SPRINT Corp
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Description of Transaction,

Public Interest Statement, and

Related Demonstrations

June 18, 2018

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EXECUTIVE SUMMARY

T-Mobile US, Inc. (T-Mobile) and Sprint Corporation (Sprint) respectfully request approval from the Federal Communications Commission (FCC or Commission) to join together to form New T-Mobile. This proposed merger is necessary to accomplish a goal critical to enhancing consumer welfare in this country: the rapid and widespread deployment of 5G networks in a market structure that spurs rivals to invest in a huge increase in capacity, and, correspondingly, to drop tremendously the price of data per gigabyte. New T-Mobile will be able to leverage a unique combination of complementary assets to unlock massive synergies in order to build a world-leading nationwide 5G network that will deliver unprecedented services to consumers, increasingly disrupt the wireless industry, and ensure U.S. leadership in the race to 5G.

Consumer Benefits Are Compelling. This transaction is a unique opportunity to deliver myriad compelling benefits for American consumers, which would not be achievable in the absence of the merger:

New T-Mobile Will Build a World-Class Nationwide 5G Network That Will Leapfrog Verizon and AT&T s Networks. New T-Mobile will invest nearly $40 billion to combine the complementary spectrum, sites, and assets of T-Mobile and Sprint to deliver a robust, nationwide world-class 5G network and services sooner than otherwise possible. Current Sprint customers will realize 4G LTE coverage benefits; T-Mobile customers will realize improvements from the greater depth of spectrum; and, as the 5G network is built out, the speed and capacity gains will be significant. By 2024, the New T-Mobile network will have approximately double the total capacity and triple the total 5G capacity of T-Mobile and Sprint combined, with 5G speeds four to six times what they could achieve on their own. In the face of this challenge, Verizon and AT&T will need to respond with improved and accelerated 5G network investment and deployment to the betterment of all consumers and the country.

American Consumers Will Pay Less and Get More. As New T-Mobile expands its capacity, the cost of delivering each gigabyte of data to customers will be greatly reduced capacity will double and the cost of delivering data will plummet. [New T-Mobile] will compete aggressively with lower prices to take market share from Verizon

and AT&T, allowing more customers to enjoy the benefits of [its] increased capacity.[1] This benefit will not be limited to T-Mobile s customers. Indeed, an economic analysis by Dr. David Evans concludes that building the nationwide 5G network will provoke competitive responses from Verizon and AT&T that result in as much as a 55 percent decrease in price per GB and a 120 percent increase in cellular data supply for all wireless customers.[2] Consumers get both a dollar and also a data dividend from the merger.

New T-Mobile Will Deliver Fiber-Like Speeds That Enable Exciting and Innovative Uses on a Broader Basis. New T-Mobile s nationwide 5G network will make possible real-time interactivity and a significantly enhanced user experience. The new network will virtually eliminate the constraints consumers currently experience in congested environments, allowing for near instantaneous sharing and downloading of content from almost any location. This will transform the way Americans live, work, travel, and play by facilitating an enormous variety of Internet of Things (IoT) applications, as well as the full spectrum of connected devices. Even better, the broad geographic reach of New T-Mobile s 5G network will facilitate the use of advanced applications that are critically needed in small towns and rural communities.

New T-Mobile Will Provide a Bona Fide Alternative to Traditional In-Home Broadband Providers. New T-Mobile s robust, nationwide 5G network will eliminate the speed and capacity differential between mobile and in-home wired broadband for many Americans, allowing millions more Americans to free themselves from the grip of traditional in-home broadband providers. The new 5G network s speeds, capacity, and low prices will allow consumers to cut the cord and use their mobile wireless service as their broadband service both inside and outside the home and pocket the savings from eliminating an unnecessary and costly wired broadband bill month after month. New T-Mobile will also offer an aggressively priced wireless in-home broadband solution to compete head-on with the traditional providers.

The Merger Will Create Expanded Choices for Enterprise and Video Customers. The merger also will unleash a maverick Un-carrier delivering competition and lower prices for customers of other services. New T-Mobile will have the scale, spectrum, and financial strength to disrupt the enterprise segment and video marketplace with innovative products and services that will bring much-needed competition, innovation, and consumer choice to these areas.

Rural Americans Win Big with Better Service, Including High Speed Broadband. New T-Mobile will bring increased broadband coverage to rural Americans, along with improved signal quality and increased network capacity that will enable data-intensive applications and superior rural consumer experiences. This improved service will be accompanied by enhanced customer service through 600 or more new stores and up to five call centers located to serve rural areas and small towns.

1 Declaration of G. Michael (Mike) Sievert, President and Chief Operating Officer, T-Mobile US, Inc., Appx. C, at ¶21 (Sievert Decl.).

2 *See* David S. Evans, Market Platform Dynamics, Economic Analysis of the Impact of the Proposed Merger of T-Mobile and Sprint on the Deployment of 5G Cellular Technologies, the 5G App Ecosystem, and Consumers, Enterprises, and the Economy, Appx. G, Section V.C., ¶¶220-44 (Evans Decl.).

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Accelerated 5G Deployment Will Help the United States Continue to Lead the World. As Chairman Pai has stated, the United States should be the best country for innovating and investing in 5G networks[3] and continue[ ] to lead in 5G and to enable wireless consumers to benefit from these technologies sooner rather than later.[4] New T-Mobile s 5G nationwide network will help ensure that this leadership happens right here in the United States.

The Merger Will Create Thousands of Additional American Jobs. Finally, the merger will create jobs on New T-Mobile s first day and going forward. New T-Mobile will hire employees to build the new network; extend the Un-carrier customer care model to a wider subscriber base; and support customers in growing segments like in-home broadband, enterprise, and IoT. New T-Mobile s increased investment and rapid growth and resultant accelerated roll-out of 5G services also will stimulate thousands of additional jobs throughout the U.S. economy.

Competition Will Intensify. The merger is resoundingly pro-competitive and pro-consumer:

New T-Mobile Will Be a Disruptive Consumer-Focused Un-carrier. New T-Mobile will have the scale and resources to take the Un-carrier movement to the next level and into new market segments. The combined company will have lower costs and the incentives to engage in aggressive pricing to expand its 4G LTE customer base as the industry continues its major transformation towards 5G. To date, T-Mobile and Sprint, individually, have not been able to materially erode Verizon and AT&T s wireless market share or overcome their scale advantages. New T-Mobile, however, will be able to go toe-to-toe with the two larger rivals to the benefit of competition and consumers.

New T-Mobile Will Have Incentives to Compete Aggressively. The combined company s network will have enormous capacity that will incentivize New T-Mobile to compete vigorously to fill up the network. This increased pressure to utilize added capacity is supported by New T-Mobile s financial plan, which calls for the company to provide a combination of greater value and lower cost for conventional data services and to continue offering subscribers more data each year without increasing prices. Indeed, as Dr. David S. Evans substantiates, added capacity has historically reduced unit prices for consumers, and it will continue to do so here.

3 Chairman Ajit Pai, Remarks at Mobile World Congress, Barcelona, Spain (Feb. 26, 2018), https://apps.fcc.gov/edocs_public/attachmatch/DOC-349432A1.pdf.

4 Chairman Ajit Pai, Remarks at Mobile World Congress Americas, San Francisco, CA (Sept. 12, 2017), https://docs.fcc.gov/public/attachments/DOC-346666A1.pdf.

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T-Mobile and Sprint Are Merging to Beat Verizon and AT&T, Not to Be Like Them. Verizon and AT&T are investing in a wide array of businesses in recognition of a converging broadband market, and therefore their interests and resources are spread across a lot of areas. New T-Mobile will be laser-focused on improved broadband connectivity at a lower price. This means New T-Mobile will not be coordinating with AT&T, Verizon or other large players to increase prices or restrict the amount of data delivered per dollar.

Other Large Players Will Intensify Competition Further. Many significant companies, particularly Comcast and Charter, but also DISH, TracFone, and Google, have successfully entered or are on the verge of entering the wireless market, demonstrating the intensity of current competition in the sector. Indeed, renowned economists Professor Steven Salop and Dr. Yianis Sarafidis find that, a conclusion that there will be higher risk of coordination after this merger cannot be supported by the totality of the evidence and economic analysis.[5]

T-Mobile s Chief Executive Officer John Legere aptly captures the benefits of this transaction for consumers and competition:

We are committing nearly $40 billion to bring this company into the 5G era over the first 3 years, with the majority of this investment focused on the rapid enhancement of the network, in order to retain our existing customer base, attract new customers, and benefit from being first to deliver transformative 5G services across the country. That s why we plan to expand T-Mobile s unique customer service model to Sprint while we subsequently deliver better coverage, reliability, and speed. And that s why we will keep prices low for consumers, who are vital to our ability to build out 5G infrastructure across the country. When it comes to changing how the wireless industry operates, we re only getting started.[6]

For these reasons, the grant of the T-Mobile and Sprint applications to transfer their authorizations to New T-Mobile clearly will serve the public interest, convenience and necessity.

5 Declaration of Prof. Steven C. Salop and Dr. Yianis Sarafidis, Charles River Associates, Appx. H, at ¶9.

6 Declaration of John Legere, Chief Executive Officer, T-Mobile US, Inc., Appx. A, at ¶23.

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By this application and related applications (the Applications[1]) and pursuant to Sections 214 and 310(d) of the Communications Act of 1934, as amended (the Act), T-Mobile US, Inc. (T-Mobile) and Sprint Corporation (Sprint and, collectively with T-Mobile, Applicants) hereby request the Federal Communications Commission s (FCC or Commission) consent to the transfer of control of the FCC authorizations, radio licenses, and spectrum leases held by Sprint s subsidiaries from Sprint to T-Mobile. In addition, the Applicants hereby request authority for the *pro forma* transfer of control of the authorizations, radio licenses, and spectrum leases held by T-Mobile s subsidiaries as a result of the proposed transaction. As discussed herein, the proposed transfers of control satisfy the Commission s standards for approval, generate substantial public interest benefits for the customers of T-Mobile and Sprint and for U.S. wireless customers as a whole, and do not give rise to any competitive harms. So that consumers can promptly enjoy these benefits, the Applicants seek expedited review and grant of the Applications.

I. DESCRIPTION OF THE APPLICANTS AND TRANSACTION

A. The Applicants

1. Description of T-Mobile

T-Mobile is currently the third largest wireless carrier in the United States, serving approximately 72.6 million customers under the T-Mobile and MetroPCS brands.[2] Through its owned and operated retail stores, third-party distributors, and its websites, T-Mobile offers wireless voice and data services to residential and business customers in the United States, Puerto Rico, and the U.S. Virgin Islands, as well as a wide selection of wireless devices and accessories.

1 Individual applications have been filed to transfer control of the radio station licenses, leases, subleases, satellite earth station licenses, submarine cable landing licenses, experimental licenses, and domestic and international Section 214 authorizations involved in this transaction. ULS File No. 0008224209 is the lead wireless application; *see also* Joint Application for Consent to Transfer Control of Domestic and International Authority Pursuant to Section 214 of the Communications Act, as amended, WT Docket No 18-197 (filed June 18, 2018).

2 T-Mobile US, Inc., Annual Report (Form 10-K), at 37 (Feb. 7, 2018), http://investor.t-mobile.com/Cache/392104903.pdf (T-Mobile 2017 10-K).

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T-Mobile is a publicly traded Delaware corporation headquartered in Bellevue, Washington. T-Mobile s 2017 revenues were approximately $40.6 billion,[3] its assets currently total approximately $70.56 billion,[4] its market capitalization is approximately $50.82 billion,[5] and it holds approximately $28.32 billion in debt.[6] The company is controlled by Deutsche Telekom AG (Deutsche Telekom), which indirectly holds approximately 62 percent of T-Mobile s stock. Deutsche Telekom is based in Bonn, Germany, and provides fixed broadband and wireless services to customers in more than 50 countries around the world.[7]

2. Description of Sprint

Sprint is the fourth-largest wireless carrier in the United States, serving approximately 54.58 million customers across its retail and wholesale wireless service offerings at the end of 2017, and is an interexchange carrier and Tier 1 Internet backbone provider.[8] Sprint offers a range of wireless and wireline voice and data products and services, as well as devices and accessories, to residential and business customers in the United States, Puerto Rico, and the U.S. Virgin Islands under the Sprint, Boost Mobile, Virgin Mobile, and Assurance Wireless brands.

3 *Id.* at 24.
4 *Id.*
5 *See* T-Mobile US, Inc., WALL STREET JOURNAL, https://quotes.wsj.com/TMUS (last visited June 16, 2018).
6 T-Mobile 2017 10-K at 24.
7 *See* Deutsche Telekom, *Leading European Telco,* https://www.telekom.com/en/company/details/leading-european-telco-355194 (last visited June 16, 2018).
8 Sprint Corporation, Annual Report (Form 10-K), at 40 (May 24, 2018), http://d18rn0p25nwr6d.cloudfront.net/CIK-0000101830/f87fb089-cbf4-415a-accf-2122a5b0323f.pdf (Sprint 2017 10-K).

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Sprint also provides wireline voice and data services to businesses with operations outside the United States.

Sprint is a publicly traded Delaware corporation with its headquarters located in Overland Park, Kansas. Sprint s 2017 revenues were approximately $32.41 billion,[9] its assets currently total approximately $85.46 billion,[10] its market capitalization is approximately $22.02 billion,[11] and it holds approximately $32 billion in net debt.[12] Sprint is controlled by SoftBank Group Corp. (SoftBank), which indirectly holds approximately 84 percent of Sprint s stock.[13] SoftBank is based in Tokyo, Japan, and provides mobile and fixed-line services in Japan through SoftBank Corp., its telecommunications subsidiary.[14]

B. The Transaction

The Business Combination Agreement between the parties sets forth the structure and steps of the proposed transaction. In short, the transaction will be a merger of Sprint into an indirect subsidiary of T-Mobile, with Sprint surviving as a direct subsidiary of T-Mobile USA, Inc., which is a direct subsidiary of T-Mobile. This will be accomplished through several, virtually simultaneous steps.

9 *Id.* at 30.

10 *Id.*

11 *See* Sprint Corporation, WALL STREET JOURNAL, https://quotes.wsj.com/S (last visited June 16, 2018).

12 Sprint 2017 10-K at 18. *See also* Sprint Corporation, *Sprint Delivers Best Financial Results In Company History With Highest Ever Net Income And Operating Income In Fiscal Year 2017* (May 2, 2018), http://investors.sprint.com/news-and-events/press-releases/press-release-details/2018/Sprint-Delivers-Best-Financial-Results-In-Company-History-With-Highest-Ever-Net-Income-And-Operating-Income-In-Fiscal-Year-2017/default.aspx (laying out debt maturity schedule).

13 Sprint 2017 10-K at 1.

14 *See* SoftBank Group, *Group Structure,* https://www.softbank.jp/en/corp/irinfo/about/outline/ (last visited June 16, 2018).

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In anticipation of the transaction, T-Mobile has formed two indirect subsidiaries, Huron Merger Sub LLC (Huron) and Superior Merger Sub Corporation (Superior). The current, pre-closing structure of Sprint and T-Mobile is illustrated below:

At closing, if certain conditions are met, the first step will be that SoftBank subsidiaries, Galaxy Investment Holdings, Inc. (Galaxy) and Starburst, Inc. (Starburst), which currently collectively own approximately 84 percent of Sprint, will merge with and into Huron, with Huron continuing as the surviving corporation. All of the issued and outstanding shares of Galaxy and Starburst stock will be converted such that SoftBank will receive an aggregate number of shares of T-Mobile Common Stock, par value $0.00001 per share, equal to the product of 0.10256 (the Exchange Ratio) and the aggregate number of shares of common stock of Sprint, par value $0.01 per share, held by Galaxy and Starburst, collectively.

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Next, Superior will merge with and into Sprint, with Sprint continuing as the surviving entity. Each share of Sprint stock issued and outstanding (other than shares of Sprint Common Stock that were held by Galaxy and Starburst or are held by Sprint as treasury stock) will be converted into the right to receive a number of shares of T-Mobile Common Stock equal to the Exchange Ratio. SoftBank and its affiliates will receive the same amount of T-Mobile Common Stock per share of Sprint Common Stock as all other Sprint stockholders. If the first step above does not occur, Sprint shares held by Galaxy and Starburst will be converted into T-Mobile shares in this step.

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As a final step, Huron will distribute Sprint stock to T-Mobile, which T-Mobile will then contribute to its subsidiary, T-Mobile USA, Inc. Following completion of these steps, Sprint will be a wholly owned subsidiary of T-Mobile USA, Inc., which is a direct subsidiary of T-Mobile. Deutsche Telekom and SoftBank are expected to hold approximately 42 percent and 27 percent of the fully diluted shares of T-Mobile Common Stock, respectively, with the remaining approximately 31 percent of the fully-diluted shares of T-Mobile Common Stock held by public stockholders. Pursuant to a Proxy, Lock-up and ROFR Agreement between Deutsche Telekom and SoftBank to be executed prior to closing, SoftBank will grant Deutsche Telekom the right to direct the voting of SoftBank s T-Mobile shares. The post-closing structure of New T-Mobile is below:

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John Legere, CEO of T-Mobile and the creator of T-Mobile s successful Un-carrier strategy, will serve as Chief Executive Officer of the combined company. Mike Sievert, T-Mobile s current President and Chief Operating Officer, will serve as President and Chief Operating Officer of the combined company.

The Board of Directors (Board) of New T-Mobile will be comprised of 14 members. Pursuant to the Business Combination Agreement, Deutsche Telekom will designate 9 directors (at least 2 of whom will be independent). SoftBank will designate 4 directors (at least 2 of whom will be independent).[15] The remaining director will be New T-Mobile s CEO. Existing T-Mobile Chairman and Deutsche Telekom CEO, Tim Höttges, has been designated to serve as

[15] Masayoshi Son, current SoftBank Chairman and CEO, and Marcelo Claure, current SoftBank Chief Operating Officer and Sprint Executive Chairman, will serve on the Board of the new company as SoftBank designees.

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Chairman of the Board of New T-Mobile. The combined company will have its headquarters in Bellevue, Washington, with a secondary headquarters in Overland Park, Kansas.

C. Approvals Requested

Sprint s subsidiaries hold a variety of FCC authorizations, licenses, and leases, including radio station licenses, leases and subleases, satellite earth station and Cable Television Relay Service (CARS) licenses, submarine cable landing licenses, and domestic and international Section 214 authorizations. The transaction will result in a transfer of control of these authorizations to New T-Mobile and, accordingly, applications seeking Commission consent to such transfers are being contemporaneously submitted to the agency. The parties request that the Commission find that such transfers are in the public interest and grant the applications.

The transaction will also result in a *pro forma* transfer of control of the FCC authorizations, licenses, and leases held by T-Mobile s subsidiaries to New T-Mobile. These entities hold radio station licenses and leases, experimental licenses, and international Section 214 authorizations. As a result of having a majority of Board seats and the right to direct the voting of SoftBank s shares, T-Mobile s controlling shareholder, Deutsche Telekom, will retain *de facto* control of New T-Mobile post-closing even though its shareholdings in New T-Mobile will drop below 50 percent. While the Commission s rules permit post-closing notification for *pro forma* transfers of control of many of the licenses and leases held by T-Mobile s subsidiaries, T-Mobile is submitting all of its *pro forma* applications and notifications at this time per instructions from the FCC staff. It requests that the Commission approve such submissions.

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Following consummation of the transaction, the T-Mobile and Sprint licensees will have indirect non-U.S. ownership in excess of 25 percent. For that reason, the parties are additionally submitting a request for declaratory ruling under Section 310(b)(4) of the Communications Act[16] and section 1.5000(a)(1) of the Commission s rules.[17] The parties seek Commission grant of that request.

II. FCC STANDARD OF REVIEW

A. Public Interest Evaluation

Pursuant to sections 214(a) and 310(d) of the Act,[18] when transactions in the communications industry are proposed involving common carrier authorizations under Title II or radio licenses under Title III, the Commission must determine whether the proposed transfer of control will serve the public interest, convenience, and necessity.[19] Procedurally, if the proposed transaction does not violate a statute or rule, then the Commission considers whether the transaction could result in public interest harms by substantially frustrating or impairing the objectives or implementation of the Act or related statutes.[20]

The Commission s review of potential competitive harms is an integral part of the FCC s public interest analysis, but importantly, the analysis is informed by, but not limited to, traditional antitrust principles.[21] In particular, the Commission s competitive analysis under the public interest standard is somewhat broader [than that conducted by the Department of Justice], and the Commission may impose and enforce narrowly tailored, transaction-specific

16 47 U.S.C. § 310(b)(4).

17 47 C.F.R. § 1.5000(a)(1).

18 47 U.S.C. §§ 214(a), 310(d).

19 47 U.S.C. §§214(a), 310(d). *See also AT&T Inc. and BellSouth Corp. Application for Transfer of Control,* Memorandum Opinion and Order, 22 FCC Rcd 5662, 5671-72 ¶19 (2007).

20 *Applications of Level 3 Communications, Inc. and CenturyLink, Inc. for Consent to Transfer Control of Licenses and Authorizations,* Memorandum Opinion and Order, 32 FCC Rcd 9581, 9585 ¶9 (2017) (CenturyLink-Level 3 *Order*).

21 *Id.* at 9585 ¶9.

conditions that address the potential harms of a transaction.[22] The FCC has clarified that it will impose conditions only to remedy harms that arise from the transaction (i.*e.*, transaction-specific harms) and related to the Commission s responsibilities under the Communications Act and related statutes, and it will not impose conditions to remedy pre-existing harms or harms that are unrelated to the transaction.[23] Then, if the Commission is able to find that narrowly tailored, transaction-specific conditions are able to ameliorate any public interest harms and the transaction is in the public interest, it may approve the transaction as so conditioned.[24]

The FCC s competitive review takes place against a backdrop where the Commission has long recognized the clear public interest benefits in a license or authorization holder being able to assign or transfer control of its license or authorization freely.[25] And the Commission considers other benefits as well the FCC will also review other claimed public interest benefits of a transaction, although applicants [bear] the burden of proving those benefits by a preponderance of the evidence.[26] While a finding of public interest benefits is thus necessary for approval, the FCC has emphasized that it does not employ a balancing test, . . . or a sliding scale approach.[27]

22 *Id.* at 9585-86 ¶9.

23 *Id.* at 9586 ¶9 (citing *SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control,* Memorandum Opinion and Order, 20 FCC Rcd 18290, 18303 ¶19 (2005); *Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations et al.*, Memorandum Opinion and Order, 19 FCC Rcd 21522, 21545-46 ¶43 (2004); *Applications of Nextel Partners, Inc. Transferor, and Nextel WIP Corp. and Sprint Nextel Corporation, Transferees, for Consent to Transfer Control of Licenses and Authorizations,* Memorandum Opinion and Order, 21 FCC Rcd 7358, 7361 ¶9 (2006); *Applications of AT&T Inc. and CellCo Partnership d/b/a Verizon Wireless for Consent to Assign or Transfer Control of Licenses and Authorizations and Modify a Spectrum Leasing Arrangement,* Memorandum Opinion and Order, 25 FCC Rcd 8704, 8747 ¶101 (2010) (AT&T-Verizon *Wireless Order*)).

24 *CenturyLink-Level3 Order,* 32 FCC Rcd at 9586 ¶11.

25 *Id.* at 9586 ¶10.

26 *Id.*

27 *Id.* n.36. The Commission has specifically noted that it has not allowed potential competitive harms to go unremedied nor allowed them to be offset by benefits that are not transaction-specific, *i.e.*, benefits that do not naturally arise from the transaction at issue. *Id.*

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B. Product and Geographic Markets

In prior transactions, the FCC s competitive review has started by first determining the appropriate market definitions for its evaluation, which includes establishing the product and geographic market definitions that [the FCC] will apply.[28] The FCC has found that [t]he relevant product market includes all products reasonably interchangeable by consumers for the same purposes.[29] Specifically, the Commission has traditionally viewed the relevant product market for wireless services as a combined mobile telephony/broadband services product market, which is comprised of mobile voice and data services, including mobile voice and data services provided over advanced broadband wireless networks (mobile broadband services).[30] In its analyses, however, the FCC has not restricted itself to facilities-based carriers, but rather has assessed the competitive effect of Mobile Virtual Network Operators (MVNOs) and resellers.[31]

28 *Application of AT&T Inc. and Qualcomm Incorporated,* Order, 26 FCC Rcd 17589, 17602 ¶32 (2011) (AT&T-*Qualcomm Order*).

29 *Id.* (citing *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956); *United States v. Microsoft,* 253 F.3d 34, 52 (D.C. Cir. 2001), *cert. denied,* 122 S. Ct. 350 (2001)).

30 *AT&T-Qualcomm Order,* 26 FCC Rcd at 17603 ¶33 (citing *AT&T-Verizon Wireless Order,* 25 FCC Rcd at 8721 ¶35; *Applications of AT&T Inc. and Centennial Communications Corp. For Consent to Transfer Control of Licenses, Authorizations, and Spectrum Leasing Arrangements,* Memorandum Opinion and Order, 24 FCC Rcd 13915, 13932 ¶37 (2009) (AT&T-Centennial *Order*); *Applications of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings LLC For Consent to Transfer Control of Licenses, Authorizations, and Spectrum Manager and De Facto Transfer Leasing Arrangements and Petition for Declaratory Ruling that the Transaction is Consistent with Section 310(b)(4) of the Communications Act,* Memorandum Opinion and Order and Declaratory Ruling, 23 FCC Rcd 17444, 17469-70 ¶45 (2008) (Verizon *Wireless-ALLTEL Order*); *Sprint Nextel Corporation and Clearwire Corporation Applications for Consent to Transfer Control of Licenses, Leases, and Authorizations,* Memorandum Opinion and Order, 23 FCC Rcd 17570, 17583-84 ¶26 (2008)).

31 *Applications of Cricket License Company, LLC, et al., Leap Wireless International, Inc., and AT&T Inc. for Consent to Transfer Control of Authorizations*, Memorandum Opinion and Order, 29 FCC Rcd 2735, 2751 ¶35 (2014) (*Cricket Leap-AT&T Order*).

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With respect to the appropriate geographic market, the FCC will primarily use Cellular Market Areas (CMAs) as the local geographic markets in which [it] analyze[s] the potential competitive harms.[32] The FCC has used CMAs historically because most consumers use their mobile telephony/broadband services at or close to where they live, work, and shop, [and thus] they purchase mobile telephony/broadband services from service providers that offer and market services locally.[33] However, the Commission has also said that it recognize[s] that two key competitive variables prices and service plan offerings do not vary for most providers across most geographic markets, and therefore in certain transactions the FCC find[s] it is in the public interest not only to consider the local markets, but also to consider the effect of [the] transaction at the national level.[34]

C. The FCC Competitive Analysis and Mobile Services in a Converging Broadband Market

While the Applicants herein analyze the proposed transaction under the review framework that has been used by the FCC for mobile transactions in the past,[35] the mobile

32 *AT&T-Qualcomm Order*, 26 FCC Rcd at 17603 ¶32.

33 *Applications of Deutsche Telekom AG, T-Mobile USA, Inc., and MetroPCS Communications, Inc. for Consent to Transfer of Control of Licenses and Authorizations*, 28 FCC Rcd 2322, 2332-33 ¶31 (WTB 2013) (*T-Mobile-MetroPCS Order*). *See also AT&T-Qualcomm Order*, 26 FCC Rcd at 17604 ¶34 (stating [n]othing in our record causes us to doubt that, in the event of a price increase limited to one CMA, . . . too few buyers would switch to purchasing mobile wireless services in another area to make that quality-adjusted price increase unprofitable.).

34 *AT&T-Qualcomm Order*, 26 FCC Rcd at 17605 ¶37.

35 Importantly, however, the Commission has not reviewed a major wireless transaction since the 2014 acquisition of Leap Wireless by AT&T. *See generally Cricket Leap-AT&T Order*. While the Commission has iteratively applied the prior definition of relevant product market in a string of decisions since 2014, it has not seriously considered whether the definition should be considered anew in light of technology and market changes.

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services landscape has undergone significant transformation in recent years to converge with wireline services within the broadband market. Preferences and patterns for consuming communications services and content have shifted, with wireless being increasingly used as a complete solution to users broadband data and video content needs wireless is becoming many consumers principal connection to the Internet. These changes have been driven by innovations like unlimited wireless plans and rapid changes in wireless technology that have enabled faster data connections. In this new environment, mobile providers are bringing mobile Internet, and content, to consumers in ways never imagined. Cord-cutting in the broadest sense of removing any fixed landline connection to the home is increasing and customers have become platform-agnostic. And, data is increasingly consumed not just by individuals, but also by machines connecting to other machines that are supporting infrastructure, services, and applications that will benefit consumers.

As the Applicants discuss, fundamental changes to the ways mobile broadband is used are being made at an accelerating pace, and the FCC has recognized that the mobile wireless services marketplace is on the brink of a major technological transformation that is likely to be both competitively disruptive and transformative the introduction of 5G. In Section III.C, *infra,* the Applicants discuss the technological changes ongoing in the marketplace and the massive consumer welfare benefits that will cascade from New T-Mobile s 5G network and its derivative ability to offer 100 Mbps service to two-thirds of the country. That speed and coverage will allow New T-Mobile to bring new and enhanced competition to multiple adjacent business segments, including in-home broadband, consumer and business IoT, enterprise, and rural market segments. In Section IV, the Applicants then discuss the changing face of competition in a market shaped by the convergence of businesses around the central axis of

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broadband connectivity. New T-Mobile will face competition from Verizon and AT&T both entities are actively engaging in acquisitions and leveraging existing diverse assets to bundle services and content from related businesses to lure and keep subscribers. And, just as Verizon and AT&T are reaching into new areas, cable entities like Comcast and Charter and satellite providers like DISH are executing business strategies that exploit their existing consumer reach to provide broadband through wireless technology. As Chairman Pai has suggested, the lines between wireless and wireline service will continue to blur as technology advances and the former becomes a more reliable way to connect.[36]

Against this dynamic backdrop, now more than ever the FCC s review of the public interest benefits should not be retrospective or overlook clear trends and business plans being executed in the market today.[37] The FCC has always looked at potential competitive entry and changes in the market in its competitive analyses.[38] Especially at a time when the industry is undergoing transformative change, the merger should be considered in the context of today s marketplace.

36 *See* Diana Goovaerts, *FCC s Pai Won t Rule Out Wireless Consolidation,* Wireless Week (May 8, 2017), https://www.wirelessweek.com/news/2017/05/fccs-pai-wont-rule-out-wireless-consolidation.

37 As discussed in Section III.C, IV.D, and IV.E, even under a static view of the market, the substantial public interest benefits of this transaction far outweigh any potential harms.

38 *See, e.g.*, *CenturyLink-Level3 Order,* 32 FCC Rcd at 9589 ¶18 (noting we assess the likelihood of competitive entry to the . . . in response to any post-Transaction unilateral attempt by the combined company to increase prices to customers at that location.) and 9602 ¶46 (observing numerous potential competitors exist in the form of other large Internet providers, such as AT&T, Comcast, and Charter, all of which are well positioned to compete aggressively in the transit marketplace, in addition to other network owners, including firms such as Apple and Google, that have built IP networks to transport content to ISPs serving end-users but historically have not sold transit services, and recognizing other developments in the transit services marketplace, such as falling capacity costs and the increasing tendency of large transit services customers to invest in their own network infrastructure, rather than purchasing capacity from transit providers.).

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III. THE MERGER WILL PRODUCE SIGNIFICANT PUBLIC INTEREST BENEFITS

T-Mobile s Un-carrier approach of putting consumers first and driving increased competition has led to dramatic changes in the wireless industry over the last five-plus years. Today, all wireless consumers have the freedom to choose the carrier, plans, and services that work best for them, thanks in large part to T-Mobile s introduction of the Un-contract and elimination of termination fees and penalties for over-usage.[39] New T-Mobile will be able to leverage a unique combination of assets and unlock massive synergies that will allow it to build a world-leading 5G network, resulting in substantial benefits for consumers, competition, and the country.

A. The Merger Will Provide New T-Mobile with the Ability to Construct and Deploy a World-Leading 5G Network

Together, T-Mobile and Sprint possess a truly unique combination of spectrum, sites, and equipment that will provide New T-Mobile with the scale and resources necessary to supercharge the Un-carrier model. The combination of the two companies will generate enormous cost-savings in the form of approximately $43.6 billion total net present value cost synergies by 2024, allowing New T-Mobile to invest in new network technology, innovation, and operations to rapidly construct and deploy the first true, nationwide 5G network.[40] New T-Mobile will use these synergies to invest nearly $40 billion to bring the combined company into the 5G era over the next three years, or approximately three times the amount that T-Mobile would have invested on its own without the merger.[41] These merger synergies also will free up financial resources that can be invested into improving customer care, and expanding or enhancing business segments, such as in-home broadband, consumer and business IoT, business, and rural market segments.[42]

39 Declaration of John Legere, Chief Executive Officer, T-Mobile US, Inc., Appx. A, at ¶4 (Legere Decl.).

40 Declaration of G. Michael (Mike) Sievert, President and Chief Operating Officer, T-Mobile, US, Inc., Appx. C, at ¶12, 15 (Sievert Decl.).

41 *Id.* at ¶15.

42 *Id.* at ¶16.

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This capital commitment, paired with the unique combination of spectrum, sites, and equipment of T-Mobile and Sprint, will produce a network that will deliver unprecedented services to consumers, increasingly disrupt the wireless industry, and ensure U.S. leadership in the race to 5G. New T-Mobile also will be positioned to use its 5G network to deliver increased competition in broadband, enterprise, and video offerings.[43] Moreover, New T-Mobile will use the increased capacity realized by the combination of T-Mobile and Sprint s networks to deliver lower prices and allow for increased data usage by subscribers.[44] As T-Mobile President and Chief Operating Officer Mike Sievert explains, [o]ur goal for the merger is to be the first, fastest, and best in the 5G race and to capture market share with the Un-carrier combination of value and quality.[45]

B. The Merger Enables Faster and Cheaper Deployment of a Nationwide 5G Network to Leapfrog Verizon and AT&T

Chairman Pai recently noted with respect to 5G deployment, [i]f you ain t first, you re last.[46] Neither T-Mobile nor Sprint can win on its own, yet both see winning the race to deploy the first next-generation nationwide 5G network as critical to their combined future. The merger provides over $40 billion in synergies, a beneficial increase in scale, and a combination of

43 *Id.*

44 *Id.* at ¶21.

45 *Id.* at ¶12.

46 *See* Chairman Ajit Pai, Remarks at the Wireless Infrastructure Association Connectivity Expo (May 23, 2018), https://docs.fcc.gov/public/attachments/DOC-350919A1.pdf (citing Ricky Bobby, *Talladega Nights: The Ballad of Ricky Bobby* (Relativity Media 2006), in the context of country leadership in 5G).

complementary and essential assets (including spectrum and sites) to accelerate and deliver a superior nationwide 5G network that will be better and more expansive than anything the companies could deliver on their own. The goal, if not the imperative, is to leapfrog Verizon and AT&T s networks and, in doing so, force them and other competitors to more quickly provide faster, better 5G services and ensure U.S. leadership in the ongoing race to the 5G finish line.

The transaction will enable New T-Mobile to build a network with distinct advantages over both the standalone 5G networks planned by T-Mobile and Sprint and will provide a platform for an unrivaled nationwide 5G mobile service.[47] On a standalone basis, neither company has enough or the right combination of spectrum or cell site resources to deliver the enormous gains in capacity that New T-Mobile will provide in the near term. By having the option to use cell sites from either company, the transaction will allow the merged entity to have almost immediate access to more cell sites than either company would have absent the merger. New T-Mobile s deployment of T-Mobile s and Sprint s combined spectrum portfolios, together with the addition of many more radios across the combined network than either party would install on its own, will create a massive increase in capacity that would not be possible but for the transaction. The merger will also enable the combined company to dedicate more spectrum to 5G much sooner than either company could do individually, while also allowing New T-Mobile to more efficiently utilize existing spectrum assets for continued and unimpaired LTE services. At a fundamental level, the multiplicative effects associated with more cell sites, more

47 Declaration of Neville R. Ray, Executive Vice President and Chief Technology Officer, T-Mobile, US, Inc., Appx. B, at ¶4 (Ray Decl.); Declaration of John C. Saw, Chief Technology Officer, Sprint Corporation, Appx. E, at ¶4 (Saw Decl.).

spectrum per cell site, and higher spectral efficiencies will result in dramatic increases in capacity, throughput,[48] and coverage:

Figure 1: New T-Mobile 5G Network Comparison to Standalone Networks (2024) [49]

The increased competition for 5G leadership stimulated by the merger will dramatically enhance U.S. efforts to meet Chairman Pai s challenge to deliver world class 5G services to American consumers ahead of any other country. While T-Mobile and Sprint have each been developing plans to deploy 5G, their combined assets will bring significantly better and broader benefits to American consumers much sooner than either company could on its own, if ever. With a quicker path to true, nationwide 5G, New T-Mobile will exert competitive pressure on other U.S. providers to accelerate and improve 5G network deployment and thereby accelerate the country s technological progress, rapidly bringing enormous benefits to consumers.

1. Neither T-Mobile Nor Sprint Can Develop a Robust, Nationwide 5G Network on a Standalone Basis

The creation of New T-Mobile solves the most intractable problems standing in the way of T-Mobile and Sprint in building a superior, nationwide 5G network the right mix of

48 Average data rate is not equivalent to the actual user experience. The user experience will be affected by a number of variable factors, including received signal strength, location of the mobile device and base station, and whether the device is in motion, among others.

49 Ray Decl. at ¶51.

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spectrum and cell site resources needed to deliver 5G capacity and services faster than any other wireless provider in the world. On a standalone basis, T-Mobile would be capacity constrained and Sprint lacks coverage. The transaction will solve these issues as New T-Mobile combines each company s complementary spectrum and site assets to mitigate their individual shortcomings and leverage their strengths. The result will yield gains that are otherwise unattainable by each as a standalone network for the foreseeable future.

For T-Mobile, it would be cost-prohibitive to build out enough sites to reach comparable capacity and quality to what New T-Mobile can achieve.[50] In addition, T-Mobile s standalone capability to refarm spectrum to provide 5G service is limited because its spectrum is extensively used for LTE.[51] Its ability to roll out a robust 5G network is further challenged by its lack of available mid-band spectrum and the fact that additional mid-band spectrum suitable for 5G is not expected to become available via spectrum auctions in the near term.[52] For these reasons, and because LTE is significantly less spectrally efficient than 5G,[53] T-Mobile s ability to expand capacity to maximize the value of its spectrum assets and roll out robust 5G cannot come close to matching that of New T-Mobile.

Similarly, Sprint faces a number of constraints that do not allow it to roll out a nationwide 5G offering with robust and ubiquitous coverage. As is true for T-Mobile, Sprint cannot maximize the value of its spectrum as it would be cost-prohibitive for it to build out enough sites using its valuable 2.5 GHz spectrum to enable capacity, coverage, and quality

50 *Id.* at ¶32.
51 *Id.* at ¶18.
52 *Id.* at ¶18.
53 *Id.* at ¶24.

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comparable to New T-Mobile s network.[54] Sprint is further constrained from deploying a geographically ubiquitous 5G network because of its lack of sufficient low-band spectrum and because the propagation characteristics of its 2.5 GHz spectrum restrict its ability to cover wide geographic areas, including many rural areas, or provide strong-in building coverage.[55] Sprint on a standalone basis would only cover much more limited geographic areas with 5G services using its 2.5 GHz spectrum.[56] Finally, Sprint s ability to fully dedicate its 2.5 GHz spectrum to 5G is limited by its need to use a significant portion of that spectrum for LTE under its standalone plans.[57]

a. T-Mobile s 5G Network Would Have Broad Coverage But Lack Capacity

T-Mobile has announced its intention to install a standalone 5G network utilizing its newly acquired 600 MHz low-band spectrum as well as its spectrum holdings in the millimeter wave bands.[58] T-Mobile recently began deploying equipment for its 600 MHz spectrum, which provides a clean slate for building a 5G network as an initial offering in the band. T-Mobile plans to build a 5G network in 30 cities during 2018, including New York, Los Angeles, Dallas and Las Vegas.[59] As a standalone network, T-Mobile would provide enhanced LTE through its 5G-compatible 600 MHz base stations and enable 5G on those sites when standards-based equipment becomes available. In sum, on a standalone basis, T-Mobile would have only

54 Saw Decl. at ¶18, 23; Declaration of Brandon Dow Draper, Chief Commercial Officer, Sprint Corporation, Appx. F, at ¶10 (Draper Decl.).

55 Saw Decl. at ¶23.

56 *Id.* at ¶18, 23.

57 *Id.* at ¶22-24.

58 *See* T-Mobile, *T-Mobile Ready to Rock New Spectrum With First 600 MHz LTE Smartphone & 5G-Ready Network Gear* (Aug. 31, 2017), https://newsroom.t-mobile.com/news-and-blogs/tmobile-600mhz.htm.

59 T-Mobile, *T-Mobile Building Out 5G in 30 Cities This Year . . . and That s Just the Start* (Feb. 27, 2018), https://newsroom.t-mobile.com/news-and-blogs/mwc-2018-5g.htm .

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megahertz of spectrum dedicated to 5G with megahertz of spectrum split between LTE and 5G in 2021 and only megahertz of spectrum dedicated to 5G with megahertz of spectrum split between LTE and 5G by 2024, and limited amounts of millimeter wave spectrum in select markets.[60] Thereafter, T-Mobile would refarm LTE spectrum to 5G gradually to avoid network congestion, and would devote more network resources to 5G over time.

The majority of T-Mobile s spectrum holdings that would be used for 5G coverage on a standalone basis reside in the 600 MHz band. While the 600 MHz band provides superior coverage and would allow T-Mobile to extend its footprint beyond areas currently served, this spectrum band is also constrained by its relatively low bandwidth and limited ability to efficiently support applications that require high data rates.[61] As a result, this band is best suited for certain mobile and IoT applications where wide area coverage, but not the highest data rate, is needed.[62]

To complement the low-band spectrum used for 5G, T-Mobile on a standalone basis would use up to 200 megahertz of millimeter wave spectrum for 5G,[63] which today covers nearly 100 million people in most major metropolitan markets, including New York, Los Angeles, San Francisco, Boston, Dallas, and Philadelphia.[64] While T-Mobile s millimeter wave spectrum constitutes a valuable component of its 5G plan, its millimeter wave holdings are far smaller than

60 For the AWS/PCS spectrum divided between LTE and 5G, some markets will have LTE, some will have 5G. *See* Ray Decl. at ¶41.

61 *Id.* at ¶¶18, 35, 38.

62 *Id.* at ¶52.

63 In most markets, T-Mobile has 200 MHz, but in others the company has as much as 800 megahertz.

64 Ray Decl. at ¶16, 34. *See also* T-Mobile, *T-Mobile Announces Plans for Real Nationwide Mobile 5G* (May 2, 2017), https://newsroom.t-mobile.com/news-and-blogs/nationwide-5g.htm; Neville Ray, *Setting the 5G Record Straight: Announcing Plans for Nationwide 5G from T-Mobile* (May 2, 2017), https://newsroom.t-mobile.com/news-and-blogs/nationwide-5g-blog.htm.

those of Verizon and AT&T.[65] T-Mobile, therefore, has limited overall capacity and ability in the near term to serve a large number of simultaneous customers with high bandwidth applications as compared to its competitors.[66] The millimeter wave spectrum will be used to support applications that require very high speeds but, due to the propagation properties of this spectrum, millimeter wave band coverage will be available only in limited areas.[67]

Although T-Mobile will build a nationwide 5G network, as shown in the map below, its broad coverage is based on deployment of the 600 MHz spectrum, which lacks the bandwidth to deliver upon the full data rate and capacity gains possible for 5G.[68] The map below also demonstrates that T-Mobile s lack of access to significant, unused mid-band spectrum and large amounts of high-band millimeter wave spectrum across the entire U.S. would continue to limit its ability to support the most demanding, high capacity 5G applications.[69] While the Commission has announced future auctions for millimeter wave band spectrum, and T-Mobile may participate in those auctions, such auctions do not address the need for mid-band spectrum to support many of the consumer benefits that New T-Mobile would be able to provide.[70]

65 The Competitive Carriers Association recently calculated that AT&T and Verizon hold a staggering 80 percent of the MHz-POPs in the 28 GHz and 39 GHz bands with 850 MHz in the 28 GHz band and 1,400 MHz in the 39 GHz band, that comes to an average of 1,800 MHz between the two carriers. *See* Application for Review or, in the Alternative, Petition for Reconsideration of Competitive Carriers Association, ULS File Nos. 0007652635 and 0007652637 (filed Mar. 12, 2018).

66 In contrast, both AT&T and Verizon have substantially greater millimeter wave band spectrum holdings that are licensed on a much broader geographic basis. *See* Competitor Chart, Appx. M.

67 Ray Decl. at ¶37.

68 *Id.* at ¶18.

69 *Id.*

70 *See Auctions of Upper Microwave Flexible Use Licenses for Next-Generation Wireless Services,* AU Docket No. 18-85 (rel. April 17, 2018), https://docs.fcc.gov/public/attachments/FCC-18-43A1.pdf; Ray Decl. at ¶18.

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Figure 2: T-Mobile Standalone Projected 5G Coverage in 2024

b. Sprint s Standalone 5G Network Deployment Would Have Capacity But Lack Coverage

Like T-Mobile, Sprint s standalone 5G plans also face significant limitations, but whereas T-Mobile faces capacity constraints, Sprint faces coverage limitations. Sprint has announced plans to begin providing 5G commercial services and devices in the first half of 2019.[71] However, Sprint s spectrum holdings would require it to constrain 5G deployments to the 2.5 GHz band while it continues providing traditional 3G and 4G service in its other spectrum bands.[72] The majority of Sprint s spectrum holdings are in the 2.5 GHz mid-band, and this band will be the primary resource for the standalone company to develop and deploy 5G. However, by being restricted to this spectrum band, Sprint s standalone 5G network would be limited in terms of geographic reach.[73] The map below projects the extent of Sprint s 5G services in 2024.

71 Saw Decl. at ¶17.
72 *Id.* at ¶22-24.
73 *Id.* at ¶¶17-18.

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Figure 3: Sprint Standalone Projected 5G Coverage in 2024

To begin offering 5G services on a standalone basis, Sprint would split its 2.5 GHz spectrum between 5G functionality and LTE. Initially, Sprint would upgrade approximately sites to massive MIMO[74] in the 2018-19 timeframe.[75] To allow each 2.5 GHz base station site to support both LTE and 5G, Sprint would deploy split mode LTE+5G Dual Connect functionality at each site. The split mode functionality support by equipment vendors will allow Sprint initially to deploy massive MIMO sites for LTE only but then, through software changes, migrate to simulcasting LTE and 5G through a single radio at each base station site equipped in this fashion.[76]

[74] Massive MIMO (multiple-in; multiple-out) is a technique that uses large antenna arrays so that multiple transmitters and receivers can simultaneously transmit to improve network coverage and capacity. In today s networks, 2x2 or 4x4 MIMO arrays are common, but massive MIMO requires a much larger antenna array. *See, e.g.*, Ericsson, *Going Massive with MIMO* (Jan. 26, 2018), https://www.ericsson.com/en/news/2018/1/massive-mimo-highlights.

[75] Saw Decl. at ¶17. Sprint would roll out more than massive MIMO sites in 2018, increasing to approximately sites in 2019.

[76] *Id.* at ¶¶20-21.

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However, the performance impact of massive MIMO would occur only in the limited geographic areas where Sprint would deploy this technology on its own. Sprint expects to deploy this feature on approximately sites by the end of 2020 and will be focused only on population-dense metropolitan areas, not ubiquitous geographic coverage.[77] Additionally, splitting 2.5 GHz spectrum between LTE and 5G significantly limits Sprint s ability to realize the full potential of this valuable spectrum resource. This is a substantial opportunity cost as compared to New T-Mobile, which can use the combined resources of both companies to deploy more of the 2.5 GHz band spectrum for 5G faster, unlocking greater performance benefits.[78] Sprint does not currently have plans to deploy 5G on its 800 MHz or 1900 MHz spectrum due to Sprint s limited available spectrum holdings in these bands and the need to continue to support 3G and 4G services with this spectrum.[79] New T-Mobile, on the other hand, would be able to deploy 5G on Sprint s PCS spectrum.[80]

In sum, while Sprint would be able to use its 2.5 GHz band spectrum resources to achieve higher data rates to meet the requirements of some new 5G applications, it would lack sufficient low-band spectrum needed to provide the robust, national 5G coverage that New T-Mobile would offer and would not be able to utilize as much 2.5 GHz spectrum for 5G.

77 *Id.* at ¶17.
78 *Id.* at ¶¶ 29, 33.
79 *Id.* at ¶¶23-24.
80 *See infra* Section III.B.2.b.

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c. The Standalone Networks Cannot Deliver Data Rates Comparable to New T-Mobile

The limits of the standalone T-Mobile and Sprint network roll-outs are further highlighted by a review of the potential data rates each could provide to consumers.[81] The charts below depict the geographic distribution of data rates expected by each standalone company as compared to New T-Mobile.

Figure 4: 5G Speed vs. Covered Population Distribution (2021)[82]

[81] Average data rate is not equivalent to the actual user experience. *See supra* n.48.

[82] Ray Decl. at ¶18, Figure 3.

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Figure 5: 5G Speed vs. Covered Population Distribution (2024)[83]

The capacity constraints for standalone T-Mobile are demonstrated in the figures above. In 2021, New T-Mobile s 5G network will cover over 6.5 times the covered POPs with data rates greater than 100 Mbps and nearly 18 times the covered POPs with data rates greater than 150 Mbps as compared to the T-Mobile standalone 5G network. New T-Mobile s 5G network also will provide data rates exceeding 300 Mbps to nearly 100 million POPs and 500 Mbps to over 16 million POPs, which the T-Mobile standalone 5G network would be unable to do at all. This trend would continue in 2024, with New T-Mobile able to cover over 2.8 times the covered POPs with over 100 Mbps and over 4 times the covered POPs with more than 150 Mbps. New T-Mobile would be able to cover 252.4 million POPs at data rates greater than 300 Mbps and 208.7 million POPs at greater than 500 Mbps, while standalone T-Mobile would still be unable to cover anyone at those speeds.[84] Although the 5G network coverage supported by T-Mobile and New T-Mobile would be somewhat equivalent in terms of covered POPs, the merger would provide the network capacity and complementary spectrum resources to provide massively increased capacity and a significantly more robust mobile broadband experience for American consumers.

83 *Id.* at ¶18, Figure 4.

84 *Id.* at ¶18. The performance metrics defined here are derived by an internal T-Mobile engineering modeling effort.

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The comparison to the standalone Sprint network yields a similar result. As shown in the figures above, in 2021, New T-Mobile will cover approximately 1.3 times the covered POPs with data rates greater than either 100 or 150 Mbps than standalone Sprint. Moreover, whereas New T-Mobile will provide data rates greater than 300 or 500 Mbps to a substantial portion of the covered POPs, Sprint would not be able to do so. In 2024, New T-Mobile will cover more than 1.5 times the covered POPs with data rates greater than 100 or 150 Mbps. And Sprint s standalone 5G network will still not cover any POPs with speeds greater than 300 Mbps. Therefore, the standalone Sprint 5G network will not come close to achieving the depth of service and performance that the New T-Mobile 5G network would deliver.

2. New T-Mobile Will Deploy 5G Faster and on a Much Wider and Deeper Basis, While Also Improving LTE Service

New T-Mobile will have significant advantages over both standalone networks that will allow it to create a platform for an unrivaled 5G mobile service.[85] The merger will enable the combined company to: (1) access more cell sites expeditiously than either company could do on its own, (2) deploy a unique combination of spectrum across more cell sites on a more accelerated basis than either company could do individually, (3) provide unencumbered spectrum for 5G deployment, (4) allow faster spectrum refarming that will drive better spectral efficiency, and (5) provide enhanced LTE services and a rapid, seamless migration for existing T-Mobile and Sprint customers.

85 Ray Decl. at ¶4; Saw Decl. at ¶4.

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a. The Transaction Will Provide Nearly Immediate Access to More Cell Sites

New T-Mobile will be able to densify the network infrastructure nearly immediately and reuse spectrum more intensely from the natural cell splits occurring as a result of the deployment of both parties spectrum on the combined network s sites.[86] A cell is shorthand for the coverage area surrounding the transmission from a base station. A cell split means that in that same coverage area, rather than a single base station, there are multiple base stations reusing the spectrum more intensely to improve network capacity. A simplified example of cell splitting is provided in the figures below:

New T-Mobile will implement natural cell splitting by (1) anchoring on the T-Mobile cell site network, (2) augmenting the density of deployed cell sites by retaining a number of Sprint cell sites (approximately 11,000 retained sites), and (3) deploying both parties spectrum across New T-Mobile s network, ultimately leading to far more 5G sites being deployed than either standalone company had planned or could practicably deploy.[87] This approach will lead to a multiplicative increase in overall network capacity, as demonstrated by the formula below.[88]

86 Ray Decl. at ¶31.

87 *Id.* at ¶32. Anchoring means that the existing T-Mobile network of cell sites and network core would be retained and supplemented with resources (cell sites, spectrum) from Sprint.

88 *Id.* at ¶23.

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Number of cell sites x Spectrum (MHz) Deployed Per Site x Spectrum Efficiency = Capacity

The combined effect, as shown in the figure below, is to drive more spectrum availability at more sites for the New T-Mobile 5G network.[89]

These cell site increases would be practically and economically unattainable by T-Mobile without the transaction. To match the capacity of New T-Mobile, the T-Mobile standalone network would require approximately 162,400 cell splits.[90] In effect, standalone T-Mobile

[89] *Id.* at ¶59.
[90] *Id.* at ¶32.

would be required to more than double the number of existing sites in the next several years.[91] From an operational standpoint, it would not be possible to get this many sites designed and approved (through local zoning processes) in that short period of time.[92] And even if more than double the existing site base were possible, the costs associated with this exercise would be economically unachievable.[93] Having more than double the number of cell sites would more than double the operational expenditures (including cell tower rents and backhaul expenses) needed to support the network. Moreover, the capital expenditures needed to build out this many sites would be out of reach.[94]

Similarly, it would be infeasible for Sprint to match the throughput, capacity, and coverage of New T-Mobile. Sprint would face the same insurmountable challenge as standalone T-Mobile an overwhelming increase in capital and operational expenditures that would not be supported by the cost model for the business.[95] Only through the creation of New T-Mobile can these economic barriers be overcome, enabling a rapid and substantial increase in capacity for consumers.

b. The Combined Company s Spectrum Assets Are Complementary and Span All Ranges to Create a True Nationwide 5G Network

By combining T-Mobile s and Sprint s spectrum resources, New T-Mobile will be positioned to rapidly deliver a broader and deeper 5G network and a superior, more consistent

91 *Id.*
92 *Id.*
93 *Id.*
94 *Id.*
95 Saw Decl. ¶18, 23.

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user experience than either T-Mobile or Sprint could on its own.[96] The complementary spectrum assets of T-Mobile and Sprint will allow New T-Mobile to expeditiously create a nationwide, truly robust 5G network that will support a broad range of innovative 5G use cases.[97] New T-Mobile will deploy the spectrum holdings of T-Mobile and Sprint across the combined network, leading to the highest and best use of those assets, simultaneously allowing more customers access to ultra-fast speeds, and improving existing customers LTE experience.[98] Faster refarming enabled by accelerated device deployment and New T-Mobile s unique spectrum portfolio will increase spectral efficiency.

From a spectrum standpoint, the merger yields the following key benefits:

- Access to a complementary spectrum portfolio to deploy 5G, including a combination of low-, mid-, and high-band spectrum that offers options for wide area coverage and high capacity;
- Spectrum available for 5G from Day One;
- Sufficient spectrum available to accelerate refarming of spectrum for 5G; and
- Sufficient available spectrum to accommodate existing users on legacy networks without degradation of quality while pursuing an aggressive refarming strategy.

Having a diverse mix of spectrum assets is the foundation for implementing a robust 5G network:

- Low-band spectrum (below 1 GHz) allows for better coverage in-building as well as in rural areas. These bands can support cell site operating radii of up to 18 miles, allowing for broad coverage without the need for as much capital expenditure, such as backhaul and tower rents, especially in rural areas.[99]

96 *See, e.g.*, Ray Decl. at ¶60.
97 *Id.* at ¶33.
98 *Id.*
99 *Id.* at ¶35.

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> Mid-band spectrum (from 1 GHz to 6 GHz) is better suited to suburban and urban areas as it provides higher capacity but some diminishment in coverage. The mid-band has more available spectrum, meaning that more capacity can be delivered from a single cell site. However, operating areas around mid-band cell sites would be reduced to approximately 4 miles, which makes the band less optimal for rural market coverage.[100]

> Finally, high-band, millimeter wave spectrum (above 20 GHz) is preferable in dense urban markets to address extreme demand, the need for low latency, and high-speed data applications. Cell operating areas are significantly less than half a mile in the millimeter wave bands, making use of this spectrum economical only in very densely populated areas. However, the physical characteristics of millimeter wave spectrum (large bandwidth availability, ability to use very small antennas) allows for much higher data rates (multiple gigabits per second) than mid-band or low-band spectrum.[101]

By combining all these spectrum resources, New T-Mobile will be able to accommodate existing LTE users and dedicate more spectrum to 5G. The aggregate amount of spectrum available to New T-Mobile will allow it to dedicate spectrum in the 600 MHz, 2.5 GHz, and millimeter wave bands to 5G more rapidly with a migration path to ultimately also offer 5G using the AWS and PCS bands more quickly.[102]

The spectrum refarming plans of T-Mobile, Sprint and New T-Mobile included below demonstrate the complementary spectrum holdings across the low-, mid-, and high-bands that New T-Mobile will utilize for 5G and LTE services.

[100] *Id.* at ¶36.
[101] *Id.* at ¶37.
[102] *Id.* at ¶¶41-42.

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As can be seen, the combined entity s spectrum resources will allow New T-Mobile to deploy 5G more quickly by providing the flexibility to continue offering LTE service to all customers in some bands, while focusing on building out the 5G network in others. By 2024, on average, New T-Mobile will have at least megahertz of 600 MHz spectrum, megahertz of PCS, and MHz of 2.5 GHz spectrum to deliver 5G services.[104] In sum, by 2024, New T-Mobile will have approximately megahertz of dedicated 5G low- and mid-band spectrum nationally (and

[103] *Id.* at ¶40, Table 2.

[104] megahertz of AWS spectrum in certain markets will also be available for 5G, but is not included in this count for New T-Mobile.

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possibly more if refarming is faster than projected), while the combined standalone companies would on average only have a little over megahertz[105] less than half as much.

c. New T-Mobile Will Allow Faster Spectrum Refarming That Delivers Spectral Efficiency Gains

The ability to rapidly migrate consumers from LTE to 5G also provides immediate benefits because 5G has much better spectral efficiency.[106] An increase in spectral efficiency translates into a proportional increase in the number of users supported at the same load per user or, for the same number of users, an increase in throughput available to each user. As T-Mobile s Chief Technology Officer Neville Ray describes in greater detail in his declaration, 5G delivers spectral efficiency improvements due to four main factors: (1) lean carrier design; (2) high bandwidth utilization; (3) improved massive MIMO and beamforming; and (4) inter-cell coordination.[107] Each of these improvements contributes to significant spectral efficiency benefits for 5G. Greater efficiency gains will be provided in the high-band spectrum because this spectrum has smaller wavelengths.[108] Smaller wavelengths mean that antennas optimized for that frequency can be smaller meaning that more antenna elements can be placed in a given area or form factor. More antennas will typically improve coverage and capacity in the network.[109]

As can be seen in the table below, moving from LTE to 5G will result in low-band spectrum receiving a 19 percent improvement in average spectral efficiency (2.1 bps/Hz to 2.5

[105] The combined standalone calculation for 2024 is: megahertz of 600 MHz spectrum for T-Mobile and megahertz of 2.5 GHz spectrum for Sprint. megahertz of PCS and megahertz of AWS spectrum in certain markets will also be available for 5G, but is not included in this count from standalone T-Mobile.

[106] Ray Decl. at ¶43.

[107] *Id.* at ¶44-49.

[108] *Id.* at ¶49.

[109] *Id.*

bps/Hz) and mid-band receiving a 52 percent improvement in average spectral efficiency (2.5 bps/Hz to 3.8 bps/Hz).[110] These improvements in efficiencies could not be achieved at the same pace without the transaction because neither company has the required spectrum resources to migrate users to 5G in the low- and mid-band spectrum as rapidly as New T-Mobile, nor does either company have sufficient spectrum to create the transformational speed and capacity improvements at scale that New T-Mobile will provide.

	Average Spectral Efficiency (bps/Cell)			Percentage Increase
Spectrum	**Antennas**	**LTE**	**5G**	
Low band	4x2 MIMO	2.1	2.5	19%
Mid band	4x4 MIMO	2.5	3.8	52%
mmWave	mMIMO	N/A	7	N/A

Table 2: Spectral Efficiency Comparison[111]

d. New T-Mobile Will Provide LTE Network Benefits and a Fast and Seamless Migration for Existing Customers

Because spectrum must be preserved for the existing LTE network and to serve consumers with LTE-only devices, spectrum cannot easily be re-assigned for 5G use. In fact, one of the primary barriers limiting technological advancement in wireless technology is the need to continue servicing the older technology during the transition. Repurposing existing spectrum away from LTE and other legacy services requires careful coordination and a broad and deep spectrum portfolio to avoid undermining the performance of the current predominant LTE service. New T-Mobile s broader spectrum portfolio will allow it to devote substantial spectrum resources to 5G more rapidly, while also enhancing the coverage and capabilities of the existing LTE network. This spectrum depth will allow New T-Mobile to transition subscribers to 5G much faster than either T-Mobile or Sprint could alone and will allow more spectrum (and a higher percentage of the company s spectrum) to be dedicated to 5G than either company could manage on its own.[112]

110 *Id.* at ¶50.

111 The spectral efficiency improvements are derived from equipment vendor simulations, internal T-Mobile analysis, and ITU requirements.

112 Ray Decl. at ¶40.

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New T-Mobile will optimize the use of existing LTE spectrum resources (AWS, PCS, 600 MHz, 700 MHz, and 800 MHz spectrum bands) to provide enhanced LTE, while simultaneously freeing up extensive spectrum resources for 5G (using 600 MHz, PCS, AWS, 2.5 GHz, and millimeter wave band spectrum).[113] As part of this transition, Sprint customers 2.5 GHz LTE traffic will move to T-Mobile s AWS spectrum, which could not occur but for this transaction. This refarming frees resources to implement a pure 5G network in the 2.5 GHz band as rapidly as possible. As can be seen from Table 1 above, the LTE migration for the 2.5 GHz band is projected to be complete by 2022 for the combined entity, while standalone Sprint would likely still be required to reserve at least megahertz of 2.5 GHz spectrum for LTE through 2024 (and would reserve at least some 2.5 GHz spectrum for LTE for the foreseeable future).[114] This means that New T-Mobile will have megahertz of 2.5 GHz spectrum dedicated nationally to 5G, as compared to the megahertz that Sprint would have on its own an increase of 75 percent. In addition, by 2024, the transaction will allow all megahertz of available PCS spectrum to be dedicated nationally to 5G, whereas the standalone companies would only have megahertz of PCS available in some markets.[115]

At the same time, during the transition to 5G, the Sprint and T-Mobile PCS and AWS spectrum will provide a dense LTE layer in combination with the Sprint 800 MHz and 2.5 GHz

113 *Id.*

114 Saw Decl. at ¶22.

115 Ray Decl. at ¶42. Sprint would available for 5G; T-Mobile would have megahertz of PCS available only in some markets.

37

and T-Mobile 600 and 700 MHz spectrum assets and allow for 5G to be deployed without degrading the LTE experience.[116] New T-Mobile s LTE network will be able to maintain LTE average data rates without any network congestion and without a need for any additional costs for cell splits.[117] In contrast, in transitioning to 5G, both standalone companies would have lower LTE average data rates with high levels of congestion, absent additional cell splits or other network investments.[118]

In addition, New T-Mobile will rely upon best practices developed during previous technology migrations to allow for the smooth migration of existing T-Mobile and Sprint customers to the new network.[119] New T-Mobile will use the existing T-Mobile network as its anchor, increase network density and coverage with selected Sprint retained sites, deploy 2.5 GHz spectrum on T-Mobile sites, and utilize the full T-Mobile spectrum portfolio on virtually all the Sprint retained sites, as needed.[120] This will enable New T-Mobile to migrate Sprint customers to the existing T-Mobile network within three years without degrading the user experience for LTE, while simultaneously allowing a more rapid introduction of a robust 5G network.[121] The New T-Mobile LTE network will maintain a consistent data throughput level, while avoiding any network congestion, during this more rapid 5G migration than would be possible for either company on a standalone basis.[122]

116 *Id.* at ¶40. Saw Decl. at ¶¶31-33.
117 Ray Decl. at ¶62.
118 *Id.*
119 *Id.* at ¶71.
120 *Id.*. at ¶¶63-65.
121 *Id.* at ¶65.
122 *Id.* at ¶¶61-62.

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The transition of T-Mobile customers to New T-Mobile will be simplified because the existing T-Mobile network will be the anchor network for the combined company, allowing T-Mobile s existing subscriber base immediately to access the New T-Mobile network and enjoy the overall benefits from increased speed, capacity, and footprint in the near term.[123] In a similar fashion, Sprint subscribers with compatible devices will be able rapidly to convert to the New T-Mobile network and, almost immediately, be able to take advantage of the greater network breadth and depth.[124] About one-half of Sprint s branded customer base, or about 20 million users, have devices that are compatible with T-Mobile s network and can be integrated into the New T-Mobile network with an over-the-air software update shortly after deal close.[125] Additionally, New T-Mobile will migrate Sprint CDMA voice users to VoLTE (either through a software upgrade or handset replacement promotions).[126] Significantly, the one area of overlapping spectrum holdings the 1900 MHz PCS band will allow a seamless integration of Sprint s existing customers onto T-Mobile s network.[127] Finally, billing and back office system transitions will occur over time to minimize disruption to distribution, customer care, and operations.

Track Record of Successful Migration. T-Mobile has a proven track record of success in large-scale customer migration, and will use this experience to ensure the migration of Sprint customers to the New T-Mobile network is smooth, quick, and painless. After acquiring

123 *Id.* at ¶70.

124 *Id.* at ¶¶64-69.

125 *Id.* at ¶72.

126 VoLTE is an acronym for Voice over LTE networks. VoLTE is a standards-based technology that is required to allow for the delivery of voice calls over the LTE network. Sprint is beginning to deploy VoLTE on its network on a standalone basis in 2018. By moving Sprint customers to the T-Mobile network, VoLTE-capable devices of existing Sprint customers can immediately be updated through an over-the-air software upgrade. *See* Saw Decl. at ¶7.

127 Ray Decl. at ¶72.

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MetroPCS, T-Mobile projected that it could complete the entire migration of approximately 9 million MetroPCS subscribers in 24 months.[128] At the time, industry experts predicted a hugely complex and challenging migration that will take significant time and investment, and which is a major risk for derailing the benefits of the deal.[129] Indeed, the migration was complex it involved a market-by-market transition of MetroPCS customers from an incompatible network (CDMA) that required handset changes for all existing subscribers to access the T-Mobile network.[130] However, T-Mobile s team was able to migrate 70 percent of MetroPCS subscribers within 15 months and complete the full migration within 26 months, with the majority of markets completed well ahead of this date, and well before outside predictions.[131]

After the migration, MetroPCS customers enjoyed radically expanded coverage (as T-Mobile retained more MetroPCS cell sites than its original target to increase coverage and capacity).[132] The MetroPCS customer base has doubled in the first 4.5 years since the deal closed, testifying to the success of the migration and the improved customer experience for these subscribers.[133] Refarming spectrum from MetroPCS CDMA to LTE was also expedited 70 percent of MetroPCS subscribers migrated to HSPA+ or LTE within 15 months and this enabled a more accelerated refarm of the MetroPCS spectrum to LTE (from CDMA).[134] Furthermore, the company s rapid decommissioning of the old MetroPCS equipment allowed it to realize the target synergies a year ahead of schedule and achieve 40 percent higher synergies than planned.[135]

128 *Id.* at ¶71.

129 Harro Ten Wolde and Sinead Carew, *Merged T-Mobile USA, MetroPCS to face tech challenges*, REUTERS (Oct. 3, 2012), https://www.reuters.com/article/us-deutschetelekom-tmobile/merged-t-mobile-usa-metropcs-to-face-tech-challenges-idUSB

130 Ray Decl. at ¶71.

131 *Id.*

132 *Id.*

133 *Id*.

134 *Id*.

135 *Id*.

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Just like the MetroPCS transaction, the migration required following the proposed transaction must be accomplished on a market-by-market basis.[136] New T-Mobile will use the same know-how, same tools, and a similar approach for migrating Sprint customers as it did for MetroPCS.[137] By carefully managing this transition process, New T-Mobile will ensure existing T-Mobile and Sprint subscribers migrate to the new network in a seamless manner without negatively affecting their day-to-day wireless experience.[138] Moreover, the current LTE performance will not only be maintained, but also improved, due to the efficiencies associated with the complementary spectrum and network assets of T-Mobile and Sprint that will be combined in one network.[139]

3. The New T-Mobile 5G Network Will Result in Substantial Customer Experience Improvements Over the Standalone Networks of Either Company

Combining the two companies assets will boost average throughput, make greater capacity available, and increase the reliability and depth of coverage everywhere providing benefits to consumers that would not arise but for the merger.[140] Aggregating the two companies spectrum and site portfolios will dramatically increase capacity, reduce costs, and decrease the need to split existing spectrum between LTE and 5G.[141] This approach will

136 *Id*. at ¶72.
137 *Id*.
138 *Id*. at ¶63.
139 *Id*. at ¶62.
140 *Id.* at ¶53.
141 *Id.* at ¶40.

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improve the subscriber experience by creating more spectrum dedicated solely to 5G, while keeping significant spectrum to maintain LTE quality of service.[142] Also, for both the LTE and 5G networks, the combination of fewer sites per subscriber to support the same traffic and subscriber base will cost-effectively support an increase in subscriber density per site, resulting in lower operating expenses.

a. New T-Mobile Will Dramatically Increase Overall Capacity for 5G Customers

While both T-Mobile and Sprint have standalone plans to deploy 5G networks, the combined company will make available significantly more capacity for 5G services. As seen in the tables below, the combined company provides substantial capacity improvements that will benefit consumers, both in the near term (by 2021) and in the medium term (by 2024).

Entity	2021 5G Monthly Available Capacity (Exabytes)	2024 5G Monthly Available Capacity (Exabytes)
T-Mobile		
Sprint		
New T-Mobile	6.8	20.3

Table 3: 5G Monthly Available Capacity (in addition to LTE)[143]

142 *Id.* at ¶33.

143 *Id.* at ¶57, Table 6.

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Entity	2021 5G Monthly Carried Capacity (Exabytes)	2024 5G Monthly Carried Capacity (Exabytes)
T-Mobile		
Sprint		
New T-Mobile		

Table 4: 5G Monthly Carried Capacity (in addition to LTE)[144]

Entity	2021 LTE Available Capacity (Exabytes)	2024 LTE Available Capacity (Exabytes)
T-Mobile		
Sprint		
New T-Mobile		

Table 5: LTE Monthly Available Capacity[145]

Entity	2021 LTE Carried Capacity (Exabytes)	2024 LTE Carried Capacity (Exabytes)
T-Mobile		
Sprint		
New T-Mobile		

Table 6: LTE Monthly Carried Capacity Per Month[146]

New T-Mobile s capacity and output will give it the ability to deploy broad-based 5G services rapidly without compromising the quality of services for existing subscribers.[147] It will also allow New T-Mobile to provide ever more competitive offerings in the marketplace, such as

144 *Id.* at ¶57, Table 7.
145 *Id.* at ¶57, Table 8.
146 *Id.* at ¶57, Table 9.
147 *Id.* at ¶¶39, 52.

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unlimited data, at much higher data rates to the benefit of consumers.[148] Additionally, the greater available capacity will enable New T-Mobile to compete directly against other types of wired broadband providers and deliver additional consumer benefits discussed in detail below, including supporting higher quality video streaming, faster data downloads, and new and innovative applications such as augmented and virtual reality.[149] Absent this transaction, neither company alone would have the cell sites, spectrum, and spectral efficiency gains needed to drive the increased capacity available to New T-Mobile.[150]

b. New T-Mobile Will Provide Faster Data Rates for 5G

With greater spectrum resources, enhanced capacity, and a denser cell site network, New T-Mobile will be able to provide dramatic improvements in data rates to consumers.[151] The tables below demonstrate the substantially improved data rates that will occur by 2021 and 2024 due to the transaction.

Entity	Average 5G Data Rates (Mbps)	Peak 5G Data Rates (Mbps)
T-Mobile	25	900
Sprint	55	300
New T-Mobile	149	1500

Table 7: Average and Peak Data Rate Comparisons (Year 2021)[152]

148 *Id.* at ¶51.
149 *Id.* at ¶15.
150 *Id.* at ¶¶39-42.
151 Average data rate is not equivalent to the actual user experience. *See supra* n.48.
152 Ray Decl. at ¶53, Table 4.

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Entity	Average 5G Data Rates (Mbps)	Peak 5G Data Rates (Mbps)
T-Mobile	76	2700
Sprint	113	700
New T-Mobile	444	4100

Table 8: Average and Peak Data Rate Comparisons (Year 2024)[153]

These marked improvements in data rates will have a direct impact on wireless consumers. Customers traditionally have relied upon wired, rather than wireless, connections to deliver average data rates in excess of 25 Mbps and these wired connections have been extremely costly. The merger will allow New T-Mobile to deliver data rates that compete against wired data speeds (and exceed current wireless speeds) and enable the delivery of myriad new and improved services.[154]

This increased capacity results, in part, from greatly expanding the 2.5 GHz 5G geographic coverage, as the New T-Mobile 5G network infrastructure will be much denser than Sprint could deploy on a standalone basis.[155] The geographic coverage for 5G deployments for New T-Mobile and standalone Sprint are provided below.

153 Id. at ¶53, Table 5.
154 *Id*. at ¶53.
155 Saw Decl. at ¶12.

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Figure 9: Sprint Standalone 5G Coverage in 2024

Figure 10: New T-Mobile 5G Coverage in 2024

New T-Mobile will leverage the variety of spectrum at its disposal to deploy greater quantities (more spectrum per cell site) more densely (to more cell sites throughout the network).[156] New T-Mobile will be able to deploy a capacity layer of 2.5 GHz spectrum to provide much higher 5G data rates to many more consumers than either T-Mobile or Sprint could provide alone.[157] Moreover, the combined company will be able to deploy more spectrum

156 Ray Decl. at ¶23; Saw Decl. at ¶¶ 27-28, 30.
157 Ray Decl. at ¶38.

in more cell sites, providing a much more consistent signal strength throughout the coverage area than either company could on a standalone basis.[158] Signal strength is one of the best approximations of the actual user experience the stronger and more consistent the signal strength, the more likely the consumer will have a steady and robust connection.[159] For this reason, signal strength is directly related to the actual data rates delivered to a customer.[160] As shown in the table below, the New T-Mobile network will cover a far larger population than either T-Mobile or Sprint would on its own.

Table 9: 5G Coverage Comparisons[161]

4. New T-Mobile Will Cause Verizon, AT&T, and Others to Accelerate and Increase Investment in Their 5G Networks

The scope and scale of the New T-Mobile 5G network will necessitate a competitive response from parties seeking to compete in the broadband market, including Verizon and

158 *Id.*
159 *Id.*
160 *Id.*
161 *Id.* at ¶39, Table 1.

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AT&T. The capacity added by New T-Mobile s 5G network, as well as the response it will induce in its competitors, will have a significant consumer welfare benefit, both enhancing value for subscribers in the form of greater quality and decreasing prices across the board.[162] And beyond the simple increase in capacity, New T-Mobile will be able to deploy a multi-faceted 5G network that combines T-Mobile low- and high-band spectrum with Sprint mid-band spectrum to provide the full array of features and improvements that the new 5G standard promises across the country.[163]

At present, both Verizon and AT&T have announced 5G deployments that rely upon their significant millimeter wave band holdings, but are not true nationwide 5G networks because they lack coverage outside the most densely populated areas. Millimeter wave spectrum has massive bandwidth, which provides the potential for incredible capacity when deployed in high density areas.[164] Even though Verizon and AT&T also have significant low- and mid-band spectrum resources,[165] they have both concentrated on limited 5G networks built around millimeter wave spectrum in the case of Verizon, seemingly as a fixed fiber replacement[166] and, in the case of AT&T, providing mobile broadband in very select metropolitan areas.[167] Neither carrier has yet announced plans to extend 5G to cover rural markets, which would require that they refarm low-

162 *See infra* Section III.C.1.

163 Ray Decl. at ¶52.

164 *Id.* at ¶37.

165 *See e.g.*, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Report, 32 FCC Rcd 8968, 8995-97 ¶¶40-41 (2017) (Twentieth Mobile Wireless Competition Report).*

166 Verizon has announced plans to launch 5G residential broadband service in 3-5 markets in late 2018, but makes no commitment on offering mobile 5G services, opting to wait until more mobile devices become available. *See, e.g.* Verizon, *What it means to lead the race to 5G* (Apr 25, 2018), http://www.verizon.com/about/news/what-it-means-lead-race-5g.

167 AT&T, *AT&T to Launch Mobile 5G in 2018* (Jan. 4, 2018), http://about.att.com/story/att_to_launch_mobile_5g_in_2018.html.

and mid-band spectrum away from 4G LTE users and potentially require cell-splitting or new investments in spectrum. Instead, Verizon and AT&T seem more intent on taking advantage of vertical assets they uniquely possess through various content and distribution acquisitions. These announced 5G plans pale in comparison to New T-Mobile s proposed deployment of 5G services to two-thirds of the U.S. population with data rates greater than 100 Mbps by 2021.[168]

As documented in the economic analysis conducted by Dr. David S. Evans, this tepid adoption of the next generation of cellular technology [by Verizon and AT&T] will likely continue until a carrier makes a first move to accelerate deployment.[169] Dr. Evans reviewed the history of investment in the mobile market (dating back to the first generation of cellular technology) and concludes that, absent the impetus provided by New T-Mobile, neither Verizon nor AT&T will race to deploy real 5G on a nationwide basis because history demonstrates that one carrier makes the first move to the new technology, inducing other carriers to follow. [170] Noting that Verizon and AT&T s existing announced 5G plans are limited and that [n]either Sprint nor T-Mobile have the spectrum resources, or scale as stand-alone companies, to deploy high-quality 5G networks with national coverage in the near future, [171] Dr. Evans notes that [t]he public data indicates that none of the carriers are on track to deploy a robust national 5G network quickly. [172] Observing that the Transaction will cause New T-Mobile to deploy a stronger 5G network sooner because of the substantial efficiencies described above, Dr. Evans finds that New T-Mobile s aggressive launch would be the catalyst that would spur AT&T and Verizon along. [173]

168 Sievert Decl. at ¶36.
169 Evans Decl. at ¶197.
170 *Id.* at ¶2.
171 *Id.* at ¶¶193-95.
172 *Id.* at ¶196.
173 *Id.* at ¶197.

Because New T-Mobile s network will leapfrog what Verizon and AT&T have announced, it must trigger a competitive response. The competitive threat from New T-Mobile s network will spur Verizon and AT&T to change their overall 5G approaches to the benefit of consumers. Verizon and AT&T have long marketed their own networks as providing superior network performance. These companies will find it imperative to make the additional network investments necessary to try to catch up with the higher quality network of New T-Mobile. Furthermore, because New T-Mobile will experience reduced operating expenses as compared to T-Mobile and Sprint on their own through access to more cell sites and deployment of more spectrum per site, it will be able to offer unlimited data at higher data rates and at reduced cost.[174] Such action will put similar pressure on Verizon and AT&T, and other entrants, to provide comparable value to their customers.

C. The Merger Will Result in Enormous Consumer Benefits that Cascade from Today s Typical Customer Services into Numerous Streams of Innovative New Offerings

New T-Mobile s broad and deep nationwide 5G network will enable the delivery of unprecedented coverage and capacity, resulting in a revolutionary consumer experience with unmatched speed. This massive capacity increase, combined with the enhanced scale of New T-Mobile, will allow consumers to get more value for their money and benefit from new competition and disruption through (1) the expansion and improvement of existing services and (2) the arrival of new, innovative services. As a result, New T-Mobile will accelerate significant industry-wide investment and propel the United States across the finish line first in the race to 5G.

[174] Declaration of Peter Ewens, Executive Vice President, Corporate Strategy, T-Mobile US, Inc., at ¶7 (Ewens Decl.).

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1. The Proposed Transaction Will Result in Consumers Paying Less and Getting More

Consumers of both New T-Mobile and the industry as a whole will benefit from enhanced value as New T-Mobile develops the capacity to augment further T-Mobile s Un-carrier movement. As John Legere has noted, T-Mobile and Sprint aren t merging to be like AT&T and Verizon. . . . This merger is about being able to go toe-to-toe with them and all comers to provide aggressive, disruptive competition that is anything but the status quo well into the future.[175] Indeed, the new company s business plan is centered on expanding T-Mobile s Un-carrier initiatives and providing consumers with increased capabilities at decreased prices. In the words of Mike Sievert, New T-Mobile will use that [added] capacity and the resulting lower marginal costs per customer to deliver lower prices and to accommodate increased customer data usage at the same or lower prices.[176] If New T-Mobile were to do otherwise for example, raise prices or reduce customer value under its rate plans it would damage the Un-carrier brand, alienate its customer base, and leave the company with idle capacity.

Consistent with T-Mobile s past practices, New T-Mobile s network capabilities will provide the capability and incentive for the company to deliver more value at a lower cost to American subscribers.[177] As T-Mobile Executive Vice President of Corporate Strategy Peter Ewens observes, [m]easured by revenue yield per GB on average, for the past several years T-

[175] Legere Decl. at ¶24.
[176] Sievert Decl. at ¶12.
[177] New T-Mobile will also continue the Lifeline services currently provided by T-Mobile and Sprint.

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Mobile has given its subscribers 37 percent more data each year per dollar spent on their wireless plans while at the same time lowering their package prices (a data dividend).[178] Continuing to add capacity has been integral to T-Mobile s consumer-oriented approach, allowed T-Mobile to grow the Un-carrier brand, and eventually permitted T-Mobile to make unlimited its core offer, which forced competitive responses from Verizon and AT&T and made unlimited rate plans broadly available.[179] Mr. Ewens observes that [o]ur demand forecasts for the next 6 years indicate that consumers are likely to continue growing their demand by over 30 percent per year, and that [w]ith the New T-Mobile we will be able to continue offering subscribers more data each year without increasing prices.[180] But, he cautions, [w]ithout this merger we will not be able to sustain those rates of data growth without severely degrading network performance.[181]

Dr. Evans work also documents that the proposed merger particularly the creation of added wireless capacity will result in significant, tangible, and verifiable public interest benefits by increasing the value of wireless services offered to the public, while decreasing prices. The economic analysis conducted by Dr. Evans found that, based on illustrative calculations, the transaction would result in as much as a 55 percent decrease in cellular data price and an 120 percent increase in cellular data supply.[182] In order to reach this conclusion, Dr. Evans used capacity data from the network model for New T-Mobile to project that New T-

178 Ewens Decl. at ¶5.

179 *Id.* at ¶4.

180 *Id.* at ¶14.

181 *Id*.

182 Evans Decl. at Section V.C, ¶¶220-44. Dr. Evans assumes that AT&T and Verizon will approximately match New T-Mobile in terms of performance and the amount of data they could offer subscribers so that they remain competitive with New T-Mobile, noting that [t]hey could not offer competitive packages if they had materially less national practical capacity available per subscriber. *Id*. at ¶227.

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Mobile could provide national practical capacity of GB per month per smartphone subscriber.[183] Based on his findings that New T-Mobile would provide a competitive impetus to Verizon and AT&T, which is discussed in Section III.B.4, *supra,* Dr. Evans determined that Verizon and AT&T would likely upgrade their networks to match New T-Mobile s GB per month per smartphone subscriber, which is a significant increase over the average of GB per month per smartphone subscriber he calculates in the absence of the merger.[184] Dr. Evans uses the derived capacity and estimated data ARPU to calculate prices per GB (price/GB) and other comparative criteria summarized in the table below:[185]

	Without Transaction	With Transaction	Percent Change Due to Transaction
National Practical Capacity (EB/Month)			120.25%
National Practical Capacity per Smartphone Subscriber (GB/Month)			120.25%
Price per GB			-54.60%

Source: Exhibit 14A.

Table 10: National Practical Capacity and Price per GB With and Without the Transaction

Notably, these calculations by Dr. Evans do not consider non-price dimensions, and Dr. Evans further concludes that [t]he Transaction would also result in a decline in quality-adjusted cellular data prices due to a dramatic improvement in network performance, and induce the development of new app features that would increase the value consumers get from a given

183 *Id.* at ¶234 (also noting that T-Mobile as a stand-alone company would provide GB per month per smartphone subscriber, and Sprint as a stand-alone company would provide GB per month per smartphone subscriber.).

184 *Id*. at ¶235.

185 *Id*. at ¶238, Table 17.

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amount of cellular data.[186] Some of the other major benefits of the transaction, as discussed in Section III.B.3, *supra,* are improved quality and performance due to the conversion to 5G technology. This ability to improve consumer quality and value is illustrated in Figure 11 below, which shows that New T-Mobile will be able to bring a much greater percentage of its capacity on-line as 5G capacity, rather than as 4G LTE, as compared to the combined standalone case:[187]

Thus, the connection quality aspects of the New T-Mobile, including speed, latency, and configurability, among other factors, will be a substantial improvement over the combined standalone case.[188]

186 *Id.* at ¶180.

187 *Id.* at ¶185, Figure 5.

188 New T-Mobile will be able to transition more spectrum to 5G earlier, which will result in a faster migration of subscribers from 4G LTE to 5G service. Thus, while New T-Mobile has less capacity dedicated for LTE than the combined standalone companies, it will have significantly fewer customers relying on 4G LTE and therefore the connection quality of 4G LTE services should not be adversely affected. *See supra* Section III.B.2.d.

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In sum, both T-Mobile s executive declarations and economic analysis confirm that the proposed transaction will have substantial consumer welfare benefits. These benefits will be derived from the added capacity New T-Mobile will create, giving it the capability and incentive to amplify T-Mobile s Un-carrier initiatives. This maverick behavior has been shown to benefit all wireless customers, as entrenched industry players are forced to respond with matching pro-consumer policies. Economic work also documents the substantial consumer benefits more than halving unit data prices per GB and more than doubling data capacity that will result from New T-Mobile driving a competitive response and forcing the industry to broader and deeper 5G plans.

2. Exciting and Innovative Services Will Flow from New T-Mobile s Network Speed and Capacity

Consumers will reap enormous benefits from the inherent improvements in wireless service resulting from the transition to 5G, which will not only be an evolution of mobile broadband networks, it is also envisioned to enable new unique network and service capabilities.[189] New T-Mobile s 5G network will provide a nationwide footprint and robust capacity to enable all Americans to benefit from the full spectrum of possible 5G services and applications.

The combined company s 5G network will make possible fiber-like data speeds and enable real-time interactivity and more consistent performance and user experiences, as well as leaving plenty of capacity for unlimited data.[190] For example, the new network will support streaming of state-of-the-art 4K video straight to devices, providing consumers with the freedom

189 Ray Decl. at ¶13.
190 *Id*.

to watch content wherever and whenever they want without having to subscribe to multiple providers.[191] The new network will virtually eliminate the constraints consumers currently experience in congested environments, such as sporting events and concerts, allowing for the sharing and downloading of content nearly instantaneously from any location.[192] The 5G services provided by the new network will also fundamentally transform the way Americans live, work, travel, and play by being able to connect an enormous variety of IoT devices and sensors.

T-Mobile currently offers a small number of basic consumer IoT products, with a focus on smart and connected home and car devices, wearables, and mobile hotspots.[193] For its part, Sprint has made recent efforts to expand its IoT offerings, but has struggled to launch competitive products in part due to its lack of low-band spectrum. Because of its spectrum limitations, standalone Sprint does not have the coverage needed to successfully provide the kinds of broad-based IoT deployments contemplated in the 5G era.[194] As a result, both companies have a very low share in the emerging IoT segment as compared to other wireless providers, particularly Verizon and AT&T.

However, New T-Mobile s robust nationwide network will enable it to support and offer the full range of IoT products and services. It will also allow the combined company to extend the Un-carrier approach to IoT, helping customers take advantage of the latest products and services at lower prices.[195] Supported by New T-Mobile s nationwide 5G network, everything in the house can be connected for example, a smart refrigerator can monitor consumer usage and

191 *Id*.
192 *Id.*
193 Sievert Decl. at ¶29.
194 Draper Decl. at ¶38.
195 Sievert Decl. at ¶¶30-34.

grocery needs, a smart range can prevent a user from overcooking or burning a meal, a smart fan and air filter can turn on automatically if needed, and a connected home security and safety system can alert authorities remotely if an issue arises. New T-Mobile s nationwide 5G network also will enable myriad uses beyond the home (e.*g.*, autonomous cars, real-time traffic data).[196]

Additionally, the broad geographic reach of New T-Mobile s 5G network will facilitate the use of advanced applications that are critically needed in small towns and rural communities. For instance, rural residents are forced to rely on only 13.1 physicians per 10,000 people, compared to residents in urban areas who have access to 31.2 physicians per 10,000 people.[197] The network s ability to transmit high-resolution video and audio to distant physicians will enable rural residents to access higher-quality medical care and to get it faster and without having to travel hundreds of miles. The New T-Mobile 5G network also will support information-enabled agriculture processes that allow farmers in rural areas to monitor crops, climates, livestock, equipment, and commodities markets.[198] Senator Deb Fischer and Commissioner Brendan Carr recently recognized, [p]recision agriculture generates incredibly useful information for producers, helping them to be more efficient. But for producers to take advantage of these innovative processes that gather, transmit, and analyze vast amounts of data, . . . all Americans, need sufficient Internet connectivity. . . . In rural America today, the broadband needed to support precision agriculture applications isn t always available.[199] The complementary spectrum and network assets brought together in the merged company will provide the high-speed broadband needed to support these types of beneficial applications and bring them to rural areas and small towns that would otherwise go without them.

196 *Id.* at ¶¶28-34.

197 National Rural Health Association, *About Rural Health Care*, https://www.ruralhealthweb.org/about-nrha/about-rural-health-care (last visited June 16, 2018).

198 Dusty Weis, *How Smart Farms Are Making the Case for Rural Broadband*, AEM (Oct. 19, 2017), https://www.aem.org/news/october-2017/how-smart-farms-are-making-the-case-for-rural-broadband/.

199 Senator Deb Fischer and Commissioner Brendan Carr, *Agriculture and Connectivity*, NORFOLK DAILY NEWS (May 29, 2018), http://norfolkdailynews.com/blogs/agriculture-and-connectivity/article_313f71d0-633c-11e8-91f1-f725de833061.html.

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3. Consumers Will Have a New Lower Priced and Higher Quality Competitive Option for In-Home Broadband

Commissioner Michael O Rielly recently observed that wireless broadband service, both mobile and fixed, should no longer be considered a complement to wired broadband, as it has become a viable substitute in many instances.[200] That is T-Mobile s view as it already considers itself a broadband company today. Indeed, a significant number of T-Mobile s existing customers utilize their T-Mobile device as their sole broadband connection. Yet, while the services offered currently by T-Mobile, Sprint, and other wireless companies are sufficient for many data uses, they are not on par with the speeds of wired in-home broadband connections offered to many Americans.

With the merger, however, that will all change. New T-Mobile s robust nationwide 5G network will close the speed differential between mobile and wired broadband and have the capacity to handle the diverse needs of in-home broadband customers in many areas. The combined company intends to directly and aggressively compete against conventional in-home wired broadband products, providing consumers with an attractive high-speed broadband alternative to the wired incumbent some for the first time.[201] The new 5G network s performance and low prices will incentivize consumers to cut the cord, pocketing the savings from eliminating their wired broadband bill month after month.[202]

200 Statement of Commissioner Michael O Rielly, *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 17-199, https://apps.fcc.gov/edocs_public/attachmatch/FCC-18-10A4.pdf.

201 Sievert Decl. at ¶¶36-37.

202 *Id.* at ¶38.

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New T-Mobile s In-Home Offering Will Provide Meaningful Competition to Wired Broadband Incumbents. Consumers will benefit from the introduction of a supercharged Un-carrier into the in-home broadband delivery business. The in-home broadband segment today is not competitive. According to a study based on FCC data, 48 percent of U.S. households lack any competitive choice for in-home broadband service exceeding 25 Mbps.[203] Of that group, 9 percent are unable to receive any broadband service at all.[204] Moreover, approximately 79 percent of U.S. households lack a competitive choice in service providers delivering high-speed broadband with speeds exceeding 100 Mbps.[205] New T-Mobile will change this dynamic.

As described above, New T-Mobile s 5G network will deliver high-speed wireless broadband with speeds in excess of 100 Mbps to nearly two-thirds of the U.S. population by 2021 and to almost 90 percent of the U.S. population by 2024.[206] These speeds are sufficient to support HD and 4K video streaming to screens of the customer s choosing. The network will also have improved signal strength, which will enhance in-building service. New T-Mobile will utilize this network performance and coverage to shake up the in-home broadband marketplace and offer consumers a new and very attractive competitive option for in-home broadband service. With New T-Mobile, many consumers would be enjoying a choice for their in-home provider for the first time.

203 Hal Singer, Economists Incorporated, and Ed Naef and Alex King, CMA Strategy Consulting, *Assessing the Impact of Removing Regulatory Barriers on Next Generation Wireless and Wireline Broadband Infrastructure Investment*, at 10-11 (June 2017), http://ei.com/wp-content/uploads/2017/06/SingerAssessingImpact6.17.pdf (based on FCC Form 477 data from June 2016).

204 *Id.*

205 *Id*.

206 *See supra* Section III.B.1.c. *See also* Sievert Decl. at ¶36.

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Specifically, the merger enables New T-Mobile to offer in some areas a robust wireless broadband solution for residential use that will have equipment, service packages, and products matching or exceeding those of traditional, subscription-based and often costly in-home wired broadband providers. Given the lack of competition in the in-home market, this offering should be well-received, and the combined company plans to market it aggressively, particularly in rural areas. By 2024, the Applicants expect New T-Mobile to provide high-speed, in-home broadband service to approximately 9.5 million subscriber households, equating to approximately 7 percent market penetration, and making New T-Mobile the fourth largest in-home Internet service provider (ISP) in the United States based on current subscriber counts.[207] Of particular importance, T-Mobile estimates that 20-25 percent of these new subscribers for in-home broadband service will be located in rural areas.[208]

New T-Mobile s 5G network will provide speeds and capacity, as well as enhanced in-building quality, sufficient to support consumers evolving in-home broadband needs, and will do so without compromising the quality of its core wireless service offerings.[209] This would not be possible without the merger as neither T-Mobile nor Sprint on its own has the spectrum assets, scale, or other resources necessary to deploy networks with the capabilities required to support the quality of streaming HD and 4K video and other key applications in-home broadband customers will demand. T-Mobile s standalone plan contemplates the deployment of only a thin

207 These estimates assume that the average monthly mobile subscriber data consumption would increase ten-fold from today s 9.8 GB to 80 GB by 2024, and that the capacity needed for providing in-home broadband, would be approximately 500 GB per month per household. *See* Sievert Decl. at ¶37.

208 *Id*.

209 Ray Decl. at ¶¶15, 61-62.

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layer of 5G services that will not have the speed or capacity to justify aggressive entry into the in-home broadband market. While Sprint s 5G network will have substantial capacity, it will lack the broad, ubiquitous coverage of New T-Mobile s 5G network, particularly in areas outside of major urban and suburban areas that want for high-speed broadband options today. However, by combining the two companies assets, the transaction will enable a true competitor in the in-home broadband space and will alter the fundamental dynamics that have left millions of customers lacking an alternative option for residential wired high-speed broadband.

New T-Mobile s 5G Service Will Spur Mobile Substitution for In-home Broadband. The term cord cutting is typically used to refer to cable TV subscribers who elect to cancel their subscriptions entirely or in favor of alternative video content distribution providers (*e.g.*, over-the-top viewing options such as Netflix or Amazon). The trend towards cord cutting is now emerging for in-home wired broadband as well. Increasingly, consumers are choosing to rely solely on mobile wireless subscriptions for their Internet needs and are dropping their in-home broadband service entirely. Today, 19 percent of households could eliminate their home broadband subscription entirely by tethering on a T-Mobile two-line plan. New T-Mobile will accelerate this trend by providing an increasingly viable alternative to in-home broadband. By 2024, 35 to 45 percent of households could completely eliminate their home broadband subscription and rely on New T-Mobile for all their broadband needs.

According to the National Telecommunications and Information Administration s review of Census Bureau data in 2016, mobile Internet service appears to be competing more directly with wired Internet connections.[210] Last year, Deloitte estimated that in 2018, one-fifth (20

[210] Giulia McHenry, *Evolving Technologies Change the Nature of Internet Use*, NTIA (Apr. 19, 2016), https://www.ntia.doc.gov/blog/2016/evolving-technologies-change-nature-Internet-use.

percent) of North Americans with Internet access would get all of their in-home Internet access via cellular mobile networks.[211] A good indicator that this trend will continue is that the shift from wired to wireless Internet use is particularly strong among young adults. One report found that 95 percent of American teens have smartphones, and that 45 percent of U.S. teens who say they use the Internet, either on a computer or a cellphone, are connected to the Internet almost constantly.[212] But it s not just the young: another report found that a full one-fifth (20 percent) of all American adults are smartphone only users at home.[213]

Just as many consumers terminated their landline telephone service when cellphone service became an effective substitute, many will see the mobile wireless services provided by the New T-Mobile 5G network as an extremely attractive and effective substitute for in-home broadband, allowing them to cut the cord and terminate their residential broadband subscription completely. Customers who do so will experience performance equivalent to the available wired broadband option in many areas. More importantly, such customers will pocket the savings from terminating their costly wired subscription and continue to do so month after month.

Cost Savings for Broadband Consumers. The combined company will be a robust and disruptive competitor in the in-home broadband marketplace, which will result in lower prices for consumers. New T-Mobile will price its own in-home offering aggressively to gain market share and utilize its expansive network capacity. However, the cost savings will extend beyond New T-Mobile s in-home broadband customers.

[211] *Mobile-only: wireless home Internet is bigger than you think*, at 1, DELOITTE (2017), https://www2.deloitte.com/content/dam/Deloitte/global/Images/infographics/technologymediatelecommunications/gx-deloitte-tmt-2018-mobile-home-Internet-report.pdf.

[212] Monica Anderson and Jingjing Jiang, *Teens, Social Media, and Technology 2018*, at 7-8, PEW RESEARCH CENTER (May 31, 2018), http://assets.pewresearch.org/wp-content/uploads/sites/14/2018/05/31102617/PI_2018.05.31_TeensTech_FINAL.pdf.

[213] Aaron Smith and Kenneth Olmstead, *Declining Majority of Adults Say the Internet Has Been Good for Society*, at 3, PEW RESEARCH CENTER (Apr. 30, 2018), http://assets.pewresearch.org/wp-content/uploads/sites/14/2018/04/27165144/PI_2018.04.30_Internet-Good-Bad_FINAL.pdf.

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Today, the median cost of residential wired broadband in the United States is approximately $80 per month,[214] with nearly all subscribers of such services also paying a separate monthly charge for mobile wireless service. As the FCC has recognized, just one additional competitor entering the in-home broadband marketplace would lead to lower prices and higher data rate services for all consumers.[215] In fact, prices for in-home high-speed broadband service are projected to drop by more than 25 percent with the entry of a faster competitor to the market.[216] And, when that new entrant is the Un-carrier, consumers will benefit even more through the introduction of New T-Mobile s innovative and lower priced plans. Accordingly, all consumers of in-home broadband service are likely to enjoy cost savings as a result of New T-Mobile s entry into this business.

However, consumers who choose to cut the in-home wired broadband cord and utilize New T-Mobile s 5G mobile wireless service to meet their in-home broadband needs will see the most savings. By way of example, today such a consumer might pay $80 per month for their wired in-home broadband service and $60 per month for mobile wireless service, for a total of $140 per month. Once New T-Mobile deploys its broad and deep nationwide 5G network that

214 Carl Weinschenk, *Report: U.S. Median Broadband Price is $80 Monthly,* TELECOMPETITOR (Aug. 8, 2017), http://www.telecompetitor.