begun aggressively marketing wireless plans to its existing cable subscribers in a growing number of markets.

- ***Clearwire***, owned by a consortium of Sprint, Comcast, Time Warner Cable, Intel, Google, and Bright House Networks, is the nation's largest holder of spectrum. Using spectrum in the 2.5-2.6 GHz bands, Clearwire is both a retailer of 4G data services (under the "Clear" brand), with more than a million retail customers, and a supplier of wholesale inputs to 4G WiMAX retail providers such as Sprint, Time Warner Cable, and Comcast. In March 2011, it signed a wholesale agreement with Best Buy, which will use Clearwire spectrum to offer its "Best Buy Connect" MVNO services at its retail stores throughout America. Clearwire is also conducting LTE trials, which, according to CTO John Saw, have yielded "mind blowing" results.[13]

- ***LightSquared***, a spectrum-rich and well-capitalized wireless entrant, plans to deploy a 4G LTE network covering 100 million people by the end of 2012 and 260 million by the end of 2015. It recently announced major wholesale arrangements with Best Buy, rural broadband provider Open Range, and Leap, which, as discussed, will use LightSquared spectrum to help roll out its LTE services.

T-Mobile USA's network and spectrum resources will add substantial value to this highly competitive marketplace when they are combined with AT&T's network and spectrum resources to produce the output-enhancing synergies discussed in this submission. As a standalone company, however, T-Mobile USA would continue to face substantial commercial and spectrum-related challenges. It confronts increased competition from industry mavericks such as MetroPCS, Leap, and others; its percentage of U.S. subscribers has been falling for nearly two years; and it has no clear path to LTE.

T-Mobile USA's absence from the marketplace will not have a significant competitive impact, particularly vis-à-vis AT&T. AT&T is more focused on Verizon and Sprint than on T-Mobile USA, and AT&T too is seeing increased competitive threats from rapidly growing mavericks like MetroPCS and Leap and other providers. These other competitors can quickly replace the diminished market role T-Mobile USA plays today—and indeed have already begun

[13] Karl Bode, *Clearwire: LTE Trial Results 'Mind Blowing'*, DSL Reports (Mar. 23, 2011), http://www.dslreports.com/shownews/Clearwire-LTE-Trial-Results-Mind-Blowing-113342.

to do so. More generally, this transaction will promote the core objectives of sound competition policy by alleviating the applicants' capacity constraints and thereby generating greater output and more competitive prices.

Finally, the Commission should view this transaction in its international context when assessing both its competitive significance and its importance to American innovation. As the Commission has observed, the U.S. wireless marketplace is substantially less concentrated than its counterparts in other industrialized nations.[14] The Commission would disserve American consumers if it imposed artificial constraints on network scale and efficiency not seen elsewhere in the world, thereby ultimately consigning the U.S. marketplace to a collection of spectrum-starved providers. That outcome would risk degrading service for millions of American consumers, undermining the virtuous cycle of mobile broadband innovation, and imperiling U.S. technological leadership.

In sum, this transaction will be good for consumers, for workers, for the economy, and for the companies involved. It is needed to alleviate serious capacity challenges on the two parties' networks; to enable the combined company to deploy LTE to more than 97 percent of Americans; to derive the greatest value for consumers from T-Mobile USA's existing resources; and to keep America on the cutting edge of wireless broadband technologies. The transaction should be promptly approved.

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[14] *Fourteenth Wireless Report*, 25 FCC Rcd at 11621-22 ¶¶ 364-67.

DESCRIPTION OF THE APPLICANTS AND THE TRANSACTION

A. The Applicants

AT&T is a leading provider in the United States of wireless, Wi-Fi, high-speed Internet, local and long distance voice, mobile broadband, and advanced TV services.[15] It also provides worldwide wireless coverage and IP-based business communications services. Headquartered in Dallas, Texas, AT&T is the only large U.S. wireless carrier that is unionized.

Deutsche Telekom AG (DT), based in Bonn, Germany, is one of the world's leading telecommunications companies with operations in about 50 countries. The Federal Republic of Germany holds approximately a direct 15% interest in DT. KfW, a development bank that is 80% owned by the Federal Republic of Germany and 20% owned by the German federal states, owns approximately a 17% interest in DT. DT's core businesses, which require substantial capital investments in their own right, involve the provision of fixed broadband and wireless services in Germany and throughout much of the rest of Europe. *See* Langheim Decl. ¶ 7.

T-Mobile USA, a wholly owned subsidiary of DT, is headquartered in Bellevue, Washington and offers nationwide wireless voice and data services to residential and business customers.

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[15] AT&T Mobility LLC, which operates AT&T's wireless network, is the successor to Cingular Wireless and is a wholly owned subsidiary of AT&T Inc. For ease of exposition for present purposes, the term "AT&T" is generally used here to refer to AT&T Mobility LLC or other wholly-owned subsidiaries of AT&T Inc. Nonetheless, AT&T Inc. is the AT&T applicant in this proceeding and, as noted below, is the corporate entity acquiring T-Mobile USA.

B. Qualifications

The Commission has concluded repeatedly that AT&T has the necessary qualifications required by the Communications Act, and nothing has changed to disturb this conclusion.[16] The Commission has likewise concluded that T-Mobile USA has the requisite character and qualifications to hold Commission authorizations.[17]

C. Nature of the Transaction

AT&T Inc. has agreed to acquire from DT all of the stock of T-Mobile USA on a debt-free basis. The total consideration will be $39 billion. That amount will include a cash payment of $25 billion with the balance to be paid using AT&T common stock, subject to adjustment. AT&T has the right to increase the cash portion of the purchase price by up to $4.2 billion with a corresponding reduction in the stock component, so long as DT receives at least a 5 percent equity ownership interest in AT&T. If AT&T makes no adjustments, DT will hold approximately 8 percent of AT&T stock at the transaction's close. The number of AT&T shares issued will be based on the AT&T share price during a 30-trading-day period prior to closing, subject to a 7.5 percent collar that was determined at signing. The cash portion of the purchase price will be financed with new debt and cash on AT&T's balance sheet. AT&T has an 18-month commitment for a one-year unsecured bridge term facility with various banks for up to $20 billion. AT&T assumes no debt from T-Mobile USA or DT.

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16 *See* Memorandum Opinion and Order, *Applications of AT&T Inc. and Cellco Partnership d/b/a Verizon Wireless*, 25 FCC Rcd 8704, 8720 ¶ 29 (2010) ("*AT&T/Verizon Order*"); Memorandum Opinion and Order, *Applications of AT&T Inc. and Centennial Communic'ns Corp.*, 24 FCC Rcd 13915, 13931 ¶ 33 (2009) ("*AT&T/Centennial Order*").

17 *See* Memorandum Opinion and Order, *Applications of T-Mobile USA, Inc. and Suncom Wireless Holdings, Inc. for Consent to Transfer Control of Licenses and Authorizations*, 23 FCC Rcd 2515, 2519-20 ¶ 10 (2008).

Under the terms of the parties' Stockholder's Agreement, DT will have the right to nominate one director for election to the AT&T board so long as it owns 5% or more of AT&T's voting stock.[18] DT will not be permitted to transfer any stock for the first 12 months after the closing. Sales in any calendar year, other than in a registered offering, will be limited. DT will have demand and piggyback registration rights. But DT will have no special voting rights or other indicia of control. In addition, the Stockholder's Agreement has a standstill provision that limits DT's ability to acquire additional AT&T stock.

STANDARD OF REVIEW

In reviewing license-transfer applications, the Commission first assesses whether the proposed transaction complies with the specific provisions of the Communications Act, other applicable statutes, the Commission's rules, and federal communications policy.[19] The Commission then weighs any potential public interest harms of the proposed transaction against the potential public interest benefits. The Applicants need to show by a preponderance of the evidence that the proposed transaction, on balance, serves the public interest.[20] The Commission "may not consider whether the public interest, convenience, and necessity might be served by" a transaction involving an entity "other than the proposed transferee."[21] Moreover, as the

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18 The Agreement specifies that, in some circumstances, DT can retain this right if it owns as little as 2.5% of AT&T's voting stock if AT&T takes actions to dilute DT's share.

19 47 U.S.C. § 310(d)

20 *See AT&T/Verizon Order*, 25 FCC Rcd at 8716 ¶ 22; *AT&T/Centennial Order*, 24 FCC Rcd at 13928 ¶ 27.

21 47 U.S.C. § 310(d).

Commission has repeatedly found, merger proceedings are improper forums for addressing general industry issues that are not specific to the transaction.[22]

This transaction does not violate any law or rule, and, for the reasons discussed below, it will strongly promote the public interest.

PUBLIC INTEREST ANALYSIS

I. THE TRANSACTION WILL BENEFIT CONSUMERS AND THE AMERICAN ECONOMY.

This transaction will generate strong and diverse public interest benefits that would not occur but for this transaction. First, as discussed in Section I.A, it will create immense network and spectrum synergies that will alleviate the capacity constraints that the applicants would otherwise be left to address, far less efficiently and effectively, on their own. It will thereby increase capacity, enhance efficiency in the use of scarce spectrum resources, and significantly improve quality of service. This expanded capacity will benefit not only the applicants and their customers, but consumers in general. As Professor Carlton explains, the transaction will increase total industry output and thus produce lower prices than would prevail in the absence of the transaction.[23]

Second, as discussed in Section I.B, the transaction will give the combined company the scale, resources, and spectrum it needs to increase its LTE deployment from AT&T's current

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[22] *E.g., AT&T/Centennial Order*, 24 FCC Rcd at 13972 ¶ 141; Memorandum Opinion and Order and Declaratory Ruling, *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*, 23 FCC Rcd 17444, 17527-28 ¶ 185 (2008) ("*Verizon/ALLTEL Order*"); Memorandum Opinion and Order, *AT&T, Inc. and BellSouth Corporation Application for Transfer of Control*, 22 FCC Rcd 5662, 5692 ¶ 56 n.154 (2007) ("*AT&T/BellSouth Order*").

[23] *See* Declaration of Dennis Carlton, Allan Shampine, and Hal Sider, Compass Lexecon, at ¶¶ 12, 58, 133 (April 20, 2011) ("Carlton Decl.") (attached); *see also* Section II, *infra.*

plans of 80 percent of Americans to more than 97 percent. That is a transformative benefit because LTE rivals some of today's wireline broadband connections in speed and performance. This initiative will increase jobs and investment, particularly in rural areas, and enhance U.S. global competitiveness and leadership in mobile broadband services. Moreover, the transaction will promote America's global leadership in mobile broadband innovation. Finally, as discussed in Section I.C, the transaction will enhance our country's disaster preparedness and recovery capabilities.

A. The Transaction Will Benefit Customers of Both AT&T and T-Mobile USA by Creating Substantial Synergies, Expanding Output, and Alleviating Severe Capacity Constraints.

AT&T faces network capacity constraints more serious than those of other providers, and this merger provides the surest, fastest, and most efficient solution to that challenge. This section discusses—

- the sources of these capacity constraints, including AT&T's leadership in smartphone services, its customers' escalating data usage, and its need to support multiple generations of technology over limited spectrum bands;
- the practical consequences of those constraints;
- T-Mobile USA's own capacity constraints and lack of a clear path to LTE;
- the many independent ways in which this transaction will alleviate capacity constraints on both parties' networks, expand output, and thereby promote competition and consumer welfare; and
- the relative inefficacy of alternative ad hoc patches to the parties' systemic capacity challenges.

This section then concludes by identifying the tens of billions of dollars in overall cost synergies this transaction is expected to generate.

1. The Mobile Broadband Revolution Is Placing Unprecedented Strains on AT&T's Network.

As Chairman Genachowski recently observed, "mobile broadband is being adopted faster than any computing platform in history, and could surpass all prior platforms in their potential to drive economic growth and opportunity."[24] Smartphones are exploding in popularity; data-intensive mobile applications are proliferating; consumers are feeding a limitless appetite for streaming video and social networking sites; and cloud-based computing services are fast emerging. Yet that unprecedented adoption rate is placing similarly unprecedented congestion on mobile broadband networks. And that congestion is hitting AT&T's network sooner and harder than others for two main reasons. First, AT&T has been a key pioneer of mobile broadband technologies and is now on the leading edge of the mobile traffic growth curve. Second, unlike some of its competitors, AT&T must also dedicate substantial spectrum to serve three different generations of technology.

a) AT&T has pioneered the mobile broadband revolution, and its network usage has surged dramatically.

AT&T has long been a leader in wireless innovation, both in developing key network technologies and in forging the commercial relationships needed to launch a wide range of cutting-edge services and devices, including smartphones, e-readers, M2M services, and cloud-based computing.[25] For example, AT&T was the first wireless provider to feature a number of innovative devices, from the revolutionary Motorola RAZR in 2004 to the iPhone in 2007 to the iPad in 2010. And this year, AT&T is the first wireless provider to feature the Motorola ATRIX

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[24] *Genachowski CTIA Remarks* at 5.

[25] Declaration of John Donovan, Chief Technology Officer, AT&T Services, Inc., at ¶¶ 4-8 (April 20, 2011) ("Donovan Decl.") (attached).

4G, the first smartphone to contain dual-core processing technology that can power a laptop via a docking port. All of these devices consume enormous wireless bandwidth. "Smartphones consume 24 times as much data as traditional cell phones," and they outsold "PCs worldwide—101 million to 92 million in the 4th quarter of 2010."[26] Meanwhile, tablets can consume at least as much data as smartphones, and "[a]nalysts project tablet sales of 55 million worldwide this year."[27]

Because of its leadership, AT&T is now on the front end of the mobile broadband traffic growth curve. AT&T has approximately 31 million smartphone users,[28] and according to a leading market research firm, its subscribers accounted for more than **[Begin Confidential Information] [End Confidential Information]** percent of all U.S. smartphone users at year-end 2010, **[Begin Confidential Information] [End Confidential Information]**.[29] At the end of 2010, 61 percent of AT&T's 68.0 million contract subscribers had "integrated devices," up from 46.8 percent a year earlier.[30] And in the fourth quarter of 2010, integrated devices accounted for more than 80 percent of AT&T's device sales in connection with contract plans. By the end of 2011, AT&T plans to introduce twenty additional devices, including two LTE tablets and additional LTE devices such as smartphones.

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26 *FCC Fact Sheet, supra.*

27 *Id.*

28 Declaration of Rick L. Moore, Senior Vice President of Corporate Development, AT&T Inc., at ¶ 17 (April 20, 2011) ("Moore Decl.") (attached).

29 The Nielsen Company, *Carrier Share of Smartphone Subscribers – Q4 2010.* By comparison, the data show that **[Begin Confidential Information] [End Confidential Information]** percent. *Id.*

30 "Integrated devices are handsets with QWERTY or virtual keyboards in addition to voice functionality and are a key driver of wireless data usage." AT&T 4Q 2010 Investor Briefing, at 4 (Jan. 27, 2011), http://www.att.com/Investor/Financial/Earning_Info/docs/4Q_10_IB_FINAL.pdf.

The result is extraordinary and accelerating usage on AT&T's network. AT&T's mobile data volumes increased *8000 percent* from 2007 to 2010. Donovan Decl. ¶ 41. That growth is expected to continue. By 2015, AT&T estimates that mobile data traffic on its network will reach eight to ten times what it was in 2010. Moore Decl. ¶ 6. Put another way, in just the first five to seven weeks of 2015, AT&T expects to carry *all* of the mobile traffic volume it carried during 2010.

b) AT&T must support three generations of technology over its available spectrum.

While AT&T's capacity challenges arise largely from exploding data usage on its network, they are exacerbated by AT&T's need to divide its spectrum portfolio among three different generations of technology—a challenge some of its competitors do not face. *See* Carlton Decl. ¶¶ 9, 34, 76, 106, 116, 120. In particular, even as AT&T begins to deploy LTE services on its AWS and 700 MHz bands, it must continue to support services on the 850 MHz (cellular) and 1900 MHz (PCS) bands for the tens of millions of its customers using two older standards: (1) the 2G GSM standard, and (2) the UMTS standard, enhanced with different types of High Speed Packet Access ("HSPA" and "HSPA+") technology, which permit increased download and upload speeds.[31] Significantly, those customers' handsets, purchased over many years, are designed for particular standards and frequency bands, and they will not work with newer technologies or on other bands. Hogg Decl. ¶ 16 n.4. Thus, a GSM handset cannot be

[31] Declaration of William Hogg, Senior Vice President of Network Planning and Engineering, AT&T Services, Inc., at ¶¶ 18, 20, 22 (April 20, 2011) ("Hogg Decl.") (attached). As used below, "UMTS" refers to all forms of that technology, whether enhanced with HSPA or not.

used for UMTS or LTE services, and a UMTS handset cannot be used for LTE services. And none of these embedded handsets can be used for *any* service in the AWS or 700 MHz bands.[32]

AT&T will need to continue dedicating much of its spectrum to supporting these legacy GSM and UMTS services. As of the end of 2010, AT&T provided GSM services to approximately **[Begin Confidential Information]** **[End Confidential Information]** subscribers. Hogg Decl. ¶ 18. And it projects that it will need to continue devoting 850 MHz and 1900 MHz spectrum to GSM subscribers well into this decade, given the time it will take for AT&T to expand its UMTS network and migrate its GSM subscribers to UMTS or LTE services. *Id.* ¶¶ 5, 27.

As of the end of 2010, AT&T separately provided UMTS service to about another **[Begin Confidential Information]** **[End Confidential Information]** subscribers. Hogg Decl. ¶ 22. To support those services, it uses one or more 10 MHz "carriers" of 850 MHz or 1900 MHz spectrum, each consisting of paired 5 MHz blocks of spectrum. *Id.* ¶¶ 21-22. Because of the high demand for broadband service, AT&T already has had to deploy four carriers (for a total of 40 MHz of spectrum) for UMTS in some areas—and it will need to deploy more in the near future, even if doing so squeezes its GSM spectrum allocation and compromises GSM service quality. *See id.*; Section I.A.2, *infra.* AT&T expects that, given the relative infancy of the LTE ecosystem and the time needed to migrate subscribers, it will need to continue to allocate spectrum to UMTS services for a substantial number of years—indeed, even longer than AT&T needs to continue allocating spectrum for GSM services. *Id.* ¶¶ 5, 27.

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[32] Although handsets are not forward-compatible, they are typically backwards-compatible. For example, UMTS handsets can generally process GSM signals (so long as they are transmitted on compatible frequencies). *See* Carlton Decl. ¶ 33; Hogg Decl. ¶¶ 16 n.4, 22-23.

Finally, AT&T has begun deployment of LTE services using its AWS and 700 MHz spectrum and currently plans to cover more than 250 million people by the end of 2013. *Id.* ¶ 27. LTE offers peak data speeds that, depending on the deployment configuration, are up to four times faster than HSPA+. *Id.* ¶ 24.

Significantly, although it will take time for subscribers to migrate to LTE, AT&T cannot simply "borrow" spectrum from the AWS or 700 MHz bands to address congestion for its GSM and UMTS/HSPA services. First, its customers' GSM and UMTS handsets do not operate on those bands (or, for that matter, on a range of other frequencies in which third-party providers offer wholesale spectrum services). Hogg Decl. ¶ 66. Second, even if those customers' handsets did operate on the AWS and 700 MHz bands, carving out some of that spectrum to support GSM and UMTS services would leave AT&T with insufficient spectrum to deploy the fastest and most spectrally efficient LTE services. *See id.*

AT&T's need to support multiple generations of technology severely constrains its flexibility to use its spectrum with optimal efficiency. Each new generation of technology can support more traffic in a fixed amount of spectrum in a particular geographic area than its predecessor, and greater use of newer technologies is thus more spectrally efficient. For example, UMTS is significantly more spectrally efficient than GSM, and LTE in turn is 30-40 percent more spectrally efficient than HSPA+. Hogg Decl. ¶ 25. LTE is also about *860* percent more spectrally efficient than GSM. *Id.* But migration of customers from one technology to the next is typically a multi-year undertaking even once the new technology is deployed because, among other things, it takes considerable time for customers to migrate to new handsets. *See id.* ¶ 40. For example, in the first year after AT&T launched UMTS service, fewer than **[Begin Confidential Information]** **[End Confidential Information]** percent of its customers were

UMTS subscribers. *Id.* Even after five years, only about **[Begin Confidential Information] [End Confidential Information]** percent of its subscribers had UMTS service, with the remainder still on predecessor technologies. *Id.* Again, AT&T projects it will need to use its 850 MHz and 1900 MHz spectrum holdings to support GSM and UMTS services for a number of years and, in the meantime, will not be able to re-deploy them for more spectrally efficient LTE services. *Id.* ¶¶ 5, 27.

2. AT&T Faces Growing Capacity Constraints That, Absent This Transaction, Would Impair Its Ability to Offer High-Quality, Leading-Edge Services to Its Customers.

As Chairman Genachowski recently warned, today's "explosion in demand for mobile services places unsustainable demands on our invisible infrastructure—spectrum. . . . And the coming spectrum crunch threatens American leadership in mobile and the benefits it can deliver to our country."[33] He added:

> If we do nothing in the face of the looming spectrum crunch, many consumers will face higher prices—as the market is forced to respond to supply and demand—and frustrating service—connections that drop, apps that run unreliably or too slowly. The result will be downward pressure on consumer use of wireless service, and a slowing down of innovation and investment in the space. Emerging markets like mobile medicine, mobile payments, social-network-based services, and machine-to-machine connectivity will see their growth stunted. This would hurt our economy broadly. It would also have a disproportionate impact on minority and low-income groups who are more likely than the average American to access the Internet through a mobile device.[34]

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33 *Genachowski CTIA Remarks* at 5-6.

34 *Id.* at 9 (emphasis added).

FCC staff has quantified the "looming spectrum crisis" to which the Chairman referred, concluding that "mobile data demand will exceed available capacity by 2013, and will reach a nearly 300 MHz deficit by 2014."[35]

AT&T's network-capacity challenges, however, are not just "looming" a few years down the road—they are here today, the product of AT&T's mobile broadband leadership and its need to support multiple generations of services. And although other providers' public statements indicate that they have sufficient capacity to cover their needs until additional spectrum is made available via auction several years from now,[36] AT&T must move more quickly.

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[35] Federal Communications Commission, *FCC Technical Paper No. 6: Mobile Broadband: The Benefits of Additional Spectrum* (Oct. 2010) at 18, http://download.broadband.gov/plan/fcc-staff-technical-paper-mobile-broadband-benefits-of-additional-spectrum.pdf ("*FCC Technical Paper No. 6*").

[36] As noted in Section II.B below, ***Verizon Wireless's*** CEO recently reaffirmed that his company is "extremely confident" it has the "spectrum position" it needs. *Verizon and Sprint react to US mega deal*, Mobile Business Briefing (Mar. 22, 2011) (quoting CEO Dan Mead), http://www.mobilebusinessbriefing.com/article/verizon-and-sprint-react-to-us-mega-deal. ***Sprint*** CEO Dan Hesse also has noted the strength of Sprint's spectrum position: "When you combine Sprint's spectrum position with Clearwire's spectrum position it put[s] us in the strongest place for the future." Andrew Munchbach, *Live from CTIA 2010's Day Two Keynote with Sprint CEO Dan Hesse* (Mar. 24, 2010), http://www.bgr.com/2010/03/24/live-from-ctia-2010%E2%80%99s-day-one-keynote-with-sprint%E2%80%99s-dan-hesse/ ("*Hesse Keynote*"). He further stated that "[w]e have the spectrum resources where we could add LTE if we choose to do that, on top of the WiMAX network. The beauty of having a lot of spectrum is we have a lot of flexibility." Andrew Parker, *Sprint's 4G move opens way to merger*, Fin. Times (July 12, 2010), http://www.ft.com/cms/s/0/c4d6eb6a-8de0-11df-9153-00144feab49a.html#axzz1JKLAeXkb ("*Sprint's 4G move*"). ***Leap's*** President and CEO similarly stated that, particularly with its new LightSquared spectrum arrangement (*see* Section II.B, *infra*), Leap "certainly ha[s] spectrum in most of our markets to launch LTE and to the degree that we can see cost advantages and scale advantages." Phil Goldstein, *Leap to hold off on LTE devices until 2012* (Apr. 13, 2011), http://www.fiercewireless.com/story/leap-hold-lte-devices-until-2012/2011-04-13?utm_medium=nl&utm_source=internal. Meanwhile, ***MetroPCS*** has skipped a generation of technology and moved directly to more spectrally efficient LTE, which according to its COO, will allow it to "have great capacity," particularly as it "can move voice to LTE." Sue Marek, *MetroPCS' COO on the pros and cons of the AT&T/T-Mobile deal*, FierceWireless (Mar. 30, 2011), http://www.fiercewireless.com/story/metropcs-coo-pros-and-cons-attt-mobile-deal/2011-03-30.

AT&T has worked tirelessly to address these network-capacity challenges through a wide variety of available measures. First, AT&T has added many thousands of cell sites to extend and deepen its network, including approximately **[Begin Confidential Information] [End Confidential Information]** in 2010 alone. Hogg Decl. ¶ 72. A provider can effectively divide, or "split," the geographic area covered by a cell site by adding one or more nearby sites. *Id.* ¶ 43. Because each site will serve a smaller area than the original, fewer people have to share the radio channels in each of the split sites, which effectively increases the available capacity. *See id.* To take a simple example, if a cell site covering a given area is divided into two equally sized cells covering the same area, the total capacity (*i.e.*, the amount of traffic that the network can handle) doubles. *Id.* As discussed below, however, building new cell sites is difficult, expensive, and—most importantly—prone to multi-year delays.

Second, AT&T has deployed indoor and outdoor distributed antenna systems ("DAS"), and Wi-Fi hotspots and Hotzones to offload traffic from AT&T's mobile broadband network and relieve congestion. For example, AT&T installed a DAS network in downtown Chicago to offload heavy usage due to business and festival traffic. Hogg Decl. ¶ 34. AT&T also had deployed 24,000 Wi-Fi hotspots as of the end of 2010 in high use areas, as well as Hotzones in areas such as New York City's Times Square and Chicago's Wrigleyville. *Id.* In addition, since 2007, AT&T has purchased or leased spectrum in particular areas (where available and compatible) to alleviate specific capacity constraints on existing networks and to support next-generation networks. *Id.* ¶¶ 33, 66.[37]

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[37] AT&T also recently implemented tiered data pricing for smartphones, a decision necessitated, in part, by the need to respond to network capacity constraints. *See* Declaration of David Christopher, Chief Marketing Officer, AT&T Mobility Inc., at ¶ 4 (April 19, 2011) ("Christopher Decl.") (attached).

As discussed in Section I.A.6 below, however, these are short-term and expensive patches, and they are increasingly inadequate for dealing with AT&T's broader spectrum challenges. In a number of markets, AT&T is burning through its existing spectrum at an accelerating rate. Whereas in 2004 it took 24 months in major markets to exhaust 10 MHz of spectrum, from 2008-2010 growing UMTS demand caused AT&T to burn through 10 MHz in half that time or less in some major markets. Hogg Decl. ¶ 6. As a result, in many urban, suburban, and rural markets, AT&T faces a growing capacity crunch. Absent a solution to this problem, AT&T's customers would face a greater number of blocked and dropped calls as well as less reliable and slower data connections. And in some markets, AT&T's customers would be left without access to more advanced technologies. These potential consumer harms vary by market and fall generally into the following categories.

First, AT&T anticipates that it would lack the spectrum it needs to serve the demand for UMTS service in approximately **[Begin Confidential Information] [End Confidential Information]** CMAs covering nearly **[Begin Confidential Information] [End Confidential Information]** people by the end of **[Begin Confidential Information] [End Confidential Information]** (and in additional markets thereafter). Hogg Decl. ¶ 37. In particular, AT&T expects **[Begin Confidential Information] [End Confidential Information]** CMAs to reach UMTS spectrum exhaust between now and the end of **[Begin Confidential Information] [End Confidential Information]**, and **[Begin Confidential Information] [End Confidential Information]** more CMAs by the end of **[Begin Confidential Information] [End Confidential Information]**. *Id.* These markets include large cities such as **[Begin Confidential Information]**

[End Confidential Information], as well as smaller towns and

rural areas such as **[Begin Confidential Information]**

[End Confidential Information]. *Id.* Without a capacity solution, subscribers in these areas would confront degradation in service, including increased blocked and dropped calls and data connections, slower mobile broadband service, and other reductions in service quality. *Id.* ¶ 38.

Second, in **[Begin Confidential Information]** **[End Confidential Information]** other CMAs covering more than **[Begin Confidential Information]** **[End Confidential Information]** people, spectrum constraints currently keep AT&T from launching and supporting more spectrally efficient UMTS services *at all*. Hogg Decl. ¶ 39. Such areas encompass smaller and rural markets where broadband is less prevalent today, including—to name but a few examples—**[Begin Confidential Information]**

[End Confidential Information]. *Id.* In all of these areas, spectrum constraints deny customers the faster speeds and other benefits that accompany an upgrade from GSM to UMTS/HSPA+. And AT&T is unable to take advantage of the latter technology's greater spectral efficiencies. *Id.*

Third, quite apart from GSM and UMTS services, spectrum and capacity constraints would prevent AT&T in some markets from deploying LTE service at all, from providing it in its most beneficial configuration, and/or from serving expected LTE demand. In approximately **[Begin Confidential Information]** **[End Confidential Information]** CMAs covering about **[Begin Confidential Information]** **[End Confidential Information]** people, AT&T lacks the AWS or 700 MHz spectrum it needs to deploy LTE at all, while T-Mobile USA has at least 20 MHz of AWS spectrum. Hogg Decl. ¶ 60. Within another approximately **[Begin Confidential Information]** **[End Confidential Information]** CMAs, covering nearly

[Begin Confidential Information] **[End Confidential Information]** people, AT&T's average spectrum holding is insufficient to permit deployment of the most spectrally efficient LTE services, whereas the combination of AT&T's and T-Mobile USA's spectrum will address the situation. *Id.* These markets include major cities such as **[Begin Confidential Information]** **[End Confidential Information]**, and smaller communities such as **[Begin Confidential Information]** **[End Confidential Information]**. *Id.* AT&T also estimates that, as early as **[Begin Confidential Information]** **[End Confidential Information]**, growing LTE demand is likely to create capacity shortages in such major markets as **[Begin Confidential Information]** **[End Confidential Information]**. *Id.*

3. Absent This Transaction, T-Mobile USA Would Confront Capacity Constraints and Lack a Clear Path to LTE.

Meanwhile, T-Mobile USA faces spectrum constraints of its own, despite its substantial investments in spectrum and network facilities. Like AT&T, T-Mobile USA confronts rising demand for data services.[38] As of the end of 2010, 3G/4G smartphone customers accounted for 24 percent of T-Mobile USA's total customers, about double the 12 percent figure it had achieved by the fourth quarter of 2009.[39] Because of this "explosive growth in demand," T-Mobile USA "faces spectrum exhaust in a number of markets." Larsen Decl. ¶ 12. In particular,

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[38] Dr. Kim Kyllesbech Larsen, Senior Vice President, Technology Service and International Network Economics, Deutsche Telekom AG, at ¶¶ 12-13 (April 19, 2011) ("Larsen Decl.") (attached).

[39] *T-Mobile USA Reports Fourth Quarter 2010 Results*, at 5 (Feb. 25, 2011), http://www.t-mobile.com/company/InvestorRelations.aspx?tp=Abt_Tab_InvestorRelations&ViewArchive=Yes.

T-Mobile USA anticipates that, during **[Begin Confidential Information]** **[End Confidential Information]**, it will reach spectrum exhaust in **[Begin Confidential Information]** **[End Confidential Information]**; that, during **[Begin Confidential Information]** **[End Confidential Information]**, it will reach spectrum exhaust in **[Begin Confidential Information]** **[End Confidential Information]**; and that, by **[Begin Confidential Information]** **[End Confidential Information]**, anywhere from **[Begin Confidential Information]** **[End Confidential Information]** of its markets could follow suit. *Id.* ¶ 18.

Just as significantly, T-Mobile USA has "no clear path" to LTE. Larsen Decl. ¶¶ 23-26; Langheim Decl. ¶ 11. T-Mobile USA has already dedicated its current spectrum to UMTS/HSPA+ and GSM technologies. Larsen Decl. ¶ 11; Langheim Decl. ¶ 12. As a result, T-Mobile USA "does not have access to the spectrum needed to deploy LTE in an economically and technically sustainable fashion." Langheim Decl. ¶ 12. Even in areas where T-Mobile USA could try to "refarm" its existing spectrum to make room for LTE, it would face serious competitive disadvantages. **[Begin Confidential Information]**

[End Confidential Information]. Larsen Decl. ¶ 30. Moreover, T-Mobile USA **[Begin Confidential Information]**

[End Confidential Information]. *Id.* ¶ 23. In short, any such deployment

would be **[Begin Confidential Information]**

[End Confidential Information]. *Id.* As a result, T-Mobile USA "has no clear path to an effective, economical deployment of LTE." *Id.* Simply put, its "options are **[Begin Confidential Information]** **[End Confidential Information]**." *Id.*

T-Mobile USA could try to alleviate these problems by purchasing more spectrum and investing in the necessary network infrastructure—at an estimated cost of **[Begin Confidential Information]** **[End Confidential Information]**. Langheim Decl. ¶ 14. But T-Mobile USA has concluded that its options for acquiring sufficient additional spectrum **[Begin Confidential Information]**

[End Confidential Information]. Larsen Decl. ¶ 9. Further, T-Mobile USA could not acquire new spectrum unless it obtains the necessary billions of dollars in investment capital, and it can no longer look to its corporate parent for that purpose. As DT Senior Vice President Langheim explains, "[t]he required substantial investments in LTE in the United States would significantly stretch Deutsche Telekom's financial capability or, alternatively, force Deutsche Telekom to reallocate investments from our core Europe operations into T-Mobile USA, which has been shrinking for the last two years and which is lacking a clear path towards LTE to stay competitive." Langheim Decl. ¶ 14. Because Deutsche Telekom has determined that it cannot divert capital from its core business, it has directed T-Mobile USA to "fund its future itself."[40] As Langheim concludes, "[t]his means that T-Mobile USA would need

[40] *Jan. 20, 2011 DT Analyst Briefing* (Deutsche Telekom CEO Rene Obermann); *see also* Langheim Decl. ¶ 14 ("Because Deutsche Telekom's financial priorities must be focused on

to fund spectrum acquisitions and other necessary capital investments through its own operations rather than by drawing on the resources of its corporate parent." Langheim Decl. ¶ 14. That DT decision has made it significantly more difficult for T-Mobile USA to obtain the capital it needs to upgrade its network.

4. This Transaction Provides By Far the Surest, Most Output-Expanding, and Most Pro-Consumer Solution to the Applicants' Capacity Challenges.

This transaction provides the most effective, efficient, and timely resolution of the capacity constraints facing AT&T and T-Mobile USA. AT&T's and T-Mobile USA's spectrum and networks are uniquely complementary: in addition to their well-matched cell site grids, both providers use GSM/HSPA+ technologies and have contiguous and compatible spectrum assets:

AT&T and T-Mobile USA Networks and Spectrum

Spectrum	AT&T			T-Mobile USA		
Band	GSM	UMTS/HSPA	LTE	GSM	UMTS/HSPA	LTE
700 MHz			UC			
850 MHz	X	X				
1900 MHz	X	X		X		
AWS			UC		X	

X: Active; UC: Under Construction

See Carlton Decl. ¶ 32 & Table 1. That complementarity will allow the combined company to produce the network synergies detailed below, each of which will increase capacity and output through more efficient use of the applicants' spectrum and network resources. That increased capacity is *the functional equivalent of new spectrum*. AT&T estimates that the efficiencies resulting from this transaction, in combination, will push back the date of expected spectrum exhaust in many markets, particularly in its constrained markets. Hogg Decl. ¶ 11. With this

Europe, however, Deutsche Telekom's CEO Rene Obermann has stated publicly that T-Mobile USA 'has to develop into a self-funding platform that is able to fund its future itself.'").

additional time, the company expects to be able to address continuing capacity needs through the ramping down of GSM networks, the fuller deployment of efficient, capacity-increasing LTE technologies, and new spectrum available at auction. *Id.*

This additional capacity will produce immediate and long-term benefits for the two companies' customers and consumers at large. It will give the combined company the flexibility it needs, on a market-by-market basis, to improve service quality for existing services and reallocate spectrum so that more consumers will have access to more advanced and spectrally efficient technologies such as LTE. And because the combined network will far exceed the sum of its parts (*i.e.*, 1+1=3), the transaction will increase overall output and consumer welfare more broadly. *See* Carlton Decl. ¶¶ 51-58, 133; *see* Section I.A.5, *infra.* Acting alone, neither company could begin to realize these efficiencies on anything resembling the same timetable.

a) *Network Capacity Expansion Through Integration of T-Mobile USA's Cell Sites.*

AT&T and T-Mobile USA have highly compatible cell site grids, both (1) because, unlike other major carriers, they both use GSM and UMTS/HSPA technologies that will permit more rapid integration of cell sites, and (2) because many of T-Mobile USA's sites are located in places where AT&T needs them to, for example, ease capacity congestion in its network. Hogg Decl. ¶¶ 18-19, 43-45. As a result, upon network integration, the combined company can conduct instant "cell splits," effectively doubling the amount of traffic that can be carried over the same amount of spectrum in the area served by the original site. *See* Section I.A.2, *supra.* All told, AT&T plans to integrate more than **[Begin Confidential Information]** **[End Confidential Information]** of T-Mobile USA's cell sites this way. Hogg Decl. ¶ 44; *see also* Larsen Decl. ¶ 7.

The cell-site integration will proceed on a rolling basis, beginning immediately upon close of the transaction. AT&T will implement cell splits in its network by identifying T-Mobile USA sites that are complementary to AT&T's cell grid and then replacing T-Mobile USA's antennas and equipment with multi-band antennas and AT&T's equipment. Hogg Decl. ¶ 46. In selecting these T-Mobile USA sites, AT&T will give priority to locations that are currently suffering from near-term capacity constraints. *Id.* The company expects to see service improvements in areas of various markets in as early as nine months, and it expects to complete this integration process and optimize its network architecture on a national basis within twenty-four months. *Id.* ¶ 44. AT&T has a proven track record of incorporating cell sites in this fashion from prior transactions. *Id.* ¶ 45.

Given the complexity and delays inherent in the process of building cell sites (discussed in more detail below), AT&T could not replicate the benefits of this network integration on its own nearly as quickly because it could not possibly build **[Begin Confidential Information]** **[End Confidential Information]** additional sites for many more years. *See* Hogg Decl. ¶¶ 12, 47; *see* Section I.A.6, *infra*. In markets throughout the country, the transaction will thus create a denser cell grid far faster than AT&T could standing alone. For example, AT&T projects that integration of T-Mobile USA's sites will increase cell density by as much as 35-45 percent in Chicago, 25-35 percent in San Francisco and New York, and nearly **[Begin Confidential Information]** **[End Confidential Information]** percent in Wichita, Kansas. Hogg Decl. ¶ 47. By itself, this increase in network density will mean that the combined company's GSM and UMTS networks will have greater capacity than the sum of the two companies' separate networks. And that additional capacity will relieve congestion, allow for further broadband traffic growth, and, in some markets, allow existing customers to be served

with less spectrum, thereby freeing up spectrum for more spectrally efficient services. *Id.* ¶¶ 12, 44.

b) *Elimination of redundant control channels.*

AT&T and T-Mobile USA each generally dedicate substantial spectrum to GSM control channels, which are used to transmit commands (such as the assignment of particular radio channels) between user handsets and base stations. Hogg Decl. ¶ 48. The transaction will allow more efficient use of spectrum because the parties' combined network will require only a single set of control channels, rather than one for each independent network. *Id.* Eliminating redundant control channels will free up anywhere from 4.8 to 10 MHz of spectrum in each market where the applicants both provide GSM service. *Id.*; *see also* Larsen Decl. ¶ 7.

That spectrum can be either used to improve the quality of GSM service in congested areas or re-deployed and used more efficiently on the combined company's UMTS network. For example, in a market where AT&T currently has only 5 MHz of spectrum available for redeployment to UMTS, the elimination of redundant control channels could free up enough spectrum to permit the combined company to relieve UMTS congestion by deploying an additional carrier (which requires 10 MHz of spectrum). Hogg Decl. ¶ 48. This efficiency is another way in which the transaction will give the combined company substantially more capacity than the sum of the capacities of the standalone companies, increasing output and generating lower prices than would otherwise prevail. Carlton Decl. ¶¶ 12, 58, 133. No other two major carriers today have compatible GSM networks that would produce this efficiency, and thus it is unique to this transaction.

c) ***Channel pooling efficiencies.***

Because not all users in a wireless cell are likely to place calls at once, a large number of those users will share a "pool" of a provider's radio channels available to connect handsets with the network. Hogg Decl. ¶ 50. The term "channel pooling efficiencies" refers to the efficiencies a wireless provider gains when it can combine spectrum in an area and pool a greater number of wireless channels together. *Id.*[41] For example, if a provider doubles the number of radio channels in a pool, it can serve significantly *more* than double the amount of customer traffic from that pool with the same statistical likelihood of network availability. *See id.* ¶ 52.

By analogy, imagine two airport scenarios involving four ticket agents:

> ***Scenario 1:*** All customers line up in a single queue to accept service from any of the four ticket agents.
>
> ***Scenario 2:*** Customers line up in two queues on opposite sides of the airport (making it impractical for customers to change queues), and each queue is served by two ticket agents (for a total of four).

Scenario 1 will result in faster and more efficient service for customers than Scenario 2. In Scenario 1, whenever a ticket agent is available, the next customer in line will be served. In Scenario 2, if there is no one in line for one group of ticket agents, those ticket agents could not serve any customers even if there is a long line for the other two ticket agents. *Id.* ¶ 51.

In wireless communications, two providers with complementary spectrum and common technologies can achieve an analogous benefit by serving all of their customers over a single set of shared network resources. In particular, any given caller is significantly more likely to find a vacant channel when a larger number of channels are pooled together. Hogg Decl. ¶ 50. This

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[41] Some network engineers use the term "trunking efficiencies" to describe the same phenomenon. Hogg Decl. ¶ 49 n.18. These terms relate to efficiencies in wireless channels between subscribers and radio infrastructure and are unrelated to efficiencies in backhaul facilities between towers and switching stations.