *Seventeenth Report* ¶ 66; *Sixteenth Report, 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*, 28 FCC Rcd. 3700, ¶ 252 (2013).

<sup>82</sup> CTIA 2014 Release at 2-3 (average monthly service revenue per unit decreased from \$48.79 in 2013 to \$46.64 in 2014, after remaining stable around \$48 for several years). See also Cisco Visual Networking Index, VNI Mobile Forecast Highlights, United States – 2014 Year in Review (May 2015) (data traffic in the U.S. grew by 63 percent in 2014, to a level equivalent to 32 times the volume of U.S. mobile traffic five years earlier, in 2009).

<sup>83</sup> Ericsson, *Ericsson Mobility Report: On the Pulse of the Networked Society*, June 2015, at 13, <http://www.ericsson.com/res/docs/2015/ericsson-mobility-report-june-2015.pdf>. Other metrics confirm that customer usage was robust in 2014. The number of "Minutes of Use (MOU)" for 2014 stood at 2.455 trillion, down slightly from 2013's record high of 2.618 trillion minutes. See CTIA 2014 Release at 3. The number of carrier-provided SMS and MMS messages in 2014 was up from 2013 to 1.92 trillion and 151.99 billion, *id.*, respectively, notwithstanding that there has been a substantial shift away from carrier-based SMS and MMS services to data-based services not captured by the metrics, such as Google Hangouts, Apple's iMessage, Facebook Messenger, Snapchat, and similar applications.

types of devices: the number of “wireless-enabled tablets, laptops, netbooks and wireless broadband modems” in 2014 was 35.4 million, up 40.5 percent over 2013 levels,<sup>84</sup> and during the first quarter of 2015, sales of cellular-connected tablets grew by nearly 50 percent compared to the first quarter of 2014.<sup>85</sup> And customer satisfaction, a reflection of robust competition, has reached an all-time high according to the American Customer Satisfaction Index for the Wireless Telephone Service Industry.<sup>86</sup>

The way customers are using wireless data also continues to evolve. The majority of data usage in 2014 was for video – 60 percent, representing 317.8 petabytes per month.<sup>87</sup> Cisco estimates that video usage will continue to increase exponentially in the next four years, to an estimated 75 percent of all mobile data traffic and 2.7 exabytes per month.<sup>88</sup> Content providers have dramatically expanded their availability of mobile video services; for example, in 2015 HBO launched HBO Now, providing mobile streaming of HBO content services without the need for a pay-TV-based HBO subscription.<sup>89</sup> Further, content providers such as ESPN, NBCU, Vice News, Comedy Central, and the BBC have teamed up with streaming service Spotify to

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<sup>84</sup> CTIA 2014 Release at 4.

<sup>85</sup> See Phil Goldstein, *As U.S. tablet sales fall overall, Verizon, AT&T and Sprint see increasing sales of cellular tablets*, Fierce Wireless, May 14, 2015, <http://www.fiercewireless.com/story/us-tablet-sales-fall-overall-verizon-att-and-sprint-see-increasing-sales-ce/2015-05-14>.

<sup>86</sup> See American Customer Satisfaction Index, *Benchmarks By Industry – Wireless Telephone Service*, [http://www.theacsi.org/index.php?option=com\\_content&view=article&id=147&catid=&Itemid=212&i=Wireless+Telephone+Service](http://www.theacsi.org/index.php?option=com_content&view=article&id=147&catid=&Itemid=212&i=Wireless+Telephone+Service).

<sup>87</sup> Robert Roche, *Mobile Usage Continues to Increase + Projections Say Skyrocketing Demand = More Spectrum Required*, CTIA, Feb. 6, 2015, <http://blog.ctia.org/2015/02/06/mobile-usage-more-spectrum-required/> (“Roche 2/6/15 Blog”).

<sup>88</sup> *Id.*

<sup>89</sup> Joan E. Solsman, *HBO Now launches on Apple TV, Cablevision ahead of ‘Game of Thrones’* CNET, April 7, 2015, <http://www.cnet.com/news/hbo-now-launches-on-apple-tv-cablevision-ahead-of-game-of-thrones/>.

launch a streaming video service, which will include popular content from the various providers as well as some original content created only for the Spotify streaming video offering.<sup>90</sup>

Wireless carriers are also breaking into the market for video; in mid-2015, Verizon plans to launch an Over The Top mobile-video offering focused on college sports, and has signed new content agreements with CBS and ESPN, among others, to provide live college games, previews, recaps, and original programming to subscribers.<sup>91</sup> Directed offerings, such as a Nickelodeon app for children's content<sup>92</sup> and a Reuters TV app for news, offer mobile video including live newscasts.<sup>93</sup> Niche content providers are also entering the market and taking advantage of demand for video and the strength of today's mobile networks. Twitter launched its Periscope service in early 2015, which allows smartphone users to live-stream video from anywhere,<sup>94</sup> and there is a burgeoning new market for watching "eSports," exemplified by streaming service

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<sup>90</sup> Todd Spangler, *Spotify Launches Video with ESPN, NBCU, Vice News, Comedy Central and More*, Variety, May 20, 2015, <http://variety.com/2015/digital/news/spotify-launches-video-with-espn-nbc-vice-media-comedy-central-and-more-1201501485/>.

<sup>91</sup> Ben Munson, *Verizon Bets on College Spots for Its OTT Mobile Video Offer*, Wireless Week, April 16, 2015, <http://www.wirelessweek.com/news/2015/04/verizon-bets-college-sports-its-ott-mobile-video-offer>.

<sup>92</sup> Jon Lafayette, *Nickelodeon to Launch Mobile Video Service* Broadcasting & Cable, Jan. 29, 2015, <http://www.broadcastingcable.com/news/upfront-central/nickelodeon-launch-mobile-video-service/137528>.

<sup>93</sup> Will Richmond, *Reuters TV Launches Amid Flurry of Mobile Vide News Initiatives*, Video Nuze, Feb. 5, 2015, <http://www.videonuze.com/article/reuters-tv-launches-amid-flurry-of-mobile-video-news-initiatives>.

<sup>94</sup> Blair Hanley Frank, *Twitter launches Periscope, jumping into live mobile streaming market*, GeekWire, March 27, 2015, <http://www.geekwire.com/2015/twitter-launches-periscope-jumping-into-live-mobile-streaming-market/>.

Twitch.tv, which has 100 million users logging on each month to watch the best gamers in the world play their favorite video games.<sup>95</sup>

Streaming music services have also seen tremendous growth, with Apple launching its new streaming music service in June 2015.<sup>96</sup> Recording artist Jay Z has teamed up with other artists to launch Tidal,<sup>97</sup> a streaming music competitor that focuses on artist compensation, and specialized genres like house and electronic dance music have seen new streaming services such as Beatport come onto the mobile music streaming scene.<sup>98</sup>

Upgraded mobile broadband networks are also providing the platforms for a whole new generation of services. Indeed, mobile connected devices are seeping into every aspect of American life. Consumers today use mobile networks to watch video, stream music, engage in video calls, control their thermostats and lighting, monitor home video surveillance, share photos and videos, play video games with friends, track health, obtain healthcare, make payments at stores and online, among many other things. And this is just the tip of the iceberg. Mobile broadband connectivity is being built into an ever increasing number of devices. The past year, for example, produced the first widespread wave of “wearables,” such as watches, exercise monitors, health trackers, and other devices. Usage of wearables is predicted to increase from

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<sup>95</sup> Melia Robinson, *What it's like to work at Twitch, the \$970 million company that's turned gaming into a full-time job*, Business Insider, March 6, 2015, <http://www.businessinsider.com/twitch-headquarters-office-tour-2015-3?op=1>.

<sup>96</sup> Darrell Etherington, *Apple Streaming Music Service Launches June 30<sup>th</sup> At \$9.99 A Month, \$14.99 Family Plan*, Tech Crunch, June 8, 2015, <http://techcrunch.com/2015/06/08/apple-streaming-music-service-apple-music/#.a5mo6v:4GM9>.

<sup>97</sup> Ben Sisario, *Jay Z Reveals Plans for Tidal, a Streaming Music Service*, NY Times, March 30, 2015, [http://www.nytimes.com/2015/03/31/business/media/jay-z-reveals-plans-for-tidal-a-streaming-music-service.html?\\_r=0](http://www.nytimes.com/2015/03/31/business/media/jay-z-reveals-plans-for-tidal-a-streaming-music-service.html?_r=0).

<sup>98</sup> Billboard Staff, *Beatport Launches Free Streaming Music App for Mobile*, Billboard, March 26, 2015, <http://www.billboard.com/articles/business/6516447/beatport-mobile-app-streaming-music>.

29.3 million units in 2014 to 170.3 million in 2019;<sup>99</sup> traffic from wearables is expected to grow 19 times the current rate by 2019, to 100.4 petabytes per month.<sup>100</sup>

“[E]ven as human use of mobile data continues to expand, it pales in comparison to anticipated growth in the ‘Internet of Things’ — much of which will be wirelessly enabled.”<sup>101</sup> Deloitte estimates that 26 billion “Internet of Things” units will be installed by 2020.<sup>102</sup> AT&T has led the industry in this environment, striking agreements with more than 136 companies across numerous industries including agriculture, automotive, aviation, energy, healthcare, transportation, security, and supply chain logistics, for Internet of Things device integration.<sup>103</sup> AT&T’s network already serves 22 million connected devices worldwide (as of March 2015), and 70 percent more devices were activated during the first quarter of 2015 compared to the first quarter of 2014.<sup>104</sup> In addition to consumer products such as wearables, home control, and assistance devices for disabled persons, Internet of Things devices are also helping cities increase efficiency via smart energy grids, streetlights, irrigation systems, and traffic systems, among other deployments.

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<sup>99</sup> Roche 2/6/15 Blog.

<sup>100</sup> *Id.*

<sup>101</sup> Deloitte, “United States expands global lead in mobile broadband: How policy actions could enhance or imperil America’s mobile broadband competitiveness,” at 17 (Sept. 2014), <http://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-mobile-index-09262014.pdf>.

<sup>102</sup> *Id.*

<sup>103</sup> AT&T, Press Release, “AT&T Leads the Industry in the Internet of Things,” June 15, 2015, [http://about.att.com/story/att\\_leads\\_industry\\_in\\_internet\\_of\\_things.html](http://about.att.com/story/att_leads_industry_in_internet_of_things.html).

<sup>104</sup> *Id.*

**CONCLUSION**

For the foregoing reasons, the Commission should find that the wireless mobile marketplace is characterized by effective competition.

Respectfully Submitted,

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