Federal Communications Commission

WT Docket No. 11-65

STAFF ANALYSIS AND FINDINGS

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STAFF ANALYSIS AND FINDINGS

I. INTRODUCTION

1. The applications before the Commission seek approval for AT&T Inc. ("AT&T") to acquire control of all the FCC licenses and related authorizations held by T-Mobile USA, Inc. ("T-Mobile") in a stock and cash transaction valued at $39 billion.[1] The proposed transaction would combine two of the largest providers of wireless telephony and broadband services in the United States. If the proposed transaction is approved, AT&T would become the largest mobile wireless provider, surpassing Verizon Wireless, the current leader in wireless subscribers, and giving it two-and-a-half times the number of subscribers as the third largest, Sprint.[2] At the same time that AT&T would grow larger, the proposed transaction would simultaneously eliminate T-Mobile, a provider whose disruptive pricing and innovation have benefitted wireless consumers throughout the United States. The potential loss of this competitive force in the market is a cause for serious concern.

2. Commission staff, including engineers, lawyers, economists and industry experts, has conducted an exhaustive review of the proposed transaction, reviewing thousands of pages of pleadings; issuing multiple document and information requests to AT&T and T-Mobile (collectively "the Applicants"),[3] and third parties; reviewing more than 200,000 documents produced in response to these requests; carefully examining and analyzing engineering and economic models submitted by the Applicants; and conducting independent analyses of the public interest claims of the Applicants and third parties.

3. Under the Communications Act, the Commission must determine whether the "public interest, convenience, and necessity will be served" by granting an application.[4] The Applicants bear the burden of proving, by a preponderance of the evidence, that the proposed transaction, on balance, will serve the public interest.[5]

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[1] *See* Applications of AT&T Inc. and Deutsche Telekom AG for Consent To Assign or Transfer Control of Licenses and Authorizations, Description of Transaction, file no. 0004669383 ("Application"), Description of Transaction, Public Interest Showing, and Related Demonstrations ("Public Interest Statement") (filed April 21, 2011) at 16-17. File no. 0004669383 has been designated the lead application for the wireless radio services, and the other applications contain an exhibit referring to the exhibits attached to file No. 0004669383 .

[2] *See* Sprint Petition to Deny at ii, 4, 11, 16, 35-36, 94; Metro PCS and NTELOS Petition to Deny at 2, 6.

[3] The Applications at issue were filed by AT&T and Deutsche Telekom AG ("Deutsche Telekom"), the latter of which wholly owns T-Mobile. For ease of reference, we use the term Applicants to refer both to AT&T and T-Mobile (collectively) and to AT&T and Deutsche Telekom (collectively), as appropriate.

[4] *See* 47 U.S.C. §§ 309(a), (d); 310(d).

[5] *See e.g.,* Applications of Comcast Corp., General Electric Co. and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licenses, MB Docket No. 10-56, *Memorandum Opinion and Order,* 26 FCC Rcd 4238, 4247 ¶ 22 (2011) (*"Comcast-NBCU Order"*); 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, WT Docket No. 09-104, *Memorandum Opinion and Order*, 25 FCC Rcd 8704, 8716 ¶ 22 (2010) (*AT&T-Verizon Wireless Order*); Applications of AT&T Inc. and Centennial Communications Corp. for Consent to Transfer Control of Licenses, Authorizations, and Spectrum Leasing Arrangements, WT Docket No. 08-246, *Memorandum Opinion and Order*, 24 FCC Rcd 13915, 13927 ¶ 27 (2009) (*AT&T-Centennial Order*); Application of EchoStar Communications Corporation (A Nevada Corporation), General Motors Corporation, and Hughes Electronics Corporation (Transferors) and EchoStar Communications Corporation (A Delaware Corporation) (Transferee), CS Docket No. 01-348, *Hearing Designation Order*, 17 FCC Rcd 20559, 20574, ¶ 25 (2002) (*EchoStar-DirecTV HDO*).

4. The Antitrust Division of the United States Department of Justice ("DOJ") also reviews telecommunications mergers, pursuant to Section 7 of the Clayton Act, which prohibits mergers that may substantially lessen competition.[6] DOJ's parallel review of the proposed transaction focused solely on the competitive effects of the acquisition, without reference to the additional public interest considerations applicable to the Commission's analysis. On August 31, 2011, DOJ filed suit to enjoin the proposed merger of AT&T and T-Mobile on the grounds that the merger would substantially lessen competition.[7] Seven states joined the lawsuit filed by DOJ.[8]

5. We likewise now conclude, as reflected in the details of the analysis and findings below, that the Applicants have failed to meet their burden of demonstrating that the competitive harms that would result from the proposed transaction are outweighed by the claimed benefits. Staff thus finds, as has DOJ, that the proposed transaction would likely lead to a substantial lessening of competition in violation of the Clayton Act. A transaction that violates the Clayton Act would not be in the public interest. In addition, with respect to certain discrete alleged harms unique to the FCC's public interest analysis, Staff finds that substantial and material questions of fact exist as to the nature and extent of those potential harms.

6. After setting forth the background and applicable standard of review, we address below the potential impact of the proposed transaction on competition, describing the market structure and then evaluating the arguments and evidence in the record supporting or contradicting alleged potential harms. We then turn to the alleged potential benefits of the proposed transaction and again evaluate the arguments and evidence supporting or contradicting the existence and magnitude of potential beneficial impacts. Finally, we summarize the results of our analysis.

II. BACKGROUND

A. The Applicants

7. AT&T, incorporated in Delaware and headquartered in Dallas, Texas, is a communications holding company.[9] With its subsidiaries, affiliates, and operating companies, AT&T is among the leading providers of telecommunications services in the United States and around the world.[10] AT&T provides wireless services through its subsidiary, AT&T Mobility.[11] It has significant spectrum holdings in several different frequency bands – including the 700 MHz band, the 850 MHz Cellular band, Personal Communications Service ("PCS"), the Advanced Wireless Service ("AWS"), and the Wireless Communications Service ("WCS") – which cover the entire United States.[12] AT&T offers a variety of wireless-based voice and data services, including consumer services (both post-paid and pre-paid) and

[6] *See* 15 U.S.C. § 18.

[7] *See* Complaint, *United States of America v. AT&T Inc.*, 11-cv-1560 (D.D.C. Aug. 31, 2011).

[8] *See* Amended Complaint, *United States of America v. AT&T*, 11-cv-1560 (D.D.C. Sept. 16, 2011). The states joining the lawsuit are Pennsylvania, Ohio, Washington, Massachusetts, New York, Illinois, and California.

[9] *See* AT&T Inc., SEC Form 10-K, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, for the fiscal year ended December 31, 2010, at 1 (filed March 1, 2011) ("AT&T 2010 10-K").

[10] *Id.* at 1; Public Interest Statement at 15.

[11] *See* AT&T 2010 10-K at 1; *see also* Public Interest Statement at 15.

[12] *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, including Commercial Mobile Services, WT Docket No. 10-133, *Fifteenth Report*, 26 FCC Rcd 9664 (2011) (*Fifteenth Mobile Wireless Competition Report*) at ¶¶ 286-88, Tables 27 and 28; Public Interest Statement, Appendix A.

business services,[13] as well as other services, including roaming[14] and backhaul services. AT&T's GSM wireless network reaches over 300 million Americans.[15] At the end of 2010, AT&T Mobility had more than 95.5 million wireless connections,[16] making it the second largest wireless provider in the United States on a subscriber basis.[17] AT&T Mobility in 2010 earned $58.5 billion in total wireless revenues and of this $53.5 billion were service revenues.[18] AT&T is also a leading provider of wireline services.[19] Altogether, the company reported more than $124 billion in revenues in 2010.[20]

8. T-Mobile is headquartered in Bellevue, Washington and is a wholly-owned subsidiary of Deutsche Telekom AG, a large German telecommunications provider ("Deutsche Telekom").[21] T-Mobile provides wireless voice and data services to consumers and businesses, as well as other services such as roaming. It has significant spectrum holdings in PCS and AWS spectrum across the nation, with a network reaching over 293 million Americans.[22] At the end of 2010, T-Mobile had 33.7 million subscribers,[23] making it the fourth largest wireless provider in the United States by subscribership.[24]

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[13] *See* AT&T 2010 10-K at 1.

[14] For a description of roaming, see Section IV.D.1, *infra*.

[15] Hogg Declaration at 10.

[16] AT&T Mobility had approximately 68 million postpaid customers, 6.5 million prepaid customers, 11.6 reseller customers, and 9.3 million connected devices. AT&T 10-K, at 6.

[17] *See* John C. Hodulik, Batya Levi, UBS Investment Research, *US Wireless 411* (Aug. 17, 2011).

[18] AT&T's service revenues include local voice and data services, roaming, long-distance, and other revenues. AT&T 2010 10-K, at 69, 72.

[19] AT&T's wireline subsidiaries provide both retail and wholesale communications services (both voice and data) domestically and internationally, accounting for approximately 49 percent of the firm's 2010 operating revenues. AT&T's U.S. wired network includes 23 million retail consumer, 19 million retail business, and 2 million wholesale access lines, and more than 17.8 million broadband customers. *See* AT&T 2010 10-K at 4; AT&T, About Us, Corporate Profile, Networks, *available at* http://www.att.com/gen/investor-relations?pid=5711 (last visited July 20, 2011).

[20] AT&T Inc. 2010 10-K, Ex. 13 (AT&T 2010 Annual Report).

[21] T-Mobile USA, Company, About T-Mobile, Company Information, *available at* http://www.T-Mobile.com/Company/CompanyInfo.aspx?tp=Abt_Tab_CompanyOverview (last visited July 21, 2011); Public Interest Statement at 15. Deutsche Telekom, headquartered in Bonn, Germany, is one of the largest telecommunications and information technology service companies in the world. Deutsche Telecom, Company, Corporate Profile, Deutsche Telekom, *available at* http://www.telekom.com/dtag/cms/content/dt/en/13588 (last visited July 21, 2011); Public Interest Statement at 15.

[22] *See* T-Mobile USA, Company, About T-Mobile, Company Information, *available at* http://www.T-Mobile.com/Company/CompanyInfo.aspx?tp=Abt_Tab_CompanyOverview (last visited Nov. 20, 2011); *Fifteenth Mobile Wireless Competition Report* at 19 and ¶ 274. T-Mobile holds licenses in all 50 states and the District of Columbia. *See* Federal Communications Commission Universal Licensing System, available at http://wireless.fcc.gov/uls/index.htm?job=home (last visited Nov. 21, 2011).

[23] Press Release, T-Mobile USA, Inc., T-Mobile USA Reports Fourth Quarter 2010 Results (Feb. 25, 2011) at 9-10. T-Mobile had 26.4 million contract customers and 7.4 million prepaid customers. T-Mobile defines a customer as a SIM card with a unique mobile identity number which generates revenue. T-Mobile classifies it Mobile Virtual Network Operators (MVNOs) customers as prepaid customers and connected device customers are included in the contract customer counts. *See id.* at 10.

[24] *See Fifteenth Mobile Wireless Competition Report* at ¶ 31 and Table 3.

T-Mobile's total revenues for 2010 were $21.3 billion and its service revenues were $18.7 billion.[25]

B. Proposed Transaction

9. On March 20, 2010, AT&T announced an agreement with Deutsche Telekom to acquire all of the stock of T-Mobile for the total consideration of $39 billion, $25 billion of which would be paid in cash,[26] with AT&T's common stock used to pay the balance.[27]

C. Transaction Review

10. On April 21, 2010, the Applicants filed applications, pursuant to Sections 214 and 310(d) of the Communications Act, as amended ("Communications Act" or "Act"),[28] seeking Commission consent to the transfer of control of the licenses and authorizations held by T-Mobile and its wholly-owned and controlled subsidiaries from Deutsche Telekom to AT&T.[29] On April 28, 2011, the Commission sought comment on the proposed transaction.[30] In response, the Commission received more than 50 petitions to deny and thousands of comments both in support and in opposition to the proposed transaction.[31] The Applicants filed a Joint Opposition,[32] and many parties submitted replies. Since the

[25] Service revenues include contract, prepaid, roaming and other service revenues but do not include equipment sales and other revenue. Press Release, "T-Mobile USA, Inc., T-Mobile USA Reports Fourth Quarter 2010 Results" (Feb. 25, 2011) at 9.

[26] *See* Public Interest Statement at 16. The cash portion of the purchase price will be financed with new debt and cash on AT&T's balance sheet. *Id.*

[27] *Id.* In the event that the transaction is not consummated, there are reverse "breakup" provisions such that, if the necessary conditions are met, AT&T will be obligated to pay Deutsche Telekom AG $3 billion in cash, transfer to T-Mobile AWS spectrum in specified CMAs across the country, and enter into a voice and data roaming agreement with T-Mobile on specified terms for a number of years. *See* Reply Comments of Public Knowledge, filed June 20, 2011, at 33-34 (*Public Knowledge Reply*), *citing* Alan Pearce, Ph.D., Barry Goodstadt, Ph.D., and Martyn Roetter, Ph.D., *A Preliminary Analysis of the Impacts and Consequences of the Proposed AT&T/T-MOBILE Merger,* Information Age Economics at 54 (June 2011).

[28] 47 U.S.C. §§ 214(a), 310(d).

[29] Applications of AT&T Inc. and Deutsche Telekom AG for Consent To Assign or Transfer Control of Licenses and Authorizations, Description of Transaction, file no. 0004669383. File no. 0004669383 has been designated the lead application for the wireless radio services, and the other applications contain an exhibit referring to the exhibits attached to file No. 0004669383. A complete list of the applications at issue in this proceeding is set forth in AT&T Inc. and Deutsche Telekom AG Seek FCC Consent to the Transfer of Control of the Licenses and Authorizations Held by T-Mobile USA, Inc. and Its Subsidiaries to AT&T Inc., Pleading Cycle Established, WT Docket No. 11-65, *Public Notice*, 26 FCC Rcd 6424 (2011).

[30] AT&T Inc. and Deutsche Telekom AG Seek FCC Consent to the Transfer of Control of the Licenses and Authorizations Held by T-Mobile USA, Inc. and Its Subsidiaries to AT&T Inc., Pleading Cycle Established, WT Docket No. 11-65, *Public Notice*, 26 FCC Rcd 6424 (2011). Petitions to deny were due on May 31, 2011, oppositions on June 10, 2011, and replies on June 20, 2011.

[31] With the exception of Verizon Wireless, which did not submit comments, all of the wireless providers and associations representing providers that filed in this proceeding oppose the transaction as proposed. Many, including Sprint Nextel Corp. ("Sprint"), regional providers such as Cincinnati Bell, C Spire (Cellular South), MetroPCS, Ntelos, and Leap Wireless/Cricket, and associations representing rural providers, such as the Rural Cellular Association and the Rural Telecommunications Group (RTG), filed petitions to deny. Others, such as U.S. Cellular, filed comments opposing approval of the transaction. Several of these opponents also requested that conditions be attached if the transaction were approved.

[32] Joint Opposition of AT&T Inc., Deutsche Telekom AG, and T-Mobile USA, Inc. to Petitions to Deny or to Condition Consent and Reply to Comments, filed June 10, 2011 ("Joint Opposition").

applications were filed, we also have received many *ex parte* filings and have conducted dozens of *ex parte* meetings with the Applicants and other stakeholders.

D. Standard and Public Interest Framework

11. Staff's analysis is guided by Sections 214(a) and 310(d) of the Communications Act, under which the Commission evaluates whether the Applicants have demonstrated that the proposed assignment and transfer of control of licenses and authorizations will serve the public interest, convenience, and necessity.[33] The Commission first considers whether the proposed transaction could result in public interest harms, by substantially frustrating or impairing the objectives or implementation of the Communications Act or related statutes, or public interest benefits.[34] It then employs a balancing test, weighing any potential public interest harms of the proposed transaction against any potential public interest benefits.[35] The Applicants bear the burden of proving, by a preponderance of the evidence, that the proposed transaction, on balance, will serve the public interest.[36]

III. OVERVIEW OF THE APPLICANTS' CLAIMS AND STAFF ANALYSIS AND FINDINGS

12. Figure 1 below provides a schematic overview of the arguments that the Applicants have presented to demonstrate that the proposed transaction is in the public interest, according to the Commission's standard described above. The remainder of this document reviews these arguments. In Section IV we consider the competitive effects of the proposed transaction, both in markets for mobile wireless services (Sections IV.A,B,C) and in other affected markets, namely roaming, wholesale and resale services, backhaul, and handsets/devices (Section IV.D). Next, in Section V, we assess the public interest benefits the Applicants claim arise from the proposed transaction. These benefits fall into three categories: First, the effect on industry prices and output, as assessed by the Applicants' economic model (Section V.B). This model attempts to weigh some of the potential competitive harms, discussed in Section IV, against the network efficiencies that could result from the proposed transaction. These network efficiencies are, in turn, quantified using an engineering model, also constructed by the Applicants for this proceeding (Section V.C). The second category is other cost synergies the Applicants would realize as a result of the proposed transaction – such as savings in general and administrative, capital, and customer acquisition expenditures – which could get passed on to consumers (Section V.D). The third category is other potential public interest benefits arising from the proposed transaction, such as

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[33] 47 U.S.C. §§ 214(a), 310(d).

[34] *See, e.g., AT&T-Verizon Wireless Order*, 25 FCC Rcd at 8716 ¶ 22; *AT&T-Centennial Order*, 24 FCC Rcd at 13927 ¶ 27; 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, WT Docket No. 08-95, *Memorandum Opinion and Order and Declaratory Ruling*, 23 FCC Rcd 17444, 17460 ¶ 26 (2008) ("*Verizon Wireless-ALLTEL Order*"); Sprint Nextel Corporation and Clearwire Corporation Applications for Consent to Transfer Control of Licenses, Leases, and Authorizations, WT Docket No. 08-94, *Memorandum Opinion and Order*, 23 FCC Rcd 17570, 17578-79 ¶ 19 (2008) ("*Sprint Nextel-Clearwire Order*"); Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation, WT Docket No. 04-70, *Memorandum Opinion and Order*, 19 FCC Rcd 21522, 21543 ¶ 40 (2004) ("*Cingular-AT&T Wireless Order*").

[35] *See, e.g., AT&T-Verizon Wireless Order*, 25 FCC Rcd at 8716 ¶ 22; *AT&T-Centennial Order*, 24 FCC Rcd at 13927 ¶ 27; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17460 ¶ 26; *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17579 ¶ 19; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21543 ¶ 40.

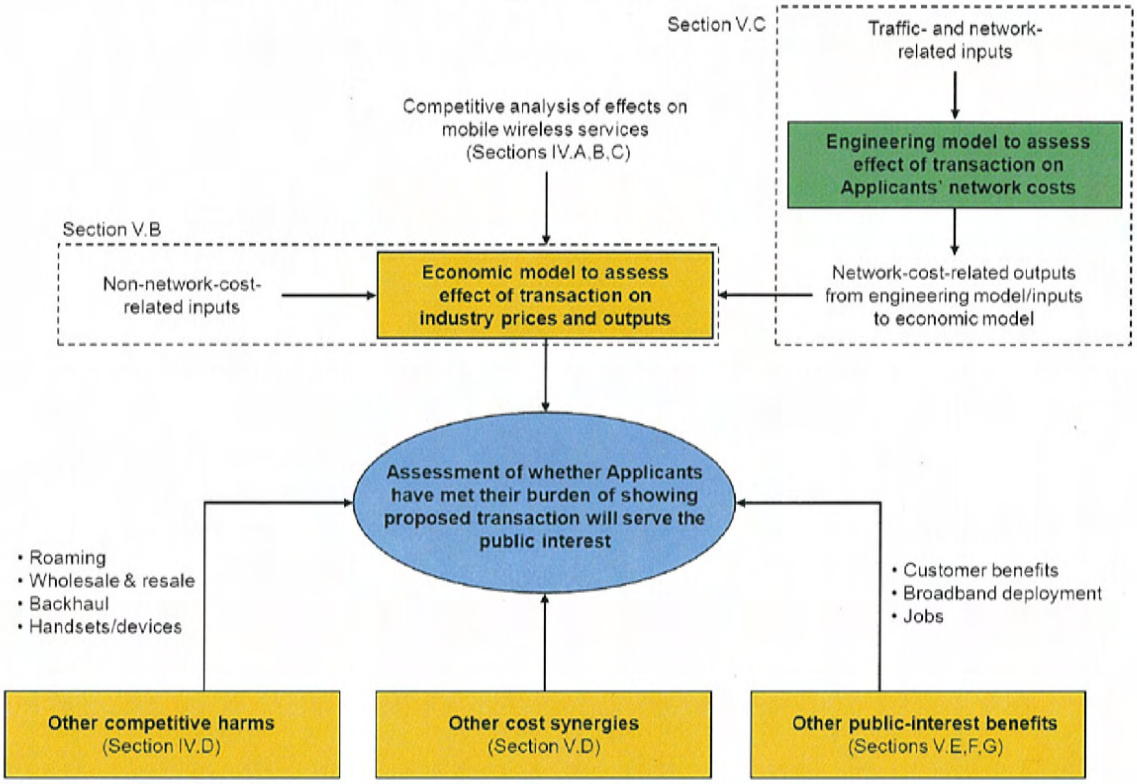
[36] *See, e.g., AT&T-Verizon Wireless Order*, 25 FCC Rcd at 8716 ¶ 22; *AT&T-Centennial Order*, 24 FCC Rcd at 13927 ¶ 27; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17461 ¶ 26; *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17579 ¶ 19; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21543 ¶ 40.

improvements in service for current T-Mobile customers from being served instead by the combined entity, increased broadband deployment, and increased U.S.-based jobs (Section V.E,F,G).

13. As discussed in greater detail in the following sections, based on a thorough examination of the record, we conclude that the Applicants have failed to meet their burden of proof to show that the proposed transaction is in the public interest. In particular:

- Sections IV.A,B,C together find that the proposed transaction raises significant competitive concerns in the mobile wireless markets due to the increased likelihood of unilateral and coordinated effects.
- Section IV.D finds that the record raises substantial and material questions of fact relating to the competitive effects the proposed transaction would have in the markets for roaming, wholesale and resale services, backhaul, and handsets/devices.
- Section V.B finds that the economic model on which the Applicants base their claim that the proposed transaction would result in lower wireless industry prices is flawed in terms of its structure and input assumptions, and therefore does not provide a sufficient basis for the Applicant's claims. In particular, the model ignores several potential competitive harms, makes overly simplistic assumptions about the structure and conduct of the wireless industry, overestimates the benefits that would be passed on to consumers (even if they are realized by the Applicants), and is inconsistent with the engineering model on which it relies for critical inputs.
- Section V.C finds that the engineering model on which the Applicants base their claim of reduced network costs resulting from the proposed transaction is also flawed, and therefore does not provide a sufficient basis for the Applicants' claims. Although we agree that combining the network assets and spectrum of AT&T and T-Mobile would result in some engineering efficiencies for the Applicants, the model overestimates their magnitude. Its output of predicted network costs is therefore an unreliable input into the economic model, further undermining the economic forecasts from that model.
- Sections V.D finds that the Applicants have not demonstrated that most of the other cost synergies, such as savings in general and administrative ("G&A"), capital, and customer acquisition expenditures, are likely to get passed on to consumers. In addition, if they are realized, some of these cost savings would likely result in reduced service quality.
- Sections V.E,F,G find that the Applicants have not provided adequate support for other claimed public interest benefits and these claimed benefits thus should not be recognized by the Commission. For example, we cannot find that the transaction would lead to a net increase in U.S.-based jobs (particularly in light of the multi-billion-dollar employment related synergies that the Applicants expect from the transaction) and we do not find the promise of increased LTE build-out to be cognizable as a transaction-specific benefit.

Figure 1. Overview of the Structure of Applicants' Public Interest Argument



IV. COMPETITIVE ANALYSIS

14. Our evaluation of the potential competitive effects of the proposed transaction begins with the recognition that the acquisition of T-Mobile by AT&T is a horizontal merger: AT&T, the second largest mobile services provider seeks to acquire one of its direct rivals, the fourth largest mobile services provider.[37] We thus examine whether the Applicants have demonstrated that this transaction is unlikely to harm competition in the mobile services markets.[38] Harm to competition could take the form of an increase in price (or a reduction in the rate of price decline), a reduction in output or service quality, or a reduction in the rate of new product development or other innovation in a relevant market.[39] Our approach to analyzing the likely competitive harms resulting from the proposed transaction is consistent

[37] A transaction is said to be horizontal when the firms in the transaction sell products that are in the same relevant markets and are therefore viewed as reasonable substitutes by purchasers of the products. General Motors Corp. and Hughes Elec. Corp., Transferors, and The News Corp. Ltd., Transferee, for Authority to Transfer Control, MB Docket No. 03-124, *Memorandum Opinion and Order,* 19 FCC Rcd 473, 507 ¶ 69 (2004); *accord* SBC Comm. Inc. and AT&T Corp. Applications for Approval of Transfer of Control, WC Docket No. 05-65, *Memorandum Opinion and Order*, 20 FCC Rcd 18290, 18303 ¶ 20 n.80 (2005) (*SBC-AT&T Order*).

[38] "A fundamental tenet of the Commission's public interest review is that, absent significant offsetting efficiencies or other public interest benefits, a transaction that creates or significantly enhances market power – the ability of a firm, either by itself or in coordination with other firms to raise prices above competitive levels – is unlikely to serve the public interest." *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17468 ¶ 39 (and cases cited therein).

[39] In the wireless industry, improvements in quality and reductions in price would be expected to flow from ongoing technological change. Harms are measured relative to the situation in which AT&T and T-Mobile remain separate.

with the approach undertaken by DOJ in its parallel review of the proposed transaction.

15. As the Commission has consistently stated, transactions raise competitive concerns when they reduce the availability of substitute choices to the point that the merged firm has a significant incentive and ability to engage in anticompetitive conduct, either unilaterally or in coordination with other firms.[40] The Commission has recognized that the risk of anticompetitive conduct is increased by the inability of other firms to enter the market or expand.[41] Furthermore, the elimination of a firm that acts as a disruptive force in a highly concentrated market raises the likelihood of anticompetitive conduct that might have been checked before the proposed transaction.[42]

16. The Commission's view accords with federal antitrust law. Mergers that result in both a highly concentrated market and the new firm controlling an undue share of that market are presumptively illegal.[43] The antitrust laws do "not require proof that a merger or other acquisition has caused higher prices in the affected market. All that is necessary is that the mergers create an appreciable danger of such consequences in the future."[44] "The 'Congress used the words '*may* be substantially to lessen competition' (emphasis supplied) to indicate that its concern was with probabilities, not certainties.'"[45]

A. Background for the Analysis

17. We conduct the more detailed analysis set forth in Section B below against the backdrop of two overarching characteristics of the proposed transaction. First, by combining these two nationwide providers, the proposed transaction would result in an increase in both subscriber and spectrum concentration that is unprecedented in its scale. While there is more to establishing likely competitive harms than measuring market and spectrum concentration, these metrics shed light on the scope and scale of the competition that would be eliminated by the proposed transaction. Second, the proposed transaction would result in the elimination of a nationwide rival that has played the role of a disruptive competitive force in the marketplace. The elimination of such a rival carries with it additional concerns because disruptive competitors can play a special role in counteracting the exercise of market power.

18. *Increased Concentration.* With respect to the first of these characteristics, this transaction raises competitive concerns because it would increase concentration substantially in many markets that would be highly concentrated post-transaction, measured using both the standard market concentration screen and the Commission's standard screen for spectrum concentration.[46] In most Cellular Market Area ("CMA") markets for retail mobile wireless services,[47] and nationwide, the widely

[40] *See, e.g., EchoStar-DirecTV HDO*, 17 FCC Rcd at 20608 ¶ 97; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21557 ¶ 70.

[41] *See, e.g., ATT-Centennial Order,* 24 FCC Rcd at 13982 ¶ 34 and 13948-52 ¶¶ 75-86; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21556-57 ¶ 69 and Appendix D. *Cf. FTC v. Heinz*, 246 F.3d 708, 717 (D.C. Cir. 2001).

[42] *See United States v. H&R Block, Inc.*, No. 11-00948, slip op. at 63 (D.D.C. Nov. 10, 2011) (citing *FTC v. Staples, Inc.*, 970 F. Supp. 1066, 1083 (D.D.C. 1997).

[43] *FTC v. Heinz Co.*, 246 F.3d at 715-16 (also stating "Increases in concentration above certain levels are thought to 'raise[] a likelihood of interdependent anticompetitive conduct.'").

[44] *United States v. H&R Block.*, slip op. at 14 (*quoting Hospital Corp. of America v. FTC,* 807 F.2d 1381, 1389 (7th Cir. 1986)).

[45] *FTC v. Heinz*, 246 F.3d at 713 (quoting *Brown Shoe Co. v, United States*, 370 U.S. 294, 323 (emphasis in original)); *accord United States v. H&R Block,* slip op. at 14.

[46] As discussed below, these markets are defined to include products reasonably interchangeable to customers and are protected from entry.

[47] There are 734 CMAs in the country (including territories). The 100 largest CMAs cover 62% of the U.S. population.

used Herfindahl-Hirschman Index ("HHI") of market concentration would substantially exceed the thresholds at which horizontal mergers raise competitive concerns using the standards for judging concentration in evaluating horizontal mergers employed by the Commission[48] and also those set forth in the *DOJ/FTC Horizontal Merger Guidelines*.[49] For instance, an unprecedented 99 of the 100 largest local wireless markets—every Top 100 CMA except Omaha, Nebraska, where T-Mobile does not operate–would exceed the level at which the Commission becomes concerned about anticompetitive effects.[50] Similarly, the Commission's spectrum screen is triggered in an excess of 250 CMAs covering two-thirds of the population in the United States (and territories).

19. The concentration levels and increases arising from AT&T's acquisition of T-Mobile are a strong indicator of harm to competition – and in antitrust analysis trigger a presumption of such harm[51] – for good reason. Market concentration statistics of the type generated by this transaction commonly indicate that buyers would have fewer viable choices, making both unilateral and coordinated competitive effects more likely. The more detailed analysis of the likely competitive effects arising from this transaction that we perform below confirms the story that these concentration indicators tell, and is consistent with the analysis that DOJ performed.[52] In addition, our record contains evidence concerning particular potential harms arising from the potential loss of competition in the provision of roaming, wholesale and resale, and backhaul services, as well as the development and sale of new handsets and devices. We also discuss these other potential harms below.

20. Indeed, AT&T's own internal analyses acknowledge the potential relationship between market concentration and price in mobile wireless services markets. For example, an AT&T evaluation of **[Begin Confidential Information]**[53]

[48] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 46.

[49] *See* Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, (Aug. 19, 2010) ("*DOJ/FTC Horizontal Merger Guidelines*"). The Justice Department and Federal Trade Commission merger guidelines are commonly relied upon by the courts. *See, e.g., FTC v. Heinz*, 246 F.3d at 716, 720.

[50] For purposes of this analysis, consistent with the Commission's attribution rules, we attribute the substitutes and spectrum holdings of Iowa Wireless to T-Mobile's ownership interests in Iowa Wireless.

[51] *See DOJ/FTC Horizontal Merger Guidelines* § 5.3 (mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power)

[52] *See* Amended Complaint, *United States of America v. AT&T*, 11-cv-1560, at ¶¶ 22-26.

[53] In the public version of this Staff Report, confidential or proprietary information submitted pursuant to the *Protective Order*, the *Second Protective Order*, and/or the *NRUF/LNP Protective Order* has been redacted. The unredacted version of this Report will be available upon request to qualified persons who execute and file with the Commission the signed acknowledgements required by the protective orders in this proceeding. *See, e.g., Second Protective Order*, Appendix B – Acknowledgment of Confidentiality.

[54] ATTF-TMO-00775795 ("Disruptor Analysis," Feb. 25, 2010). **[Begin Confidential Information]**

[End Confidential Information]

21. *Loss of a Disruptive Force.* The competitive concerns arising from the increased levels of concentration that this transaction would cause are exacerbated by the role that T-Mobile plays in wireless industry competition. T-Mobile has a history of disruptive competitive conduct that has continued at least up to the time the transaction with AT&T was negotiated. This transaction would result in the elimination of this competitive force from the wireless marketplace.

22. T-Mobile has played an important role in the development of a more competitive mobile services marketplace by engaging in both pricing and technical innovation. Although T-Mobile faces challenges as the industry develops and responds to the increasing data demands of consumers, the record does not support the bleak short-term outlook for T-Mobile that AT&T has portrayed in its submissions. In 2010, T-Mobile generated earnings before taxes and depreciation of approximately $5.4 billion on $21.3 billion in total revenues.[56] T-Mobile currently offers both voice and data services, using the same network technologies employed by AT&T – namely GSM-based and UMTS/HSPA-based technologies.[57] Its GSM network covers 282 million people, and its high-speed HSPA+ network covers 195 million people (approximately 62 percent of the U.S. population) as of April 2011.[58] The speed of T-Mobile's

(Continued from previous page)

[End Confidential Information]

[55] ATTF-TMO-00775795 at 2, 21 **[Begin Confidential Information]** **[End Confidential Information]**

[56] *See* Press Release, "T-Mobile USA, Inc., T-Mobile USA Reports Fourth Quarter 2010 Results" (Feb. 25, 2011); *see also* http://www.annualreport.telekom.com/site0410/en/kf/operative-segmente-des-konzerns/index.php (visited Nov. 8, 2011). As of year-end 2008, T-Mobile accounted for 12 percent of the market by subscribers and by revenue (*see Fourteenth Mobile Wireless Competition Report* at 31). At year-end 2009, its respective shares remained at 12% (*see Fifteenth Mobile Wireless Competition Report* at 35), but by year-end 2010, its respective shares had fallen to 11% (*See* John C. Hodulik, Batya Levi, UBS Investment Research, *US Wireless 411* (Aug. 17, 2011).). Although T-Mobile's national market share and revenues have fallen somewhat in recent years, the company remains profitable and indeed, AT&T valued T-Mobile at $27 billion as a standalone enterprise, while independent analysts valued it on average at $29.5 billion. *See* FCC-ATT- 00019081 at 9, 31.

[57] Most mobile providers in the United States use one of two second generation, or "2G," digital technologies: GSM (Global System for Mobile Communications) or CDMA (Code Division Multiple Access). They are referred to as "2G" because they succeeded the first generation of analog cellular technology. T-Mobile and AT&T (and some other providers) have deployed GSM, while other providers, such as Verizon Wireless and Sprint, have deployed CDMA. The GSM standard is more widely deployed than CDMA by providers in other countries, (e.g., CDMA is not deployed in Europe). Beyond 2G, certain GSM providers, including AT&T and T-Mobile, have deployed a series of next-generation network technologies along the GSM migration path, each with increasingly higher data transfer speeds that have enabled more advanced mobile data services. These technologies include GPRS (General Packet Radio Service), EDGE (Enhanced Data Rates for GSM Evolution), WCDMA/UMTS (Wideband CDMA/Universal Mobile Telecommunications System), HSPA (High Speed Packet Access), and HSPA+. *See Fifteenth Mobile Wireless Competition Report*, at ¶100.

[58] Commission analysis of American Roamer coverage maps, April 2011, and census block population data from the 2010 Census. *See also* T-Mobile, Where Is 4G Available? at http://T-Mobile-coverage.T-Mobile.com/ (last visited Nov. 20, 2011). American Roamer, an independent consulting firm that tracks service provision for mobile voice and mobile data services, provides, under contract, coverage boundary maps of facilities-based mobile wireless providers based on the coverage boundaries provided by them by the network operators. We note that our analysis of coverage maps provided by American Roamer likely overstates the coverage actually experienced by consumers because American Roamer reports advertised coverage as reported to it by many mobile wireless service providers, each of which uses a different definition or determination of coverage.

broadband network is comparable to AT&T's current broadband service offerings, and is expected to be comparable for the next several years.[59] In fact, T-Mobile's documents indicate that **[Begin Confidential Information]**

[End Confidential Information]

23. We also note that, a short time before the announcement of the transaction, T-Mobile's new CEO, Mr. Philipp Humm, had announced and begun to implement several new initiatives designed to make T-Mobile more competitive and increase its market share, which included expanding T-Mobile's advanced network (3G/4G) footprint to cover 290 million people by 2013,[61] **[Begin Confidential Information]**

[59] *See* Eric Zeman, *Verizon Winning 4G Race*, INFORMATION WEEK (Oct. 25, 2011); Craig Galbraith, *Forget LTE; HSPA Still Has Speedy Potential*, Vision2Mobile.com (Oct. 25, 2011) (citing 4G Americas, "The Evolution of HSPA: The 3GPP Standards Progress for Fast Mobile Broadband Using HSPA+," (Oct. 2011), and quoting 4G Americas' president, Chris Pearson, "While LTE has tremendous momentum in the marketplace and it is clearly the next-generation technology of choice for all operators, HSPA will continue to be a leader in mobile broadband subscriptions for the next five to ten years."). Both HSPA+ and LTE may be considered fourth generation (4G) technologies. [Begin Confidential Information] Indeed an email exchange argues that "T-Mobile's 4G network is much faster than AT&T's network." [End Confidential Information] *See* ATTF-TMO-01226926 (AT&T, Dec. 6, 2010 email between Paul Weisbecker (ATT) and Kelsey Joyce (T-Mobile)). Also, T-Mobile's HSPA+ deployment [Begin Confidential Information] "puts T-Mobile ahead of its competitors in terms of network speeds," [End Confidential Information] ATTF-TMO-00103622, at 10 (Network Business Quarterly, "T-Mobile USA," Mar. 18, 2011).

[60] *See, e.g.*, DTTM-FCC-001565562 (T-Mobile, "Deutsche Telekom, Discussion Materials," Dec. 7, 2010 at 6) **[Begin Confidential Information]**

[End Confidential Information]; DTTM-FCC-00227200 **[Begin Confidential Information]**

[End Confidential Information]. *See, e.g.*, DTTM-FCC-00160570-618 (T-Mobile, "T-Mobile USA Monthly Business Review," Jan. 31, 2011); DTTM-FCC-00154591-596 (T-Mobile, "TM US Update," Jan. 24, 2011); DTTM-FCC-00014786-814 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00291583-598; **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00154929-961 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00246144-155 (T-Mobile, "Bonn Agenda," Sept. 10, 2010); DTTM-FCC-00186848 (T-Mobile, "T-Mobile Discussion Materials," August 26, 2010); *see also* DTTM-FCC-00058902-904 **[Begin Confidential Information]** **[End Confidential Information]** DTTM-FCC-00244755, at 40 **[Begin Confidential Information]**

[End Confidential Information]; DTTM-FCC-00122680 **[Begin Confidential Information]**
Sharing") **[End Confidential Information]**; ATTF-TMO-00020468 **[Begin Confidential Information]**

[End Confidential Information]; ATTF-TMO-00100421**[Begin Confidential Information]** **[End Confidential Information]**

[61] DTTM-FCC-00150636 at 41 (T-Mobile, "T-Mobile USA Investor Day," January 20, 2011).

[End Confidential Information] These initiatives might have strengthened T-Mobile's disruptive role in the industry, for example by highlighting its unlimited data plans, and using them to define its brand and differentiate it from rival brands that have adopted tiered pricing.[63]

24. T-Mobile has also repeatedly acted as a pricing innovator over the past few years, introducing offers such as:

- **Unlimited HotSpot Calling (2007) and T-Mobile Hotspot @Home (2008).** T-Mobile was the first provider to offer unlimited Wi-Fi calling (without using voice minutes) to customers subscribing to Hotspot data plans.[64]

- **Flex Pay (2008).** T-Mobile introduced a novel type of prepaid plan under which customers were not required to make an upfront deposit, but were required to make their monthly payments at the beginning of each month, and were offered the same rate plans as monthly postpaid customers.[65]

- **Month-to-Month Postpaid Plans (2008).** T-Mobile was the first nationwide provider to offer month-to-month postpaid plans, instead of the typical two-year contracts. These plans also gave lower rates to subscribers who already had GSM-enabled phones.

- **Family Allowances (2008).** T-Mobile introduced a simple online tool that allows a subscriber to manage all services on a multi-line family plan, for example, setting and changing the limits for minutes, messages and downloads (e.g., games, ring tones) on a child's line.

- **Equipment Installment Plans (2009).** T-Mobile was the first nationwide provider to allow both new and existing customers to pay for new phone purchases in four monthly interest-free installments instead of paying the full purchase price upfront.

- **Unlimited Data Plans with "Soft" Data Caps (2010).** T-Mobile was the first nationwide provider to allow subscribers to continue sending and receiving data after reaching the monthly data cap without incurring expensive overage fees.[66]

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[62] *See, e.g.*, DTTM-FCC-00017839 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00159443, **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00291551 **[Begin Confidential Information]** **[End Confidential Information]**

[63] *See* DTTM-FCC-00149141 at 19 **[Begin Confidential Information]** **End Confidential Information]** *See* ATTF-TMO-00898170 at 4 Dec. 17, 2010 **[Begin Confidential Information]** **[End Confidential Information]**

[64] The service was suspended in 2009 but announced in 2010 as a feature to be used with certain Android devices.

[65] T-Mobile recently ended Flex Pay in favor of the more traditional deposit-based prepaid plans.

[66] Instead, T-Mobile reduced the data speeds.

- **Shared Family Data Plans (2011).** T-Mobile introduced "Shared Family Data Plans" that allow "families" the option of sharing not only voice minutes, but also allowance for texts and mobile data.

25. The Commission has already noted that certain such pricing plans have had an important impact on the marketplace. In its *Fourteenth Mobile Wireless Competition Report*, the Commission expressly stated that particular T-Mobile pricing plans appear to have prompted AT&T and Verizon Wireless "to narrow the price premium" on select offerings[67] and our analysis of the record reflects that T-Mobile charges lower prices than the other nationwide firms[68] – **[Begin Confidential Information]** **[End Confidential Information]** below major competitors' prices" according to one recent analysis[69] – and acts as a "price leader" according to another.[70]

26. T-Mobile also acted disruptively by being the first to deploy HSPA+ technology aggressively and pervasively through its network, which caused AT&T to accelerate its deployment of HSPA+.[71] T-Mobile was a founding member of the Open Handset Alliance,[72] which helped bring Android devices to the market, and was the first provider to offer an Android smartphone.[73] T-Mobile also was the first provider to offer the Blackberry wireless email solution with integrated voice; it supported handsets for which it did not have an exclusive arrangement, and offered lower monthly rates

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[67] Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Fourteenth Report*, 25 FCC Rcd 11407, at ¶¶ 91-92 (2010) (*Fourteenth Mobile Wireless Competition Report).*

[68] *See* ATTF-TMO-00553129 **[Begin Confidential Information]** **[End Confidential Information]**; ATTF-TMO-00486763 at 7, **[Begin Confidential Information]**

[End Confidential Information]

[69] *See* ATTF-TMO-00103622 at 9 **[Begin Confidential Information]** **[End Confidential Information]**; ATTF-TMO-00505119 at 2 March 15, 2011, **[Begin Confidential Information]** **[End Confidential Information]**

[70] *See, e.g.*, **[Begin Confidential Information]** **[End Confidential Information]**; *Fifteenth Mobile Wireless Competition Report* at ¶ 114; Chris Ziegler, *AT&T to Cover About 250M People with HSPA+ by Year's End*, Engadget, available at http://www.engadget.com/2010/05/14/atandt-to-cover-about-250m-people-with-hspa-by-years-end/ (last visited Nov. 18, 2010); AT&T, Press Release, *AT&T Introduces Its First LTE and HSPA+ LaptopConnect Devices,* Oct. 5, 2010, at http://www.att.com/gen/press-room?pid=18623&cdvn=news&newsarticleid=31259&mapcode=consumer|mobile-devices.

[71] *See* ATTF-TMO-0123921 at 3 **[Begin Confidential Information]**

[End Confidential Information]

[72] Christian Zibreg, *Nearly 50 Open Handset Alliance Members Now Backing Android,* TG Daily, Dec. 10, 2011, at http://www.tgdaily.com/mobility-features/40529-nearly-50-open-handset-alliance-members-now-backing-android (visited Nov. 28, 2011). Sprint also was a founding member. *See id.*

[73] *Fourteenth Mobile Wireless Competition Report* at ¶ 141; *see also* DTTM-FCC-00032474 at 3, 9 **[Begin Confidential Information]** **[End Confidential Information]**

to customers who brought their own handset or purchased unsubsidized ones.[74]

27. T-Mobile has also shown interest in entering wholesale relationships for its high-speed data network.[75] Further, for potential entrants like Cablevision, it is an "ideal partner" and the most likely one.[76] Cablevision, which offers cable television, high-speed Internet access and landline voice services to customers in and around New York, New Jersey and Connecticut, wanted to offer its customers these services in combination with nationwide mobile wireless services, as a "quad-play" bundle[77] By offering this new product, Cablevision sought to become a stronger competitor to AT&T and Verizon.[78]

28. Cablevision concluded that their customers "increasingly demand the ability to access its services regardless of their physical location", and that it was not feasible for it to build its own national network.[79] Of the four national providers,[80] AT&T and Verizon Wireless were not interested in selling wholesale access to Cablevision, most likely because Cablevision's new "quad-play" bundle would have made Cablevision a stronger competitor to them, especially where they offer landline service.[81] T-Mobile expressed interest, had previously exhibited a willingness to sell wholesale mobile wireless capacity, and, in Cablevision's view, was likely to continue to have excess capacity it could use to serve Cablevision's customers in the future.[82] Although the outcome of any negotiation is uncertain, a deal between Cablevision and T-Mobile appeared to be beneficial to both parties.[83] **[Begin Confidential Information]**

[74] *See* DTTM-FCC-00087570 at 24 **[Begin Confidential Information]** **[End Confidential Information]** *see also, e.g.*, Cox Petition at 3; Free Press Petition at 33-34; Sprint Petition at 37; New Media Petition at 11, 18-19 CERC Petition at 25-26; CCIA at ii-iii, 3, 15-17; Clearwire Comments at i, 13-16; Sprint Petition at 36-27, 48 and CRA Declaration at 54; Sprint Reply, Salop Reply at 71; Clearwire Reply at 9; GCI Reply at 11-12.

[75] Cablevision Comments at 10.

[76] Cablevision Comments at 10, 13 and Varello Decl. at 5 ¶ 10.

[77] Cablevision Comments at 7. Cablevision offers subscribers a "triple pay" package of cable television, Internet access, and telephone service. Mobile wireless would be the fourth service in the bundle, hence the term "quad-play." Cablevision also offers fixed wireless service (through access to its wi-fi network)at no additional charge to its broadband customers.

[78] *See* Cablevision Comments at 9-10, Verello Decl. at 3-4, Cablevision Reply Comments at 5. Cablevision competes with the landline affiliates of both AT&T and Verizon in selling telephone service, Internet access and in some cases video programming packages to residential customers in Cablevision's footprint. Both AT&T and Verizon Wireless offer quad-play packages to subscribers in (parts of) the New York City metropolitan area.

[79] *See* Cablevision Comments at 7-10, Varello Decl. at 3-4, ¶ 3.

[80] LightSquared and other suppliers with plans to develop a wholesale mobile wireless business were not viewed as realistic alternatives. Nor were regional providers such as Leap or MetroPCS that offered national coverage through roaming rather than their own facilities viewed as realistic possibilities. *See* Cablevision Comments at 11-13, Cablevision Reply at 8-11.

[81] *See* Cablevision Comments at 9; Varello Decl. at 3-4, Cablevision Reply Comments at 5.

[82] *See* Cablevision Comments at 10-11; Cablevision Reply at 6-7.

[83] *See* DTTM-FCC-00218761, at 29. **[Begin Confidential Information]** **[End Confidential Information]** This is largely due to T-Mobile not having a wireline business (unlike AT&T).

[End Confidential Information] Absent an independent T-Mobile, therefore, the prospects for timely introduction of the potentially disruptive innovation that Cablevision and other cable providers sought to bring to its customers have been reduced.[87]

B. Retail Mobile Wireless Services

1. Market Definition, Market Participants, and Concentration

29. We begin our detailed competitive analysis by defining some of the relevant product and geographic markets that would be affected by this transaction. Market definition is designed to aid the assessment of a transaction's likely competitive effects,[88] focusing on customers' ability and willingness to switch to a different product in response to an increase in price or reduction in quality.[89] When one product is a reasonable substitute for the other in the eyes of buyers, we include it in the same relevant product market even if the products themselves, or the locations at which they are sold, are not identical.[90]

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[84] *See* Letter from Samuel L. Feder, Jenner & Block, Counsel for Cablevisions Systems Corp., Second Declaration of Joseph Varello, November 10, 2011, at 2-3 **[Begin Confidential Information]** (

[End Confidential Information].

[85] *See* Letter from Samuel L. Feder, Jenner & Block, Counsel for Cablevisions Systems Corp., Second Declaration of Joseph Varello, November 10, 2011, at 2-3.

[86] DTTM-FCC-00012765 at 27 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00202702 at 5 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00181032 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00226778 **[Begin Confidential Information]** (

[End Confidential Information] *See* DTTM-FCC-00018987 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00018993 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00018990 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00018983 **[Begin Confidential Information]** **[End Confidential Information]**

[87] Sprint remains available as a potential provider of wholesale mobile wireless services to Cablevision. But, as Cablevision explains, Sprint is not able to provide the same services as T-Mobile. Cablevision Comments at 11-13; Cablevision Reply at 8-11. Further, the loss of the only alternative supplier (T-Mobile) improves Sprint's bargaining position. *See* Cablevision Comments at 12. But, as Cablevision explains, Sprint is not able to provide the same services as T-Mobile. Cablevision Comments at 11-13; Cablevision Reply at 8-11.

[88] Market definition is not an end in itself but a tool to facilitate the analysis of competitive effects. If the competitive effects of a transaction can be understood without rigorously defining markets, it may be unnecessary to do so. *See, e.g., DOJ/FTC Horizontal Merger Guidelines* § 4.

[89] *See, e.g., DOJ/FTC Horizontal Merger Guidelines* § 4.

[90] *See United States v. E.I. du Pont de Nemours & Co,.* 351 U.S. 377, 395 (1956) (relevant product market includes "all products 'reasonably interchangeable by consumers for the same purposes.'"); s*ee also United States v. Microsoft,* 253 F.3d 34, 52 (D.C. Cir. 2001), *cert. denied*, 122 S. Ct. 350 (2001).

To determine whether a group of products and locations constitutes a product market, antitrust authorities and economists often evaluate whether a hypothetical monopolist provider of those products in those locations could profitably impose at least a "small but significant and non-transitory increase in price."[91]

30. *Product Market.* The Applicants contend that the Commission should evaluate the proposed transaction using a combined "mobile telephony/broadband services product market," consistent with previous transactions.[92] Several commenters with diverse positions on the proposed transaction agree,[93] while various opponents contend that the proposed transaction should be analyzed within separate product markets, for example, for postpaid and pre-paid wireless services, or for smartphone devices.[94]

31. Consistent with the Commission's approach in recent wireless transactions, where it has analyzed transactions by using a combined "mobile telephony/broadband services" product market, we analyze this transaction within a product market comprised of mobile voice and data services, including mobile voice and data services provided over advanced broadband networks.[95] In order to assess competitive effects accurately, we also define two other product markets contained within this broad product market, within which we undertake most of our competitive analysis.[96] First, we analyze this transaction within a product market of combined mobile wireless services (including voice, text, and data) accessible using a handset or other mobile device (whether a simple voice-only handset, feature phone, smartphone, laptop modem, etc.) and sold to consumers.[97] We term this collection "retail mobile wireless

[91] *See DOJ/FTC Horizontal Merger Guidelines* § 4.1.1.

[92] *See* Joint Opposition at 115-16 (also arguing the marketplace is changing too quickly to define it based on current technology).

[93] *See, e.g.,* Sprint Petition at 10-11; American Antitrust Institute Comments at 6; Communications Workers of America Comments at 41; COMPTEL Petition to Deny at 8-10.

[94] *See* American Antitrust Institute Comments at 6 (separate markets for post-paid and pre-paid services); Sprint Petition at 11-15 (differences between post-paid and pre-paid); Free Press Petition to Deny at 9-12 ("smartphone" service constitutes a separate product market); Greenlining Institute Petition to Deny at 4, 12-13 (distinguishing high-profit contract plans from value-oriented "all-you-can-eat" plans). While there is no industry standard definition of a smartphone, for purposes of its annual *Mobile Wireless Competition Reports*, the Commission has considered the distinguishing features of a smartphone to be an HTML browser that allows easy access to the full, open Internet; an operating system that providers a standardized interface and platform for application developers; and a larger screen size than a traditional, voice-centric handset. Many smartphones also have touch screen and/or a QWERTY keypad, and run an operating system that offers a standard platform for application developers to create and sell device software through an application store. *See Fifteenth Mobile Wireless Competition Report* at n. 426.

[95] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13932 ¶ 37;*Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17470 ¶ 45. In defining product markets in recent transactions, the Commission has concluded that there are separate product markets for interconnected mobile voice services and mobile data services, and also for residential services and enterprise services. The Commission, nevertheless, has evaluated transactions using 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 markets. The Commission has found this a reasonable way of assessing potential competitive harm considering the rapid evolution of mobile services. *See, e.g., Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17470-71 ¶¶ 45-47 & n.198 (and orders cited therein).

[96] *Cf. DOJ/FTC Horizontal Merger Guidelines* § 4.1.1 ("The hypothetical monopolist test ensures that markets are not defined too narrowly, but it does not lead to a single relevant market. The Agencies may evaluate a merger in any relevant market satisfying the test, guided by the overarching principle that the purpose of defining the market and measuring market shares is to illuminate the evaluation of competitive effects.").

[97] We recognize the product market we define encompasses differentiated services (*e.g.*, voice-centric or data-centric), devices (*e.g.*, feature phone, smartphone, tablet, etc.), and contract features (*e.g.* prepaid vs. postpaid), and that wireless providers often recognize such distinctions in their internal analyses of the marketplace. While such distinctions may suggest the possibility of smaller markets nested within the product market we define, we find it (continued....)

services." Thus, the retail mobile wireless services product market includes the traditional wireless services identified in earlier transactions and more recently-introduced mobile broadband and next-generation services. Retail mobile wireless services can be provided over less advanced networks (*e.g.*, using 2G or 2.5G technologies) or wireless broadband networks (*e.g.,* using 3G or 4G technologies).[98] We analyze the competitive effects for retail mobile wireless services in detail in this section. We describe and analyze the competitive effects of the proposed transaction for the enterprise and government services in Section V.C. below.

32. *Geographic Market.* The Applicants advocate defining the relevant geographic market as local (e.g., Cellular Market Areas (CMAs)).[99] While several commenters agree,[100] many opponents contend that the proposed transaction raises national competitive concerns and should be evaluated on a national basis.[101] Other opponents argue that the proposed transaction should be evaluated on both a local and national level.[102]

33. Consistent with the Commission's previous analyses, we recognize that most retail customers purchase wireless service locally,[103] and that service sold in distant locations is generally not a substitute for service near a consumer's home or work.[104] With respect to retail mobile wireless services and (more broadly) mobile telephony/broadband services, nothing in our record causes us to doubt that in the event of a price increase limited to one CMA, or, more likely, in the event of a reduction in service quality in one CMA that has the effect of raising the quality-adjusted price in that locality,[105] too few

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unnecessary to examine that possibility in order to analyze the potential competitive effects of this transaction. We consider these aspects of product differentiation, as appropriate, when we analyze the competitive effects of the transaction within the markets we define.

[98] *See AT&T-Centennial Order*, 24 FCC Rcd at 13932 ¶ 37. We also follow prior Commission precedent and do not distinguish among services based on the underlying technology (*e.g.*, AT&T's use of the GSM family of technologies vs. Verizon Wireless's use of CDMA family of technologies). *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 45; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17480-82 ¶¶ 71-73; *see also Fifteenth Mobile Wireless Competition Report* at ¶¶ 106-108, Figure 2. For purposes of this report, we include all 3G and 4G network technologies – CDMA EV-DO, EV-DO Rev. A, WCDMA/UMTA/HSPA, HSPA+, LTE (Long Term Evolution), a mobile WiMAX – in our discussion of mobile broadband. *See Fifteenth Mobile Wireless Competition Report*, n. 312 and accompanying text.

[99] Public Interest Statement at 72-74 (*also citing* Christopher Decl. ¶ 12); Joint Opposition 105-110.

[100] *See, e.g.*, CWA Comments at 43; COMPTEL Comments at 10; Greenlining Petition at 16-17.

[101] *See, e.g.,* Sprint Petition at 16-27; RTG Petition to Deny at 43; MetroPCS Petition to Deny at 22-23; Leap Wireless Petition to Deny at 9-10; USA Mobility Comments at 4. Several opponents point out that, in previous wireless transactions, AT&T has argued that the geographic market is national. *See, e.g.,* Sprint Petition at 17-18 (citing AT&T's earlier statements in the AT&T-Centennial Communications transaction (Docket No. WT 08-246), ¶ 39, and other transactions); Free Press Petition at 18; *see also AT&T/Verizon Order* at ¶ 37 (AT&T arguing "that the market for mobile telephony/broadband services is national in scope and that...national and regional wireless providers offer nationwide rate plans and set prices on a national basis.")

[102] *See, e.g.,* AAI Comments at 8-10; Leap Wireless Petition at 9-10; MetroPCS Petition at 22-23; Public Knowledge Petition to Deny at 17-19; Center for Media Justice Petition to Deny at 7.

[103] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13934 ¶ 41; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17472 ¶ 52; *see also* Public Interest Statement at 73-74 (citing Christopher Decl. ¶ 12).

[104] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13934 ¶ 41; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17472 ¶ 52.

[105] Service quality might fall, for example, if the firms do not expand service in response to increases in demand, leading to more problems associated with network congestion (such as slow data transmission speeds or more frequent dropped calls).

buyers would switch to purchasing mobile wireless services in another area to make that quality-adjusted price increase unprofitable.

34. Defining local geographic markets for retail wireless services does not preclude us from recognizing that two key competitive variables – prices and service plan offerings – do not vary for most providers across most geographic markets where they sell services. In particular, the four nationwide facilities-based providers of retail wireless services (A&T, Verizon Wireless, Sprint, and T-Mobile) set the same rates for a given plan wherever they sell service and do not alter the plans they offer depending on the location.[106] The vast amount of provider advertising is national,[107] and online retailers and nationwide retail stores such as Wal-Mart, Best Buy, and RadioShack, which sell plans at the same rates in every store, play an important role marketing retail wireless services.[108] Because of these important national characteristics, a loss of competition that occurs at a local level is likely to have only a small adverse effect on, for example, the pricing and plans that the nationwide providers offer unless there is enough lost competition in enough local markets to make a nationwide pricing or plan change economically rational. As discussed below, the proposed transaction results in a significant increase in market and spectrum concentration across a broad swathe of the nation. Accordingly, we do not find it necessary to assess the competitive effects in retail wireless services individually in each local market to determine the likely consequences of the proposed transaction for competition.[109]

35. *Market Participants.* Consistent with our approach in previous transactions, we focus our initial analysis of market concentration on facilities-based providers offering mobile telephony and mobile broadband services using frequency bands suitable for the provision of these services.[110] Our analysis of concentration and competitive effects focuses here on retail mobile wireless service and on enterprise and government services below. We find it unnecessary to analyze further consequences of the proposed transaction in the broader markets in mobile telephony/broadband services to assess accurately the competitive effects of this transaction.

36. Four facilities-based providers can be described as "nationwide" providers of retail

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[106] *See, e.g.,* Joint Opposition, Christopher Decl. at ¶ 8; Sprint Petition at 21, 23; *see also* Leap Wireless Petition at 9-10; AAI Comments at 8. Moreover, every plan these firms offer today provides coverage over at least the provider's entire network. (At one time, providers offered local or regional plans with rates and coverage differing depending on where it was sold.) AT&T's regional managers have the authority to offer local promotions, *see* Joint Opposition at 110-12; Letter from AT&T Inc. and Deutsche Telekom AG (July 22, 2011) (response to staff inquiries regarding competitive significance of AT&T's local promotional activities), but they do not use this authority to systematically affect competition in local markets. Nor is there evidence in the record that local competition affects national pricing and service plan decisions in any meaningful way.

[107] *See, e.g., Fifteenth Mobile Wireless Competition Report* at ¶¶ 129-136; *see also* Sprint Petition at 23-24, Appendix A (claiming that in 2010 the percentage of national advertising for these four providers was: **[Begin Confidential Information]** **[End Confidential Information]**).

[108] *See* Sprint Petition at 24-25.

[109] We could have chosen to analyze the competitive consequences of this transaction in a national market for retail wireless services as well as in local markets, but we find it unnecessary to do so in order to assess accurately the effects of the merger for retail customers. *Cf. DOJ/FTC Horizontal Merger Guidelines* § 4.1.1 ("The hypothetical monopolist test ensures that markets are not defined too narrowly, but it does not lead to a single relevant market. The Agencies may evaluate a merger in any relevant market satisfying the test, guided by the overarching principle that the purpose of defining the market and measuring market shares is to illuminate the evaluation of competitive effects.").

[110] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 45 (including cellular, SMR, PCS, 700 MHz, AWS-1, and certain BRS spectrum); *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17480-81 ¶ 71.

mobile wireless services: AT&T, Verizon Wireless, Sprint, and T-Mobile. Each has the spectrum and infrastructure necessary to provide coverage for more than 90 percent of the U.S. population.[111] These four providers also have the most advanced networks, and offer the newest handsets and devices.

37. As of year-end 2010, AT&T and Verizon Wireless each accounted for over 30 percent of subscribers, and earn over 30 percent of and the industry's total service revenues; also, AT&T accounted for 35 percent and Verizon Wireless for 45 percent of total industry EBITDA. Sprint and T-Mobile are substantially smaller. In 2010, Sprint accounted for approximately 16 percent of the country's subscribers and earned approximately 16 percent of the industry's total revenues, while earning 7 percent of total industry EBITDA. T-Mobile served accounted for approximately 11 percent of subscribers and earned approximately 11 percent of the industry's revenues, while earning 9 percent of total industry EBITDA.[112]

38. Several other firms that hold spectrum licenses only in certain regions or sections of the country provide facilities-based wireless services on a multi-regional or multi-metropolitan area basis. U.S. Cellular serves regions in the western, mid-western, and eastern United States; C Spire (formerly Cellular South) provides service in six southern states; and Leap Wireless and MetroPCS each provide service in several large and medium-sized metropolitan areas.[113] Newly-formed Alltel offers wireless voice and data services in rural markets located principally in the Southeast and Midwest.[114] Combined, these five regional providers[115] accounted for approximately six percent of the industry's total subscribers and revenues at the end of 2010.[116] None of these providers' networks cover more than 34 percent of the U.S. population, and for most their more advanced broadband networks are smaller.[117] To the extent they offer "nationwide" service plans to their subscribers, they generally do so through voice and data roaming agreements that they have negotiated individually with other providers, including with nationwide providers. Further, they do not compete on a nationwide basis because they generally do not market their brand or sell their services to customers outside the areas where they own facilities. In addition, because of the high cost of roaming, certain providers may discontinue service if a subscriber uses too much roaming.[118]

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[111] *See Fifteenth Mobile Wireless Competition Report* at ¶ 31 n.70.

[112] Staff analysis based on information contained in 2010 annual reports. EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) is widely used by industry observers, such as equity analysts, as an indicator of profitability in the telecommunications sector a common measure of profitability used in the wireless industry. *See Fifteenth Mobile Wireless Competition Report* at ¶ 214.

[113] *See Fifteenth Mobile Wireless Competition Report* at ¶¶ 28-31, 69, 71.

[114] Alltel, the brand name and a direct subsidiary of ATN, was created from a small portion of the assets of the former Alltel, when most of the latter was purchased by and merged into Verizon Wireless. Commnet, another subsidiary of ATN, also offers wholesale mobile wireless voice and data roaming services to other providers in rural markets principally in the Southwest and Midwest U.S.

[115] By subscriber count, these five constitute the five largest regional providers (*i.e.*, with coverage in more than one state or territory). *See Fifteenth Mobile Wireless Competition Report* at Table 3 & ¶ 71.

[116] *See* John C. Hodulik, Batya Levi, UBS Investment Research, *US Wireless 411* (Aug. 17, 2011). In a small number of CMAs a regional provider may have a larger share of retail mobile wireless services than a nationwide provider, but some regional firm is present in most major markets so the 6 percent national market share of the group in aggregate, roughly half that of T-Mobile's reasonably depicts the relatively small size of these firms.

[117] Calculated from American Roamer, April 2011.

[118] Roaming is far less significant for the nationwide providers since their extensive networks mean that their customers will roam much less than the smaller providers' customers. However, T-Mobile, for example has similar terms and conditions:
(continued....)

39. A number of small facilities-based providers, with more localized spectrum holdings, offer retail mobile wireless services in various CMAs. These firms typically provide service in only a single geographical area, often rural. Collectively, these small providers account for approximately **[Begin Confidential Information]** **[End Confidential Information]** percent of the nation's subscribers (with smaller shares in the largest 100 markets),[119] and they earn approximately **[Begin Confidential Information]** **[End Confidential Information]** percent of the nation's wireless revenues.[120]

40. Another market participant is Clearwire, which has spectrum holdings in the 2.5GHz band across the country and offers retail mobile data services, but not mobile voice services in 74 markets.[121] Despite Applicants' assertions,[122] we do not include LightSquared, which has Mobile Satellite Service ("MSS") L-band spectrum authorized for Ancillary Terrestrial Component ("ATC") use, as a market participant. While LightSquared has announced plans to provide wholesale terrestrial broadband service to third parties nationwide, and has obtained expressions of interest for future wholesale capacity from several potential customers,[123] it does not at present have any commercial territorial build out, has not launched service,[124] and does not plan to offer retail wireless services.

41. Finally, the Commission generally has excluded Mobile Virtual Network Operators ("MNVOs") and resellers when computing initial concentration measures, though it does take into account the role of such providers to the extent necessary in evaluation of likely competitive effects,[125] and we take the same approach here.[126]

42. *Concentration.* This transaction would merge two of the four largest retail mobile wireless providers, leaving the top two firms by share (AT&T and Verizon Wireless) together serving three-fourths of all U.S. mobile wireless subscribers and capturing over three-fourths of the revenues

(Continued from previous page)
http://www.T-Mobile.com/Templates/Popup.aspx?PAsset=Ftr_Ftr_TermsAndConditions&print=true (last visited Nov. 21, 2011).

[119] These providers serve approximately **[Begin Confidential Information]** **[End Confidential Information]** percent of subscribers in the largest 100 markets (including Puerto Rico).

[120] The information on subscribers was calculated using NRUF data.

[121] Clearwire mostly sells wholesale services to Sprint (its majority owner) and others. *See Fifteenth Mobile Wireless Competition Report* at ¶ 68.

[122] *See, e.g.*, Public Interest Statement at 92-94.

[123] *See* LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component, *Order and Authorization*, 26 FCC Rcd 566 (IB 2011). LightSquared has authority to provide terrestrial service in conjunction with its satellite service pursuant to its Ancillary Terrestrial Component (ATC) authority.

[124] Indeed, by Commission order, LightSquared may not commence commercial operations using its terrestrial network until recently surfaced potential interference concerns with government and commercial GPS equipment are resolved. *See* LightSquared Subsidiary LLC, Request for Modification of its Authority for an Ancillary Terrestrial Component, *Order and Authorization*, 26 FCC Rcd 566 (IB 2011). Further, we do not have any basis in our record for concluding that LightSquared provides a competitive constraint on participants in any retail mobile wireless services market by virtue of its potential.

[125] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 45; Applications of AT&T Inc. and Dobson Communications Corporation For Consent to Transfer Control of Licenses and Authorizations, WT Docket No. 07-153, *Memorandum Opinion and Order*, 22 FCC Rcd 20295, 20317 ¶ 38 (2007) (*AT&T-Dobson*).

[126] We discuss potential competitive effects relating to MVNOs below.

post-transaction.[127] Moreover, the HHI, a widely used and accepted measure of market concentration,[128] and the Commission's spectrum screen together demonstrate that the proposed transaction would generate a substantial increase in concentration in many already concentrated retail mobile wireless markets to above the thresholds at which horizontal mergers raise competitive concerns.[129]

43. The Commission generally applies a two-part initial "screen" to identify those local markets in which no competitive harm is initially apparent from the transaction. The first part of the screen considers changes in market concentration in the provision of retail mobile wireless services as a result of the proposed transaction, and is based on the absolute level and change in HHI. The second part of the screen examines the input market for spectrum that is suitable for the provision of retail mobile wireless services.[130]

44. The Commission generally calculates HHIs for retail wireless providers using the number of wireless connections each provider sells to subscribers in a geographic market. In recent transactions, the Commission has examined the potential anticompetitive effects of any wireless transaction when the

[127] Applicants claim that the market will nevertheless remain competitive, stating that approximately three-quarters of Americans live in areas where they may choose among at least five facilities-based wireless providers (citing the *Fourteenth Mobile Wireless Competition Report*), such that the transaction would "at most" reduce the number to four or more facilities-based providers. Public Interest Statement at 70 & n.91; Joint Opposition at 10. We note that the Applicants cannot simply rely on the mobile services "coverage" estimates, discussed in the annual Competition Report, as a proxy for the degree of actual competition that transpires in a local market. When analyzing particular transactions, the Commission for good reason has never relied on these census block coverage estimates for establishing the number of competitors in a relevant market. Indeed, the subsequent Competition Report itself makes clear that this data is limited in its representations, and should not be seen as a substitute for individual market analyses. *See Fifteenth Mobile Wireless Competition Report* at nn. 4, 5, 107, and 109. Further, when evaluating a transaction, the Commission has never viewed the mere presence of a provider in a CMA as meaning that that provider necessarily provides competitive constraints with respect to other providers. The Commission generally does not even consider a provider to be a competitor in a CMA (i.e., in a position to constrain potential anticompetitive behavior) unless the provider covers 70% of the population or 50% of the geographic coverage area of a given CMA, which is sufficient coverage to be considered a market participant. *See, e.g., Verizon Wireless-ALLTEL Order,* 23 FCC Rcd 17444 (confidential appendices). We conclude that the data cited by Applicants on the mere presence of a provider in a geographic region poorly reflects the competitive significance of the firms in retail wireless service markets and in mobile telephony/broadband services markets. By contrast, the market shares that we use to compute measures of market concentration reasonably reflect each provider's competitive significance in retail wireless service markets and in mobile telephony/broadband services markets because smaller shares often reflect limited facilities or spectrum footprint, targeted service offerings, or brand recognition that could not be expanded in a timely or sufficient manner in response to an anticompetitive price increase. This approach is consistent with standard antitrust analysis.

[128] *See, e.g., DOJ/FTC Horizontal Merger Guidelines* § 5.3. The HHI is the sum of the squares of the market shares (expressed as whole numbers) of each firm participating in the market. Since the HHI is based on squared market shares, it gives proportionally greater weight to providers with large market shares, and thus accounts for market share variation.

[129] According to the *DOJ/FTC Horizontal Merger Guidelines*, an HHI above 2500 indicates a market with a high degree of concentration, and mergers resulting in concentration above this level that increase the HHI by more than 200 points are presumed likely to enhance market power. *DOJ/FTC Horizontal Merger Guidelines* § 5.3. (Under the Merger Guidelines, lesser concentration levels and increases may also raise competitive concerns. *Id.*) The Commission examines the potential anticompetitive effects of any wireless transaction when the HHI in any market after the transaction would be greater than 2800 and the change in the HHI would be 100, or when the change in the HHI would be 250 or more regardless of the level. *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 46.

[130] *See AT&T-Centennial Order*, 24 FCC Rcd at 13931 ¶ 34; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17482 ¶ 75.

HHI in any market after the proposed transaction would be greater than 2800 and the change in the HHI would be 100, or when the change in the HHI would be 250 or more regardless of the absolute level.[131] Here, we have calculated HHIs both by using Numbering Report / Utilization Forecast ("NRUF").[132] December 2010 data for CMAs and by using national revenues. Based on the number of connections, the post-transaction HHI would be above 2800, with a delta HHI of more than 100, in 95 of the 100 most populous CMAs, and the change in HHI would exceed 250 or more regardless of the level in 93 of the 100 most populous CMAs, with an average change of **[Begin Confidential Information] [End Confidential Information]** (weighted by population).[133] The population weighted average HHI in those 100 CMAs would increase to 3448. Overall, as described above, 99 of the Top 100 CMAs trigger the HHI screen. Looking at all CMAs nationwide, the (weighted average) HHI by CMA would rise **[Begin Confidential Information] [End Confidential Information]** based on the number of connections. Nationwide, 419 CMAs trigger the HHI screen as described.[134]

45. The Commission has routinely updated its calculus for the second part of its test – the spectrum screen – when "new" spectrum has been made available for mobile wireless services.[135] While various parties debate whether or not additional spectrum bands (and parts thereof) should be included in the spectrum screen,[136] we do not attempt to predict whether the Commission will modify the screen beyond the minor modification anticipated in *AT&T-Qualcomm*.[137] In this case, as with the HHI calculations performed above, the effect on spectrum concentration as a result of the transaction would be so substantial – well beyond what the Commission has seen to date – that significant competitive

[131] *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 46.

[132] NRUF tracks the number of phone numbers that have been assigned to end users. *See Fifteenth Mobile Wireless Competition Report* ¶¶ 159, 173, n. 529.

[133] CMAs are the areas in which the Commission initially granted licenses for cellular service. Nationwide, there are 734 CMAs (including territories). *See* 47 C.F.R. § 22.909. In past orders, as a cross-check to ensure that we do not miss any markets where competitive harm may occur, the Commission also has calculated HHIs for Component Economic Areas ("CEAs"). CEAs are designed to represent consumers' patterns of normal travel for personal and employment reasons and may therefore capture areas within which groups of consumers would be expected to shop for wireless service. Here, however, the HHIs show that this transaction poses significant competitive risks for almost all areas and no further cross-check is necessary.

[134] *See* Appendix A.

[135] *See Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17473-79 ¶¶ 54-66.

[136] In this instance, the Applicants assert that substantial additional spectrum to be included in the spectrum screen, including 90 MHz of MSS/ATC spectrum and all 194 MHz of BRS/EBS spectrum (not just the 55.5 MHz of BRS spectrum it has considered before). They also argue that the Commission should continue to exclude WCS spectrum. *See* Public Interest Statement at 49 n. 48, 77; Joint Opposition at 186. Others, including Green Flag, Clearwire and Sprint disagree that the entire BRS/EBS spectrum should be included, Green Flag Petition to Deny at 3-6, Clearwire Reply at 12, Metro PCS Replay at 24, Sprint Reply at 42-43, and Metro PCS and Green Flag argue that, in light of the Commission's recent action on WCS spectrum, it should be included in the screen, Metro PCS Reply at 34, Green Flag at 5-6. In addition to adding or subtracting bands – or portions thereof – from the screen, changes could also include distinguishing between different spectrum bands when determining the total bandwidth available. *See Fifteenth Mobile Wireless Competition Report* at 281.

[137] See Applications of AT&T Inc., and Qualcomm Incorporated for Consent to Assign Licenses and Authorizations, WT Docket No. 11-18. On November 22, 2011, Chairman Genachowski circulated to his colleagues a draft Order approving, with conditions, AT&T's applications to acquire licenses for the 700 MHz D and E Block spectrum held by Qualcomm. In that draft Order, the Commission would reduce the amount of SMR spectrum used in the spectrum screen from 26.5 megahertz to 14 megahertz.

concerns are raised. For example, under the screen,[138] AT&T's proposed acquisition of T-Mobile triggers an unprecedented 274 CMAs, covering 71 of the Top 100 markets, or 66 percent of the U.S. population.[139] Put in context, the transaction that previously resulted in the highest number of markets triggering the spectrum screen was Cingular's acquisition of AT&T Wireless in 2004, where the transaction triggered 80 CMAs, covering just less than 15% of the U.S. population.[140]

46. In addition to the unprecedented number of markets in which the spectrum screen is triggered, the amount of spectrum by which the screen is exceeded is noteworthy. In the 274 CMAs in which the screen is triggered, the combined entity would exceed the screen by an average of 15 megahertz per market. The spectrum screen would be exceeded by at least 20 megahertz in 129 markets, and by 30 megahertz or more in 87 of those markets,[141] including Dallas (40 megahertz), San Francisco (41 megahertz), Miami (37 megahertz), Houston (35 megahertz), Atlanta (35 megahertz), and San Jose (41 megahertz).[142]

47. These data demonstrate high concentration and a substantial increase in subscriber and spectrum concentration in most individual CMA markets and nationally. In consequence, as the Commission has observed, under traditional structural analysis used to apply the antitrust laws, AT&T's proposed acquisition of T-Mobile is presumed to create or enhance market power or facilitate its exercise,[143] creating significant potential for competitive harm in most retail mobile wireless services markets, to the detriment of consumers. Given that most wireless providers market the same service plans and charge the same prices in every geographic market in which they participate, there is a substantial likelihood of an adverse effect on competition in every CMA market across the nation in which both participate.

2. Unilateral Competitive Effects

48. Unilateral competitive effects arise when firms find it profitable to raise prices or otherwise exercise market power following a horizontal merger regardless of the anticipated actions or responses of the other firms in the market.[144] Despite the Applicants' assertions to the contrary, but consistent with the results of applying the concentration screen described above,[145] we conclude that the loss of T-Mobile as a competitive alternative would give post-merger AT&T a unilateral incentive to raise price (or, to similar effect, to reduce service quality or otherwise exercise market power) and would also

[138] For purposes of calculation, we attribute to the post-merger AT&T the 700 MHz D and E Block spectrum it has agreed to acquire from Qualcomm.

[139] See Appendix B, CMAs Triggered By Spectrum Screen.

[140] *Cingular-AT&T Wireless Order,* 19 FCC Rcd at 21569 ¶ 110. The combination of AT&T Wireless and Cingular reduced the number of nationwide carriers from six to five.

[141] The average population in CMAs that are over the screen by 20-29 MHz is over a quarter of a million Americans; for CMAs that are over the screen by 30 MHz or more, the average population is almost two million.

[142] AT&T's post-transaction market share in these markets would be 56.1%, 50.3%, 49%, 51.9%, 46.7%, and 49.3%, respectively.

[143] *See EchoStar-DirecTV HDO*, 17 FCC Rcd at 20622 ¶ 139 (citing previous *DOJ-FTC Horizontal Merger Guidelines*).

[144] *EchoStar-DirecTV HDO*, 17 FCC Rcd at 20619 ¶ 152; *DOJ/FTC Horizontal Merger Guidelines* §1. A transaction can also increase the risk of coordinated price increases or other anticompetitive conduct among rivals, termed "coordinated effects." In any given transaction, either or both effects may arise, and the distinction between them may be blurred. We evaluate the threat of coordinated competitive effects in retail mobile wireless services markets separately below.

[145] *See generally* Public Interest Statement at 96-103; Joint Opposition at 133-37.

confer a unilateral incentive to raise price on non-merging rivals, including Verizon Wireless and Sprint.

49. The proposed transaction would result in the elimination of the T-Mobile product offerings.[146] The acquisition of T-Mobile would thus remove its products as a competitive alternative for AT&T's current customers, for the current customers of rival providers such as Verizon Wireless and Sprint, and for T-Mobile's current customers when they choose to upgrade service or consider switching plans.

50. AT&T's unilateral incentive to raise price in this case arises because providers sell differentiated products, and many of AT&T's customers view T-Mobile as their second choice at current prices. In the event AT&T were to raise price pre-merger, enough customers would instead select a product offered by T-Mobile or some other firm as to make the price increase unprofitable.[147] After the transaction, however, T-Mobile would no longer be available as an alternative provider for AT&T's customers. Under such circumstances, some of AT&T's customers would no longer be able to respond to a higher price by switching to T-Mobile, and would not switch to a third provider-- they would instead remain with AT&T and pay more. In consequence, AT&T would find it profitable to increase price post-merger, even though the same price increase would not have been profitable pre-merger.

51. In fact, all non-merging providers, in particular large national competitors Verizon Wireless and Sprint, have the same type of unilateral incentives for the same reason. Local number porting data (data on where customers go when they switch wireless providers while keeping their phone number)[148] indicate that each of them has customers who view T-Mobile products as their second choice. With T-Mobile's departure, some of these customers would instead remain with their current provider if it raised its price, potentially confering a unilateral incentive on these firms to increase price. Moreover, if AT&T or any of its non-merging rivals raises its prices unilaterally, that action would reduce competitive pressure on other market participants, potentially leading to additional price increases that go beyond the

[146] AT&T has the right to market under the T-Mobile brand for 18 months. *See* Stock Purchase Agreement, § 4.21. Existing T-Mobile customers will be permitted to obtain service from AT&T on the same terms on which they now receive service from T-Mobile, but those terms will not be offered to new customers. Legacy T-Mobile customers will be required to switch to an AT&T plan if they choose to upgrade service, add a line, switch to an iPhone or other subsidized devices or simply wish to change plans. Unilateral competitive effects arise when firms find it profitable to raise prices or otherwise exercise market power following a horizontal merger regardless of the anticipated actions or responses of the other firms in the market. *DOJ/FTC Horizontal Merger Guidelines* § 1; *EchoStar-DirecTV HDO*,17 FCC Rcd at 20619 ¶ 152 (footnotes omitted). A transaction can also increase the risk of coordinated price increases or other anticompetitive conduct among rivals, termed "coordinated effects." In any given transaction, either or both effects may arise, and the two effects may not be distinct. We evaluate the threat of coordinated competitive effects in retail mobile wireless services markets separately below.

[147] AT&T would gain from raising price to the extent doing so allows it to increase the profit margin it earns on sales to existing customers, but lose to the extent that it gives up the entire profit margin on customers that switch away from its products. A profit maximizing firm selling a differentiated product raises price until these opposing effects balance.

[148] Every month, the North American Numbering Plan Administrator provides the Commission with a report of the number of customers who switch their service from one wireless provider to another while keeping ("porting") their same telephone numbers. See *Trends in Telephone Service*, Report of the Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, at 8-2 – 8-3 (Sept. 2010). Although the data shows only those people who switched providers and kept their same phone numbers, and not all customers who terminate service with any provider appear to port their numbers to another provider, each provider's share of the total number of ports approximately corresponds to their overall market shares. If customers who did not port their numbers did so in substantially different patterns than those who do, we would expect to see markedly different overall subscriber shares than we observe in the marketplace. We thus believe the data contains a sufficiently representative sample of the market to be a reliable indicator of real world behavior.

incentive created simply from the phase-out of T-Mobile.[149] Pre-merger customers of AT&T and the non-merging firms would be harmed by such price increases.

52. T-Mobile customers who continue on their legacy T-Mobile plan within AT&T after the proposed acquisition would also be harmed by the loss of T-Mobile as a competitive alternative when they are deciding whether to upgrade service or otherwise leave their legacy plan. These customers would lose the ability to change among T-Mobile plans, an option T-Mobile customers would likely have valued given that they have already demonstrated that they prefer T-Mobile. In addition, guaranteeing a specific price may be of little value when technological improvement and new product development cause quality-adjusted prices to fall. The inability to switch among T-Mobile plans could cause some customers to leave T-Mobile and settle for their second choice provider. Indeed AT&T anticipates that it would lose about **[Begin Confidential Information]**

[End Confidential Information] over time.[150] Some T-Mobile customers may remain with their legacy plan longer than they would have had T-Mobile remained independent and offered them multiple plan choices.[151] We disagree with AT&T's contention that pre-merger T-Mobile

[149] This unilateral competitive effects mechanism is related to the theories set forth in the *DOJ/FTC Horizontal Merger Guidelines*. In both approaches, the residual demand curve facing AT&T grows less elastic (less responsive to price), giving the merged firm an incentive to raise the prices for AT&T's products. The Guidelines discussion of "Pricing of Differentiated Products" assumes that both brands remain post-merger, allowing the merged firm to recapture some customers that it would previously have lost. Our approach accounts for the unavailability of that mechanism to post-merger AT&T, as the merged firm does not plan to preserve the T-Mobile brand. Instead, in our approach, AT&T's unilateral incentive to raise the price of AT&T products arises because of the departure of an independent T-Mobile. *Cf.* Jonathan B. Baker & Timothy F. Bresnahan, *The Gains from Merger or Collusion in Product-Differentiated Industries*, 33 J. Indus. Econ. 427, 434 (1985) ("If the [acquiring firm's residual] demand curve grows steeper as a result of the merger ... the merged firm will have an incentive to raise price [of the acquiring firm's product] from the pre-merger level."). The acquisition of new customers from T-Mobile would not be expected to change this conclusion. It would not alter the elasticity of demand facing AT&T in the short run, even though those subscribers would receive wireless services from AT&T, because most would be expected to keep their existing T-Mobile service plan. AT&T expects T-Mobile subscriber churn to **[Begin Confidential Information]**

[End Confidential Information] FCC-ATT-0019081 at 15 **[Begin Confidential Information]**

[End Confidential Information] Over time, however, many T-Mobile customers would be expected to switch out of their legacy plans and obtain service from AT&T or other providers. As that phase-out occurs, the most price-sensitive of the former T-Mobile customers would most likely pick disproportionately a provider that offers lower price alternatives to AT&T. In consequence, there is no reason to expect that the former T-Mobile customers that eventually choose an AT&T plan will make the demand for AT&T products more elastic and undermine the unilateral incentive to raise price described here. Although the Merger Guidelines do not explicitly discuss how unilateral effects from a merger between sellers of differentiated products would arise when the merged firm plans to drop the acquired brand, the government has successfully challenged mergers that would do so on a unilateral effects theory. *See, e.g., FTC v. Staples,* 970 F. Supp. 1066 (D.D.C. 1997); Roundtable Discussion: Unilateral Effects Analysis after Oracle, Antitrust, Spring 2005 at 8, 9 (lead attorney for the FTC interprets *Staples* as a unilateral effects case).

[150] *See* FCC-ATT-00019081 at 15 (AT&T, "Project Auto: Mercury Transaction- Executive Briefing," Mar. 17, 2011).

[151] This analysis is consistent with the finding of the court in *H&R Block. United States v. H&R Block.*, slip op. at 69 ("First, the defendants have pledged to maintain TaxACT's current prices for three years. While the Court has no reason to doubt that defendants would honor their promise, this type of guarantee cannot rebut a likelihood of anticompetitive effects in this case.") In that case H&R Block offered to make TaxAct's prices available to all customers in the market, including existing customers. AT&T's promise is much more restrictive in that T-Mobile's products and plans would not be available to any non T-Mobile customers, and the ability to switch among plans would not even be available to pre-merger T-Mobile customers.

customers would be protected from price increases by being allowed to remain on their existing contracts indefinitely.[152] Unilateral price increases by all remaining providers would make switching to those alternatives worse choices, injuring T-Mobile customers (and other customers as well) and inducing them to remain in their legacy plans longer still. When T-Mobile customers choose to leave their legacy plan, and switch to a plan offered by AT&T or another provider, they would pay more for that alternative than they would have if T-Mobile had remained independent, given the unilateral incentive the transaction may confer on those providers to raise price.

a. Buyer Substitution

53. *Positions of the Parties.* The Applicants assert that AT&T's acquisition of T-Mobile would confer only minimal incentives to increase prices because T-Mobile and AT&T are not close competitors and would not likely be in the foreseeable future.[153] The Applicants also claim that AT&T has made no direct response to T-Mobile's advertising, pricing promotions, or offers since 2009 at the latest.[154] In contrast, opponents to this transaction argue that T-Mobile plays an important competitive role for wireless services.[155]

54. *Discussion.* For the proposed transaction to confer a unilateral incentive on AT&T to raise the prices of its products through the mechanism described above, a non-trivial fraction of AT&T's customers must view T-Mobile's products and services as their second choice at pre-merger prices, and view the products of other firms, or the alternative of doing without service entirely, as more distant choices. Under such circumstances, those customers would stick with AT&T in the event it raises prices post-merger, when they would have switched away pre-merger. Moreover, the greater the fraction of T-Mobile customers that view AT&T's products as their second choice, the greater the harm to T-Mobile customers when they choose to switch away from their legacy plan or consider doing so. Our review of the evidence indicates that T-Mobile is a substitute for AT&T, consistent with concerns about unilateral effects.[156]

55. Our analysis of local number porting data indicates that many AT&T customers view T-Mobile products as their second choice, and vice versa.[157] When customers leave AT&T, many choose T-Mobile, and when customers leave T-Mobile, a large number choose AT&T. For example, porting data for the fourth quarter of 2010 indicates that **[Begin Confidential Information]**

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[152] Carlton Declaration at ¶ 64 (citing Moore Declaration at ¶ 30).

[153] *See* Public Interest Statement at 98-99 (citing Christopher Declaration at ¶ 27); Carlton Declaration at 7 ("Concern about unilateral effects are also reduced by the substantial differences in the characteristics of T-Mobile and AT&T subscribers); *id* ("...T-Mobile does not exert strong competitive pressure on AT&T and the two brands serve substantially different groups of subscribers."); Carlton Declaration at ¶ 149; *see also* Christopher Declaration at ¶ 24; Christopher Reply Declaration at ¶¶ 33-37.

[154] *See* Christopher Declaration at ¶ 24; *see also* Christopher Reply Declaration at ¶¶ 33-37. We note that this claim, even if correct, does not cover responses in 2009 or before or responses involving network upgrades, and that the claim is inconsistent with other evidence in our record. *See supra.*

[155] *See, e.g.*, AAI Comments at 15-17 (pointing to T-Mobile's November 2010 advertising campaign that touted its upgraded HSPA+ network which enticed AT&T into altering its advertising campaign strategy in direct response); Comptel Comments at 16 (stating that T-Mobile's aggressive 4G advertising campaign undermines AT&T's contention that T-Mobile is not a close competitor); Sprint Petition (CRA Declaration) at ¶¶ 125-132.

[156] Economic Analysis.

[157] See Table 1.

[End Confidential Information] T-Mobile documents, and data confirm that of those customers who leave T-Mobile, substantial numbers choose AT&T.[159] Moreover, the porting data demonstrate that a substantial fraction of AT&T customers switch to T-Mobile in response to changes in the relative price of T-Mobile products and the introduction of new T-Mobile products, and vice versa.[160] For example, Figures 2 and 3 show the fraction of AT&T customers that ported their numbers to T-Mobile increased noticeably when T-Mobile **[Begin Confidential Information]**

[End Confidential Information] While the Applicants contend that T-Mobile does not provide substantial competition to AT&T, but fringe providers like Metro PCS do.[163] The data indicate that customers view AT&T and T-Mobile as closer substitutes.

[158] See Table 1.

[159] *See, e.g.*, DTTM-FCC-00149806 at 8 **[Begin Confidential Informatio**
[End Confidential Information] (showing **[Begin Confidential Information]**
[End Confidential Information]

[160] *See, e.g.*, ATTF-TMO-00802519 **[Begin Confidential Information]**
[End Confidential Information] The unilateral effects theory turns on the presence of buyer substitution in response to changes in the quality-adjusted price. These analyses confirm that the substitution rates seen in the porting data generally, likely resulting from buyer substitution in response to a wide range of factors (including consumer relocations to other regions of the country) along with price, do not mislead as to the rates of substitution that would be observed in response to changes in price.

[161] See Figure 2 below.

[162] See Figure 3 below.

[163] Joint Opposition at 135.

Table 1. National Diversion Rate Calculations from Q4 2010 Local Number Portability Data

[Begin Confidential Information]

[End Confidential Information]

Figure 2[164]

[Begin Confidential Information]

[End Confidential Information]

[164] Source: Response of T-Mobile and MetroPCS to Information Requests to Applicants and Third Parties at Attachments A and B.

Figure 3[165]

[Begin Confidential Information]

[End Confidential Information]

56. The switching rates observed in the porting data and the evidence from company documents discussed above suggest that many customers of each Applicant view the products offered by the other as their second choice. To calibrate these switching rates, and confirm that they are sufficiently large to raise concerns about unilateral competitive effects, the Commission staff conducted several analyses. One approach involves the calculation of a Gross Upward Pricing Pressure Index (GUPPI); another is the closely related calculation of the Compensating Marginal Cost Reduction (CMCR). We treat these as indicators of the practical significance of the switching rates suggested by our evidence. In the Economic Analysis, we show that the GUPPI values for both AT&T and T-Mobile are above the level at which unilateral effects concerns are triggered by antitrust authorities.[166] We also show that the marginal cost savings we credit after analysis of AT&T's claims (see below) is less than the CMCR statistic. Our third approach to calibrating switching rates relies on our review of the economic model submitted by the Applicants. As demonstrated below, we find that given the rates of buyer substitution in response to price changes assumed by AT&T, the Applicants' own economic model predicts higher prices during the first few years following consummation of their proposed transaction.

57. Another indicator that many AT&T customers viewed T-Mobile products as their second choice, and vice versa, is the evidence that each firm recognized the other as a competitive threat. Indeed.

[165] Source: Response of AT&T to Information Requests to Applicants and Third Parties at Attachments A and B.

[166] *See* Carl Shapiro remarks as prepared for the American Bar Association Section of Antitrust Law Fall Forum, at 24 (Nov. 18, 2010), available at http://www.justice.gov/atr/public/speeches/264295.pdf (last visited Nov. 28. 2011); *see also DOJ/FTC Horizontal Merger Guidelines* § 6.1.

AT&T has monitored and responded to a number of T-Mobile's competitive initiatives.[167] In 2009, AT&T introduced a new service plan in response to a family plan offered by T-Mobile.[168] Later that year, AT&T introduced a new unlimited service plan **[Begin Confidential Information]** [169] **[End Confidential Information]** AT&T documents from 2010 **[Begin Confidential Information]**

Information] AT&T also recently **[Begin Confidential Information]**

[167] T-Mobile's initiatives enhance the constraint that firm imposes on AT&T regardless of whether AT&T responds, simply by making T-Mobile's products more attractive to AT&T's customers. AT&T's responses provide further evidence of T-Mobile's competitive significance.

[168] In April 2009, AT&T developed a response to T-Mobile's Family Time Unlimited Plan, called Family Talk Unlimited. As a result, in September 2009, AT&T introduced its "A-List" calling feature, which allows unlimited mobile calling to and from any five "VIP" domestic phone numbers for individual plans, and any ten numbers for family plan at no additional charge to compete with T-Mobile's myFaves and Verizon Wireless's Friends and Family options. *Fourteenth Mobile Wireless Competition Report* at 58; *see also* ATTF-TMO-00566238 at 7 (AT&T, "Industry Pricing Timeline 2004-2009," Nov. 17, 2009).

[169] **[Begin Confidential Information]**

[End Confidential Information] *See* ATTF-TMO-01046058 **[Begin Confidential Information]**

[End Confidential Information] (AT&T, "T-Mobile Project Dark," (Oct. 19, 2009). In late 2009, T-Mobile introduced a $59 unlimited plan. By January 2010, both Verizon and AT&T had reduced their unlimited voice plans to $69. *Fourteenth Mobile Wireless Competition Report* at ¶¶ 91-92; *see also* ATTF-TMO-00554919 **[Begin Confidential Information]**

[End Confidential Information]

[170] *See* ATTF-TMO-01213921 at 3-4 **[Begin Confidential Information]**

" [End Confidential Information]

[171] *See* ATTF-TMO-01213921 **[Begin Confidential Information]**

; **[End Confidential Information]** *see also* ATTF-TMO-00017734 at 5 **[Begin Confidential Information]**

[End Confidential Information]

response to T-Mobile[172] and actively monitored T-Mobile's "reemergence" as a competitive force with its improved network.[173]

58. T-Mobile similarly monitors and responds to competitive moves by AT&T. Prior to the announcement of the proposed transaction, for example, T-Mobile ran a series of high-profile advertisements targeting AT&T directly. In these advertisements, T-Mobile encouraged AT&T customers to switch to its network. For example, in the advertisement, "Step Up to Nationwide 4G without Losing your Shirt," the script talks about AT&T requiring customers to "pay more to be slower."[174] In a July 2010 Strategy Document T-Mobile notes of AT&T, **[Begin Confidential Information]** **[End Confidential Information]**

59. The evidence set forth above explains why it is likely that a sufficient number of customers view AT&T and T-Mobile as their first and second choices to generate a concern about unilateral effects.[176] In consequence, AT&T's acquisition of T-Mobile would be likely to confer a unilateral incentive on the combined entity to raise prices. Because AT&T and the other national providers offer to set rates and service plans on a national basis, we would expect that if AT&T acts on this incentive, it would do so by raising rates by the same amount nationwide.[177]

b. Repositioning and Entry

60. *Position of the Parties.* The Applicants argue that another reason that the proposed transaction would not result in anticompetitive unilateral effects is because competition from other providers would prevent any exercise of market power. In particular, AT&T claims that regional providers such as MetroPCS, Leap, and U.S. Cellular would expand to replace any competition lost from the elimination of T-Mobile (through repositioning in markets currently served and entry into CMAs not

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[172] ATTF-TMO-00179485 at 2 **[Begin Confidential Information]** **[End Confidential Information]**

[173] ATTF-TMO-00141215 at 5 **[Begin Confidential Information]** **[End Confidential Information]** *see also* ATTF-TMO-00507562 **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-01213921 at 3 **[Begin Confidential Information]** **[End Confidential Information]**

[174] Available at http://www.youtube.com/watch?v=CFjVZizLVE4 (last visited Nov. 20, 2011).

[175] *See* DTTM-FCC-00239668 at 21 **[Begin Confidential Information]** **[End Confidential Information]**

[176] The dispersion of buyer second choices shown by the porting data and the magnitude of the price-cost margins for the national brands calculated by staff demonstrate substantial differentiation across the firms offering retail wireless services – over such characteristics as brand reputation, service offerings, technologies, geographic coverage, location of local stores, handset availability and the like. Nothing in our record suggests that most retail buyers who have AT&T and T-Mobile as their first and second choices would view the services offered by their third-choice provider as a very close substitute to their second choice provider at pre-merger prices. *See* GUPPI analysis in Economic Analysis.

[177] While AT&T suggests that regional managers have discretion to set prices for handsets on a regional basis, they have provided no evidence that this would mitigate the exercise of market power that may result from the transaction. While AT&T suggests that regional managers have discretion to set prices for handsets on a regional basis, they have provided no evidence that this would mitigate the exercise of market power that may result from the transaction. Letter from AT&T Inc. and Deutsche Telekom AG (July 22, 2011).

now served),[178] and that the threat of competition/entry from Clearwire and LightSquared would deter the combined entity from exercising market power.[179] They also suggest that through roaming agreements, the regional providers in effect already have nationwide coverage that enables them to compete effectively with the nationwide providers.[180]

61. Opponents dispute these assertions, contending that the Applicants substantially overstate the competitive significance of the various regional providers, which together account for only a small percent of wireless subscribers. They argue that regional and smaller providers face various barriers and cannot constrain pricing by the nationwide providers in the same manner as T-Mobile for several reasons: regional providers' existing footprints generally are smaller; they lack the spectrum necessary to expand existing services (including to meet increased data demands) or enter new markets; some only provide prepaid services or serve niche markets; they lack access to the newest handsets available to nationwide providers; and they must rely on roaming, which cannot substitute for a nationwide network.[181] Opponents also dispute the Applicants' claims that Clearwire or LightSquared would provide the necessary competitive constraint.[182]

62. *Discussion.* We are skeptical of the Applicants' position that regional providers – firms with considerably less spectrum, much smaller footprints, and lower ARPU (average revenue per user) than T-Mobile, and facing difficulties with respect to various inputs (e.g., roaming and handsets, which we discuss in more detail below[183]) – would and could expand and compete effectively in the space now occupied by T-Mobile, while T-Mobile, with more spectrum, an extensive existing network and infrastructure, a larger scale that enables lower input costs and greater access to handsets, and a national brand, cannot be an effective competitor.[184] Rather, we conclude that, for several reasons, a regional

[178] *See* Public Interest Statement at 70-71, 78-94, 98-100 & Carlton Declaration at 54; Joint Opposition at 126-137; National Characteristics White Paper (filed July 20, 2011). Public Interest Statement at 78-94 & Carlton Declaration at 5–6; Joint Opposition at 134-135.

[179] *See* Public Interest Statement at 70, 78-94 & Carlton Declaration at 6. The Applicants also suggest that cable companies like Cox help constrain wireless competition as potential entrants. Since the transaction was submitted, Cox has announced that it would not be providing its own facilities-based wireless services. *See* Press Release, Cox Communications, "Cox Communications to Discontinue Cox Wireless Service, Effective March 30, 2012," http://cox.mediaroom.com/index.php?s=43&item=569 (last visited Nov. 20, 2011); Anton Troianovski, *Cox to Stop Offering Wireless Service*, WALL STREET JOURNAL (Nov. 17, 2011).

[180] *See* Public Interest Statement at 75 (noting that regional providers generally do not charge their customers roaming fees); National Characteristics White Paper at 11-17.

[181] *See, e.g.*, Letter from Grant B. Spellmeyer, Executive Director – Federal Affairs & Public Policy, U.S. Cellular, to Marlene H. Dortch, Secretary, FCC, Attachment entitled "Promoting Competition in a Consolidating Wireless Industry" at 2 (Sept. 1, 2011) ("significant constraints," when compared to nationwide providers, include lack of access to handsets, roaming, spectrum, and backhaul) (U.S. Cellular Sept. 1 *Ex Parte* Letter); Sprint Reply at 10-14, 28-39 & CRA Reply Declaration at 21-37, 54-72; Cincinnati Bell Petition at 18-34; Leap Petition at 12-28; MetroPCS and Ntelos Petition at 28-36; Public Knowledge Petition at 15; 22-37; RTG Petition at 16-26; Sprint Petition at 53-55 (and associated CRA Declaration); U.S. Cellular Comments at 2; *see also* Ad Hoc Telecommunications Users Committee Comments, Declaration of Lee Selwyn at 14-15.

[182] *See, e.g.*, Cincinnati Bell Petition at 22-23; Cox Petition at 12; Earthlink Petition at 22.

[183] There is additional discussion below on the potential for anticompetitive harms that could result with respect to the provision of roaming and the availability of handsets and other devices to regional and smaller providers. *See* Sections V.D.1 and V.D.4, *infra.*

[184] *See, e.g.*, Sprint Reply, CRA Reply Declaration at 66 (regional providers could not easily reposition themselves as they currently differ substantially from nationwide providers in key characteristics such as brand names and service offerings).

provider cannot practically replace the competition lost from the departure of T-Mobile, and thus counteract or deter the exercise of post-merger market power through repositioning or expansion beyond its footprint.[185]

63. As a group, these providers are significantly smaller than T-Mobile.[186] Moreover, the porting data suggests that few customers find their products to be the closest substitutes for those offered by the nationwide providers.[187]

64. To provide service comparable to a nationwide provider, and thus be able to compete effectively and prevent competitive harm, a regional provider would most importantly need to obtain a nationwide spectrum footprint and the resources to build it out. Regional and smaller providers face spectrum constraints that would hinder their ability to replace the current competitive constraint of T-Mobile or to deploy extensive broadband networks. For instance, while MetroPCS has deployed an advanced technology (LTE) in some cities, because of spectrum constraints it is currently unable to offer speeds that match those of other providers' LTE and HSPA+ networks,[188] and must limit its LTE deployment to small portions of its spectrum in many locations.[189] In general, MetroPCS, Leap, U.S. Cellular, and the other regional and small firms all have substantially less spectrum than T-Mobile. In only one of the top ten markets do Leap, MetroPCS and U.S. Cellular, the largest regional firms, have half as much spectrum combined as T-Mobile's spectrum holdings. Over the top 100 markets, T-Mobile has a weighted average spectrum holding of 54 megahertz compared to 11 megahertz, 11 megahertz and 4 megahertz for Metro, Leap and U.S. Cellular respectively. Combined, these three firms have a weighted average of less than half of T-Mobile and 25 percent of AT&T today.[190] Other non-nationwide providers such as Cincinnati Bell have even less spectrum.

65. The services offered by providers such as MetroPCS and Leap tend to attract a subset of

[185] *Cf. DOJ/FTC Horizontal Merger Guidelines* § 9.3 (entry by a single firm would be sufficient to counteract or deter the competitive effect of concern if it will "replicate at least the scale and strength of one of the merging firms").

[186] As of the fourth quarter of 2009, Leap's national market share (measured by revenue) was 1.5%, Metro's was 2.1%, and U.S. Cellular's was 2.5%, for a combined total of 6.1%. By the second quarter of 2011, their market shares were 1.6%, 2.6%, and 2.3% respectively, for a combined total of 6.5%, a gain of only 0.4 percentage points over 18 months. *See* UBS Investment Research, US Wireless 411, 17th August 2011. In contrast, T-Mobile had a market share of approximately 11% in the second quarter of 2011, nearly double the combined share of the regional and smaller firms.

[187] For example, the number of consumers porting their phone numbers from AT&T to all firms other than the four nationwide providers **[Begin Confidential Information]**

[End Confidential Information] While we recognize that our porting data may be less reliable for customers transferring between postpaid and prepaid services, correcting for this problem would not materially change the shares substantially.

[188] *See* ATTF-TMO-01145302 at 6 **[Begin Confidential Information]**

[End Confidential Information]

[189] Sam Churchill, *MetroPCS Moves to Voice over LTE*, dailywireless.org, Aug. 3, 2011, at http://www.dailywireless.org/2011/08/03/metropcs-moves-to-voice-over-lte/ (because of its need to split capacity between CDMA and LTE, MetroPCS's average download speeds is slower than many other LTE or HSPA+ services).

[190] *See Fifteenth Mobile Wireless Competition Report.*

customers who are more price sensitive, not too concerned by their more limited geographic scope, who have lower data usage rates than average, and who seem to have a lower willingness to pay for the latest handsets. These customers are unlikely to prefer the nationwide providers generally and, of particular relevance to analyzing unilateral effects, are unlikely to include those AT&T customers who have T-Mobile as their second choice (or vice versa).[191] **[Begin Confidential Information]**

[192] **[End Confidential Information]** These providers would likely need to substantially alter their existing business models and services to significantly constrain the nationwide providers. **[Begin Confidential Information]**

i. **[End Confidential Information]** The smaller providers would need to match the rest of the national providers' business model (e.g., by expanding their marketing nationwide) in order to provide a comparable competitive threat.[193]

66. Nor are we persuaded, based on the record before us, that other regional providers, such as U.S. Cellular, C Spire (formerly Cellular South), or Cincinnati Bell, which offer traditional post-paid services, are in a position to fill the competitive gap that would be left by the acquisition of T-Mobile by AT&T. These regional providers are long-time incumbents in their respective regions, and generally have not grown market share in recent years.[194] While their incumbency has enabled them to compete in their respective locales, this does not suggest that they would be able to replicate their success were they to expand into new areas.[195] Moreover, as discussed above, they too are spectrum constrained and thus face difficulties expanding their offerings even in their current markets. They also lack the scale and scope of T-Mobile, have difficulties in obtaining the newest handsets that help them compete for subscribers, and must rely extensively on roaming to offer nationwide services.

67. The Applicants contend that smaller and regional providers can expand their footprint easily through the use of roaming agreements with providers with network facilities. While roaming agreements enable smaller and regional providers to provide nationwide service to subscribers they serve on their own networks, roaming arrangements do not allow these providers to replicate the competitive position of a nationwide facilities-based provider. Roaming is often a costly input, requires that the providers obtain for their subscribers mobile devices technically compatible with the roamed-upon network, and limits the providers to offering service consistent with the capabilities of that network. Roaming agreements between two providers can be difficult to negotiate when there is limited mutual

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[191] We thus disagree with AT&T's claim that "no-contract service providers" are highly substitutable for the traditional contract service providers that can quickly adapt to fill any market gap T-Mobile would leave. *See* Public Interest Statement at 82-83.

[192] *See* ATTF-TMO-00775795 at 29 **[Begin Confidential Information]** **[End Confidential Information]**

[193] ATTF-TMO-01386580 at 3 (AT&T, "Wireless Evolution-Steering Team Review," Mar. 18, 2011); *see also* ATTF-TMO-00099901 (AT&T, "AT&T 2011 Mobility Consumer Market Kickoff") **[Begin Confidential Information]** **[End Confidential Information]**

[194] *See Fifteenth Mobile Wireless Competition Report*, Table 3 at 34; *Fourteenth Mobile Wireless Competition Report*, Table C-4.

[195] Thus, consistent with the Commission's decision in past merger orders, we are not persuaded by the Applicants' arguments that the fact that a provider such as U.S. Cellular, C Spire (Cellular South), or Cincinnati Bell in some major markets has a higher market share than a nationwide provider indicates that these providers can readily fill the nationwide competitive gap that would result from T-Mobile's exit. *See* National Characteristics White Paper at 3-5 and Exhibit 1.

interest – for instance when they have significantly different needs for their subscribers to roam on the other's network, or when they directly compete for the subscribers in a number of markets. Roaming service for the more advanced data roaming services also must be periodically re-negotiated (*e.g.*, to address changing needs and technologies, and market conditions). While the Commission has adopted rules to promote the availability of voice and data roaming through negotiated arrangements (as discussed more fully in Section V.D, below), those rules do not enable a smaller or regional provider to replace the competitive position of a nationwide facilities-based provider.[196]

68. Another way for a regional provider to increase its coverage would be to expand its facilities-based footprint significantly. To do so would require it to obtain (or already have) the necessary spectrum, build the necessary infrastructure (including renting space on cell towers or acquiring sites and building towers, obtaining and installing at those sites the equipment needed to offer a robust network, and securing backhaul[197]), be able to obtain and sell sophisticated handsets, and develop a retail network for signing up customers and distributing handsets in a large number of CMAs.[198] It most likely also would need to develop an extensive customer service operation and a national brand reputation.[199] Even if it were physically feasible and not prohibitively costly for it to do so, those tasks would likely take years to complete – so long as to prevent any such firm from substituting for T-Mobile in the foreseeable future.[200] For entry to counteract the competitive effect of concern, "the impact of entrants in the relevant market [must] be rapid enough that customers are not significantly harmed by the merger, despite any anticompetitive harm that occurs prior to the entry."[201] Moreover, AT&T's efficiency claims are inconsistent with its contention that a regional firm could readily obtain the necessary infrastructure nationally. That is, AT&T claims it cannot now build enough additional sites and obtain sufficient additional spectrum in a few localities to expand an existing and successful business. Yet AT&T simultaneously argues that the smaller providers would solve any competitive problem by installing entirely new networks over most of the country, a task that would require substantially more cell site construction and integration than AT&T's claimed requirements absent the transaction.

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[196] Thus, we are not persuaded by the Applicants' suggestions that because the regional providers offer their customer nationwide coverage through roaming, without charging their customers roaming fees, that roaming enables they a cost-effective means of competing with nationwide providers. *See AT&T-Centennial Order*, 24 FCC Rcd at 13938-39 ¶¶ 56-57 (rejecting AT&T's argument that, when evaluating the potential for anticompetitive unilateral effects in a particular market, the Commission should consider the ability of competitors in neighboring markets to serve customers in the market at issue through roaming; based on the evidence in the record, the Commission could not find that non-facilities-based services enabled through roaming agreements would be cost effective).

[197] Backhaul refers to the connections linking cell sites to wireline networks that carry wireless voice and data traffic for routing and onward transmission. Competitive issues in backhaul provision are discussed below.

[198] *See e.g.*, Sprint Reply at 10-13.

[199] *See* ATTF-TMO-00096304 at 7. **[Begin Confidential Information]**

). **[End Confidential Information]**; *Fifteenth Mobile Wireless Competition Report*, § III.D, Entry and Exit Conditions (costs of entry and expansion may include costs of acquiring spectrum licenses or spectrum leases, network coverage costs such as site acquisition and construction, backhaul, handset costs, and marketing and distribution costs). For similar reasons, expansion by multiple regional (or single CMA) providers would not be sufficient to solve a competitive problem created by this acquisition. *Cf. DOJ/FTC Horizontal Merger Guidelines* § 9.3 ("Entry by one or more firms operating at a smaller scale may be sufficient if such firms are not at a significant competitive disadvantage.")

[200] *See, e.g.*, Sprint Reply at 10-14 & CRA Reply Declaration at 21-37.

[201] *DOJ/FTC Horizontal Merger Guidelines* § 9.1.

69. Even repositioning limited to the markets they currently serve would require the regional and smaller providers to undertake many of the same investments discussed above, and would not be sufficient to replace the competition lost through the departure of a nationwide provider, and therefore would not counteract or deter a competitive problem created by AT&T's acquisition of T-Mobile in those markets. For similar reasons, we would not expect resellers and MVNOs to be able to counteract or deter a competitive problem in retail mobile wireless services through expansion, whether on their own or in conjunction with expansion or new competition by other firms.[202]

70. Finally, AT&T has argued that new facilities-based competition would come from Clearwire, which currently provides mobile data services and wholesale services in 74 CMAs, and LightSquared, which has announced plans to use its MMS/ATC authority to provide wholesale service to third parties nationwide. Clearwire is unlikely to solve a potential competitive harm problem in the mobile wireless services market because of its currently limited footprint and because it is majority-owned by an existing national provider, Sprint, which could complicate a potential Clearwire expansion. As noted above, LightSquared has not commenced any commercial service on a ground broadband network, does not plan to offer retail wireless services,[203] and is unlikely to provide a timely competitive constraint, even if it successfully enters as a wholesaler. Hence we do not expect competition from these firms to prevent the exercise of post-merger market power.

3. Coordinated Competitive Effects

71. AT&T's acquisition of T-Mobile also threatens to harm competition by making coordination among the sellers of retail mobile wireless services more likely and/or more effective. Coordinated effects arise when competing firms, on recognizing their interdependence, take actions "that are profitable for each of them only as a result of the accommodating reactions of the others."[204]

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[202] These firms purchase service at wholesale rates from facilities-based providers. Unless the firms selling wholesale services (often the nationwide providers) have an ability and incentive to expand output after the proposed transaction, as we find unlikely, it is also unlikely that they would set wholesale rates at a level that would allow resellers to create significant new competition in retail services. Commission rules do not require facilities-based providers to offer services for resale. *See* 47 C.F.R. § 20.12(b).

[203] *See supra* ¶ 40; *see also* LightSquared, What We Do, Operating Model at http://www.lightsquared.com/what-we-do/operating-model/ (last visited Nov. 27, 2011) ("LightSquared will operate a wholesale-only business model").

[204] *EchoStar-DirecTV HDO*, 17 FCC Rcd 20559, 20619 ¶ 152 (footnotes omitted); *see also DOJ/FTC Horizontal Merger Guidelines* § 7:

> Coordinated interaction includes a range of conduct. Coordinated interaction can involve the explicit negotiation of a common understanding of how firms will compete or refrain from competing. Such conduct typically would itself violate the antitrust laws. Coordinated interaction also can involve a similar common understanding that is not explicitly negotiated but would be enforced by the detection and punishment of deviations that would undermine the coordinated interaction. Coordinated interaction alternatively can involve parallel accommodating conduct not pursuant to a prior understanding. Parallel accommodating conduct includes situations in which each rival's response to competitive moves made by others is individually rational, and not motivated by retaliation or deterrence nor intended to sustain an agreed-upon market outcome, but nevertheless emboldens price increases and weakens competitive incentives to reduce prices or offer customers better terms. Coordinated interaction includes conduct not otherwise condemned by the antitrust laws.
>
> The ability of rival firms to engage in coordinated conduct depends on the strength and predictability of rivals' responses to a price change or other competitive initiative. Under some circumstances, a merger can result in market concentration sufficient to strengthen such responses or enable multiple firms in the market

(continued....)

72. *Position of the Parties.* The Applicants argue that this transaction would raise no prospect of anticompetitive coordination because the U.S. wireless market is characterized by many heterogeneous firms with different product offerings and diverse market positions, strong growth in demand, rapid technological change, and susceptibility to disruption by regional "mavericks" such as MetroPCS or Leap. They claim that any attempt at successful coordination would be extremely unlikely.[205] They further claim that T-Mobile does not play the role of a maverick.[206]

73. Many opponents disagree, and are concerned that if the proposed transaction were approved, the post-merger market would be vulnerable to coordination, particularly because of the reduction in the number of significant competitors and the high national market share that would be held by the two largest firms, AT&T and Verizon Wireless.[207] These opponents argue that this market structure would, in all likelihood, lead to increased prices, less consumer choice, and less innovation.[208] In particular, they contend that post-transaction AT&T and Verizon Wireless would likely accommodate each other's price increases, even without direct agreement, harming consumers.[209] In addition, opponents assert that smaller providers would have neither the ability nor the incentive to deter coordination,[210] and the proposed transaction would increase the risk of coordinated effects by reducing the number of national participants from four to three.[211] Many also assert that T-Mobile serves as a maverick in the market.[212]

74. *Discussion.* Merger law, in part, "rests on the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and achieve profits above competitive levels."[213] As the courts have stated, "[t]he combination of a concentrated market and barriers to entry is a recipe for price coordination."[214] That coordination need not be explicit, and typically is not. But "[t]acit coordination is feared by antitrust policy even more than express collusion" as it is harder to detect and to prevent.[215] Accordingly, "[i]t is a central object of merger policy to obstruct the creation or reinforcement by merger of such oligopolistic market structures

(Continued from previous page)
to predict them more confidently, thereby affecting the competitive incentives of multiple firms in the market, not just the merged firm.

[205] *See* Public Interest Statement at 95-96; Carlton Declaration at 70-72, ¶ 147-152; Joint Opposition at 141-42. The Applicants also state that the competitive conditions of the wireless market are the exact opposite of the conditions in which the courts, the Commission, and other regulatory authorities have found potential for coordination. *See* Joint Opposition, at 139-140.

[206] Joint Opposition at 141-42.

[207] *See, e.g.,* AAI Comments at 11; RTG Reply at 8, RTG Petition at 15; *see also* Media Access Project et al. Reply at iii, 3; Sprint July 11, 2011 *ex parte* at 8.

[208] *See* Sprint Petition, at i; *see also* Public Knowledge Petition at 37; Free Press Petition at 6; Media Justice Petition at 9, 17; Rural Telecommunications Petition at 48.

[209] *See* MetroPCS and Ntelos Petition at 50; Sprint Petition at 30.

[210] *See* Sprint Petition at ii; Free Press Petition at 30-31.

[211] *See* AAI Comments at 11.

[212] *See* RTG Reply at 8, RTG Petition at 15; *see also* Media Access Project et al Reply at iii, 3; Sprint July 11, 2011 *ex parte* at 8.

[213] *FTC v. PPG Industries*, 798 F.2d 1500, 1503 (D.C. Cir. 1986); *accord United States v. H&R Block,* slip op. at 60.

[214] *FTC v. Heinz*, 246 F.3d at 724.

[215] *FTC v. Heinz*, 246 F.3d at 725 (quoting 4 Phillip E. Areeda, Herbert Hovenkamp & John L. Solow, *Antitrust Law* ¶ 901b2, at 9 (rev. ed. 1998)).

in which tacit coordination can occur."[216]

75. Coordinated effects are of particular concern here because the retail mobile wireless services market, being relatively concentrated and hard to enter, appears conducive to coordination. In addition, T-Mobile plays a disruptive role in this market to the benefit of buyers,[217] and, thus, likely constrains coordination.[218] An acquisition eliminating a disruptive firm in markets vulnerable to coordinated conduct is likely to cause adverse coordinated effects.[219]

76. The retail mobile wireless services market would be more vulnerable to coordination post-transaction.[220] Features of this market make it likely that the remaining three nationwide providers would be able to reach a consensus on the terms of coordination (by identifying a mutually agreeable coordinated price), deter cheating on that consensus (by undercutting the coordinated price to steal high-margin business from its rivals), and prevent new competition in this market.[221] Because these providers offer the same plans and charge the same prices nationwide,[222] increased coordination would most likely take the form of raising the level of prices.

77. Reaching a consensus[223] would be facilitated by the small number of firms and the use of national prices and service plan offerings by most providers across most geographic markets. The transparency of prices (firms post and publicize them to market their plans), small size of individual retail

[216] *FTC v. Heinz*, 246 F.3d at 725 (quoting Phillip E. Areeda, Herbert Hovenkamp & John L. Solow, *Antitrust Law* ¶ 901b2, at 9 (rev. ed. 1998)).

[217] See discussion of T-Mobile's role as a "disruptor" in Section V.A.2., *supra.*

[218] *See generally DOJ/FTC Horizontal Merger Guidelines* § 2.1.5.

[219] *See DOJ/FTC Horizontal Merger Guidelines* §§ 2.1.5, 7.1; *see also* ABA Section of Antitrust Law, *Antitrust Law Developments (6th^th ed. 2007)* at 356 (*Antitrust Law Developments (Sixth)*) (citing *1992 Horizontal Merger Commentary* at 24).

[220] *See Antitrust Law Developments (Sixth)* at 356 (*quoting DOJ/FTC Horizontal Merger Guidelines* at § 7.1, describing the range of types of coordination including tacit agreements and conscious parallel behavior).

[221] *See DOJ/FTC Horizontal Merger Guidelines* at § 7.2. Several commentators express concern about parallel accommodating conduct in both retail services and enterprise markets. *See Antitrust Law Developments (Sixth)* at 356; *see also* Sprint Petition at 30-31, CRA Declaration at 8, ¶¶ 172-173; MetroPCS and Ntelos Petition at 50. Sprint's economic experts developed a methodology for assessing the impact of the merger on the likelihood of coordination through parallel accommodating conduct, which they term the Coordination Price Pressure Index (CPPI), and through application of that methodology conclude that this merger raises the risk of coordination. CRA Reply at ¶ 98; *see also* Sprint Reply at 26. Because we conclude that post-merger coordination is likely by tacit agreement, i.e. reaching a common understanding enforced through the detection and punishment of cheating, we have not evaluated whether conscious parallelism, an alternative coordinated effects theory of harm, also applies to this transaction, but recommend that it be referred for further development at hearing.

[222] *See Antitrust Law Developments (Sixth)* at 356 (6th ed. 2007). For examples of such practices by mobile wireless carriers, *see e.g.*, Sprint Petition at 30-31 & N. 112 (comparing May 28, 2011 plans for Verizon and AT&T and noting that "AT&T and Verizon offer identical Individual rates for 450-minute, 900 minute, and unlimited call plans and both have a $20 unlimited text messaging add-on available."). In its Petition to Deny, Sprint explains how it "prices exclusively on a nationwide basis..." Sprint Petition at 20-21; *see also* T-Mobile-SunCom Public Interest Statement, at 24 in WT Docket No. 07-237 (2007) ("T-Mobile's retail").

[223] A coordinated consensus need not involve conduct that could be challenged as an anticompetitive agreement in violation of Section 1 of the Sherman Act. *See DOJ/FTC Horizontal Merger Guidelines* § 7*; see also Antitrust Law Developments (Sixth)* at 356.

transactions relative to the size of the market, and the common use of contracts by postpaid customers,[224] make it likely that cheating on a coordinated consensus would be detected rapidly and matched (or otherwise punished).[225] Indeed, the nationwide providers pay close attention to each other's prices and quickly detect, evaluate, and, if they choose, respond to pricing moves by rivals.[226] Cheating would be deterred because a firm that expects its rivals to respond quickly to a price cut, as by matching, is unlikely to find it profitable to undercut a high coordinated price. Finally, new competition that would undermine or deter coordinated price is unlikely for reasons discussed in connection with analyzing the possibility that entry or expansion would preclude or counteract unilateral effects.[227]

78. By acquiring T-Mobile, AT&T would likely eliminate a disruptive firm from the retail mobile wireless services market. As previously described, T-Mobile is a firm that acts as a disruptive force in wireless industry competition – in setting prices, introducing pricing innovations, and bringing to market new products and improved technologies.[228] Moreover, T-Mobile has an economic incentive to play this role: it would benefit less from coordination than its significant rivals (the nationwide competitors) and it can expand output inexpensively.[229] Among the four nationwide providers of retail mobile wireless services, T-Mobile has the lowest national market share,--both by subscribers and by revenues--and the lowest share in **[Begin Confidential Information]** **[End Confidential Information]** CMA markets in which it competes.[230] This structural characteristic suggests that T-Mobile would benefit less from coordinated pricing than would its significant rivals. At the same time, T-Mobile's ability to expand output inexpensively is related to its investments in providing high-speed services. Its advanced broadband network, relying on HSPA+ (42 Mbps) technology, gives it an

[224] Post-paid customers account for nearly three-fourths of retail wireless subscribers, and a higher percentage for AT&T and Verizon. *See* US Wireless 411, UBS Investment Research, 17 August 2011. The vast majority of postpaid customers have a contract (often for two years), and such contracts commonly impose early termination fees. Under such circumstances, a competitor cannot expect to induce much switching immediately by unexpectedly lowering price, giving rivals time to observe and respond (for example by matching the price decrease).

[225] *See generally Antitrust Law Developments (Sixth)* at 356-57 and accompanying notes.

[226] *See* ATTF-TMO-00456568 **[Begin Confidential Information]**

[End Confidential Information]; *see also* ATTF-TMO-00504723 at 11 **[Begin Confidential Information]**

[End Confidential Information]; Sprint Petition, Attachment A., Joint Declaration of Steve Salop et al. CRA, (June 20, 2011) at 12 ("On Feb 19 2008 Verizon began to offer an unlimited calling plan for the first time starting at $99.99. On the same day AT&T and T-Mobile followed with their own $99.99 plans; within a few weeks Sprint followed.").

[227] See discussion in Section V.B.2 *supra*.

[228] See discussion in Section V.A.2 *supra*.

[229] A firm has an incentive to act as a disruptor when the profits it would make from acting to increase output through disruptive behavior exceed the profits it would make by supporting the coordinated outcome. Its profits from increasing share are related to its ability to expand output inexpensively, and its profits from supporting the coordinated outcome (the benefits it obtains from coordination) will generally be related to its market share (absent mechanisms by which the coordinating firms can funnel extra payoffs to firms that would otherwise have an incentive to disrupt their coordinated arrangement). *See generally*, Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 NYU L Rev 135, 175-77 (2002) (setting forth factors tending to suggest a firm will act as a maverick).

[230] Calculated from Numbering Report/Utilization Forecast (NRUF) December 2010 data. Precisely, in CMAs where all four nationwide operators are operating with at least a 2 percent market share, T-Mobile has the lowest market share of any carrier (the top 4 plus any others).

advantage in network speed and quality over certain other nationwide firms today,[231] and the ability to upgrade inexpensively[232] (in particular, without the cost and difficulty of replacing radio equipment at each cell site).[233]

79. The following comparison of strategic plans illustrates the difference between AT&T's incentives as a provider that has little incentive to be disruptive and T-Mobile, which has more incentive to be disruptive. **[Begin Confidential Information]**

80.

[End Confidential Information] The transaction would eliminate T-Mobile's competition, which would have disrupted AT&T's plans.[240]

81. By contrast, other nationwide providers would not be expected to play a disruptive role in retail mobile wireless services competition. AT&T and Verizon Wireless, the largest nationwide

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[231] Kevin Fitchard, *T-Mobile's 42 Mbps HSPA+: Fast, but It's Still No LTE,* GigaOm, Nov. 28, 2011, at http://gigaom.com/broadband/T-Mobiles-42-mbps-hspa-fast-but-its-still-no-lte/ (citing upload and download speed tests data from Root Metrics).

[232] *See e.g.*, **[Begin Confidential Information]**

AT&T"). **[End Confidential Information]**

[233] **[Begin Confidential Information]**

[End Confidential Information]

[234] ATTF-TMO 00073918 at 2 (AT&T, "Contents," Feb. 16, 2011).

[235] *See* ATTF-TMO-00898170 at 4 (AT&T, "Wireless Update, Ralph de la Vega." Dec. 17, 2010). **[Begin Confidential Information]**

[End Confidential Information]

ATTF-TMO 00073918 at 14 (AT&T, "Contents," Feb. 16, 2011).

[237] *See* DTTM-FCC-00149141 at 1 **[Begin Confidential Information]**

[End Confidential Information]

[238] *See* DTTM-FCC-00149141 at 19 **[Begin Confidential Information]**
[End Confidential Information]

[239] ATTF-TMO 00073918 at 9-10 (AT&T, "Contents," Feb. 16, 2011) **[Begin Confidential Information]**

[End Confidential Information]

[240] We make no judgment regarding the relative merits of different pricing plans and "unlimited" or "all you can eat" pricing.

providers, have substantially more to gain from coordination, because of their higher market shares (nationwide shares in excess of 30 percent compared with T-Mobile's 11 percent).[241] In addition, their similar structures and positions in the market suggest they would have similar preferences regarding how the market evolves. For example, AT&T and Verizon have the two most extensive wireless networks, and affiliated wireline operations that they use to offer wireline voice, data, and video services.[242] They have a similar mix of spectrum holdings, and are the two largest holders of spectrum below 1 GHz.[243] They are also the first two providers to roll out (or with plans to roll out) nationwide LTE networks. They also offer the largest variety of handsets, are the largest providers of roaming services and are the providers of backhaul services to wireless firms.[244]

82. Beyond these structural similarities, the two firms have behaved in parallel ways, a further indication that anticompetitive coordinated conduct would be even more likely post-merger.[245] They appear to have adopted parallel (and high-priced) strategies in setting the prices and features of their service plans. [246] They have also made parallel decisions making expansion by smaller competitors or entry by new providers more difficult.[247] AT&T's review of the competitive landscape indicates that

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[241] *See, e.g.*, Sprint Opposition, Exhibit A., Table 4.

[242] *See* ATTF-TMO-00483586 at 2 (AT&T, "AT&T 2010-2013: Competitive Landscape," Jan. 29, 2010) **[Begin Confidential Information]** (

(**" [End Confidential Information]**

[243] *See* ATTF-TMO-00146281 at 3 **[Begin Confidential Information]** (

[End Confidential Information] *See, e.g.*, ATTF-TMO-00070261 at 31-35; 62-65 **[Begin Confidential Information]** (

(**[End Confidential Information]** *See, e.g.*, ATTF-TMO-00070261 at 25.

[244] **[Begin Confidential Information]**

[End Confidential Information]

[245] *See United States v. H&R Block,* slip op. at 62; *DOJ/FTC Horizontal Merger Guidelines* § 7.2 ("Coordinated conduct can harm customers even if not all firms on the relevant market engage in the coordination, but significant harm normally is likely only if a substantial part of the market is subject to such conduct.").

[246] *See* ATTF-TMO-00504723 at 11 [(AT&T, "Disrupter Analysis," Mar. 30, 2010) **[Begin Confidential Information]**

[End Confidential Information] ATTF-TMO-00485586 at 38 (AT&T, "AT&T 2010-2013: Competitive Landscape," Jan. 29, 2010) (comparing the following plans: postpaid unlimited voice, postpaid unlimited voice and text, postpaid unlimited voice, text and web).

[247] For instance, in adopting data roaming requirements, the Commission noted some of the difficulties experienced by parties seeking to enter into roaming agreements with AT&T and Verizon Wireless. *Data Roaming Order* at ¶¶ 24-27; *see also supra.* As discussed elsewhere in this report, we have evidence before us that both AT&T and Verizon Wireless have been less willing to sell wholesale services than the other two nationwide providers, T-Mobile and Sprint. *See, e.g.,* Cablevision Comments at 10. Similarly, we note that both AT&T and Verizon Wireless's affiliate, incumbent local exchange carriers (ILECs) in different parts of the country, may have similar incentives when it comes to providing backhaul and special access services to competing wireless providers. Further, based on their scope and scale, they share advantages when it comes to obtaining advanced and popular handsets and devices, potentially excluding competitors from access to a sufficient range of cutting edge devices that could be important for competition.

AT&T and Verizon Wireless **[Begin Confidential Information]** re

[End Confidential Information]

83. The other national rival, Sprint, is, we believe, on balance more likely to accede to the coordinated exercise of post-merger market power rather than undermining a coordinated outcome through more aggressive competition. First, the proposed transaction would likely increase Sprint's market share, as Sprint could reasonably expect to obtain some of T-Mobile former customers when they decide to upgrade service or if they otherwise prefer not to subscribe to an AT&T service plan.[251] Sprint may have a particular advantage in attracting T-Mobile's customers: retail subscribers view Sprint services as closer substitutes for T-Mobile's services than Verizon and AT&T's services.[252] If Sprint's share grows with the proposed transaction, Sprint would have more to gain from coordination than before. Moreover, AT&T's acquisition of T-Mobile may lessen Sprint's ability to expand output inexpensively. The price Sprint must pay for backhaul services, a key input required to expand services, may rise as a result of the acquisition.[253] As discussed below, moreover, Sprint's costs of obtaining other important inputs, handsets and roaming, may also rise.[254] In addition, over time, after legacy T-Mobile customers have switched to new plans from AT&T or another provider, Sprint can expect to experience higher costs of customer acquisition, as it must look mainly to AT&T and Verizon, which have historically lower customer churn rates than T-Mobile. With more to gain from coordination after the proposed transaction, and higher costs of expanding output, Sprint would be less likely to act as a disruptive competitor post-merger and thus less likely to prevent coordinated competitive effects in a market vulnerable to coordination.[255]

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[248] ATTF-TMO-01385782 at 11 (AT&T, "AT&T Mobility and Consumer Markets, Operating Plan 2010-2012") **[Begin Confidential Information]** (s

n. **[End Confidential Information]** *See* ATTF-TMO-00490818 at 5 **[Begin Confidential Information]**

[End Confidential Information]

[249] VZW0001371 **[Begin Confidential Information]** (

[End Confidential Information]

[250] *Fourteenth Mobile Wireless Competition Report*, ¶¶ 91-92

[251] **[Begin Confidential Information]**

[End Confidential Information] *See generally* FCC-ATT-00019081 (AT&T, "Project Auto: Mercury Transaction- Executive Briefing," Mar., 17, 2011).

[252] Although Sprint and T-Mobile both offer nationwide service, they have smaller facilities-based footprints than AT&T and Verizon and some customers view them as having lower quality-adjusted service as a result. But even if those AT&T's customers that see T-Mobile as their second choice tend to prefer Sprint as their third choice, nothing in the record suggests that they view the services of T-Mobile to Sprint as closer substitutes than the services of AT&T and T-Mobile at current prices.

[253] *See infra* Section IV.D.3.

[254] *See infra* Sections IV.D.1, 2, and 4.

[255] If the merger would result in lessened competition and lead to higher prices, Sprint and other rivals to the merging firms might appear to benefit financially, and for that reason not have an incentive to take the position that many including Sprint have advocated, that the FCC should decline to approve it. We do not make that inference any more than we would infer that the merger allows AT&T to exercise market power from the fact that AT&T (continued....)

84. Finally, while smaller regional providers might have an incentive to be disruptive, they likely lack the ability. The costs and difficulties facing regional and small providers in expanding outside their current footprints, and their lack of a nationwide facilities and brand reputation, limit their ability to constrain post-merger coordination. In addition their current business plans do not focus on the national providers' core customers. Thus, they would unlikely provide much of a competitive constraint on larger providers' coordinated interaction.[256]

C. Enterprise and Government Wireless Services

85. The Applicants claim that the proposed transaction would not harm competition relating to enterprise and government wireless services because AT&T and T-Mobile are not close competitors for this business.[257] Several opponents disagree and argue that the Commission should analyze services sold to enterprise customers.[258]

86. Consistent with previous Commission determinations, we analyze enterprise and government services within the mobile broadband services product market.[259] Based on the record evidence discussed below, we analyze the potential competitive effects of the proposed transaction on the

(Continued from previous page)
proposed it, and would profit if that is the result. Sprint and other rivals could have incentives to oppose the transaction even if they thought it would lead to higher prices. They might, for example, not expect to benefit on net from an anticompetitive increase in price because the merged firm would take actions that would raise their costs or otherwise exclude them (as Sprint has argued in this proceeding). Or they might expect that their opposition would make it more likely that the Commission would ultimately approve the transaction with conditions (such as asset divesitures) that would favor them. AT&T, in turn, may have proposed the transaction out of the expectation of achieving market power (that would harm consumers), the expectation of achieving pro-competitive efficiencies (that would benefit consumers) or the expectation of achieving financial benefits or cost savings that would accrue to shareholders but not consumers. Hence we cannot make a judgment as to motive without first analyzing the likely competive outcome based on the facts in our record. Like any fact-finder, we must rely on information obtained from interested parties, review that information (and any omissions) with care, and test its credibility (as we have sought to do here). We also note that our record contains information from a wide range of industry participants unavailable to any firm individually (to the extent our protective orders keep it from firm executives). For that reason, we may be in a better position to learn about competitive conditions than any firm individually.

[256] Many commenters take a similar view. *See* MetroPCS Petition at 50; Center for Media Justice et al Petition to Deny at 41; Public Knowledge Petition to Deny at 34, 36-37; Sprint Petition at ii, 32-33; *See* Sprint Reply, at 20; Free Press at 30-31, 36; Free Press Reply at 23; MetroPCS Reply at 33.

[257] The Applicants contend that T-Mobile has a limited share of the enterprise business, focuses on smaller accounts and sales to individual employees, and has not acquired the resources necessary to deliver some services and functionality that larger buyers in this segment typically desire. *See* Public Interest Statement at 102; Enterprise Paper Final 7-26-11 – Highly Confidential, at 8-9; *see also* Christopher Declaration, ¶ 25; Joint Opposition, at 192; Brodman Reply Declaration, ¶¶ 5, 7; Peters Reply Declaration, ¶¶ 2-3.

[258] *See, e.g.*, AAI Comments at 7; Sprint Petition at 15; Public Knowledge Petition at 22 (also citing AT&T Inc. and Bell South Corporation, Application for Transfer of Control, *Memorandum Opinion & Order*, 22 FCC Rcd 5662, 5698 ¶ 64 (2007); Sprint Petition at 16 (arguing that T-Mobile tends to be the lowest bidder for enterprise sales and is a particularly close competitor to AT&T for international travelers, as both use the GSM technology used in most of Europe). .

[259] *See, e.g.*, *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17470 n.198; Applications of Nextel Communications, Inc. and Sprint Corporation For Consent to Transfer Control of Licenses and Authorizations, WT Docket No. 05-63, *Memorandum Opinion and Order,* 20 FCC Rcd 13967, 13983 ¶ 38, 13986 ¶ 43 (2005) (*Sprint-Nextel Order*); (using hypothetical monopolist test, and finding a separate market for residential and enterprise services); *Cingular-AT&T Wireless Order,* 19 FCC Rcd at 21558 ¶¶ 73-74 (same).

sale of enterprise and government services.[260] Further, based on the record, we conclude that we should analyze this market on a nationwide basis.[261]

87. Enterprise and government customers purchase mobile wireless services in a different way from retail customers. Some enterprise and government customers select a supplier and negotiate rates through a bidding process, often beginning with formal Requests for Proposals (RFPs).[262] Others may simply obtain a firm-wide service plan through negotiation with a provider.[263] They typically seek to purchase nationwide (or national plus international) service from a single provider to serve employees located in diverse CMAs, many of whom travel throughout the United States or worldwide. Because of these market features, enterprise and government wireless services customers would generally not substitute to consumer retail services in response to a small price increase.

88. The participants in this market include primarily the four nationwide providers of retail mobile wireless services: AT&T, T-Mobile, Verizon, and Sprint. These four providers are the only firms with the requisite nationwide infrastructure to economically provide the services that these customers demand.[264] They are also often the only bidders on the vast majority of RFPs issued by enterprise and government users for mobile voice and broadband service in the United States.[265]

89. Although T-Mobile has the smallest share of this business among the nationwide providers, it is a significant market participant. T-Mobile serves approximately **[Begin Confidential Information]** **[End Confidential Information]** subscribers through business sales, accounting for more than **[Begin Confidential Information]** **[End Confidential Information]**

[260] It may be appropriate to define a separate market for each customer that negotiates individually through a bidding process. Consistent with the Merger Guidelines, we have aggregated those customers, and analyze the consequences of the transaction for them as a group. *DOJ/FTC Horizontal Merger Guidelines* § 4.1.4.

[261] Had we defined each customer that negotiates individually through bidding as a separate market, we would have defined each customer location as a market. *DOJ/FTC Horizontal Merger Guidelines* § 4.2.2. Because we have aggregated those customers, we define the geographic market as the region into which sales are made, *i.e.*, the United States.

[262] *See* submitted RFP data; *see also* Sprint Petition, at 16.

[263] *See* DTTM-FCC-00059228 **[Begin Confidential Information]** **[End Confidential Information]** DTTM-FCC-00275768 at 9 and 12 **[Begin Confidential Information]** **[End Confidential Information]**

[264] Many enterprise and government consumers are only willing to deal with providers that employ more tailored ordering and billing systems than those used to serve retail customers, limiting their possible suppliers to the nationwide firms. *See* DTTM-FCC-00032912 at 5 **[Begin Confidential Information]** **[End Confidential Information].** DTTM-FCC-00088707 **[Begin Confidential Information]** **[End Confidential Information].** Providers without nationwide infrastructure cannot economically service nationwide customers using roaming. The nationwide providers market to enterprise and government customers with a specialized sales force and employ different advertising and sales strategies than they do for retail customers. *See generally* DTTM-FCC-00032912 at 3 **[Begin Confidential Information]** **[End Confidential Information]**; *see also* DTTM-FCC-00213482 **[Begin Confidential Information]** **[End Confidential Information]**

[265] *See* Sprint Petition at 25; *see also* Leap Wireless Petition at 9-10; USA Mobility Comments at 4. The bidding data submitted by Sprint ("RFP Response Data – April09 to current") show that for a minority of contracts, non-domestic providers (*e.g.*, Bell Canada) have also submitted bids. There is no evidence to suggest, however, that the non-domestic providers were offering to provide domestic mobile voice/data service or that they had partnered with a domestic provider other than the four nationwide providers.

in annual revenues.[266] Of this, approximately **[Begin Confidential Information]** **[End Confidential Information]** is earned on sales to enterprises with over 2,000 employees and government and multinational corporations.[267] T-Mobile estimates that it accounts for **[Begin Confidential Information]** **[End Confidential Information]** percent of revenues among mid- to large-enterprise customers.[268] Moreover, its prices have been competitive and it has recently won some significant enterprise contracts on the basis of price.[269]

90. We first assess market concentration and the increase resulting from this acquisition. While different providers use different definitions for small, medium, and large business customers, they do calculate (internally) market shares for the competitors in various segments. We use these shares to calculate HHIs. Based on AT&T's share estimate in the "All Business Segments,"[270] the proposed transaction would cause the HHI for the enterprise and government segment to rise by **[Begin Confidential Information]** **[End Confidential Information]**.[271] These statistics are not surprising: as discussed, the four nationwide providers dominate the enterprise and government market, and the proposed transaction would reduce the number of potential providers from four to three. Thus, post-transaction concentration would be high and the concentration level would increase

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[266] *See* DTTM-FCC-00210717 at 4 **[Begin Confidential Information]** **[End Confidential Information]**

[267] *See id.*

[268] *See* DTTM-FCC-00166536 **[Begin Confidential Information]** **[End Confidential Information]** DTTM-FCC-00210717 at 4, 17, 41, 43 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00211611**[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00088707 **[Begin Confidential Information]** **[End Confidential Information]** In the context of these internal T-Mobile documents, small business is defined as firms employing 0–49 employees. Two additional segments are defined as 50-1500 employees, and more than 500 employees.

[269] **[Begin Confidential Information]** **[End Confidential Information]**. *See* ATTF-TMO-01267868 **[Begin Confidential Information]** **[End Confidential Information]**. *See* ATTF-TMO-01271384 **[Begin Confidential Information]** **[End Confidential Information]** *See* ATTF-TMO-00403375 at 2 and 12 **[Begin Confidential Information]** **End Confidential Information]** *See* ATTF-TMO-01086661 at 24 **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-01409030 **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-01404040 **[Begin Confidential Information]** **[End Confidential Information]** and ATTF-TMO-01410734 **[Begin Confidential Information]** **[End Confidential Information]**

[270] As defined by AT&T, the All Business Segment (or ABS) includes global enterprise, wholesale and government, and the small business and alternate channels. *See* ATTF-TMO-01086661 at 25-28 **[Begin Confidential Information]** **[End Confidential Information]**

[271] *See* ATTF-TMO-01086661 at 25 **[Begin Confidential Information]** **End Confidential Information]** *see also* DTTM-FCC-00032912 **[Begin Confidential Information]** **[End Confidential Information]**

substantially. These results are robust to the use of shares of different segments and to estimates of other providers.[272]

91. In analyzing the potential competitive harms, we focus on those enterprise and governmental customers who purchase mobile wireless services through a bidding process. While not all enterprise customers purchase through RFPs, the Applicants have submitted RFP data in the record. Further, as AT&T has claimed that T-Mobile is not suited to serve large enterprise customers,[273] this data is relevant to assessing this claim. In a bidding setting the transaction will keep the combining entity from bidding against each other, reducing competition. The reduction in competition from allowing AT&T to acquire T-Mobile is most likely to harm buyers that viewed the merging firms as extremely close substitutes, with the second choice firm having a clear advantage over less preferred suppliers.[274] Accordingly, the size of the competitive harm is likely to be related to the frequency with which the merging firms bid against each other.[275]

92. We analyzed the frequency with which T-Mobile and AT&T responded to the same RFPs through a data set constructed from information submitted by the national providers.[276] We limited our analysis to RFPs seeking bids for wireless services only, thus excluding RFPs that also sought wireline service.[277] These data show that T-Mobile bid on **[Begin Confidential Information]** **[End**

[272] **[Begin Confidential Information]** **[End Confidential Information]**

[273] *See,* Letter from Richard Rosen, Counsel for AT&T Inc. and Nancy Victory, Counsel for Deutsche Telekom AG, July 26, 2011.

[274] *DOJ/FTC Horizontal Merger Guidelines* § 6.2.

[275] *DOJ/FTC Horizontal Merger Guidelines* § 6.2. The competitive harm would also likely be related to the frequency with which one merging firm won and the other was runner-up, but the data available in our record does not permit us to analyze that question.

[276] We asked these firms for information concerning their responses to RFPs from enterprise and government customers. *See, e.g.,* WT Docket No. 11-65, Information and Discovery Requests for Third Parties, Attachment B Table – Bidding. In response, Sprint provided detailed information about 1150 RFPs. ("RFP Response Data – April09 to current".) The data submitted by AT&T (FCC-ATT-00033989), Verizon Wireless ("RFP – HQ.xls") and T-Mobile (Item47_Bidding_v2.csv) were not sufficiently detailed to permit an analysis that would relate variation in bids to the number and identity of bidders. For example, little detail was provided on the identity of firms who bid, the amount bid, or the winner of the contract. For example, for the majority of RFPs that AT&T provided information on, the status of the proposal was classified as "decision pending", with no information on the identity or number of any other bidders, and very little information on who won the contract. For the majority of RFPs that T-Mobile provided information on, although number of lines and contract value were often provided, again, there was very little information on the identity of rival bidders. Verizon Wireless provided very little information, save for the name of the enterprise and whether a bid was submitted. Of the RFP data submitted to the Commission, no opportunities were identified that included Leap, MetroPCS or U.S. Cellular. Sprint analyzed an additional dataset "salesforce.com", where Leap, MetroPCS and U.S. Cellular were identified as rivals in opportunities that comprised **[Begin Confidential Information]** **[End Confidential Information]** of the total value of all salesforce.com opportunities that were responded to by Sprint. *See* Sprint Reply Declaration at ¶ 87.

[277] The contracts excluded for this reason accounted for 18 percent of the total number of proposals in our sample. Unless the buyers seeking combined contracts are willing to split their contracts into separate wireless and wireline pieces, they may only have one practical alternative, either Verizon or AT&T (depending on which firm's wireline footprint the buyer's facilities are located), as only those providers can supply both wireline and wireless services.

Confidential Information] percent of the contracts.[278] These were often large contracts: the contracts on which all four national providers bid had an average value more than 150 percent of the value of those in which only the three firms other than T-Mobile bid.[279]

93. These data also demonstrate that T-Mobile and AT&T commonly compete against each other for the same large enterprise customers. AT&T and T-Mobile both submitted bids in response to RFPs for contracts worth **[Begin Confidential Information]** **[End Confidential Information]** percent of the total dollar volume we analyze.[280] AT&T's documents confirm that T-Mobile competes against it for large enterprise contracts.[281] Its revenue mix, discussed above, indicates they have been able to compete successfully for larger customers in this market. In summary, our analysis reveals that T-Mobile has a competitive presence in the national market for enterprise and government services. The record suggests that the proposed transaction between AT&T and T-Mobile is likely to lead some enterprise and government buyers to pay more for mobile wireless services than they would absent the proposed transaction.

94. Further, T-Mobile's competitive influence in this market could increase in the future absent the proposed transaction. The firm recently concluded that there was an opportunity to improve its market share and was planning to act as a disruptive competitor by targeting the enterprise and government market.[282] The company planned to **[Begin Confidential Information]**

[278] This percentage represents **[Begin Confidential Information]** **[End Confidential Information]** of 817 RFPs. Of the 1150 RFPs in the Sprint data, the most comprehensive set of responses to our request for information, 203 involved bids for both wireless and wireline service and 130 did not contain information regarding the bidders, leaving 817 RFPs for Commission staff to analyze.

[279] There were **[Begin Confidential Information]** **[End Confidential Information]** RFPs listing bids from all the four nationwide providers, with an average contract value of $2.55 million, and **[Begin Confidential Information]** **[End Confidential Information]** RFPs listing bids from only AT&T, Verizon Wireless and Sprint, with an average contract value of $1.6 million.

[280] *See* CRA Reply Declaration, ¶¶ 85-86. Combining the RFP data with a sales database it uses ("salesforce.com"), Sprint concludes that T-Mobile was a bidder for contracts accounting for **[Begin Confidential Information]** **[End Confidential Information]** of the total value of all bidding opportunities, and that when T-Mobile bid, AT&T was also a bidder for contracts that represented **[Begin Confidential Information]** **[End Confidential Information]** of the value.

[281] *See e.g.*, ATTF-TMO-01142322 (showing T-Mobile as a competitor for the following business accounts: **[Begin Confidential Information]** **[End Confidential Information]**

[282] *See* DTTM-FCC-00032912, at 5 **[Begin Confidential Information]**

[End Confidential Information]

[283] *See* DTTM-FCC-00210717, at 7, 16, 23, 26-31, 43, 45 **[Begin Confidential Information]** **[End Confidential Information]** *see also* DTTM-FCC-00003521 at 16 **[Begin Confidential Information]** **[End Confidential Information]** DTTM-FCC-00088707 **[Begin Confidential Information]** **[End Confidential Information]**

[284] *See* DTTM-FCC-00032912 **[Begin Confidential Information]** Sept. 3, 2010) **[End Confidential Information]**; *see also* DTTM-FCC-00210717 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00211611**[Begin Confidential Information]**

[End Confidential Information] Many of these programs were approved by T-Mobile management in late 2010 or early 2011.[287] If they were fully implemented and succeeded,[288] T-Mobile would likely have created greater competitive pressure in the enterprise and government market.

95. With the departure of T-Mobile, a significant effort to increase competition in the highly concentrated enterprise and government services market would be curtailed. That attempt is unlikely to be replicated in the foreseeable future, as no other firm appears to have both the capability (by virtue of a national presence) and incentive (as a disruptive competitor with a small market share) to adopt a similar strategy.[289] This lost opportunity to increase future competition adds to the harm this transaction would create.

D. Other Potential Competitive Harms

96. In the previous sections, we outline the different types of harms that we believe are a likely result of the horizontal consolidation that this transaction presents. Like DOJ, we define product and geographic markets, analyze unilateral and coordinated effects and evaluate the impact of the proposed transaction on enterprise and government customers. Now, we turn to several other potential harms that relate to the cost of certain inputs that providers need in order to compete in the product markets that we have defined. These harms are not directly at issue in the litigation between DOJ and the Applicants, though they have been raised in the two private lawsuits that were filed shortly after DOJ's case.[290]

(Continued from previous page)

[End Confidential Information] DTTM-FCC-00088707 **[Begin Confidential Information]**

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[285] DTTM-FCC-00210170 **[Begin Confidential Information]**
[End Confidential Information]

[286] *See* DTTM-FCC-00017839 **[Begin Confidential Information]** (
) **[End Confidential Information]**

[287] See DTTM-FCC-00208064; DTTM-FCC-00210717 **[Begin Confidential Information]**
) **[End Confidential Information]**; DTTM-FCC-00023536 **[Begin Confidential Information]** **[End Confidential Information]**; DTTM-FCC-00003521 at 16 **[Begin Confidential Information]**
[End Confidential Information]

[288] After this transaction was announced, however, **[Begin Confidential Information]**
[End Confidential Information] DTTM-FCC-00281128.

[289] *Cf. DOJ/FTC Horizontal Merger Guidelines* §6.4 (competition may be harmed by a merger that results in the curtailment of product-development efforts).

[290] We are mindful that Judge Huvelle recently found that Sprint and C Spire (formerly Cellular South) had failed to adequately plead certain claims based on similar theories to those we discuss in this section. *See* Memorandum Opinion, Dist. Ct. for D.C., Civil Action Nos. 11-1600 (ESH) and 11-1690 (ESH) (Nov. 2, 2011). Our conclusion that these claims are worthy of further consideration and process is a reflection of both the different standard that we apply here (as opposed to the one the court applied in the context of a motion to dismiss) and, perhaps more importantly, the broader record in this proceeding which includes facts supportive of these theories beyond those alleged in the complaints of Sprint and C Spire.

97. Some of these harms are in the nature of "raising rivals' costs." Opponents contend that, by eliminating T-Mobile from the marketplace, the proposed transaction would cause competitive harms relating to the provision of voice and data roaming services, wholesale and resale services, and backhaul services. They also argue that the increased size, scale, and purchasing power of AT&T, in conjunction with the elimination of T-Mobile, would result in several exclusionary effects with respect to mobile handsets and devices that would raise rivals' costs and harm their ability to compete. The Applicants dispute these assertions, contending that no competitive harms would result with respect to any of these issues.

98. Based on the record and data before us, we find that opponents raise serious concerns about potential competitive harms that could result if T-Mobile were eliminated. We conclude that the record contains substantial and material questions of fact relating to these issues and that they therefore would be best addressed in an administrative process.

1. Voice and Data Roaming Services

99. Roaming arrangements between wireless service providers enable customers of one provider to receive services from another provider's network when they are in areas that their provider's network does not cover. The Commission has previously determined that the availability of both voice and data roaming arrangements is critical to promoting seamless consumer access to mobile services nationwide, to promoting innovation and investment, and to promoting facilities-based competition among providers.[291]

100. *Positions of the Parties.* Opponents contend that, by combining the only two nationwide providers of GSM-based (including HSPA-based) voice and data roaming services, the proposed transaction would effectively give the combined entity monopoly control over the nationwide provision of these services in the domestic market.[292] Similarly, opponents assert that elimination of T-Mobile would lessen competition in the provision of international roaming to U.S. consumers and result in an essential monopoly of international GSM-based roaming services for international consumers.[293] Several also assert that T-Mobile's presence in the market has promoted competition in the provision of roaming, and that it has been more forthcoming than AT&T in offering roaming services, generally offers lower rates, and has induced AT&T to offer lower rates.[294] Finally, opponents argue that removing T-Mobile as a future nationwide provider of LTE-based roaming services would reduce competition in the data roaming market and lead to increased roaming prices.[295]

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[291] Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services, WT Docket No. 05-265, *Second Report and Order*, 26 FCC Rcd 5411, 5411-12 ¶ 1 (2011); Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services, WT Docket No. 05-265, *Order on Reconsideration and Second Further Notice of Proposed Rulemaking*, 25 FCC Rcd 4181, 4182 ¶ 2 (2010).

[292] *See, e.g.*, GCI Reply at 3; American Antitrust Institute Comments at 20; Cincinnati Bell Petition to Deny at i, 2-6, 23-24; COMPTEL Petition to Deny at 18-20; Leap Petition at 21-22; RCA Petition to Deny at 16, 31 (representing thirty-four GSM-based member companies); RTG Petition at 51; Sprint Petition at iii, 43.

[293] *See, e.g.*, JCI/CSCT Comments at 2, 10-14; MetroPCS and Ntelos Petition at 48; New Zealand Ministry Letter at 2-3; RTG Petition at 29-30; USA Mobility Comments at 11-12; Vodafone Comments at 1-3.

[294] *See, e.g.*, GCI Reply 5-6; Innovative Wireless Reply at 2, 9-10; Sprint Reply at 33-34 (noting that T-Mobile previously complained that after the Cingular-AT&T transaction, Cingular raised its roaming rates by approximately 50 percent); MetroPCS and Ntelos Petition at 56; Vodafone Comments at 3-6 (asserting that competition between AT&T and T-Mobile has resulted in significant reductions in Vodafone's voice, data, and SMS roaming rates).

[295] *See, e.g.*, Leap Petition at 21-22; MetroPCS and Ntelos Petition at 56. Many assert that eliminating T-Mobile's provision of roaming services also would be another step toward enabling an effective duopoly (or coordinated (continued....)

101. The Applicants dispute these assertions. First, they argue that the combined entity, like AT&T currently, would have the necessary incentives as a net purchaser of roaming services, both domestically and internationally, to make GSM and HSPA-based roaming agreements available in the future at reduced prices.[296] Further, they assert that competition for 3G HSPA-based roaming services would not be harmed as providers currently have, effectively, only one choice of a national partner because their customers generally do not have handsets that are capable of roaming on both T-Mobile's and AT&T's 3G HSPA networks.[297] They also argue that there is no risk of future harm because LTE-based roaming services would be available from at least two other nationwide providers, Verizon Wireless and LightSquared (according to its plans), and possibly Sprint and Clearwire (if it chooses to provide LTE services).[298] Finally, they assert that the Commission's rules for domestic roaming already require that the combined entity make reasonable roaming services available, and that these rules would be sufficient to protect against any competitive harm.[299]

102. *Discussion.* Based on the record before us, we believe that the opponents have raised serious issues concerning the potential for the proposed transaction to result in a lessening of competition in the provision of GSM and HSPA-based roaming services. The transaction would leave AT&T as the only nationwide provider of these services, thus eliminating nationwide competition in their provision in the domestic market.[300] Diminished competition in international roaming services also appears possible, where T-Mobile currently competes strongly with AT&T in the provision of GSM and HSPA-based roaming services to U.S. consumers roaming abroad (in large measure because each has subscribers with GSM-based handsets that are readily capable of roaming on GSM networks that predominate in internationally),[301] and where the elimination of T-Mobile would leave only one nationwide provider of

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interaction) between AT&T and Verizon Wireless. *See, e.g.,* Cincinnati Bell Petition at i, 23-24; MetroPCS and Ntelos Petition at 66; RTG Petition at 48.

[296] *See* Joint Opposition at 156-61.

[297] *See id.* at 158-59 (arguing that only AT&T currently can accommodate the vast majority of these roamers).

[298] *See id.* at 160. They also dismiss the notion that the transaction would tip the whole roaming market to duopoly. *Id.* at 155-56.

[299] *See id.* at 159-161.

[300] As of April 2011, T-Mobile had roaming agreements with **[Begin Confidential Information]** **[End Confidential Information]** GSM operators, "38_Supplement_Roaming_Inbound_Domestic," while as of February 2011, AT&T had roaming agreements with **[Begin Confidential Information]** **[End Confidential Information]** different domestic GSM operators. FCC-ATT-00051991 (AT&T, "International Roaming" Spreadsheet). In addition, consistent with many of opponents' assertions, the record indicates that in most cases AT&T **[Begin Confidential Information]** **[End Confidential Information]** when compared with T-Mobile. A review of AT&T's and T-Mobile's roaming agreements shows T-Mobile's rates range from **[Begin Confidential Information]** **[End Confidential Information]**. *See* FCC-ATT-00035703; "38_Supplement_Roaming_Inbound_Domestic;" *see also* DTTM-FCC-00185332 at 8-11 (T-Mobile, "Regulatory Information," Sept. 10, 2010) (showing the pattern in roaming rate charges post-AT&T acquisition). Although still reciprocal, following the acquisitions of, **[Begin Confidential Information]** **[End Confidential Information]**

[301] *See* DTTM-FCC-00123029 at 14 (T-Mobile, "Wholesale Business Review, Presentation to Philipp Humm," July 2010 (comparing international roaming rates of AT&T and T-Mobile for both wholesale and retail). A review of AT&T's and T-Mobile's roaming agreements shows T-Mobile's international rates **[Begin Confidential Information]** **[End Confidential Information]**. *See* FCC-ATT-00035703; "Item_38e_IB_Roaming."

GSM-based and HSPA-based roaming for international customers.[302] Although we agree that, in addition to AT&T and Verizon Wireless, there may be other nationwide providers of LTE-based roaming in the future, the existence of these providers would not appear to alleviate potential harm to consumers using GSM-based networks who do not have LTE-based handsets; further, the proposed transaction would eliminate T-Mobile as a potential provider of LTE-based services in the AWS and/or PCS bands (where it was considering launching LTE-based service in the future),[303] which could mean less nationwide competition in the provision of these services where consumers have LTE handsets that can roam on these frequency bands.

103. In addition, the evidence in the record suggests that AT&T's "net purchaser" arguments are subject to question. For instance, we note that the data submitted with respect to domestic roaming shows that AT&T's balance of trade in terms of revenue has declined significantly in recent years.[304] Internal documents also show that AT&T is actively working to reduce its roaming payments to other providers, and has recently made significant progress in reducing its **[Begin Confidential Information]**

[End Confidential Information],[305] thus it is uncertain if AT&T would continue to be a net roaming purchaser.[306] Further, eliminating T-Mobile would lessen the provision of roaming services both domestically and

[302] T-Mobile provides (inbound) roaming to **[Begin Confidential Information]** **[End Confidential Information]** providers in **[Begin Confidential Information]** **[End Confidential Information]** countries as of April 2011, "38_Supplement_Roaming_inbound_International." As of June 2010, T-Mobile had **[Begin Confidential Information]** **[End Confidential Information]** world devices as compared to AT&T's **[Begin Confidential Information]** **[End Confidential Information]**. ATTF-TMO-00484500 (AT&T, "International Roaming Country Count," June, 2010).

[303] *See infra* para. 213.

[304] Overall in terms of GSM roaming revenue, from January 2009 to April 2011, AT&T was a net roaming purchaser. However, AT&T's net payer status declined from **[Begin Confidential Information]** **[End Confidential Information]** *See* FCC-ATT-00035703; FCC-ATT-00051991; FCC-ATT-00046776. The data analyzed includes GSM roaming through April 2011 on Verizon Wireless's legacy GSM network (from its earlier acquisitions of Rural Cellular Corporation (RCC) and ALLTEL).

[305] *See* ATTF-TMO-01385368 at 11 (AT&T, "AT&T Mobility International, Allegiances & Integrations, 2011 Planning Package") **[Begin Confidential Information]**

[End Confidential Information]

[306] **[Begin Confidential Information]**

[End Confidential Information]

internationally, and we are unable to conclude from the evidence in the record that the combined entity would have neither the ability nor the incentive to raise roaming rates.[307]

104. Finally, we note that the Commission's voice and data roaming rules and the associated complaint process, which are designed to help promote the availability of reasonable roaming arrangements, do not serve as a substitute for competition in the provision of these important services.[308] Further, as opponents have pointed out, elimination of T-Mobile's presence in the market in offering roaming services (including any future offering of LTE services) removes an important potential benchmark that could be used in roaming complaints for determining what constitutes reasonable voice and/or data roaming arrangements.[309]

105. Based on the foregoing, we conclude that the record contains substantial and material questions of fact concerning the nature and extent of the potential harms relating to GSM and HSPA-based roaming and that these questions would be best addressed in the administrative process before the ALJ.

2. Wholesale and Resale Services

106. Resellers purchase wholesale mobile services from facilities-based providers and then resell various services to consumers. Different types of resellers exist and they often increase the range of services offered to consumers by targeting certain market segments, including segments not previously served by the hosting facilities-based provider.[310] The presence of a reseller market sector creates a demand for the purchase of wholesale services, creating the possibility that a loss of competition in the sale of wholesale services would harm reseller buyers, regardless of the extent to which resellers are able to pass on higher wholesale costs to their retail customers.[311]

107. *Position of the Parties.* Various opponents claim that the proposed transaction would eliminate a critical independent nationwide provider of wholesale mobile wireless services, and that regional and smaller providers would not be able to make up for this loss.[312] Several argue that for competitive reasons neither AT&T nor Verizon Wireless is willing, or is likely to be willing, to enter into wholesale agreements with them, and that elimination of T-Mobile, a key innovator, would leave only Sprint as a potential partner of nationwide wholesale services.[313] Many contend further that, unlike Sprint, T-Mobile is an ideal partner because its network uses GSM-based technologies developed in the world market that in turn enable a variety of advanced and innovative services that can be offered through wholesale arrangements.[314] Several opponents also assert that T-Mobile's role as a price-leader among

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[307] *See supra* para. 67 (additional discussion on roaming); *see also, e.g.,* RCA Reply Comments at 9-10.

[308] *See, e.g.*, Sprint Reply at 35.

[309] *See, e.g.*, Cincinnati Bell Reply at 15-16; GCI Reply at 8; Public Knowledge Reply at 24; Sprint Reply at 35.

[310] *See generally Fifteenth Mobile Wireless Competition Report* at ¶¶ 32-36.

[311] Although we conclude that the competitive constraint provided by resellers and MVNOs in retail mobile wireless services markets would not be sufficient, on its own or in conjunction with the other forms of additional competition we evaluate to counteract or deter competitive problems in those markets, these firms nevertheless may also provide some additional constraints against anticompetitive behavior in retail markets. *See, e.g., AT&T-Centennial Order*, 24 FCC Rcd at 13936 ¶ 45; *AT&T-Dobson*, 22 FCC Rcd at 20317 ¶ 38.

[312] *See, e.g.*, Alarm.com Petition to Deny at 1-2, 5 (noting importance of GSM-based services); Cablevision Comments at 10-14; CERC Comments at 18-23; JCI/CSTC Comments at 13.

[313] *See* Cablevision Comments at 10-13; Cox Petition at 2-3, 8-11.

[314] *See* IDT Domestic Telecom Petition to Deny at 4, 8 (touting benefits of reselling a GSM-based service because it enables customers to use phones on GSM networks outside of the United States); *see also* JCI/CSCT Reply at 4, 7-8 (continued....)

nationwide providers keep the wholesale prices low.[315]

108. The Applicants respond that the wholesale market is competitive and that even without T-Mobile, there would continue to be sufficient wholesale options available.[316] They disagree with opponents' concerns about a wholesale monopoly of GSM-based services, contending that resellers are not beholden to any particular air-interface and often split their businesses among multiple providers using different technologies.[317] The Applicants also contend that T-Mobile currently is not a significant source of wholesale competition, such that its departure would not have a significant competitive impact.[318] Finally, the Applicants point out that Clearwire already has entered the market in providing nationwide wholesale services and Lightsquared soon would be, noting that they have signed various agreements with cable companies and others.[319]

109. *Discussion.* Based on the record before us, we conclude that the elimination of T-Mobile, one of the four providers that offer wholesale services on a nationwide basis, could have an adverse impact on the provision of wholesale services.[320] As a nationwide provider, with an integrated network spanning the country, T-Mobile's offerings in the wholesale market cannot be replicated by regional or smaller providers.[321] In addition, elimination of T-Mobile would leave AT&T as the only nationwide provider of GSM-based wholesale services, thereby eliminating competition in the provision of this type of wholesale services. Although T-Mobile does not currently provide the same level of wholesale services as AT&T and Verizon Wireless, the record establishes that T-Mobile plays an important role in providing wholesale services, including as a competitive constraint in wholesale markets.[322] The record similarly contains evidence suggesting that neither Clearwire nor LightSquared

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(the currently limited market for wholesale access in the United States may disappear altogether with the elimination of T-Mobile and its GSM-based network; wholesale access for a mobile virtual network enabler (MVNE) such as JCI/CSCT is important because a GSM-based network is cheaper to deploy than a CDMA-based one due to the worldwide set of equipment makers for GSM-based equipment).

[315] USA Mobility Comments at 10-12; Alarm.com Petition at 2-4, 13 (T-Mobile has created significant downward pricing pressure in the GPRS M2M applications); *see also* CERC Comments at 2-4, 6, 30-33 (post-merger AT&T would have the incentive to prevent independent retailers from lowering consumer costs by restricting retailers' ability to offer products of competing wireless providers, placing restrictions on plans sold, or requiring the retailers to bundle unrelated products).

[316] Joint Opposition at 211-215.

[317] *Id.* at 215.

[318] *Id.* at 211-212 (stating that T-Mobile has only two significant wholesale customers, Tracfone and Simple Mobile).

[319] Joint Opposition at 214-216.

[320] The mere fact that the Commission no longer has rules imposing resale requirements on providers does not establish that there could be no competitive harms in the wholesale and resale markets.

[321] *See, e.g.,* Cablevision Comments at 10-13; Cox Petition at 10-12.

[322] For instance, Alarm.com, which offers security alarm services using GSM-based equipment, submitted information that indicates that T-Mobile's presence lead to reduced prices in that wholesale market. In particular, Alarm.com states that T-Mobile won an initial contract by offering services for **[Begin Confidential Information]**

[End Confidential Information]. It was at that point, Alarm.com asserts, that AT&T then also reduced its prices. Alarm.com Petition at 16. Alarm.com is concerned that, if T-Mobile were to exit the market, the competition that previously had resulted in lower prices for wholesale services would be expected to disappear. *Id.* at 16, 21. Similarly, USA Mobility, which offers T-Mobile's plans as part of its integrated national offering to government and large enterprises, asserts that T-Mobile was chosen because of its superior pricing. *See* USA Mobility Comments at 12.

provide a substitute for T-Mobile with respect to providing wholesale services.[323]

110. Finally, prior to filing the proposed transaction, T-Mobile had developed plans to increase its provision of wholesale services to a variety of different entities,[324] **[Begin Confidential Information]** **[End Confidential Information]** The elimination of T-Mobile from the marketplace would reduce the number of potential partners for these types of services, which could hinder the development of innovative new offerings.

111. We conclude that the record contains substantial and material questions of fact concerning the impact of the proposed transaction on the market for wholesale and resale services.

3. Backhaul

112. Backhaul refers to the connections linking cell sites to wireline networks and carrying wireless voice and data traffic for routing and onward transmission. These connections are an integral component of a wireless provider's network. Backhaul is primarily provided by incumbent local exchange carriers ("ILECs"), such as AT&T and Verizon, but other backhaul providers may also be present in a particular local market. Backhaul costs currently constitute a significant portion of a mobile wireless service provider's network operating expense, and demands for backhaul are increasing.[326]

113. *Positions of the Parties.* Opponents argue that elimination of T-Mobile, one of the largest independent purchasers of alternative backhaul services, would harm competition in the backhaul services market by diminishing the ability of independent backhaul suppliers to remain in business and compete with the ILEC's wireline offerings.[327] They also argue that the proposed transaction would increase incentives for AT&T and Verizon to raise their rates, increasing their rivals' costs.[328]

114. The Applicants, however, contend that the proposed transaction would pose no backhaul or special access concerns.[329] They assert that there is strong competition for the provision of backhaul services, largely driven by the need for high capacity broadband networks, and that the proposed transaction would not change this because T-Mobile is neither a seller of backhaul services nor a significant enough purchaser to harm competition.[330] They further assert that AT&T would lack any "leverage" to harm competition given the ample competitive alternatives for wireless providers that are

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[323] *See, e.g.*, Cablevision Comments at 11-12 (noting that T-Mobile's network operates on widely used frequencies with many popular devices, while Clearwire operates on 2.5 GHz spectrum and LightSquared operates on L-band spectrum and has yet to commence commercial operations) .

[324] *See e.g.*, **[Begin Confidential Information]** **[End Confidential Information]**

[325] *See supra.*

[326] *See generally Fifteenth Mobile Wireless Competition Report* at ¶¶ 319-24.

[327] *See, e.g.*, Sprint Petition at 39-43 & Attachment A, CRA Declaration at 48-49; U.S. Cellular Comments at 2-3; Fibertech Comments at 2-3; RTG Petition at 49-50; Paetec Petition at 11-13; COMPTEL Petition at 25-26; Texaltel Reply at 6; TTM *Ex Parte* at 9.

[328] *See, e.g.*, Sprint Petition at 39-43, 47; Fibertech Comments at 2-3; Telecom Transport Management Reply at 2; Japan Communications Comments at 11-12; Free Press Petition at 44; Public Knowledge Petition at 27; New Jersey Rate Division Corrected Petition at 41-42; MetroPCS and NTELOS Petition at 54; Leap Wireless Petition at 24-25; RTG Petition at 49-50; Paetec Petition at 18; U.S. Cellular Comments at 2-3; Texatel Reply at 7.

[329] Joint Opposition at 162-78.

[330] *Id.* at 162-63, 170 (citing Casto and Willig Declarations).

increasingly being provided over fiber using Ethernet by various companies (e.g., cable companies),[331] and that ILECs such as AT&T and Verizon have no advantage in providing these fiber and Ethernet services.[332] In addition, they argue that the combined firm would have no incentive to pursue a "raising rivals' costs" strategy because raising prices of competitors' access substantially would reduce demand for AT&T's backhaul services and it would lose business.[333] To the extent that backhaul is provided by means of TDM-based special access services, the Applicants argue that these services are subject to extensive price cap rules, and that prices have been declining.[334]

115. *Discussion.* We believe that the loss of T-Mobile as an independent purchaser could lessen competition in the provision of backhaul services and harm purchasers of those services. The record suggests that over the last few years T-Mobile has been instrumental in promoting competitive entry of alternative backhaul services,[335] for example serving as a critical "anchor tenant" in many local markets and, when combined with other wireless providers seeking alternative backhaul services, helping to achieve the necessary scale to support competitive entry of higher capacity backhaul.[336] We are concerned that the loss of T-Mobile's demand for services from independent backhaul providers could reduce the market for their services and deter additional competitive entry, leading to higher backhaul prices.[337]

116. Based on the record before us, including submissions by several opponents to the proposed transaction, we conclude that the record contains substantial and material questions of fact relating to whether competitive harms would result from the elimination of T-Mobile as a purchaser of backhaul services.

4. Handsets / Devices

117. Mobile handsets and devices directly affect the quality of a consumer's mobile wireless experience. As the Commission has noted, they are increasingly central to the dynamics of the overall wireless market, and play an increasingly important role for consumers as a basis for choosing providers.[338]

118. *Positions of the Parties.* Opponents assert that the proposed transaction would result in several exclusionary competitive harms with respect to mobile handsets and similar devices that would raise rivals' costs and harm their ability to compete. They express concern that the significant increase in the size, scale, and purchasing power of AT&T post-transaction would exacerbate their already significant competitive disadvantages, thereby harming the ability of other providers or new entrants to

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[331] Joint Opposition at 162-73.

[332] *Id.* at 165-66.

[333] *Id.* at 176-77 (citing Mayo and Willig Declarations).

[334] Joint Opposition at 172-74. We note that those price cap rules are relaxed (or eliminated) where AT&T has received pricing flexibility relief.

[335] *See, e.g.*, TTM *Ex Parte* at 8-14 (including confidential information); Zayo Reply at 3, 8-11.

[336] *See, e.g.*, Sprint Petition at 40 & Attachment A (CRA Declaration at 49); Sprint Reply at 37; TTM *Ex Parte* at 8-14 (including confidential information); Zayo Reply at 3, 8-11 (including confidential information).

[337] TTM, for instance, states that the **[Begin Confidential Information]** [redacted] **[End Confidential Information]**. TTM *Ex Parte* at 9; *see also* Zayo Reply at 6, 11.

[338] *Fifteenth Mobile Wireless Competition Report* at ¶ 325.

compete by being able to provide their subscribers state-of-the art handsets and devices.[339] Several contend that as the only nationwide GSM provider the combined entity would be able to exert monopsony power when purchasing GSM handsets for the U.S. market, foreclosing smaller providers from being able to offer these handsets.[340] Regional and smaller providers argue that the proposed transaction would make existing problems with exclusive handset arrangements worse, providing the combined entity with even more control over the distribution of the handsets that consumers demand.[341] A number also argue that enhancing AT&T's market power while simultaneously removing T-Mobile from the marketplace would enhance AT&T's ability to influence manufacturers not to develop handsets that are interoperable in the 700 MHz band or other bands, or to design handsets in the future that may effectively prevent operation (e.g., roaming) on other networks.[342]

119. In contrast, the Applicants assert that the proposed transaction would generate purchasing efficiencies for procuring handset equipment.[343] The Applicants also argue that AT&T would not gain monopsony power with respect to GSM devices because the GSM handset market is global.[344] Further, any monopsony power would diminish quickly as the wireless industry transitions to LTE because device manufacturers would gain greater economies of scale in manufacturing LTE devices for a larger customer base.[345] Also, the Applicants deny allegations that AT&T has blocked competitors' access to interoperable handsets in the 700 MHz band, because the standards were adopted through the 3rd Generation Partnership Project ("3GPP") standards-setting process, and that, regardless, interoperability is not a transaction-specific harm.[346] They also contend that exclusive handset arrangements pose no risk of competitive harm because the wireless and device marketplaces are competitive and promote innovation[347] and that other mobile wireless providers have access to a growing number of cutting edge

[339] American Antitrust Institute Comments at 19-20; Clearwire Comments at 2-3, 7; U.S. Cellular Comments at 7; Cox Petition at 8-9; MetroPCS and Ntelos Petition at 58; Cincinnati Bell Petition at 32-33; Leap Petition at 26; Credo Mobile Petition at 2; Rural Cellular Association at 18; RTG Petition at 54; New Media Petition at 9-10; Public Knowledge Petition at 15, 35-36; Free Press Petition at 17; *see also* Sprint Petition, CRA Declaration at 53 (AT&T's larger subscriber base already gives it an advantage in bidding for exclusive rights); Sprint Reply, Declaration of Steven Stravitz at ¶ 116.

[340] *See, e.g.,* Rural Cellular Association Petition at 19; Free Press Petition at 34; Cablevision Petition at 13; American Antitrust Institute Comments at 19-20; Cincinnati Bell Reply at 10 (removal of T-Mobile as the only significant source of demand for dual band handsets that could roam on its and AT&T's network, would make it impossible for Cincinnati Bell to obtain such handsets); GCI Reply at 11.

[341] U.S. Cellular Comments at 7; MetroPCS and Ntelos Petition at 58; Cincinnati Bell Petition at 29-30, Rural Cellular Association Petition at 18; RTG Petition at 47; *see also* Cablevision Systems Petition at 9; CERC Petition at 18-23. As Cincinnati Bell explains this concern, exclusive handset arrangements by AT&T and other national providers have made it make it extremely difficult for smaller providers to obtain the latest technology and most desirable handsets for their subscribers so that the providers can compete. Cincinnati Bell Petition at 29-30. RTG, among others, complains that AT&T engaged in anticompetitive behavior with its exclusive access to the iPhone for several years. RTG Petition at 20-21.

[342] *See, e.g.,* Rural Cellular Association Petition at 18-20; U.S. Cellular Comments at 4-6; Cincinnati Bell Petition at 32-33; Comptel Petition at 15; MetroPCS and Ntelos Petition at 60 (AT&T and Verizon Wireless use their growing market power to engage in monopsony buying practices, and that they can and will refuse to encourage manufacturers to produce handsets that are interoperable across all band); Clearwire Reply at 10.

[343] Public Interest Statement at 52; *see also* Network Integration White Paper at 3-4.

[344] Joint Applicants' Opposition at 148-150; *see also* CWA Reply at 22.

[345] Joint Applicants' Opposition at 152.

[346] Joint Applicants' Opposition at 153-154.

[347] Joint Applicants' Opposition at 145.

handsets and devices.[348]

120. *Discussion.* We believe that the opponents have raised significant questions regarding whether the increased purchasing power of the combined entity, as well as the elimination of T-Mobile as the fourth largest purchaser that works with handset and device manufacturers and the only other national purchaser of GSM-based handsets, could alter the handset/device input market in ways harmful to competition and innovation.[349] The combination of AT&T and T-Mobile would result in approximately 56 percent of the share of smartphone device sales in the U.S. being purchased through the newly combined AT&T and Verizon Wireless.[350] Indeed, as noted above, one benefit of the proposed transaction claimed by the Applicants is that the combined entity would have even greater purchasing efficiencies, and thus have more control over the handset market.

121. While we agree with AT&T that regional and smaller providers may have access to various smartphones and other advanced devices today, the increased scale of the purchasing power of the combined entity as well as the elimination of the fourth largest U.S. purchaser would likely enhance the purchasing power of the merged entity and could make it more difficult for providers other than the newly merged AT&T and Verizon Wireless to access as sufficient a range of cutting-edge handsets in the future as would be available absent the proposed transaction.[351] T-Mobile's role in the Open Handset Alliance and the release of the first Android-compatible handsets[352] also suggests the potential for diminished innovation in the handset arena if T-Mobile is eliminated. Finally, we also conclude commenters have raised significant questions regarding the effect of the proposed transaction on AT&T's ability to hinder or prevent the design and manufacture of interoperable handsets and devices, to the detriment of both competitors and consumers.

122. We thus conclude that the record contains substantial and material questions of fact as to whether competitive harms – including a loss of innovation in the handset arena – would result from the proposed transaction.

V. CLAIMED EFFICIENCIES AND BENEFITS

A. Introduction

123. The Applicants have presented the benefits of this transaction in a package that includes several elements. A core component of their showing is a pair of complementary models – an economic merger simulation model ("the economic model") and a network cost engineering model ("the engineering model") – that attempt to quantify and balance the claimed benefits against some of the

[348] Public Interest Statement at 81, 85, 87-89; Joint Opposition at 146-148; National Characteristics White Paper at 17-21.

[349] Because we identify potential competitive harms that could result from the merged entity's increased scale, we need not address in this proceeding whether exclusive handsets are in themselves harmful to competition.

[350] *Fifteenth Mobile Wireless Competition Report* at ¶ 333, Chart 42; *see also* CCIA Reply at 15 (post-merger AT&T and Verizon Wireless would have control over a majority of the wireless market, and could pressure handset manufacturers in what they supply).

[351] In *ex parte* presentations, U.S. Cellular and others assert that even though they may have access to various smartphones and other devices, they still cannot obtain access the a fully competitive array of handsets, and that the proposed transaction would make matters worse. *See, e.g.,* U.S. Cellular Sept. 1 *Ex Parte* Letter, Attachment at 10; *see also* Cincinnati Bell Reply at 23 (asserting that AT&T has engaged in exclusionary tactics, and claiming that Cincinnati Bell has repeatedly dealt with handset manufacturers who simply refuse to work with it on the development and sale of handsets because they do not want to harm their relationship with AT&T).

[352] *See supra* Section IV.A.

predicted harms from the proposed transaction.[353] In order to demonstrate that the benefits prevail in the balance, the economic model compares the cost savings projections from the engineering model against the loss of T-Mobile as a competitor to predict the impact of the proposed transaction on consumer welfare. If the output from the engineering model fails to achieve a certain minimum required level of cost savings, the economic model predicts consumer harm. In addition, the Applicants claim other benefits outside the scope of the models, including more rapid and extensive deployment of LTE and job creation.

124. In considering the evidence provided by the Applicants in a proposed transaction, the Commission typically applies several criteria in deciding whether a claimed benefit should be considered. First, the claimed benefit must be transaction specific: It must not only be likely to occur as a result of the proposed transaction but it must be unlikely to be realized by other practical means having fewer anticompetitive effects.[354] "Efficiencies that can be achieved through means less harmful to competition than the proposed merger . . . cannot be considered to be true pro-competitive benefits of the merger."[355]

125. Second, the claimed benefit must be verifiable: The Applicants, who possess much of the information relating to the potential benefits of a transaction, are required to provide sufficient supporting evidence to permit verification of the likelihood, timing, and magnitude of each claimed benefit.[356] Benefits expected to occur only in the distant future may be discounted or dismissed because, among other things, predictions about the distant future are inherently more speculative than predictions that are expected to occur closer to the present.[357] Further, the magnitude of the claimed benefit must be calculated net of the cost of achieving it.

126. Third, the Commission generally counts benefits only to the extent they will flow through

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[353] *See* Letter from Richard L. Rosen, Counsel for AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC, (July 25, 2011) ("Applicants' Model Submission Letter (July 25, 2011)"), attaching Engineering Analysis ("Applicants' Engineering Model (July 25, 2011)"), attaching Economic Analysis ("Applicants' Economic Model (July 25, 2011)"). The models had first been discussed at a confidential ex parte meeting with Commission economists on July 13, 2011 and were submitted on July 25, 2011. Applicants' models have evolved during the course of our analysis. *See* Letter from Regina M. Keeney, Counsel for Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, at 1 (Aug. 18, 2011) ("Sprint Model Ex Parte (Aug. 18, 2011)"). Versions of the models that were amended to correct computational errors were submitted on August 10, 2011 and August 19, 2011. *See* Sprint Model Ex Parte at 2(Aug. 18, 2011). There have been no subsequent changes.

[354] *See e.g., Applications of Atlantic Tele-Network, Inc. and Cellco Partnership D/B/A Verizon Wireless for Consent to Assign or Transfer Control of Licenses and Authorizations*, WT Docket No. 09-119, Memorandum Opinion and Order, 25 FCC Rcd 3763, 3781 ¶¶ 36, 39 (2008) ("*Verizon Wireless-ATN Order*"); *AT&T-Centennial Order*, 24 FCC Rcd at 13953 ¶¶ 87, 90; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21599-600 ¶ 205. *See also DOJ/FTC Horizontal Merger Guidelines* §10.

[355] *EchoStar-DirecTV HDO*, 17 FCC Rcd at 20630 ¶ 189 (quoting *BellAtlantic/NYNEX Order*, 12 FCC Rcd at 20063); *see also, e.g., Verizon Wireless-ATN* Order, 25 FCC Rcd at 3781 ¶¶ 36, 39; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21599-600 ¶ 205; *DOJ/FTC Horizontal Merger Guidelines* §10 n. 13 (stating that "the agencies will not deem efficiencies to be merger-specific if they could be attained by practical alternatives that mitigate competitive concerns, such as divestiture or licensing").

[356] *See, e.g., Verizon Wireless-ATN* Order, 25 FCC Rcd at 3781 ¶¶ 36, 39; *AT&T-Centennial Order*, 24 FCC Rcd at 13953 ¶¶ 87, 90; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21600 ¶ 205; *see also DOJ/FTC Horizontal Merger Guidelines* at §10.

[357] *AT&T-Centennial Order*, 24 FCC Rcd at 13954 ¶ 90.

to consumers and accrue to the public interest.[358] In this regard, the Commission is more likely to find reductions in marginal costs cognizable as compared to reductions in fixed costs, because reductions in marginal or variable costs are more likely to result in lower prices.[359] However, we will discount or dismiss reductions in costs that arise from an anticompetitive reduction in quality, service or variety that customers value.[360]

127. Finally, the Commission evaluates the claimed benefits using a "sliding-scale approach."[361] "As the harms to the public interest become greater and more certain, the degree and certainty of the public benefits must also increase commensurately in order for [the Commission] to find that the proposed transaction on balance serves the public interest." Where the potential harms are "both substantial and likely, the Applicants' demonstration of claimed benefits also must reveal a higher degree of magnitude and likelihood than we would otherwise demand."[362]

128. In this case, the Applicants claim: (a) that they face unique challenges due to the explosion of data traffic on their networks;[363] (b) that in the absence of the proposed transaction, they would have limited ability to expand capacity and output to meet this growing demand "due both to their limited spectrum holdings and their inability to readily redeploy spectrum needed to continue providing service to existing subscribers";[364] (c) that the proposed transaction would "dramatically increase the efficiency of [their spectrum] use" and "provide by far the fastest, most efficient, and most certain

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[358] *See, e.g., Applications for Consent to the Transfer of Control of Licenses, XM Satellite Radio Holdings Inc., Transferor, to Sirius Satellite Radio Inc., Transferee*, Memorandum Opinion and Order and Report and Order, 23 FCC Rcd 12348, 12383 ¶ 75 (2008) ("*Sirius-XM Order*").

[359] *Sirius-XM Order*, 23 FCC Rcd at 12392-93 ¶ 103; *see also Verizon Wireless-ATN* Order, 25 FCC Rcd at 3781 ¶ 39; *AT&T-Centennial Order*, 24 FCC Rcd at 13954 ¶ 90; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21600 ¶¶ 205, 206; *SBC-AT&T Order*, 20 FCC Rcd at 18390-91 ¶¶201-02; *EchoStar-DirecTV HDO*, 17 FCC Rcd at 20639 ¶ 191; *DOJ/FTC Horizontal Merger Guidelines* § 10.

[360] *See DOJ/FTC Horizontal Merger Guidelines* § 10.

[361] *See, e.g., Verizon Wireless-ATN Order*, 25 FCC Rcd at 3781 ¶ 40; *AT&T-Centennial Order*, 24 FCC Rcd at 13953 ¶ 91; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21600 ¶ 206; *see also DOJ/FTC Horizontal Merger Guidelines* at § 10.

[362] *EchoStar-DirecTV HDO*, 17 FCC Rcd at 20631 ¶ 192; *see also, Verizon Wireless-ATN* Order, 25 FCC Rcd at 3781 ¶ 40; *AT&T-Centennial Order*, 24 FCC Rcd at 13953 ¶ 91; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21600 ¶ 206. *Cf. FTC v. Heinz*, 246 F.2d 720-21 (citations omitted); *DOJ/FTC Horizontal Merger Guidelines* § 10 (where the potential for harms is great, the merging parties must demonstrate "extraordinary efficiencies" and the court must rigorously analyze the claims). Courts generally have found proof of efficiencies to be inadequate to rebut a finding of likely competitive harm. *See, e.g., U.S. v, H&R Block,* slip op. at 80; *see also Antitrust Law Developments (Sixth)* at 362 ("to date no decision has relied on efficiencies in rejecting a challenge to an otherwise illegal merger.") (citations omitted).

[363] *See* Public Interest Statement at 2-5, 19-33; Hogg Declaration at ¶¶ 3-7, 29-30, 35-39; Donovan Declaration at ¶ 41; Moore Declaration at ¶ 16; *see also* Joint Opposition at 20-25; Hogg Reply Declaration at ¶¶ 5-10, 15; Opposition, Declaration of Jeffrey H. Reed and Nishith D. Tripathi at 2 & Attached White Paper: Jeffrey H. Reed and Nishith D. Tripathi, Analysis of Network Efficiencies Associated with the Proposed Acquisition by AT&T, Inc. of T-Mobile USA, Inc., at 4, 6-8 ("Network Efficiencies White Paper"). We note that these operating challenges are shared by all mobile wireless providers.

[364] Carlton Declaration at ¶ 9. We note that these operating challenges are shared by all mobile wireless providers. *See generally Fifteenth Mobile Wireless Competition Report* at ¶ 267 n.767 (citing Federal Communications Commission Staff Technical Paper, *Mobile Broadband: The Benefits of Additional Spectrum*, Oct. 2010 (predicting the amount of mobile data demanded by American consumers is likely to exceed the capacity of wireless networks in the near-term and adding spectrum would help)).

solution to each [A]pplicant's capacity challenges, while creating significant benefits for consumers and the marketplace as a whole."[365] These claimed benefits include better service quality, lower prices, more expansive deployment of LTE services, and increased jobs.[366]

129. As to the Applicants' network efficiency benefits claims, the economic model depends upon the engineering model for key inputs. Specifically, the economic model takes as inputs the estimated incremental network cost, for both the combined entity and for AT&T and T-Mobile as standalone entities. It then combines these estimates with assumptions about industry structure and conduct to predict future industry prices and output with and without the proposed transaction.[367] Based on these models, the Applicants conclude that – notwithstanding the reduction in competition arising from the elimination of T-Mobile as a competitor – the proposed transaction would result in net public interest benefits in the form of lower mobile wireless industry prices, higher service quality, and increased industry output.[368]

130. We recognize that models can be valuable tools for assessing a proposed transaction, and that any model will necessarily abstract from reality and include certain assumptions about the structure, conduct, and performance of industries and companies. However, if we are to rely on theoretical models to make real-world decisions, the developers of those models must show that their predictions are reliable, demonstrating, e.g., a reasonable correspondence between the models and actual business practices, a reasonable factual basis for selecting the values of key model inputs, the robustness of the results with respect to plausible variation in those values, internal consistency within the model components, and indicia of the model's predictive value in the real world.

131. In this case, the Applicants have provided models that fall short of these requirements. As we explain in detail below, the models provided are abstract, not robust to reasonable changes in their assumptions, not consistent with either each other or, in many cases, the Applicants' internal documents, and have no demonstrated predictive value. Despite numerous *ex parte* meetings and information submissions related to the models,[369] the Applicants have been unable to alleviate our concerns about

[365] Public Interest Statement at 7, 33-45. The Applicants explain that the proposed transaction's benefits result primarily from the "uniquely complementary nature of AT&T and T-Mobile." Public Interest Statement at 7. They contend that both of their networks use GSM and UMTS/HSPA+ technologies, and that they have both complementary spectrum holdings and well-matched cell-site grids. Public Interest Statement at 7. They further argue that as a result of these synergies the integration of the two networks will "far exceed the sum of its parts, creating substantially more capacity than the two companies could produce individually." Public Interest Statement at 7.

[366] Public Interest Statement at 7-11, 33-45, 52, 54-61; Hogg Declaration at ¶¶ 12, 18-19, 26, 43-58, 60-64; Carlton Declaration at ¶¶ 12, 58, 67, 133-134; Larsen Declaration at ¶¶ 7-8, 30, 35-36.

[367] Letter from Richard L. Rosen, Counsel for AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (August 23, 2011) ("Applicants' Economic Model Ex Parte (Aug. 23, 2011)"), attaching Explanation of the Compass Lexecon Merger Simulation Model, Dennis W. Carlton and Mark A. Israel at 6-7 (Aug. 23, 2011) ("Explanation of Compass Lexecon explanation of Merger Simulation Model (Aug. 23, 2011)"); attaching Presentation Re: Competitive Effects of the AT&T-T-Mobile Transaction at 4, 9, 11, 14 (August 19, 2011) ("AT&T Competitive Effects Presentation (Aug. 23, 2011)").

[368] *See* Applicants' Economic Model Ex Parte (Aug. 23, 2011) at 2.

[369] *See* Applicants' Model Submission Letter (July 25, 2011); Applicants' Engineering Model (July 25, 2011); Applicants' Economic Model (July 25, 2011); Network Integration White Paper; Letter from Samir Jain, Counsel for AT&T, Inc., to Marlene H. Dortch, Secretary, FCC (July 26, 2011) ("AT&T's LTE Deployment Ex Parte (Aug. 8, 2011)"), attaching Applicants' Migration White Paper ("Applicants' Migration White Paper"); Letter from Scott Feira, Counsel, AT&T, Inc., to Marlene H. Dortch, Secretary, FCC (Aug. 9, 2011) ("Applicants' Engineering Model Ex Parte (Aug. 9, 2011)"), attaching Presentation entitled AT&T Acquisition of T-Mobile: Engineering Analysis Overview ("Applicants' Engineering Model Presentation"); Letter from Richard L. Rosen, Counsel for AT&T, Inc., (continued....)

these issues and have not established the probative value of the models. As a result, we must discount the weight we give to these models as support for the Applicants' public interest benefit claims.

132. With respect to the Applicants remaining claimed benefits (*e.g.*, non-network cost savings, LTE deployment, and jobs), we find that they are largely of the type that typically do not lead to lower prices or other benefits for end users and/or are unsupported in the record.[370]

B. Economic Model

133. The Applicants submitted an economic model designed to predict the effect of the proposed transaction on nominal and quality-adjusted prices.[371] The model aims to weigh the ability of the merged entity to increase prices due to the elimination of T-Mobile as a competitor against its incentives to reduce prices as a result of any transaction-related marginal cost reductions.[372] The output of the Applicants' economic model is a comparison of predicted industry price and output in 15 CMAs with and without the proposed transaction.[373]

134. The economic model creates outputs for the years 2014 and 2015. The selection of this time frame excludes a number of costs from consideration, including network integration and handset substitution expenses. These expenses are not accounted for elsewhere and are likely significant. By excluding these and similar costs, the economic model exaggerates the potential financial benefits of the transaction and ignores the more predictable near-term impacts of the transaction in 2012 and 2013. .

(Continued from previous page)
and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 11, 2011) ("Applicants' Engineering Model Submission Letter (Aug. 11, 2011)"), attaching Engineering Analysis - 110811 MultiYearModelv3 0.xls ("Applicants' Engineering Model (Aug. 11, 2011); Letter from Richard L. Rosen, Counsel for AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 18, 2011) ("Applicants' Engineering Model Ex Parte (Aug. 18, 2011)"); Sprint Model Ex Parte (Aug. 18, 2011); Letter from Richard L. Rosen, Counsel for AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 19, 2011) ("Applicants' Economic Model Submission Letter (Aug. 19, 2011)"), attaching Economic Analysis ("Applicant's Economic Model") (Aug. 19, 2011); Applicants' Economic Model Ex Parte (Aug. 23, 2011); Explanation of Compass Lexecon Merger Simulation Model (Aug. 23, 2011); Competitive Effects of AT&T-T-Mobile Transaction; Letter from Richard L. Rosen, Counsel, AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 24, 2011) ("Applicants' Engineering Model Ex Parte (Aug. 24, 2011)"), attaching Further Description of Engineering Analysis and Transcript of Call with William Hogg ("Further Description of Engineering Analysis"), attaching Network Engineering Cost Model Description ("Network Engineering Cost Model Description"); Letter from Regina M. Keeney, Counsel for Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, at 2 (Oct, 12, 2011) ("Sprint Model Ex Parte (Oct, 12, 2011)"). On August 11, 2011, the Commission asked the Applicants a number of questions about their engineering and economic models. *See* Letter from Renata B. Hesse, Senior Counsel to the Chairman for Transactions, FCC, to Marlene H. Dortch, Secretary, FCC, (Aug. 31, 2011) ("Questions to Applicants Regarding Economic and Engineering Models (Aug. 31, 2011)").

[370] *DOJ/FTC Horizontal Merger Guidelines* at § 10.

[371] *See* Applicants' Model Submission Letter (July 25, 2011) attaching Applicants' Engineering Model (July 25, 2011); *see* also, Applicants' Economic Model Submission Letter (Aug. 19, 2011) attaching Applicant's Economic Model (Aug. 19, 2011).

[372] The marginal cost reduction estimates come from Applicants' engineering model discussed below. We note that the engineering model's outputs are a critical input to the economic model. Our serious concerns about the accuracy of the engineering model described below raise foundational questions about the predictive value of the economic model. *See generally* Engineering Analysis, especially ¶ 132-153.

[373] *See* Applicants' Engineering Model, (Aug. 11, 2011) at tab "SubMC_All", cells B8:B22. These markets, listed by market number, are New York, Los Angeles, San Francisco, Washington, DC, Miami, San Diego, Buffalo, Portland, (OR), Charleston, San Juan, Shreveport, Portland, (ME), Boise City, Gainesville, Waco.

135. We note that the Applicants have presented their case in terms of a net economic benefit, weighing the engineering benefits against the competitive harms that we have discussed in the previous section. Although we defer the overall weighing of all claimed public interest costs and benefits–including, for example, increased and more extensive mobile broadband deployments and job creation,–to the next section, here we assess the net economic and engineering benefit presented by the Applicants.

136. *Position of the Parties.* The Applicants claim their economic model demonstrates that the transaction-specific cost efficiencies and quality benefits outweigh any potential anticompetitive harm.[374] On the basis of their models, they argue that the proposed transaction is pro-competitive because mobile wireless industry prices would fall and output would rise in comparison to the wireless industry without the proposed transaction.[375] They find that in 2015, quality-adjusted prices would fall between 3.8 and 9.4 percent in the fifteen markets studied.[376] Due to lower prices, they also find that the proposed transaction would raise wireless industry output in 2015 by 9.0 to 22.4 percent depending on the market studied.[377]

137. Sprint initially contended that the Applicants had not provided enough documentation to verify the economic model's methodology and assumptions.[378] Later, upon receipt of additional information, Sprint argued that the economic model uses "inconsistent inputs and assumptions, overstates the alleged efficiencies and understates the anticompetitive effects of the proposed transaction."[379]

138. As discussed more fully below and in the Economic Analysis, Appendix C, we find that the economic model is insufficiently reliable to support AT&T's argument that the benefits of the proposed transaction would outweigh the harms. Our concerns about the economic model primarily fall into five categories, which we cover in more detail in the discussion that follows. First, the model relies on estimates of transaction related incremental network cost savings that are seriously flawed. Second, the economic model only considers potential harms from unilateral effects, ignoring all other competitive concerns. Third, important aspects of the industry structure and conduct are neglected and many inputs are not supported by the facts in the record.[380] Fourth, the model produces implausible estimates. Finally, the output of the model is not robust to reasonable changes in these inputs. For example, the results of the economic model are extremely sensitive to adjustments to the marginal cost inputs from the engineering model, so much so that its predictions regarding price and output are reversed when a single algorithmic flaw is corrected.[381] We conclude that the predictions of the Applicants' economic model are not sufficiently robust or credible to carry the Applicants' burden of proof.

1. Economic Model Structure

139. The Applicants' economic model is predicts expected prices and output in the wireless industry both with and without the proposed transaction by: (a) estimating customer substitution patterns (diversion ratios) among five firms–AT&T, T-Mobile, Verizon Wireless, Sprint, and a composite firm denoted as "other," –that that are assumed to provide a single mobile wireless product at given marginal

[374] Competitive Effects of AT&T-T-Mobile Transaction at 3 (Aug. 23, 2011).

[375] *Id.* at 2, 3, 5 and 6.

[376] *See* AT&T Competitive Effects Ex Parte (Aug. 23, 2011) at 6.

[377] *See* AT&T Competitive Effects Ex Parte (Aug. 23, 2011) at 5.

[378] *See* Competitive Effects of AT&T-T-Mobile Transaction at 3.

[379] *See* Sprint Engineering/Economic Model Ex Parte (Oct, 12, 2011).

[380] *See* Engineering Analysis at ¶ 148-152.

[381] *See* Economic Analysis at ¶ 35 (showing that prices increase).

costs, prices and profit margins;[382] (b) estimating future costs in the absence of proposed transaction by adding AT&T's and T-Mobile's estimated incremental costs on a standalone basis (taken from the engineering model) to current marginal costs; (c) estimating future costs after the proposed transaction by adding the estimated incremental costs for AT&T and T-Mobile assuming AT&T owns T-Mobile to current marginal costs; (d) using the estimated customer substitution patterns and provider costs to predict each firm's profit maximizing price and output in the future, both in the absence of the proposed transaction and with the proposed transaction;[383] and (e) comparing the estimated prices and output with and without the proposed transaction.[384]

140. For the case in which AT&T owns T-Mobile, the economic model also estimates quality-adjusted prices. The Applicants claim that the proposed transaction would raise network quality because the combined network would have more cell sites and this would increase signal strength.[385] This benefit of the proposed transaction would not be captured by the engineering cost model since that model incorporates capacity-related benefits only.[386] The Applicants contend that greater signal strength is a quality improvement that results in a better customer experience and lower churn.[387] To incorporate this quality improvement into the economic model, the Applicants: (a) plot predicted signal strength for the combined and non-merged (standalone) networks; (b) compare the signal strength in the two cases, weighted by usage; (c) translate improvements in signal strength into reductions in churn; (d) translate churn improvements into "price equivalents" – the price reduction necessary to produce the same reduction in churn; and (e) reduce the AT&T and T-Mobile prices by this amount in the merged case.[388]

141. The Applicants' economic model has at least three basic problems that render unreliable its prediction of the consequences of the proposed transaction. These problems are independent of the issues in how it is implemented, which we discuss below. First, it has a substantial omission: it does not account for all the ways AT&T's acquisition of T-Mobile could potentially harm competition. The model only accounts for unilateral pricing effects in retail wireless markets and ignores the potential for coordinated effects in those markets, harms in the enterprise and government services market, or the harms involving roaming, wholesale services, backhaul, and handsets.[389]

142. Second, the economic model fails to take into consideration the fact that the T-Mobile brand will cease to exist within eighteen months of consummation of the proposed transaction.[390] This means that the Applicants' predictions assume the availability of a product that would not exist in the

[382] *See* Explanation of Compass Lexecon Merger Simulation Model at 1-2 (assuming for purposes of the merger simulation analysis that five firms provide mobile telephony services: AT&T, T-Mobile, Verizon Wireless, Sprint, and a composite firm denoted as "other").

[383] *See* Explanation of Compass Lexecon Merger Simulation Model at 5. The costs of all other firms are assumed to remain at current levels.

[384] *See* Explanation of Compass Lexecon Merger Simulation Model at 8.

[385] *Id.*

[386] *Id.*

[387] *See id.* They also incorporate a signal strength quality improvement related to T-Mobile 3G devices having to connect less frequently to the 2G network. *See id.* at 9.

[388] *See id.* at 8 and 9.

[389] Explanation of Compass Lexecon Merger Simulation Model at 8-9; Economic Analysis ¶¶ 5, 34.

[390] *See* Stock Purchase Agreement §4.21; *see also* Carlton Declaration ¶ 64.

post-transaction world.[391] This modeling choice on its own does not obviate the model's value, because both approaches turn importantly on the extent to which AT&T customers would find T-Mobile products close substitutes at current prices. Thus, our concerns about competitive harms overall are not likely to be dependent on whether AT&T plans to retain T-Mobile, as the Applicants assumed in their modeling, or if T-Mobile disappears, as we take to be the case. However, the predicted harms would be different if the model accounted for the elimination of T-Mobile products as a substitution possibility for consumers, as we did above in our analysis of unilateral effects. In conjunction with the other basic problems we have identified, therefore, this modeling choice means that the Applicants' economic model provides us with no mechanism to judge the magnitude of the likely competitive harms arising from the actual transaction that they propose.

143. Third, after careful analysis, we believe that, like the engineering model, the economic model also contains a serious flaw in its implementation that renders its predictions of little value. The economic model assumes that marginal network costs are zero in 2011 for both AT&T and T-Mobile at current output levels.[392] The model then predicts future output levels for each firm, where an increase in output is understood by the Applicants to mean "an increase in the number of subscribers, an increase in usage by the same number of subscribers, or a blend of the two."[393] In their model, the Applicants normalize total industry output to be 100 in 2011 but this changes in subsequent years as costs and prices change.[394] Importantly, the Applicants' economic model predicts that the normalized output for standalone AT&T in 2014 and 2015 will be *lower* than their 2011 output in *every* market.[395] However, if this were the case, the marginal network costs would be zero for AT&T since their output is predicted to be below 2011 levels. Rather than being on a steeply increasing portion of the marginal cost curve as the Applicants claim, their economic model predicts they would have marginal cost equal to zero.

144. This critical flaw is a result of a lack of feedback between the two models, which generates inconsistencies between the assumptions of the engineering model and the predictions of the economic model. The engineering model estimates the annual incremental costs of building enough capacity to meet demand on the basis of exogenous network demand assumptions.[396] The economic model then predicts what network demand would be on the basis of these costs and predicts far lower demand.[397] If these much lower demand estimates were then fed back into the engineering model, they would result in far lower marginal cost predictions. As implemented by the Applicants, the engineering model predicts that marginal network costs would be very high in 2014 and 2015 without the proposed transaction while the economic model implies that they would be zero. This discrepancy makes the economic model's measure of the benefits of the proposed transaction unreliable since using its output to predict marginal cost would imply that the public interest benefits due to network cost savings would be zero.

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[391] We note that AT&T promises to allow T-Mobile legacy customers to remain on their current pricing plans, but makes no promise to continue such plans for any other customers. *See* Moore Declaration at ¶ 30.

[392] *See* Explanation of Compass Lexecon Merger Simulation Model at n. 13.

[393] *See* Explanation of Compass Lexecon Merger Simulation Model at n. 6.

[394] *See* Explanation of Compass Lexecon Merger Simulation Model at n. 6.

[395] T-Mobile's output is predicted to be lower in 9 of 15 CMAs in 2015 and only slightly above its 2011 output in the other CMAs. *See* Economic Analysis at Table 6.

[396] *See* Engineering Analysis at ¶ 137.

[397] *See* Economic Analysis at ¶¶ 32-33.

2. Economic Model Assumptions and Inputs

145. In the following section we analyze the economic model's assumptions and inputs, addressing those assumptions and inputs that are unsupported in the record and which may not be reasonable or appropriate. We conclude with a discussion of how, with more reasonable assumptions, the Applicants' economic model predicts that the proposed transaction will result in harm.

146. The Applicants' economic model relies on a number of assumptions that lead to a systematic understatement of the harms from potential unilateral effects. The key inputs to the model are: (a) the marginal cost estimates; (b) the diversion ratios; (c) the firm profit margins; (d) the rate customers leave the industry in response to a firm's price increase; (e) the magnitude of non-network efficiencies; and (f) the degree of quality improvement from the proposed transaction.

147. Most fundamentally, the economic model relies on implausible cost estimates taken from the engineering model. As we discuss below, after careful examination we believe the engineering model contains a serious flaw in the cell-splitting algorithm that appears to cause the model to greatly overestimate incremental costs, and the overestimate is much greater for the standalone firms than the merged firm.[398] We tested the impact of this flaw on the model's results by substituting a more reasonable cell-splitting methodology and applied the change and ran the results for the New York CMA. In New York in 2015, the Applicants' version of the engineering model estimates that standalone AT&T would have incremental network capacity costs[399] per average incremental customer that are **[Begin Confidential Information] [End Confidential Information]**.[400] After substituting a more reasonable cell-splitting methodology, the incremental cost is reduced to **[Begin Confidential Information] [End Confidential Information]**.[401] The large differences between these results suggest strongly that the engineering model's sensitivity to even just this one adjustment is significant and undermines the credibility of the model's predictions.

148. We also believe the economic model understates the potential for adverse unilateral effects even within the framework it employs because of what it assumes about the degree of buyer substitution between the two merging parties.[402] The greater the buyer substitution is between the two firms, the greater the predicted harm would be from unilateral effects, all else being equal.[403] The model employs diversion ratios as a metric for describing buyer substitution. Diversion ratios measure the percentage of customers who switch in response to a price increase.[404] The Applicants assume that diversion is proportional to the customer gross additions observed in data from **[Begin Confidential**

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[398] *See infra* Section V.C.1. Economic Model Structure at ¶ 142.

[399] Incremental costs are calculated as: cost(t) = (cost(t) – cost(t-1)) / (usage(t) –(usage(t-1)) and is measured in $/equivalent minutes of use (eMOU). This cost is then converted to incremental cost per additional subscriber based on the assumed usage (eMOUs) per subscriber in the given year. *See* Competitive Effects of the AT&T-T-Mobile Transaction at 15. The Applicants assume that these incremental network costs are currently zero for AT&T and T-Mobile so the estimates from the engineering model represent the difference in network costs between the given year and today. *See* Explanation of Compass Lexecon Merger Simulation Model at n. 13.

[400] *See* Applicants' Engineering Model (Aug. 11, 2011) at tab "SubMC_All" cell J8.

[401] *See* Engineering Analysis at ¶ 125. The corresponding incremental cost increase estimate for AT&T in 2015 assuming the transaction is approved is **[Begin Confidential Information] [End Confidential Information]**. However, this estimate does not account for many other issues we found in the engineering model. See section D for further details.

[402] *See* Explanation of Compass Lexecon Merger Simulation Model at 3-4.

[403] *See* Explanation of Compass Lexecon Merger Simulation Model at equation 8.

[404] *See* Carl Shapiro, *Mergers with Differentiated Products*, Antitrust (Spring 1996).

Information] **[End Confidential Information]** The Applicant's method is problematic for two reasons. First, the assumption that diversion is proportional to gross additions does not allow for the possibility that the diversion ratio may differ from what would be implied by the market shares.[406] Second, the data on gross additions used by AT&T is unreliable. AT&T documents show that **[Begin Confidential Information]** **[End Confidential Information]**.[407]

149. Rather than using the share of gross customer additions as the measure of diversion, as the Applicants' model does, we evaluated whether the use of porting data to obtain diversion ratios would be likely to alter the results of the model. Porting data measures substitution patterns directly, based on data reported from each wireless provider. Our analysis of the porting data shows that more customers consider AT&T and T-Mobile close substitutes than would be predicted by market shares. This analysis suggests that, even if the data the Applicants employ to measure gross customer additions were reliable, the Applicants' measure of substitution understates potential unilateral effects harms.[408]

150. The Applicants' model also understates harm from the proposed transaction by making the assumption that all wireless firms have the same profit margin as T-Mobile, despite substantial evidence that margins are likely much higher for AT&T than for T-Mobile.[409] The Applicants' calculate a profit margin for T-Mobile of **[Begin Confidential Information]** **[End Confidential Information]** from T-Mobile data and then apply this to all other firms.[410] Using the lower T-Mobile profit margin in the economic model for AT&T, for example, significantly lowers its incentive to raise prices following the proposed transaction relative to what would be implied if more plausible margins were employed, and thus leads to an overstatement of the net benefits of the proposed transaction.[411]

151. An internal AT&T document shows that, in fact, the Applicants assumed profit margin for AT&T is too low.[412] An analysis of AT&T data in the document estimates a recurring monthly

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[405] *See* Explanation of Compass Lexecon Merger Simulation Model at 3 and n. 8.

[406] In particular, in order for diversion to be proportional to market shares, the "logit" assumption must be satisfied. Under the logit assumption, unobserved consumer second choices are assumed to be proportional to observed first choices. *See* Carl Shapiro, *Mergers with Differentiated Products*, Antitrust Spring 1996, available at http://faculty.haas.berkeley.edu/shapiro/diversion.pdf (last visited Nov. 27, 2011) at n. 11.

[407] ATTF-TMO-0083101; ATTF-TMO-00838106 **[Begin Confidential Information]** **[End Confidential Information]**

[408] *See* Economic Analysis; Applicants' Economic Model (July 25, 2011). As a robustness check, we also ran the economic model using share of gross customer additions for the diversion rates and found similar results. *See* Economic Analysis, Appendix C, at Table 12.

[409] Annual and quarterly earnings reports consistently show that AT&T has significantly higher financial profit margins as measured by EBITDA than T-Mobile. *See* John C. Hodulik, Batya Levi, UBS Investment Research, *US Wireless 411* (Aug. 17, 2011).

[410] Economic profit margins are calculated based on the marginal costs of adding subscribers as opposed to financial profit margins which are based on average fixed and variable costs over all subscribers. *See* Explanation of Compass Lexecon Merger Simulation Model at 3 and n. 7.

[411] In the Applicants' model, a higher margin implies a lower own-price elasticity which raises the incentives to impose greater unilateral price increase because fewer customers would leave in response to higher prices. *See generally,* Economic Analysis, Appendix C, for further details.

[412] *See* ATTF-TMO-00546820 (AT&T, "LTV Deep-Dive," May 9, 2011); ATTF-TMO-00741790 (AT&T, "Aligning on common LTVs," May 28, 2011).

margin of **[Begin Confidential Information]** **[End Confidential Information]** per subscriber. However, this does not account for one-time subscriber acquisition and upgrade costs over the customer lifetime. After accounting for these factors, the estimates in the document imply that AT&T's profit margin over a customer lifetime is **[Begin Confidential Information]** **[End Confidential Information]**.[413] Based on additional estimates in the document of what fraction of the total cost of providing wireless service is variable versus fixed, we estimate economic profit margins for the other non-combining firms and find them to also be higher than claimed by the Applicants.[414]

152. The Applicants also assumed in the economic model that if a single firm raised its price, 40 percent of the customers that leave in response would choose to no longer have a cell phone rather than switch to a competing provider.[415] A higher value for this parameter in the model reduces potential competitive harms because it lowers the incentive for AT&T to raise price. The reason for this is that if AT&T raises price, a large fraction of the customers who leave AT&T would choose to discontinue wireless service instead of possibly switching to AT&T-owned T-Mobile products. Again based on the Applicants' documents, we believe that their 40 percent market exit rate assumption is implausible. Both AT&T and T-Mobile conduct churn studies that measure the percentage of customers that leave the market instead of switching to another firm.[416] These documents suggest that **[Begin Confidential Information]** **[End Confidential Information]** is a more reasonable upper bound estimate for this parameter.[417] Our simulations show that the Applicants' unsupported assumption about the rate at which consumers would abandon wireless service leads the economic model to overstate the benefits of this transaction.

153. Another unsupported assumption made by the Applicants is that non-engineering efficiencies from the proposed transaction would be **[Begin Confidential Information]** **[End Confidential Information]** of revenues and that those would be marginal cost reductions.[418] Based on AT&T wireless revenues reported for 2010, this implies that the proposed transaction would have to produce **[Begin Confidential Information]** **[End Confidential Information]** in non-

[413] *See* Economic Analysis, Appendix C, Table 3.

[414] *See id.* In our robustness checks in the Economic Analysis, , we also ran the economic model assuming the profit margin for all firms was **[Begin Confidential Information]** **[End Confidential Information]** and found slightly lower, but similar results. *See* Economic Analysis, Appendix C, Table 12.

[415] The Applicants assume an industry elasticity of **[Begin Confidential Information]** **[End Confidential Information]**. From the industry elasticity and the own price elasticity assumption of **[Begin Confidential Information]** **[End Confidential Information],** we calculate their implicit 40% market exit rate. *See* Economic Analysis, Appendix C, for further details.

[416] *See, e.g.*, ATTF-TMO-00802519 (AT&T, "Churn Tracking/Customer Retention Study," February, 2011); DTTM-FCC-00071156 (T-Mobile, "Churn reduction discussion, Appendix," June 29, 2010).

[417] *See* the Economic Analysis, Appendix C, for this analysis. This is also in closer agreement to the economic literature which estimate wireless industry elasticities between -.36 and -.51. *See* Mark J. Rodini, Glenn A. Woroch, and Michael R. Ward, *Going Mobile: Substitutability Between Fixed and Mobile Access*, Telecommunications Policy 27 (2003) 457-476. As a robustness check, in the Economic Analysis we also run the economic model assuming an industry elasticity at the top of this range.

[418] **[Begin Confidential Information]**

[End Confidential Information]

network marginal cost savings per year.[419] As we discuss in greater detail in Section E, we have substantial difficulty crediting the Applicants with most of the non-network efficiencies that they claim. When we adjust the estimated cognizable efficiencies to reflect that analysis, the proposed transaction would result in at most **[Begin Confidential Information]** **[End Confidential Information]** in cognizable non-network marginal cost reductions being passed onto consumers, which is **[Begin Confidential Information]** **[End Confidential Information]** of service revenues for the combined entity.[420]

154. Finally, we have difficulty crediting the Applicants' claims of improved network quality for the following reasons: First, although we requested it, the Applicants did not provide the backup materials necessary to verify the engineering analysis of signal quality and 3G roaming improvements from integrating the networks. In consequence, neither we nor commenters can determine if the assumptions of the network integration model are accurate. Second, the network integration analysis is only performed for four of the largest metropolitan areas in the U.S.[421] The results for all other markets are extrapolated from these four large, urban markets. We believe that it is unlikely that these four markets are representative of the quality improvements and churn reduction that would result from network integration in all other markets.[422] Third, the elasticity the Applicants used to convert the quality improvements into price equivalents is only for T-Mobile and is also not supported by any analysis.[423] Rather, it is an unsupported assumption taken from a single marketing report and used without justification or other indicia of credibility.[424] Fourth, the Applicants appear to have calculated the percentage change in churn reduction incorrectly, making an error that leads them to substantially overstate the estimated quality benefits.[425] Finally, the quality module also assumes that the combined firm has higher cell densities due to the addition of T-Mobile's sites but that cell density would not increase for the standalone firms. This assumption is inconsistent with the Applicants' engineering model, which predicts cell site additions each year for the standalone firms. Staff analysis finds that the cell density for the standalone firms would increase in the Applicants' engineering model from 2012 to 2016, so the Applicants' assumption in their economic model that cell site density does not change for the standalone firms is inconsistent with their engineering model and leads them to overstate potential quality

[419] See http://www.att.com/Common/about_us/annual_report/pdfs/ATT2010_Full.pdf. *See also* Press Release, "T-Mobile USA, Inc., T-Mobile USA Reports Fourth Quarter 2010 Results" (Feb. 25, 2011). AT&T reported wireless service and equipment revenues of $58.5 billion and T-Mobile reported total revenues of $21.3 billion in 2010. The revenues of the combined firm would be $79.8 billion and **[Begin Confidential Information]** **[End Confidential Information]**

[420] *See* ¶ 241, infra, for further details. **[Begin Confidential Information]** **[End Confidential Information]**

[421] The four markets are: New York City, NY, Los Angeles, CA, San Francisco, CA, and Washington, D.C. *See* Explanation of Compass Lexecon Merger Simulation Model at n. 23.

[422] Economic Analysis at ¶ 42.

[423] *See* Explanation of Compass Lexecon Merger Simulation Model at 10.

[424] *See* Letter from Phillip W. Horton, Counsel for AT&T Inc. to Marlene H. Dortch, Secretary, FCC (Aug. 24, 2011) submitting confidential documents reference in White Paper of Prof. Dennis W. Carlton and Dr. Mark A. Israel ("Applicants' Confidential Documents to Economic Model Ex Parte (Aug. 24, 2011)") at Attachment 21, T-Mobile USA, "Broadband Device Pricing," May 30, 2011 at 9.

[425] The Applicants calculated the percent change in the churn index as $(x_0 - x_1) / x_1$, where x_0 is the index prior to the transaction and x_1 is the index after the transaction. The percent change should be calculated as $(x_0 - x_1) / x_0$. *See* Explanation of Compass Lexecon Merger Simulation Model at 9. This simple mathematical error alone causes them to overstate the quality effect by about 20%.

differences greatly, and thus overstate the benefits from proposed transaction.[426] For all of these reasons, we find that the Applicants' quality adjustment is not reliable and we do not credit it in our public interest analysis.

3. Economic Model Predictions

155. Given the issues with the economic model discussed above, it is not surprising that it generates predictions that are inconsistent with both the Applicants' internal documents and forecasts by industry observers. For example, the model predicts that absent the proposed transaction, AT&T's market share in New York would drop from **[Begin Confidential Information]** **[End Confidential Information]** by 2015. Similarly, AT&T's price in Los Angeles in 2015 is predicted to be **[Begin Confidential Information]** **[End Confidential Information]** in 2015 while Verizon's would only be **[Begin Confidential Information]** **[End Confidential Information]** a difference of more than **[Begin Confidential Information]** **[End Confidential Information]**. These predictions are at odds with internal predictions by the Applicants, the assumptions of the engineering model (which assumes a growing amount of traffic based on stable market share), and industry forecasts.[427]

156. Given the substantial problems we identify with both the economic and engineering models, we cannot endorse any estimates that they produce. However, as a check on whether the flaws that we identified are significant enough to render the results unreliable, we adjusted the models to take account of some of the errors. Our modified version of the economic merger simulation model accounts for *only* the error in the engineering model cell-splitting algorithm and the assumptions that the Applicants made with respect to diversion ratios, profit margins, market exit rates, non-network efficiencies, LTE penetration and quality adjustments. In addition, we performed a number of robustness checks to test the sensitivity of the model to these assumptions.

157. The results of our sensitivity testing reveal significant issues with the reliability of the models' predictions. With the modifications to the inputs and assumptions described above, the results of the Applicants' simulation model are the opposite of what the Applicants claimed: the new results predict higher industry prices and lower output for every year after the proposed transaction in all geographic areas, including the years in which Applicants contend that prices would fall.[428] Overall, we find that the Applicants' economic model predicts weighted average price increases of more than 6 percent every year. We thus find that the predictions of the economic model are highly sensitive to reasonable corrections to the assumed inputs, This finding alone undermines the reliability of the economic model's predictions and thus causes us to question the validity of the Applicants' benefits claims. This conclusion is reinforced by our identification of many other problems noted above that are not accounted for by this sensitivity test.

158. We think it important to note that, without lending credibility to the output of the Applicants' models as submitted, the Applicants' model predicts that in 2012 prices would rise and output would decline in nearly every geographic area. The evidence in the record as submitted by the Applicants – if taken as accurate – actually demonstrates that the proposed transaction would result in higher prices and reduced output in 2012.[429]

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[426] *See* Economic Analysis at Table 7.

[427] *See e.g.*, ATTF-TMO-00063002 at 29 (AT&T, "Wireless Evolution –Project update," March 4, 2010) **[Begin Confidential Information]** **[End Confidential Information]**

[428] *See* Economic Analysis at Table 10 and Table 11.

[429] Economic Analysis at ¶ 30.

159. Finally, we are unable to adjust the Applicants' models for all of the other structural problems we have identified so the estimates that we have calculated should not be considered predictive of the likely pricing impacts of the proposed transaction. Rather, we present the predictions of our modified version of the economic model only to show that the evidence the Applicants submitted cannot be relied upon to show that the proposed transaction is in the public interest.

160. These results are illustrated in Table 2 below for reference. The data show that the economic model predicts that prices would be up to eight percent higher over the next four years as a result of the proposed transaction and that, over the 15 markets chosen by AT&T, prices would increase by a weighted average of six percent in 2015.

Table 2. Percent Difference in Nominal Prices Relative to No Merger, 2012-2015

Market	2012	2013	2014	2015
New York	8.3%	8.2%	7.7%	6.8%
Los Angeles	7.3%	7.1%	6.9%	6.3%
San Francisco	6.1%	5.9%	5.8%	5.9%
Washington, DC	5.9%	5.8%	5.3%	4.7%
Miami	7.0%	7.0%	7.0%	6.5%
San Diego	6.5%	6.4%	6.5%	6.4%
Buffalo	4.3%	4.2%	3.7%	3.1%
Portland, OR	7.3%	7.1%	6.5%	5.9%
Charleston, SC	2.4%	2.3%	2.3%	2.5%
San Juan	6.9%	6.7%	6.5%	6.4%
Shreveport	1.0%	0.8%	0.7%	1.0%
Portland, ME	3.1%	2.9%	3.4%	3.6%
Boise City	3.0%	2.9%	3.1%	3.0%
Gainesville	2.8%	2.6%	2.4%	2.3%
Waco	2.7%	2.4%	2.5%	2.7%
Wtd. Ave. (excl. PR)	**7.1%**	**6.9%**	**6.6%**	**6.0%**

Note: The price change estimate is the change of all firms' price changes in the market, weighted by market share.

161. For the reasons described above, we believe that the economic model is sensitive to the assumed inputs, contains a number of structural flaws and that it is thus materially unreliable for predicting the outcome of this transaction. On the basis of this evidence we are compelled to find that the Applicants have not met their burden of showing that the proposed transaction would be in the public interest.

C. Engineering Model and Efficiencies

162. The engineering model specifically assumes as inputs technical efficiencies related to the combination of AT&T and T-Mobile spectrum and cell sites.[430] Leveraging these benefits as a given, the engineering model attempts to approximate how each firm independently, and alternatively the combined firm, would manage congestion on its network and what the costs of doing so would be. The model uses cell splits and outdoor and indoor distributed antenna systems (oDAS and iDAS, respectively) to address evolving network capacity requirements and project related costs in fifteen "representative" markets.[431]

[430] *See,* Engineering Analysis at ¶ 26-29.

[431] *See* Engineering Cost Model Description at 1

Using the Applicants' inputs and assumptions, the model purports to establish that the incremental costs of adding network capacity for the combined firm would be lower than if AT&T and T-Mobile operated their networks separately.[432]

163. We agree with Applicants' high level assessment that the combination could result in technical efficiencies: By adding spectrum and cell sites, a network can become more efficient.[433] We begin with this basic proposition and then evaluate whether Applicants have provided sufficient record evidence to support their assertions concerning the size of these benefits and how they balance against the harms that will result from the proposed transaction. Our assessment is that the data and other information provided by the Applicants in the record is insufficient to meet this standard.

164. Despite these concerns, for the purposes of our review of the engineering model, we nevertheless assume that the Applicants' technical efficiency claims are fully realized. As set forth below, our concerns with the model are unrelated to the validity of these engineering inputs. We also briefly assess the claimed technical benefits below since the Applicants base some portion of their claimed efficiencies on the existence of these benefits.

165. *Position of the Parties.* The Applicants state that the engineering model reflects their ordinary course of business network engineering practices and analyses.[434] They contend that the selected markets are representative of the areas in which they operate in terms of population, geographic diversity, network characteristics and network load.[435] They also maintain that the demand assumptions used in model are derived from business documents and actual observed traffic loads, and that these are confirmed by third party forecasts.[436] The Applicants further contend that the proposed transaction would result in increased LTE penetration because more LTE devices could be sold to data subscribers in markets where AT&T currently has insufficient spectrum to support faster migration to LTE without a significant degradation in service.[437] They also assume that more efficient use of spectrum and the combined network resources would result in one additional UMTS carrier in each market.[438] On the basis of their model, the Applicants conclude that the transaction-related efficiencies would increase capacity on the integrated network and result in the combined firm having far lower incremental network costs relative to the standalone firms.[439]

166. Free Press contends that the Applicants' model disregards the cost of combining the two networks' spectrum holdings and cell sites and the cost attributed to repurposing some of T-Mobile's

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[432] The combined entity model assumes the growth in data usage is driving spectrum exhaust and that by 2016, **[Begin Confidential Information]** **[End Confidential Information]** *See* Engineering Analysis at ¶ 37. The combined entity model also assumes that subscriber growth would remain moderate, but that the net growth in network load would be **[Begin Confidential Information]** **[End Confidential Information]**

[433] Network Integration White Paper at 1.

[434] *See* Applicants' Engineering Model Ex Parte (Aug. 24, 2011) at 2.

[435] *See* Further Description of Engineering Analysis at 1.

[436] *See* Further Description of Engineering Analysis at 1.

[437] *See* Further Description of Engineering Analysis at 5 (stating that AT&T can only deploy **[Begin Confidential Information]** **[End Confidential Information]** markets analyzed in the Engineering Analysis without degrading the quality of existing service.

[438] *See* Engineering Analysis at ¶ 88.

[439] *See* Applicants' Engineering Model Ex Parte (Aug. 9, 2011), attaching Applicants' Engineering Model Presentation at 2, 15.

spectrum.[440] Free Press also notes that the Applicants make the "unfair" presumption that AT&T, without the proposed transaction, would do nothing to improve its long-term network performance and that a standalone AT&T would have a more difficult time converting subscribers to LTE than the combined firm would.[441]

167. *Discussion.* In the sections below we analyze the engineering model. We discuss its structure and methodology and explain how, through its use of a mathematical distribution formula, it incorrectly calculates cell-splits and incorporates other methodologies that significantly exaggerate the costs of the standalone firms—values that are fed into the economic model. We also analyze the key engineering inputs into the model as well as other claimed engineering efficiencies.

1. Engineering Model Structure

168. *Overview.* While the underlying methodologies of the engineering model are relatively simple, the structure and format of the engineering model is complex. It estimates in five steps the efficiencies of the proposed transaction in fifteen CMAs selected by the Applicants.[442] These calculations are performed in each year from 2011 to 2016 for AT&T and T-Mobile on a standalone basis, as well as under the assumption that they are combined into a single entity.[443] These steps are: (a) calculating the total annual traffic based on the input forecasts of subscribers, average voice and data usage per subscriber, and the proportion of subscribers using 2G GSM, 3G UMTS, and 4G LTE services;[444] (b) deploying currently held spectrum among GSM, UMTS and LTE technologies on existing cell sites;[445] (c) determining, in areas where the spectrum holdings are insufficient to meet the quality threshold that no more than **[Begin Confidential Information]** **[End Confidential Information]** percent of sectors in a given market exceed their capacity during the busiest hour,[446] the number of sectors that need to be split to add sufficient capacity to meet it; (d) deploying new macro cell sites first and then, if necessary, more expensive DAS[447] to the extent required to provide the required capacity; and (e) comparing the incremental annual network capital and operating costs associated with these macro and DAS additions per additional subscriber for the combined firm with those of the standalone firms to estimate the incremental cost efficiencies resulting from the proposed transaction.[448]

169. Despite the Applicants' claims that the engineering model reflects their regular business

[440] Letter from Chris Riley, Policy Counsel, Free Press, to Marlene H. Dortch, Secretary, FCC (Aug. 11, 2011) ("Free Press LTE Presentation Ex Parte (Aug. 11, 2011)") attaching Free Press Presentation on AT&T's LTE Deployment at 14 ("Free Press LTE Presentation").

[441] Free Press LTE Presentation at 14.

[442] *See* Applicants' Engineering Model (Aug. 11, 2011) at tab" SubMC_All", cells B8:B22 (These markets, listed by market number, are: New York, Los Angeles, San Francisco, Washington, DC, Miami, San Diego, Buffalo, Portland, OR, Charleston, San Juan, Shreveport, Portland, ME, Boise City, Gainesville, Waco.)

[443] *See* Engineering Analysis Overview (Aug. 3, 2011) at 4; *see also* Engineering Analysis.

[444] *See* Engineering Analysis Overview (Aug. 3, 2011) at 5. For the combined firm, it is assumed that 98% of subscribers are on UMTS/LTE by 2016.

[445] LTE and UMTS receive priority for spectrum allocations under the constraint that a minimum of 5 megahertz must be allocated to GSM service in each area. Engineering Analysis Overview (Aug. 3, 2011) at 8.

[446] *See* Engineering Analysis Overview (Aug. 3, 2011) at 9.

[447] The model constrains the number of cell splits each year to: (1) One cell split per sector per year and; (2) at most 10 percent of sectors in a market each year can be split. *See* Engineering Analysis Overview (Aug. 3, 2011) at 11 and 12.

[448] *See* Engineering Analysis Overview (Aug. 3, 2011) at 15.

and network engineering practice, we note that the engineering model was in fact developed specifically for the purpose of obtaining regulatory approval of the proposed transaction.[449] We also note that the fifteen markets chosen by the Applicants do not seem to be particularly representative: **[Begin Confidential Information]** **[End Confidential Information]** Given that the costs for the standalone firms would be significantly higher in these **[Begin Confidential Information]** **End Confidential Information]** markets compared to less capacity constrained areas, the engineering model most likely systematically overstates the benefits of the proposed transaction for this reason alone. In addition, since pricing in the wireless industry is effectively set on a national basis, what matters is the effect the proposed transaction would have on the average marginal costs on a nationwide basis. The Applicants choice of **[Begin Confidential Information]** **[End Confidential Information]** markets drives up marginal cost savings estimates and causes their economic model to overstate expected price reductions.

170. *Mathematical Distribution.* Rather than following standard industry practice of analyzing network traffic on a sector-by-sector basis, the engineering model assumes that network traffic is distributed across the sectors in each market according to an abstract mathematical distribution.[451] While the Applicants attempted to show that the mathematical distribution is a good fit for their actual traffic,[452]

[449] *See* Further Description of Engineering Analysis at 6-7.

[450] **[Begin Confidential Information]**

[End Confidential Information]

[451] The mathematical distribution approach assumes that the distribution of carriers necessary to meet demand follows **[Begin Confidential Information]** **[End Confidential Information]** *See* Letter from Richard L. Rosen, Counsel, AT&T to Marlene H. Dortch, Secretary, FCC (Aug. 11, 2011), attaching AT&T Network Engineering Cost Model Description at 12, 26 ("AT&T Network Engineering Cost Model Description"). This allows for simple calculations of the traffic overload across a network based on the network traffic for a single theoretical average sector. *See* Id. at 26, 29. This distribution is not widely used by industry for network planning. *See* Letter from Richard L. Rosen, Counsel for AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (August 23, 2011), attaching Further Description of Engineering Analysis ("Further Description of Engineering Analysis") at 6-7 (stating that "[t]he Engineering Analysis and Economic Analysis that AT&T has provided were developed to quantify the marginal cost savings associated with network-related efficiencies of the proposed transaction over a five year time horizon" and that "AT&T does not use such models to perform such calculations for planning purposes"); *see also* Letter from Regina M. Keeney, Counsel for Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, at 3 (August 18, 2011) ("Sprint Model Ex Parte (Aug. 18, 2011")) (asking that Applicants explain their engineering model and justify their methodology, including the extent to which it is used in the real world and whether Applicants Network planning groups/engineering teams use it in the normal course of business).

[452] *See* Letter from Richard L. Rosen, Counsel, AT&T to Marlene H. Dortch, Secretary, FCC (Aug. 24, 2011), attaching Network Engineering Cost Model Description ("Network Engineering Cost Model Description") at Annex A: Comparison of the **[Begin Confidential Information]** **[End Confidential Information]** Distribution of the Traffic Demand with the Actual Traffic Distribution at 36 (§ A.2) (stating that "The charts show that the delta between the **[Begin Confidential Information]** **End Confidential Information]** distribution and the March 2011 observed traffic distribution is extremely modest in the range of sector distribution most relevant to cell splits and carrier additions"); Id. at 38 (§ A.3) (stating that "the charts confirm an extremely modest delta between modeled cumulative traffic distribution and observed cumulative traffic distribution.").

staff analysis has found several flaws in this methodology as discussed below.

171. With respect to AT&T, we note that sector-specific traffic data is readily available to each provider. Incorporation of this data would have improved the precision of the engineering model with respect to AT&T's capacity requirements. AT&T understandably claims it will not have access to detailed T-Mobile traffic data until this transaction closes.[453] Nonetheless, the engineering model includes granular data from T-Mobile's network.[454] This includes T-Mobile's voice traffic as of March 2011[455] as well as T-Mobile subscriber and usage data.[456] We appreciate that this information is not the equivalent of sector-specific traffic data, but it could form the basis of a more accurate algorithm.[457] We note finally that AT&T's traffic model distribution is based purely on voice traffic while their engineering model is otherwise dominated by data traffic. Without additional information, this difference alone limits the reliability of the Applicants' engineering model.

172. Due in large part to the reliance on the abstract mathematical distribution in determining how many cell splits are needed instead of analyzing traffic data by sector, the Applicants did not implement cell splitting in the model correctly. In the model, when additional sectors are added to ease congestion, these sectors in fact relieve very little congestion on the overloaded cells. This is because these additional sectors are spread evenly over the mathematical traffic distribution. This represents building a large number of new sites that are mostly ineffective in relieving congestion.[458] As a result, after the cell splits are implemented, nearly all of the congested sites remain overloaded.[459]

173. For example, if there are 100 cell sectors in a market, the mathematical distribution might predict that two of the cells are overburdened and need to be split. Rather than adding cells to split the two overburdened cells specifically, the model simply adds three[460] theoretical cells to the entire distribution and the traffic at each cell is reduced by three percent.[461] Due to the minimal additional capacity in the overburdened area, the two cells would likely continue to exceed their capacity. Because the model is abstract, one way to interpret this assumption is to conclude that new sites are uniformly distributed across the market. In any event, all interpretations lead to a conclusion that the new sites were extremely ineffective at solving the congestion issues. As a result, after the cell splits are implemented,

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[453] *See* Further Description on Engineering Analysis at n. 14.

[454] *See* Applicants' Model Submission Letter (July 15, 2011) at 4(noting that the engineering model includes granular data for both networks).

[455] *See* Applicants' Engineering Model (Aug. 11, 2011) at tab "Subs&Spectrum."

[456] *See* Applicants' Model Submission Letter (July 15, 2011) at 4.

[457] Or, just as the Applicants hired outside economists having access to both parties' data, the Applicants could have engaged an outside engineer that had similar access to develop a more precise engineering model based on actual data.

[458] *See* Engineering Analysis at ¶¶ 100-103. More precisely, the Applicants' implementation of the model does not lower the peak-to-average ratio in a market after a cell split occurs. Cell splits in the Applicants' model only marginally lower the average while the peak-to-average ratio remains unaffected. This results in the cells being split again using expensive DAS..

[459] *Id.*

[460] *See* Engineering Analysis at FN 151. The model adds three cells to acknowledge the operators actually install sites consisting of one or more cells, so there is an inefficiency of building a multiple-cell site to address a single congested cell. This is referred to as a sector inflation factor in the model, and its value it taken to be 1.5, meaning that 3 cells are added to address every 2 blocking cells.

[461] Since the number of cells increased 3% from 100 to 103 and the total traffic is unchanged, the traffic per cell decreases.

nearly all of the sites that were overburdened remained congested.[462] Having failed to relieve the network congestion through the splitting of cells with macro sites, the model then splits these sites again in the same year using more expensive DAS.[463]

174. *DAS Overbuild.* The effect of the error described in the previous paragraph is seen in the model's predictions for the New York CMA. The Applicants' model predicts that standalone AT&T would have **[Begin Confidential Information] [End Confidential Information]** congested sectors to split in 2013, but after adding **[Begin Confidential Information] [End Confidential Information]** sectors, the model predicts that **[Begin Confidential Information] [End Confidential Information]** of the sectors would still be congested.[464] In other words, less than 19% (**[Begin Confidential Information] [End Confidential Information]**) of the congested sectors were resolved. As a result, the model's rigid structure cause it frequently to spend money to build sectors that do not relieve congestion and then splits the same sectors again with DAS, which the model assumes is a very expensive way to add capacity.

175. Our analysis suggests the DAS overbuild at the costs projected in the Applicants' model is not rational and does not reflect how any wireless provider would operate or model its business.[465] For instance, the Applicants' model predicts that in the New York CMA, standalone AT&T would have to build **[Begin Confidential Information] [End Confidential Information]** oDAS in 2016, at a cost of over **[Begin Confidential Information] [End Confidential Information]**.[466] Adjusting the cell splitting algorithm so new sites more accurately target congested areas, our analysis finds that the Applicants' model predicts that standalone AT&T would need to build only **[Begin Confidential Information] [End Confidential Information]** oDAS systems, which is a savings of approximately **[Begin Confidential Information] [End Confidential Information]** in capex and **[Begin Confidential Information] [End Confidential Information]** annually in opex over their projections in New York alone.

176. The Applicants' inflated capacity expansion costs are not limited to New York. The excessive use of DAS results in greater than 20 times the number of expensive DAS that would be required in some markets.[467] We believe that if the new sectors had been implemented in a more targeted manner, the capacity would have doubled at congested cells and the need for DAS would be substantially lower.[468] Importantly, this error disproportionately affects the standalone firms due to their smaller spectrum holdings, assumed lower LTE penetration and fewer cell sites.[469] As a result, the Applicants significantly overstate the estimated cost savings of the proposed transaction. If a more common capacity management approach were used for modeling purposes (i.e. splitting cells where capacity is actually

[462] We note that the deployment of capex in this manner is not economically rational, since a certain level of efficiency will be required in order to justify building a new site for the purpose of off-loading traffic. *See* Engineering Analysis at ¶¶ 100-107.

[463] *See* Engineering Analysis at ¶ 104.

[464] *See* Engineering Analysis at ¶ 100.

[465] *See* Engineering Analysis at ¶¶ 109-114.

[466] This is calculated as **[Begin Confidential Information] [End Confidential Information]** oDAS cost per site: Applicants' Engineering Model (Aug.11, 2011) at tab "Financials."

[467] *See* Engineering Analysis at ¶ 114 and Table 5.

[468] *See* Engineering Analysis at ¶ 116 for lower DAS needs. See CPUS Attachment 1, page 110 for effective cell splitting doubling capacity.

[469] *See* Engineering Analysis at ¶ 131.

needed and deploying more macro cells rather than DAS), the results of the engineering model would show significantly lower predicted incremental cost savings for the combined entity over the standalone firms.

177. *Unreasonable Capex Assumptions.* Exacerbating the DAS overbuild problem is that the Applicants assume that DAS costs more to build relative to macro towers than is reflected in their internal documents. The Applicants assume in their engineering model that macro cell sites cost **[Begin Confidential Information] [End Confidential Information]** to build and oDAS cost **[Begin Confidential Information] [End Confidential Information]**.[470] However, AT&T documents show that DAS is often the same cost or even less expensive to deploy than a macro tower over small capacity constrained areas. For example, in the San Francisco market, a study conducted by AT&T's engineers found that meeting capacity needs would cost **[Begin Confidential Information] [End Confidential Information]** through macro cell sites or **[Begin Confidential Information] [End Confidential Information]** through oDAS.[471] Similarly, in Cupertino engineers found that capacity needs could be met through building **[Begin Confidential Information] [End Confidential Information]** macro towers at a cost of **[Begin Confidential Information] [End Confidential Information]** or **[Begin Confidential Information] [End Confidential Information]** oDAS at a cost of **[Begin Confidential Information] [End Confidential Information]**.[472] Assuming that **[Begin Confidential Information] [End Confidential Information]**, as assumed in this document, this translates to less than **[Begin Confidential Information] [End Confidential Information]** per DAS build, which is less than half the oDAS cost assumption used by the Applicants in their engineering model.

178. The findings in these specific markets are also consistent with documents that assess the overall costs of deploying DAS versus macro cell sites. A document comparing oDAS versus new site builds over different coverage and capacity assumptions found that **[Begin Confidential Information] [End Confidential Information]** oDAS nodes provide the equivalent capacity relief as one macro tower.[473] Macro sites were assumed to cost **[Begin Confidential Information] [End Confidential Information]** and oDAS to cost **[Begin Confidential Information] [End Confidential Information]** per node so this equates to **[Begin Confidential Information] [End Confidential Information]** in capital expenses to equal the capacity of a single tower, which is again less than half of the value assumed by the Applicants.[474] Importantly, over small "hotspot" areas in

[470] *See* Engineering Analysis Overview (Aug. 3, 2011) at 14. The annual operating expense of oDAS is assumed to be **[Begin Confidential Information] [End Confidential Information]** versus **[Begin Confidential Information] [End Confidential Information]** for a macro cell site. *See* Applicants' Engineering Model (Aug. 11, 2011), "Financials" Cell Q79:Q:80.

[471] *See* ATTF-TMO-00060630 at 7 (AT&T, "May Strategic Offsite") (finding the total cost difference (including opex) of oDAS and macro towers was larger, **[Begin Confidential Information] [End Confidential Information]**.

[472] *See* ATTF-TMO-00060630 at 11 (AT&T, "May Strategic Offsite") (finding the **[Begin Confidential Information] [End Confidential Information]**, which also contradicts the Applicants assumptions in the engineering model).

[473] *See* ATTF-TMO-01065949 at 21,25 (AT&T, "Comparison of Macro NSB, CDNB & oDAS," Feb. 14, 2011).

[474] *See* ATTF-TMO-01065949 at 21, 25 (AT&T, "Comparison of Macro NSB, CDNB & oDAS," Feb. 14, 2011). These per node cost estimates are also similar to the **[Begin Confidential Information] [End Confidential Information]** purchase and **[Begin Confidential Information] [End Confidential Information]** lease price estimates for oDAS found in another AT&T document. *See* ATTF-TMO-01355036 at 6.

need of capacity relief, the same document finds that oDAS is **[Begin Confidential Information] [End Confidential Information].**[475] In the engineering appendix, we find that the coverage needed to offload traffic from the top 10 percent of AT&T capacity constrained sites in the 15 CMAs in the Applicants engineering model **[Begin Confidential Information]**

[End Confidential Information].[476] For example, in the New York CMA, the average coverage area needed to offload the traffic from the top 10 percent of congested sites is only between **[Begin Confidential Information] [End Confidential Information]** square miles and for such small coverage areas, AT&T finds oDAS would be far less expensive to deploy than macro sites.[477]

179. Therefore, we believe that while it is true that oDAS is more expensive to deploy for coverage over wide areas, it is not always more expensive to deploy for capacity relief on dense mature cellular networks such as the Applicants'. Since small areas needing capacity relief in major cities and not coverage will be the Applicants' network concern going forward, we conclude that DAS deployment will be used increasingly in the near future due to the lower cost meeting capacity needs in these "hotspots".[478] This conclusion is also broadly consistent with **[Begin Confidential Information]**

[End Confidential Information].[479]

180. *Missing Capex Values.* The usefulness of the model is further diminished by several other computational choices. For example, the model does not account for the costs of network and handset integration that would be required prior to 2014 to enable the Applicants to gain the spectral and operational benefits they identify in the model.[480] Including those costs would result in higher incremental costs for the combined entity in these years and larger predicted harms in the economic model prior to 2014. Another impact of focusing on this time frame is that any overstatement of the costs of capacity expansion inflates the difference between the standalone firms and the combined entity. The model shows the combined entity as needing only minimal network expansion due to the influx of T-Mobile sites and spectrum.[481] Since no acquisition or integration costs are assigned to T-Mobile's spectrum and sites, the network expansion cost for the combined entity is near zero.[482] By contrast the model shows the standalone firms experiencing significant capital expenditures for new cell or DAS

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[475] *See* ATTF-TMO-01065949 at 10, 21, 24-25 (AT&T, "Comparison of Macro NSB, CDNB & oDAS," Feb. 14, 2011).

[476] Our analysis shows that the average coverage over the 15 CMAs for the most constrained sites range from **[Begin Confidential Information] [End Confidential Information]** square miles from 2011 to 2015. *See* Engineering Analysis. **[Begin Confidential Information]**

[End Confidential Information]

[477] *See* ATTF-TMO-01065949 at 10, 21, 24-25 (AT&T, "Comparison of Macro NSB, CDNB & oDAS," Feb. 14, 2011).

[478] We further note the Applicants assumed in their engineering model that DAS costs are fixed at current levels. We believe that as DAS is increasingly deployed, any cost differences will be further reduced over the next five years. *See* Applicants' Engineering Model (Aug. 11, 2011), "Financials" cells V74; V76 for capex and cells Q80 and Q81 for opex..

[479] *See* ATTF-TMO-00108603 at 6 (AT&T, "Mobility RAN Plans (2011-2013)," Feb. 14, 2011).

[480] *See* Engineering Analysis at ¶ 129.

[481] *See* Engineering Analysis at ¶ 130.

[482] *See* Engineering Analysis at ¶ 30 and Figure 14.

deployments.[483]

181. *Inconsistent Demand Projections.* For the purposes of the engineering model, the Applicants use demand projections that appear to be significantly higher than the demand projections they use in their internal documents. For example, the model projects UMTS data demand on the AT&T network in 2015 from **[Begin Confidential Information]** **[End Confidential Information]** Megabytes/month/subscriber.[484] However, internal AT&T documents project data usage per subscriber over a broad range which is often significantly lower. For example, a comparison of several internal and external forecasts shows levels from under **[Begin Confidential Information]** **[End Confidential Information]** Megabytes/month/subscriber.[485] Similarly, an analysis of the impacts of tiered pricing forecasts 2015 data usage from **[Begin Confidential Information]** **[End Confidential Information]** Megabytes/month/subscriber.[486] Using higher demand projections could cause the model to overbuild to provide for capacity.

182. Taken together, we believe the choice of inputs and assumptions causes the engineering model to predict costs that are inconsistent with the Applicants' internal documents and potentially unreasonable. Consequently, the engineering model as submitted by the Applicants appears not to provide a reliable basis for balancing the proposed transaction's harms and benefits.

2. Engineering and Other Inputs

a. Overview

183. The engineering model makes a number of assumptions arising from the combination of spectrum and cell sites of the two companies. It uses these spectrum and cell site availability inputs, together with other assumptions, to generate comparative cost savings between the combined firm and each firm independently. The additional assumptions that the model uses include predictions of the extent of LTE penetration and the creation of an additional UMTS carrier. As noted above in the discussion of the engineering model above, we give the Applicants full credit for these efficiencies in connection with our evaluation of the engineering model. We nevertheless discuss each of these inputs below, since we do not believe that Applicants have met their burden with respect to demonstrating the size or, in some cases, the cognizability, of these benefits.

b. Spectrum and Cell Site Availability

184. The engineering model assumes as a significant net efficiency benefit of the proposed transaction that the spectrum and cell sites that AT&T acquires from T-Mobile will be available immediately to the combined firm upon consummation of the proposed transaction and that network capacity would more than double for the combined entity.[487] The Applicants contend that the combination of these AT&T and T-Mobile networks and spectrum holdings will result in several network operational efficiencies. These include: (a) complementarities between the AT&T and T-Mobile sites that would increase capacity in congested areas; (b) "channel pooling efficiencies" that would enable the Applicants'

[483] *See* Engineering Analysis at ¶ 30 and Figure 14.

[484] *See* Applicants' Engineering Model (Aug. 11, 2011) at tab "Tesla" cell U30. **[Begin Confidential Information]** ; **[End Confidential Information]**

[485] *See* ATTF-TMO-00113335 at 5 (AT&T, "Network Strategy").

[486] *See* ATTF-TMO-00356904 at 18-19 (AT&T, "Wireless/Wireline Evolution: Wireless Demand Model," Feb. 24, 2010).

[487] Hogg Declaration at ¶ 12 (referring to "instant" cell splits).

to serve more GSM subscribers with the same spectrum; (c) increased spectrum due to the elimination of redundant control channels on the combined GSM network; and (d) more uniform network traffic loads.[488] The model also assumes a degree of LTE device deployment that varies dramatically between the standalone and combined entities.[489]

(i) Cell-Site Complementarities

185. *Positions of the Parties.* The Applicants believe they can leverage complementarities between AT&T's network and approximately **[Begin Confidential Information]** **[End Confidential Information]** cell sites acquired from T-Mobile to relieve capacity constraints arising primarily on the AT&T network through "instant cell splits."[490] The Applicants state that the addition of T-Mobile cell sites to the AT&T network would double the amount of network traffic that could be carried on existing spectrum in areas where T-Mobile sites are integrated.[491] Cell site and device integration will be accomplished over two years (in other words, not literally instantly).[492] The Applicants contend that in the absence of the proposed transaction it would not be possible for AT&T to add as many cell sites to their network in that same two year period.[493]

186. The record suggests the Applicants' view the principal benefit of cell site complementarities as capacity relief.[494]

187. *Discussion.* We generally agree with the Applicant's claims that cell site complementarities can lead to capacity benefits. The benefits would arise in connection with this transaction when the sites that AT&T acquires from T-Mobile are located *where they can relieve capacity* when it is necessary to do so. For the benefits to be credited, the Applicants must therefore demonstrate both that the T-Mobile sites are located in the right places to address AT&T's network congestion issues and that the benefits could not practically be replicated absent the proposed transaction.[495]

188. Despite staff's requests for the necessary information, the Applicants did not submit a

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[488] Public Interest Statement at 8.

[489] See Engineering Analysis, Appendix D, §B.2.h.

[490] Public Interest Statement. at 7-8, 34-35, & Hogg Declaration at ¶¶ 12, 44 & 67; Joint Opposition at 45-46. The Applicants also claim that certain T-Mobile cell sites will enhance coverage and quality. Hogg Declaration at ¶ 57 (stating "[i]mmediately after closing, and even before the two networks are fully integrated, we expect T-Mobile USA subscribers in certain areas will be able to benefit from having access to both networks. In these areas, access to AT&T's GSM network, including its low band 850 MHz cellular spectrum, will provide T-Mobile USA subscribers with improved coverage, including superior in-building service and coverage compared to T-Mobile USA's existing GSM network....[and] AT&T's GSM customers will immediately benefit from additional capacity afforded by T-Mobile USA's GSM network.") However, there is insufficient quantitative evidence in the record to assess these claims, so staff focused its analysis on capacity relief.

[491] Public Interest Statement at 7-8, 34-35; Hogg Declaration at ¶ 46. A provider can "split" the geographic area covered by a cell site by adding nearby sites; because each site serves a smaller area and fewer people have to share the channels, capacity is increased. *See* Public Interest Statement at 27.

[492] Public Interest Statement at 8, 35 (citing Hogg Declaration at ¶¶ 12, 47 & 67); Joint Opposition at 46.

[493] Public Interest Statement at 35; Hogg Declaration at ¶ 67. At AT&T's current site build rate, they estimate the proposed transaction would add **[Begin Confidential Information]** **[End Confidential Information]** years' worth of cell sites to the AT&T network; Public Interest Statement at 46

[494] *See e.g.* Hogg Declaration at ¶¶ 43, 44; Hogg Reply Declaration at ¶ 26 (citing Hogg Declaration at ¶¶ 43-47).

[495] We note that the Applicants are primarily concerned with improving capacity on the AT&T network. *See* Hogg Declaration at ¶¶ 1-10. *See* Engineering Analysis, Appendix D for further information.

nationwide analysis of how many of the integrated T-Mobile sites would actually improve capacity in each year based on network traffic projections.[496] Instead, the Applicants submit as proof of their cell site complementarity claim evidence that 43 percent of the T-Mobile sites will be retained in San Francisco and that more than **[Begin Confidential Information]** **[End Confidential Information]** of these retained sites will actually address UMTS congestion issues. The Applicants claim this evidence is representative of AT&T's nationwide network.[497] The record does not contain support for the Applicants' claims that the information about San Francisco is, in fact, representative of AT&T's nationwide network.[498] Indeed, elsewhere in the record, Applicants have claimed that they would retain approximately **[Begin Confidential Information]** **[End Confidential Information]** of T-Mobile's **[Begin Confidential Information]** **[End Confidential Information]** [499]sites nationwide.

189. Staff nevertheless attempted to validate the Applicants' claims with respect to capacity relief by conducting a site-by-site integration analysis using a computer model based on wireless network engineering principles. As explained in the Engineering Analysis this analysis suggests that far fewer than **[Begin Confidential Information]** **[End Confidential Information]** T-Mobile sites are "instantly" available to relieve AT&T capacity constraints.[500] Moreover, when using the Applicants' engineering model network traffic projections, in every year but one until 2016, the number of additional T-Mobile sites available annually to relieve congestion on the AT&T network is less than AT&T's current build rate.[501] While we accept that it is unlikely that AT&T could build **[Begin Confidential Information]** **[End Confidential Information]** sites in two years, our analysis suggests that the magnitude of the benefit is substantially lower than what the Applicants have suggested.

190. Similarly, based on the evidence in the record, it appears that AT&T could acquire the same number of capacity relieving cell sites without acquiring T-Mobile, either by leasing, co-locating or

[496] William Hogg's estimate of **[Begin Confidential Information]** **End Confidential Information]** *See* Hogg Declaration at 23 n. 16. Reed and Tripathi performed a more detailed network integration study for parts of the San Francisco and Los Angeles CMAs but not nationwide. They found that **[Begin Confidential Information]** **End Confidential Information]** percent of T-Mobile sites could be productively integrated into AT&T's network. *See* Network Integration White Paper at 4-5.

[497] Network Integration White Paper at 5; Response to Information Request by Deutsche TeleKom AG and T-Mobile USA, Inc. Supplemental Response of T-Mobile USA to Information and Discovery Request Dated May 27, 2011, June 13, 2011 at Sites data file Item_45_Site Data_v2.csv. Capacity constraints on AT&T's network in San Francisco are not representative. In fact, San Francisco is one of the most spectrum constrained markets in the AT&T network. *See,* Carlton Reply Declaration ¶¶33-34 and Table 3. Because it is so congested, more T-Mobile cell sites are useful to address capacity constraints than T-Mobile sites in the other markets, where the average keep rate is 32 percent. *See* Engineering Analysis, Appendix D at § III.A.

[498] *See* Stravitz Declaration ¶ 45.

[499] *See* Hogg Declaration at ¶¶ 43-46; Hogg Reply Declaration at ¶ 12 ("...the combined company would achieve capacity- creating synergies through: (a) increasing cell density by integrating more than **[Begin Confidential information]** **[End Confidential Information]** T-Mobile sites...").

[500] The record is silent with respect to capacity constraints on the combined and T-Mobile standalone networks.

[501] The greatest number of sites that we estimate that AT&T would have to add to its network in any given year is **[Begin Confidential Information]** **End Confidential Information]**, which is only **[Begin Confidential Information]** **End Confidential Information]** sites more than their current build rate. Staff analysis of cell site and traffic data submitted by Applicants in response to Information and Discovery Request dated May 27, 2011.

even acquiring T-Mobile towers.[502] For example, we note that only about **[Begin Confidential Information]** **[End Confidential Information]** of the sites that AT&T would acquire from the proposed transaction are actually owned by T-Mobile; the remaining sites are leased from third parties.[503] After performing the same analysis we performed for the T-Mobile site locations on the locations that could be leased, the results suggest that **[Begin Confidential Information]** **[End Confidential Information]** the number of the T-Mobile sites AT&T would need annually to relieve capacity constraints could be acquired through leasing agreements with just these three companies.[504]

191. Staff appreciates the technical and practical challenges of building new cell sites and adding equipment to existing towers.[505] We know that local planning and zoning requirements are time consuming and delays and costs can be significant. Nonetheless, our analysis suggests that there are a number of difficulties with the supporting evidence that Applicants have submitted for their claims regarding benefits associated with cell site complementarities and we therefore must discount the weight that we give to these claims.

(ii) Channel Pooling

192. *Positions of the Parties.* An additional benefit related to the combination of the networks and cell sites is channel pooling. "Channel pooling efficiencies" is a term the Applicants use to describe the benefits associated with aggregating two separate blocks of radio channels into a single block. The Applicants claim that a larger pool of available channels would increase the probability that a user

[502] Because the Applicants were unable to provide staff with the data necessary to determine whether AT&T could obtain access to cell sites that T-Mobile only leases, staff analyzed data from tower holding companies American Tower, Crown Castle, and SBA on the locations of available site leases. Staff's analysis is conservative because, while the data represents a large fraction of available sites for lease in a market, it does not account for spaces available from other parties. The analysis is also conservative because it does not adjust for additional towers that would be built by third parties in later years or for possible leasing or infrastructure sharing arrangements between the Applicants. *See* Letter from William J. Sill, Counsel to Crown Castle International Corp., to Marlene H. Dortch, Secretary, FCC (Aug. 5, 2011) (submitting data in response to the Commission's July 26, 2011, Request for Information); *see also* Letter from Ruth T. Dowling, Counsel to American Tower Corp., to Marlene H. Dortch, Secretary, FCC (Aug. 8, 2011) (submitting data in response to the Commission's July 26, 2011, Request for Information); Brendan T. Cavanagh, Counsel for SBA Communications Corp., to Marlene H. Dortch, Secretary, FCC (Aug. 4, 2011) (submitting data in response to the Commission's July 26, 2011, Request for Information).

[503] There are documents in the record that suggest that it might have been possible for AT&T to purchase at least some of the towers owned by T-Mobile without acquiring T-Mobile itself. *See e.g.*, ATTF-TMO-00103622, Technology Business Research, Inc. "T-Mobile USA 4Q 2010", pg. 21. T-Mobile and AT&T could also realize cell-site efficiencies by co-locating equipment on their sites or by sharing sites through the use of quadband antennas. *See* Stravitz Declaration at ¶ 51.

[504] This is calculated as: **[Begin Confidential Information]** **[End Confidential Information]** We note that these figures would likely vary significantly by geographic area. Staff analysis derived from cell site and traffic data submitted by the Applicants in response to Information and Discovery Request dated May 27, 2011 and data submitted by American Tower, Crown Castle & SBA in response to Request for Information dated July 26, 2011. *See* Appendix D at ¶ 165.

[505] *See, e.g., Petition for Declaratory Ruling to Clarify Provisions of Section 332(C)(7)(B) to Ensure Timely Citing Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance*, WT Docket No. 08-165, Declaratory Ruling, 24 FCC Rcd 13994, 13994 ¶ 1, 14004-08 ¶¶ 32-36 (2009) ("Tower Siting Order") (finding that wireless operators must generally obtain state and local zoning approvals before building wireless towers or attaching equipment to pre-existing structures and that such operators face lengthy and unreasonable delays in the consideration of their applications.); *Order on Reconsideration*, 25 FCC Rcd 11157 (2010), *petition for review pending*, City of Arlington, Texas v. FCC, No. 10-60039 (5th Cir., filed Jan. 12, 2010).

initiating a call or data session on the combined network will obtain an open channel to complete the communication.[506] They estimate that channel pooling would lead to **[Begin Confidential Information]** **[End Confidential Information]** percent gains in spectrum capacity in many areas and that the gains would be a decreasing function of the size of the existing channel pools for AT&T and T-Mobile in each area.[507]

193. Based on an analysis of the Applicants' data, their experts find that in some markets the gains would exceed the **[Begin Confidential Information]** **[End Confidential Information]** percent range and that the average benefit would be **[Begin Confidential Information]** **[End Confidential Information]** percent gain in spectrum capacity.[508] Applicants contend these benefits would apply initially only to their GSM networks due to the Applicants' similar spectrum bands and technologies, but would also be applicable to their UMTS networks once their network equipment and handsets are compatible.[509] They further state that pooling efficiencies would occur even if both networks are heavily loaded.[510] In capacity constrained areas, the benefits of channel pooling capacity gains would be fewer dropped calls and blocked data sessions,[511] whereas, in uncongested areas, some GSM spectrum could be migrated for use on the UMTS network.[512]

194. Opponents of the proposed transaction argue that Applicants have not adequately quantified this synergy. MetroPCS calls upon Applicants to make a detailed showing on the record of how pooling efficiencies are expected to be achieved, so that the technical community can weigh in.[513] Both Sprint and Free Press assert that only 2G GSM networks would benefit from the proposed transaction's channel pooling efficiency. Free Press also contends that AT&T offers little evidence to substantiate their claimed channel pooling efficiency.[514] In addition, Sprint argues that Applicants' admit that channel pooling gains are smaller when larger pools of spectrum are combined. Since both AT&T and T-Mobile tend to have large channel pools in congested, dense urban areas, Sprint argues that combining the Applicants pools would only result in meager pooling efficiencies in congested areas.[515]

195. *Discussion.* We agree with the Applicants that pooling the Applicants' GSM channels could allow the combined entity to serve more traffic on their GSM network with the same amount of combined spectrum.[516] We also agree with the Applicants and Sprint that channel pooling gains would be

[506] *See* Hogg Declaration at ¶50; Network Integration White Paper at 7.

[507] *See* Hogg Declaration at ¶50; Network Efficiencies White Paper at 2 **[Begin Confidential Information]** **[End Confidential Information]** percent gains would be typical); *see also* Network Integration White Paper at 7, n. 3; Hogg Declaration at n. 20.

[508] *See* Network Integration White Paper at 9-10 and n. 5.

[509] Hogg Declaration at ¶ 49, n. 19.

[510] *Id.* at ¶ 52.

[511] *Id.* at ¶ 50.

[512] *Id.* at ¶ 53.

[513] MetroPCS and NTELOS Reply at 7.

[514] Free Press Petition at 54-56; *see also* Letter from Regina M. Keeney, Counsel for Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, at 1 (July 28, 2011) ("Sprint Ex Parte (July. 28, 2011)"), attaching Presentation AT&T's Takeover of T-Mobile Will Not Serve the Public Interest Sprint Ex Parte, at 12 (July 28, 2011) (stating that pooling gains are much lower for high usage areas and apply only to GSM network).

[515] Free Press Petition at 115; *see also* Sprint Presentation at 31 (July 11, 2011).

[516] We note that due to the large number of channels available on a UMTS network relative to a GSM network given the same amount of spectrum, any channel pooling gains on these networks would be *de minimis*.

expected to be larger in areas where the two firms have fewer GSM channels. We further agree with the Applicants that benefits related to channel pooling gains can occur even if both the AT&T and T-Mobile GSM networks are currently capacity constrained. However, as with cell site complementarities, we believe the Applicants must demonstrate with specificity that the channel pooling efficiencies are as extensive as they claim and that there is a link between potential gains and a cognizable consumer benefit. For the reasons set forth below, the record provides an insufficient basis for us to conclude that these gains are of the size predicted by the Applicants.

196. We first note that the main channel pooling gains would be limited to GSM networks. As a matter of cellular network engineering, due to the far greater number of channels deployed on UMTS and LTE networks, any potential pooling gains on these networks would be *de minimis*.[517] They are also fleeting. The Applicants internal documents indicate that AT&T contemplated shutting down their GSM networks **[Begin Confidential Information]** **[End Confidential Information]** in the absence of the proposed transaction.[518] Therefore, any channel pooling gains would disappear at that time and thus would be of limited duration. While the Applicants' contend that in the interim, GSM channel pooling gains would allow them to transition more rapidly to LTE or increase the amount of spectrum deployed on UMTS, the record does not contain credible evidence, strategic documents, or any analysis that would be appropriate to substantiate these claimed benefits.[519]

197. The record with respect to channel pooling gains is limited to several pages in two separate technical declarations containing minimal, non-geographically specific technical data.[520] Thus, to evaluate the Applicants' claims, Staff used sector-specific data provided by the Applicants to analyze GSM channel pooling efficiencies in the top twenty-five most congested CMAs as indicated by the Applicants.[521] While our analysis found evidence of some channel pooling efficiency benefits, they were almost always lower than the range claimed by the Applicants. In particular, we find that the capacity gains from channel pooling are from thirty to almost fifty percent lower than claimed in fifteen of the twenty five markets analyzed.[522] Overall, we find a population weighted average channel pooling capacity gain of seven percent, which implies only an average 6.5 percent GSM spectrum savings in the areas analyzed.[523] This percentage gain is only about half the value reported by the Applicants.

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[517] See Engineering Analysis, Appendix D for this discussion at ¶174.

[518] *See* ATTE-TMO-00143295 at 1 ("AT&T **[Begin Confidential Information]**

End Confidential Information]

[519] In the absence of more documentation, an equally plausible hypothesis is that more spectrum and less competition could allow AT&T to prolong its use of inefficient GSM technologies and further delay the transition to more spectrally efficient LTE and HSPA.

[520] *See* Network Integration White Paper at 7-11 and 17-23

[521] The Applicants did not quantify any channel pooling efficiency gains they expect on their UMTS networks, however, due to the large number of channels on each UMTS sector, we conclude that any pooling efficiencies on these networks would be negligible. *See* Engineering Analysis, Appendix D for further details.

[522] Unlike the Applicants' analysis, we limit our analysis to the most congested sites in each CMA. The reason for this is that channel pooling gains for sites that do not have the maximum number of radios (TRX's) on each site would be very low since radios could be added to these sites to increase capacity. In this case, the only savings would be the cost of the additional radio. *See* Engineering Analysis, Appendix D for further details, at ¶ 173.

[523] Wireless network capacity gain requires less spectrum to serve the same traffic demand. The fraction of the required spectrum after the gain is 1/(1 + Capacity_Gain_Fraction). Therefore, the fraction of saved spectrum is 1 - 1/(1 + Capacity_Gain_Fraction). For example, 100 % capacity gain translates to a 50% spectrum savings, 1-1/(1+.1)=.5.

198. In addition, the markets with the largest potential gains in capacity tend to be the most rural and least spectrum constrained. Since capacity relief is generally needed in larger urban areas, the cognizable benefits that may result from pooling gains in these rural markets are questionable. This also sheds doubt on whether, as the Applicants claim, the pooling efficiencies would result in cognizable consumer benefits in the form of increased capacity through deployment of an additional UMTS carrier in congested markets or more rapid deployment of LTE services.

(iii) GSM Control Channels

199. *Positions of the Parties.* The Applicants maintain that the elimination of redundant control channels (called Broadcast Control Channels or BCCHs) is a unique benefit of the proposed transaction that would yield between 4.8 to 10 megahertz of additional spectrum in every market where both providers currently operate GSM.[524] GSM networks use BCCHs to broadcast general network information to all subscribers. In order to avoid interference, a minimum of 4.8 megahertz of spectrum is typically dedicated to BCCHs, although this can be much higher if spectrum is reused on the network less efficiently.[525] When two independent operators cover the same geographic area, each operator reserves its own set of BCCHs, but if the two operators integrate their networks, only one of the BCCHs may be needed for the network.

200. The Applicants provide an analysis of the 15 markets they model using data on T-Mobile's actual frequency reuse plans in those markets.[526] The analysis of control channels in those markets confirms, according to the Applicants, the spectrum savings that would be realized through network integration meet or exceed the Applicants' initial estimated range of 4.8 MHz to over 10 MHz. Indeed, the Applicants claim that in a number of the analyzed cities, eliminating redundant control channels would free 10 megahertz of spectrum.[527]

201. Some commenters challenge the claims of spectrum gains through the elimination of redundant control channels. Pointing out that control channels also carry some voice and data traffic, opponents suggest that AT&T has not shown that this traffic can be accommodated in the combined network if the T-Mobile control channels are eliminated.[528] Free Press acknowledges that redundant control channels could potentially result in spectrum utilization inefficiencies, but they argue that the Applicants have failed to show any specific details demonstrating that the control channels used by the two companies are redundant, or otherwise could be combined in an integrated network to reduce inefficiency.[529] Sprint claims that while it may be feasible for AT&T to reclaim spectrum through control channel aggregation, these benefits will neither be immediate nor lasting. Sprint points out that the Applicants do not provide data to support their claims of 4.8 - 10 megahertz of spectrum gains or estimate

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[524] Hogg Declaration at ¶¶ 24-25.

[525] The amount of spectrum allocated to control channels depends on the number of cells that must be skipped over before the same frequency channel can be reused in a given area. *See* Network Integration White Paper at 11-12. GSM networks operate on 200kHz channels for uplink and downlink and the channels can only be reused every 12th sector, so:(2*200kHz/channel)*12channels = 4.8MHz would be required for broadcast control channels on the GSM network in this case.

[526] *See* Reed and Tripathi, July 26 Network Integration – Exhibit A Paper at 12-13. As stated above the cities, by market number, are New York-NY, Los Angeles-CA, San Francisco-CA, Washington DC, Miami-FL, San Diego-CA, Buffalo-NY, Portland-OR, Charleston-SC, San Juan-PR, Shreveport-LA, Portland-ME, Boise City-ID, Gainesville-FL, and Waco-TX. *See* footnote 367, *supra.*¶

[527] *See* Reed and Tripathi, July 26 Network Integration – Exhibit A Paper at 13.

[528] *See* Network Integration White Paper at 13 n. 9.

[529] Free Press Petition at 54.

how soon or how often the claimed degree of reclamation would be available.[530]

202. *Discussion.* We generally agree with the Applicants that eliminating redundant BCCHs could result in additional spectrum that could be repurposed for other networks or remain on the GSM network. Our analysis finds that the proposed transaction would result in at most 4.8 megahertz in additional spectrum in markets where both providers operate GSM networks. First, we note that the Applicants have again not provided sufficient plans and analyses to determine how any reclaimed spectrum – assuming control channel spectrum reclamation is possible – would result in cognizable benefits. In particular, as with our discussion of pooling efficiencies, we find that the Applicants have not established any connection between this spectrum saving and any cognizable consumer benefits.

203. Since AT&T and T-Mobile's GSM networks are scheduled to be decommissioned in **[Begin Confidential Information]** ,[531] **[End Confidential Information]** any control channel gains would again be only temporary. Furthermore, the Applicants have not provided sufficient evidence to determine potential benefits in the intervening years. While it may be true that the spectrum gained from control channel elimination could result in increased deployment of advanced technologies it could also prolong AT&T's reliance on outdated and inefficient GSM technology.

204. Currently, AT&T's GSM network reuses spectrum more frequently than T-Mobile's and therefore usually requires **[Begin Confidential Information]** **[End Confidential Information]** T-Mobile uses in some CMAs such as Portland, OR and San Diego, CA.[532] We generally agree with the Applicants that as a theoretical matter, the proposed transaction could free up the amount of spectrum equivalent to the largest amount of spectrum reserved for BCCH in every CMA where both operate GSM networks. For example, combining the two networks in those CMAs where **[Begin Confidential Information]** **[End Confidential Information]** However, if T-Mobile is facing significant near term capacity constraints, as the Applicants claim, then **[Begin Confidential Information]** **[End Confidential Information]** Because we assume that T-Mobile will make the most efficient use of its spectrum, the most we are therefore able to credit Applicants with as a transaction specific benefit from eliminating redundant control channels would be **[Begin Confidential Information]** **[End Confidential Information]** megahertz of spectrum, which is not enough to deploy an additional 5 megahertz UMTS carrier.

205. Due to the substantial doubts that remain about the feasibility, size and benefits of possible control channel elimination efficiencies, we are unable to attribute much weight to them in our public interest analysis.

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[530] Stravitz Declaration at ¶ 35.

[531] While different GSM network sunset dates appear in documents provided by the parties, it is not clear that AT&T has decided whether it will sunset its network in **[Begin Confidential Information]** **[End Confidential Information]** or when T-Mobile will complete its transition from GSM. *See e.g.,* ATTF-TMO-00143295 at 4 (AT&T, "2G Network Sunset Analysis, Consumer Strategy," August 19, 2010) (considering **[Begin Confidential Information]** ; **[End Confidential Information]** *see also* DTTM-FCC-00015735 at 40 (T-Mobile, "T-Mobile 2012 Handset Strategy" (February 4, 2011).

[532] Network Efficiencies White Paper at 15.

(iv) Network Utilization Efficiencies

206. *Positions of the Parties.* The combination of the Applicants' networks permits the realization of network utilization efficiencies, notably by more evenly distributing traffic across the networks by time, geography, or both. The Applicants contend that in certain CMAs, the traffic loads of their networks are complementary.[533] In some areas and times of day, the AT&T network is more heavily loaded than T-Mobile's network while in others the reverse is true. In an area where one provider's network is lightly loaded and another faces capacity constraints, the Applicants contend that traffic on the combined network would be more evenly distributed and this would allow them to reallocate spectrum towards increased UMTS or LTE deployment.[534] The Applicants provided the average market network utilization data in kMOU/MHz/sector for their respective networks in twenty CMAs where they claim there is the potential to achieve network utilization efficiencies resulting from better utilization of the excess capacity by the combined company. [535]

207. Opponents argue these benefits are limited, difficult to evaluate, short-lived and not applicable to data networks. Free Press points out that that the utilization efficiencies for 2G GSM subscribers are highly limited and come at the expense of the customers of the network with excess capacity.[536] Moreover, Free Press notes that any benefits would only occur in areas that fit a pattern of unbalanced network loads.[537] Free Press believes that the identification of a few such areas by the Applicants does not itself amount to a showing of substantial benefit for a significant number of customers nationwide.[538]

208. The Applicants and their experts disagree. They point out that utilization efficiencies can occur both when the two networks have a large difference in traffic loads or are similarly loaded.[539] In the former case, the benefit extends to 3G and 4G because when the differing traffic loads are combined, spectrum can be cleared and repurposed[540] In the latter case, 3G networks can benefit by distributing the total load across the two networks so fewer calls are blocked.[541]

209. *Discussion.* While we do not disagree with the general network utilization or traffic load balancing engineering premise, we find that the Applicants have provided no specific, detailed information and analysis in the record to help assess and quantify the magnitude of their claims of network utilization efficiencies. To support their claims, we would have expected the Applicants to provide detailed network information, including detailed sector-level network traffic maps and granular local traffic analysis of both networks, load balancing analysis of the combined network, local traffic analysis of both networks, and network-to-network busy-hour comparisons by the target markets. Instead, there are only average market network utilization data and general statements about "lumpy" demand on cellular networks that can be leveraged in a combined network to repurpose more spectrum or

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[533] Public Interest Statement at 39 (citing Hogg Declaration at ¶¶ 54-56).

[534] Network Efficiencies White Paper at 14.

[535] *See* Response of AT&T to Information and Discovery Request (May 27, 2011), Exhibit 5-1; FCC-ATT-00010852 (comparing utilization in market to the percent higher utilization of the most utilized network).

[536] *See* Free Press Petition at 3, 56-58, 69.

[537] *See id.* at 56.

[538] *See id.* at 56.

[539] *See* Network Efficiencies White Paper at 24-28.

[540] *See id.* at 28.

[541] *See id.* at 29.

target UMTS capacity constraints.[542] We believe that the aggregated 2G and 3G average network utilization comparisons between the two networks at the market level are not sufficient to quantify the network utilization efficiency gains of the combined network. While the Applicants assert that an engineering analysis of San Francisco sector-level traffic data can accurately predict nationwide benefits, they do not support that assertion.

c. LTE Penetration.

210. The extent of LTE penetration is another input for the engineering model. The model attributes a lower rate of LTE device deployment to the standalone firms due to claimed reduced spectrum flexibility. The model assumes that 45 percent of the combined firm's subscribers would have LTE by 2016 compared to **[Begin Confidential Information]** **[End Confidential Information]** for AT&T and **[Begin Confidential Information]** **[End Confidential Information]** LTE deployment for standalone T-Mobile[543] We find this assumption counterintuitive for several reasons and believe it has a significant misleading effect on the benefits of the proposed transaction.

211. One of the Applicants' primary justifications for the necessity of this transaction is that, as standalone firms, AT&T and T-Mobile are, and will continue to be, spectrum and capacity constrained. Due to these constraints, we find it more plausible that a spectrum constrained firm would maximize deployment of more spectrally efficient LTE, rather than limit it. Transitioning to LTE is primarily a function of only two factors: (1) the extent of LTE capable equipment deployed on the network and (2) the penetration of LTE compatible devices in the subscriber base. Although it may make it more economical, the transition does not require "spectrum headroom" as the Applicants claim.[544] Increased deployment could be achieved by both of the Applicants on a standalone basis by adding the more spectrally efficient LTE-capable radios and equipment to the network and then providing customers with dual mode HSPA/LTE devices.[545] As soon as the penetration reaches a predetermined level, an LTE carrier can replace an HSPA carrier and dual mode devices will use the new LTE carrier.[546] As LTE penetration increases further, UMTS spectrum would then be transitioned to LTE as demand required.[547]

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[542] *See, e.g., id.* at 3.

[543] *See* Applicants' Engineering Model Presentation at 6.

[544] *See* ATTF-TMO-01202704 at 5 (AT&T, "Spectral Efficiency Improvements," July –August 2009) Efficiencies can result both as a result of deploying devices that support the latest network technologies and from deploying devices that include improvements in receiver technology that are independent of networks; *see also* MetroPCS and NTELOS Petition at 30-32

[545] *See generally* GSM-UMTS Network Migration to LTE, LTE and 2G-3G Interworking Functions. February 2010. http://www.3gamericas.org/documents/2010_LTE_Introduction_into_GSM-UMTS_Networks_Feb_2010_FINAL.pdf.

[546] *Id.*

[547] We would also note that LTE has been designed to facilitate spectrum redeployment and ease technology migration. LTE can be deployed in channel sizes down to 1.4MHz +1.4MHz, which would make it more efficient, from a spectrum conservation perspective to transition GSM customers directly to LTE, rather than first equipping them with HSPA devices. *See generally* GSM-UMTS Network Migration to LTE, LTE and 2G-3G Interworking Functions, February 2010. http://www.3gamericas.org/documents/2010_LTE_Introduction_into_GSM-UMTS_Networks_Feb_2010_FINAL.pdf. *See also* Letter from Michael Lazarus, Counsel, MetroPCS, to Marlene H. Dortch, Secretary FCC (Jan. 13, 2010) (MetroPCS Ex Parte (Jan. 13, 2010) attaching presentation of Hossam H'mimy, Ericsson Inc., LTE technology capabilities at 5-6; Letter from Jean L. Kiddoo, Counsel, MetroPCS to Marlene H. Dortch, Secretary, FCC (Aug. 19, 2011) (MetroPCS Ex Parte (Aug. 19. 2011) at 4 (suggesting T-Mobile "clearly would have adequate spectrum to begin offering 4G LTE"); ATTF-TMO-00043902 at 11-16 (AT&T, "Mobility Network Performance, Infrastructure Evolution and Changes in the Network," Nov. 15, 2010) (detailing HSPA+ and LTE Upgrades). *See generally,* ATTF-TMO-00004733 (AT&T, "Marketing – Mobility (continued....)

We note that all providers face these challenges.

212. On the first of the two factors required for greater LTE penetration, there is ample documentation in the record that AT&T was planning a robust roll-out of LTE prior to the announcement of the proposed transaction.[548] **[Begin Confidential Information]**

[End Confidential Information] It is reasonable to assume that AT&T's LTE roll-out would include the markets in the model, or at least the spectrum constrained ones.

213. While LTE deployment is less certain but not impossible for T-Mobile, we also find ample documentation in the record to at least question whether no LTE penetration is appropriate as a model input for T-Mobile. **[Begin Confidential Information]**

[End Confidential Information] Moreover, in most CMAs the Applicants have analyzed, T-Mobile has excess spectrum that it could readily deploy. And, if the proposed transaction is not consummated, T-Mobile is scheduled to receive additional spectrum in the AWS band from AT&T. Thus, we feel the assumption in the model is questionable.[551]

214. The standalone firms could also likely achieve these proposed benefits through more aggressive handset migration of subscribers off of legacy GSM technologies onto UMTS and LTE as well as an aggressive offering of dual mode HSPA/LTE devices. While the Applicants claim that GSM migration is difficult due to the unwillingness of customers to switch devices, this claim is undermined by their own modeling assumptions. The Applicants' engineering model assumes that **[Begin Confidential Information]** **[End Confidential Information]** T-Mobile subscribers with UMTS phones would have devices compatible with AT&T's 850/1900 MHz spectrum by 2014 when only **[Begin Confidential Information]** **[End Confidential Information]** do today.[552] This demonstrates, and the Applicants' documents and past experiences suggest, that aggressive handset migration is a feasible alternative for achieving the benefits of faster LTE deployment absent the proposed transaction.[553]

215. Since both standalone AT&T and the combined firm would have sufficient spectrum for LTE deployment we do not find the assumption that standalone AT&T would have LTE penetration **[Begin Confidential Information]** **[End Confidential Information]** percentage points lower than the

(Continued from previous page)
Network," Nov. 10, 2011); ATTF-TMO-00002562 **[Begin Confidential Information]**

[End Confidential Information]

[548] ATTF-TMO-01069730 at 12 (AT&T, "Wireless Evolution, Steering Team Review," March 18, 2010); *see also Id.* at 5; ATTF-TMO-00145224 at 12 (AT&T, "Competitor Develops Network Advantage, 3G/4G Coverage Expansion Analysis," April 14, 2010).

[549] *See* Further Description of Engineering Analysis at 5.

[550] *See, e.g.* DTTM-FCC-00027940 at 29 (T-Mobile, S-Band Spectrum, Executive Committee Project Review, Jan. 25, 2011).

[551] We note that while the Applicants maintain there is no clear path to LTE for T-Mobile, the engineering model nonetheless contains an option for T-Mobile to deploy LTE. *See* Engineering Analysis, Appendix D, ¶ 91, n. 143 and ¶ 129, n. 197.

[552] *See* Explanation of Compass Lexecon Merger Simulation Model at n. 25.

[553] *See supra* Section V.B..

combined firm to be credible. Using more reasonable LTE deployment assumptions for the standalone firms would have the effect of reducing the need for cell splits needed by the standalone firms in the model and effectively lower the relative cost differences between the combined and standalone cases.[554] We find that conservatively assuming that T-Mobile has no LTE but standalone AT&T has LTE penetration equivalent to the combined firm reduces the network cost efficiencies of the proposed transaction by from 26 percent to 41 percent in 2014, depending upon the market.[555]

d. Additional UMTS Carrier

216. The Applicants claim that an additional 5MHz x 5MHz UMTS carrier will be created through the proposed transaction as a result of the control channel and channel pooling efficiencies described above. The extra carrier is a separate input into the model. The Applicants maintain that this additional capacity is necessary for UMTS deployments in a number of markets and that in certain markets it will be impossible to deploy UMTS absent the proposed transaction.[556]As noted above, we believe that both the control channel and channel pooling efficiencies are real but find that the claims are overstated. There is inadequate evidence in the record to support the Applicants contention that these benefits would exist in sufficient quantity in areas where an additional UMTS carrier would be most needed, or even, if they were, that the Applicants would use them for that purpose. Moreover, as discussed, the Applicants can use other approaches to deploy an additional UMTS carrier. Consequently we find that the creation of an additional UMTS carrier is not a cognizable benefit.

3. Network Migration Issues

217. *Positions of the Parties.* Independent of the engineering model, the Applicants claim the technical efficiencies of the proposed transaction discussed above would release enough additional spectrum to allow a more rapid migration of their networks to UMTS and LTE.[557] The Applicants argue that without the proposed transaction, network migration would be greatly complicated and impossible in some areas.[558] The Applicants claim that network migrations are complex and depend upon the successful migration of customers to efficient handsets. AT&T argues that it has used aggressive migration techniques to try optimize its spectrum efficiency through the elimination of GSM users and that the number of retail customers using GSM devices dropped by 60 percent from 2008-2011.[559] These include incentives in metropolitan areas to encourage customers to buy new non-GSM handsets. [560] However, the Applicants found that only a very small percentage of customers took advantage of these incentives.[561]

218. Moreover, the Applicants state that AT&T stopped supplying GSM handsets for postpaid services in 2010 and that AT&T hopes to phase out GSM handsets from prepaid sales by **[Begin Confidential Information] [End Confidential Information]**[562] AT&T claims that even if all retail customers no longer used the GSM network, it cannot repurpose additional spectrum for

[554] *See infra* Section V.F.

[555] *See* Engineering Analysis, Appendix D, Table 2.

[556] Hogg Declaration ¶¶ 37-40.

[557] Public Interest Statement at 8-9.

[558] Migration White Paper at 11-13, 18-20, 25.

[559] *Id.* at 8.

[560] *Id.* at 3.

[561] *Id.* at 15.

[562] *Id.* at 9.

deployment of other technologies without affecting the service provided to non-retail GSM customers like wireless resellers, wholesale users, and government or military personnel.[563] According to the Applicants, this transaction is specifically important because it would relieve UMTS congestion caused by increasing data usage in a more effective manner than using traditional migration practices.[564] Overall, the Applicants call migration a "complex and prolonged" process..[565]

219. Free Press believes the Applicants' network migration would be complicated because all T-Mobile users will have to transition to new devices to achieve them. [566] Opponents claim that although this requires a significant amount of upfront capital, the long term rewards will outweigh those initial costs.[567] Instead of transitioning all customers to newer technologies, AT&T could focus on migrating some of its customers, thus allowing AT&T to reallocate spectrum while still leaving enough GSM spectrum for those that still use GSM.[568]

220. *Discussion.* The success of any mobile technology migration is directly related to the handset mix on the resulting network.[569] To achieve the benefits of upgrading its radio access network to UMTS, AT&T must reduce the percentage of devices that rely on GSM to get service in bands it is targeting for redeployment.[570] AT&T continues to sell GSM-only prepaid devices, and predicts those sales to continue into **[Begin Confidential Information]** **[End Confidential Information]**. [571] As AT&T did not stop selling 2G postpaid phones until shortly before the proposed transaction was announced, a small number of postpaid GSM devices have been sold so far in 2011. It has an enterprise and machine-to-machine customer base that it has been reluctant to transition to UMTS.[572] **[Begin Confidential Information]** F

[End Confidential Information]

221. As the Applicants' Migration White Paper itself ultimately implies, one of the net benefits of combining AT&T and T-Mobile spectrum would be "additional head-room" that could allow the Applicants to take more time to phase out their GSM networks.[574] In our view, prolonging use of less

[563] *Id.* at 12.

[564] *Id.* at 4.

[565] *Id.* at 13.

[566] Free Press Petition at 61.

[567] Public Knowledge Petition at 53.

[568] Free Press Reply to Opposition at 40.

[569] Migration White Paper at 1.

[570] UMTS radio access equipment typically supports GSM as well as UMTS devices. The efficiency gains from its UMTS capability, however, are limited where GSM devices continue to operate. The more there are GSM devices, the less there are spectrum gains and opportunities for spectrum redeployment. *See e.g.*, http://www.ericsson.com/ourportfolio/products/base-stations?nav=fgb_101_220 (last visited Nov. 18, 2011).

[571] Moreover, some of AT&T's significant third party retail partners dealt primarily in GSM devices. AT&T claims it is working to curtail GSM sales by these retailers, but has little ability to encourage their customers to switch to more modern phones. *See, e.g.,* Migration White Paper at 9-13.

[572] *See id.* at 24.

[573] *See* ATTF-TMO-00002989 at 17 (AT&T, "Mobility Radio Access Network 3 Year Plan Fundamental Network Planning - RAN 3Y/POR", Mar. 3, 2010).

[574] *See generally* Migration White Paper.

efficient technology should not be deemed a benefit for purposes of assessing this transaction. Moreover, the Applicants have options well short of the proposed transaction to facilitate their network migration strategy, so the benefit is not transaction specific. And, it is not immediately available in any event. While we agree that network migration could be facilitated by the additional spectrum we are not inclined to give this claimed benefit significant weight in our public interest analysis.

222. Despite the legitimate practical considerations involved, we believe AT&T could have been more proactive if it wanted to move customers off GSM-only devices. If AT&T had stopped selling GSM-only devices sooner, more UMTS could be in place today and the efficiencies and "head-room" the Applicants derive from the proposed transaction would be less relevant for LTE deployment.

223. The issues with T-Mobile handsets are more complex. The Applicants claim they will combine AT&T and T-Mobile spectrum holdings in the AWS band to deploy LTE, consolidate UMTS/HSPA traffic in the PCS band, and reserve a small portion of the cellular band for residual GSM use. To do this, they would have to provide T-Mobile customers with devices that use the appropriate technologies in the appropriate bands. Based on T-Mobile's current device mix, this would imply a costly, comprehensive exchange of T-Mobile customer devices, including a significant number of relatively expensive smartphones.[575]

224. It is significant that in connection with this transaction, AT&T claims it is prepared to make the investment to transition T-Mobile customers to devices accessing AT&T frequencies.[576] Given that AT&T was not prepared to make the financial commitment to clear its own GSM spectrum to allow for the deployment of UMTS/GSM,[577] we question whether AT&T would take the steps necessary to provide T-Mobile customers with appropriate handsets in the short term. It also underscores that with sufficient commitment and motivation, AT&T might have been more successful in redeploying its own spectrum.

225. We are not convinced that facilitating network migration is a transaction-specific benefit of the proposed transaction where there are clear alternatives, including providing new devices, that offer significantly reduced competitive harms. It is even less convincing to the extent the benefit addresses issues arising as a result of a corporate decision to delay migration off GSM that now exacerbates technology upgrades. Consequently, we cannot give this claimed benefit any significant weight in our public interest analysis.

D. Other Claimed Cost Synergies

226. The Applicants claim that in addition to the network-related synergies discussed above, the proposed transaction would generate several other significant cost savings that, when combined, would exceed T-Mobile's purchase price of $39 billion.[578] Specifically, the Applicants contend that they would achieve cost synergies from eliminating portions of T-Mobile's network; from reallocating capital

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[575] *See* ATTF-TMO-00052304 at 9 (AT&T, "ABS Connected Devices, 3G Adoption Program details," April 4, 2011) **[Begin Confidential Information]**

[End Confidential Information]

[576] See Economic Merger White Paper n. 15; **[Begin Confidential Information]**

[End Confidential Information]

[577] *See* ATTF-TMO-00052304 "ABS Connected Devices" Apr. 4, 2011 at ATTF-TMO-00052316 "3G Adoption Program Details" **[Begin Confidential Information]**
[End Confidential Information]

[578] *See* Public Interest Statement at 51-53; Moore Declaration ¶¶ 32-42; Carlton Declaration at ¶ 65.

expenditures; and from greater scale efficiencies in retail and distribution, customer support and billing, handset procurement, and network equipment and infrastructure.[579]

227. As discussed below, while we agree there may be some cost savings that would benefit consumers we find that the vast majority of the cost savings claimed by AT&T would be unlikely to lower prices to end users and thus offset potential anticompetitive harms from the proposed transaction. As stated above, the Commission considers as public benefits only those cost savings and synergies that are verifiable, quantifiable and cognizable.[580] The Applicants bear the burden of proving each of these factors. The Commission also considers benefits primarily to the extent that they could mitigate any anticompetitive harms.[581]

228. In this regard, the Commission is more likely to find reductions in marginal costs cognizable as compared to reductions in fixed costs, because reductions in marginal cost are more likely to result in lower prices.[582] Marginal, or incremental, costs refer to the costs a company would incur in expanding output (whether adding new customers or providing additional output to current customers).[583] These types of costs affect current prices, while fixed costs, or costs that are incurred to serve the current set of customers generally do not affect price, at least in the short term.[584] Although savings that do not affect marginal costs may benefit customers in the longer term,[585] in general, we discount benefits that arise only in the longer term.[586] We therefore recognize efficiencies and cost savings that do not involve marginal cost savings, but assign them less weight than reductions in marginal cost, and do not consider them to offset any current anticompetitive harms. Here, the Applicants have failed to demonstrate that most of the additional cost savings they claim affect marginal costs.

229. Moreover, many of the non-network cost savings claimed by the Applicants in this transaction might be the result of lowering the quality of services to consumers, for example, cutting back on T-Mobile's customer support personnel. Such output or quality reductions are not public benefits.[587]

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[579] *See* Public Interest Statement at 51-52; Moore Declaration at ¶¶ 9, 34.

[580] *See infra* Section V.A ¶¶ 133-135.

[581] *See infra* Section V.A ¶ 136; *see also AT&T-Centennial Order*, 24 FCC Rcd at 13953, ¶ 89 ("Under Commission precedent, the Applicants bear the burden of demonstrating that the potential public interest benefits of the proposed transaction outweigh the potential public interest harms."); *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17495 ¶ 116; *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17615 ¶ 115; *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21599 ¶ 204.

[582] *AT&T-Centennial Order*, 24 FCC Rcd at 13954 ¶ 90; *EchoStar-DirecTV HDO*, 17 FCC Rcd at 20631 ¶ 191.

[583] *See Modern Industrial Organization*, Fourth Edition, 2005, Dennis Carlton and Jeffrey Perloff, Pearson Addison-Wesley, at 30. While reductions in marginal costs would be fully passed through to consumers in a perfectly competitive market, when there is market power, marginal cost reductions generally do not fully benefit consumers.

[584] *See Modern Industrial Organization*, Fourth Edition, 2005, Dennis Carlton and Jeffrey Perloff, Pearson Addison-Wesley, at 58-61, 89-93. *See also DOJ/FTC Horizontal Merger Guidelines* at § 10 n. 15 (stating "Efficiencies relating to costs that are fixed in the short term are unlikely to benefit customers in the short term").

[585] *See DOJ/FTC Horizontal Merger Guidelines* §§ 2.2.1 n.3, 10 n. 15; *Verizon Wireless-ALLTEL Order*, 23 FCC Rcd at 17495-96, ¶ 117; *id.* at 17512, ¶ 147.

[586] *AT&T-Centennial Order*, 24 FCC Rcd at 13954 ¶ 90 (finding "benefits that are to occur only in the distant future may be discounted or dismissed because, among other things, predictions about the more distant future are inherently more speculative than predictions about events that are expected to occur closer to the present.") (internal quotes omitted).

[587] *See DOJ/FTC Horizontal Merger Guidelines* § 10 (not recognizing purported efficiencies that rest on reductions in product quality or variety that customers value).

We conclude that while the Applicants might realize their anticipated cost savings as a result of this transaction, they have not shown what proportion of the savings, if any, would result in public interest benefits.

230. *General and Administrative Expenses.* Applicants estimate savings in customer support and general and administrative expenses in excess of $10 billion in net present value.[588] AT&T documents show that they anticipate saving **[Begin Confidential Information]** **[End Confidential Information]** million per year by eliminating jobs for General and Administrative ("G&A") employees.[589] In addition, reducing other corporate G&A costs will yield savings of **[Begin Confidential Information]** **[End Confidential Information]** G&A expenses are generally considered fixed costs, *i.e.*, ones that do not vary according to the number of customers served.[591] The Applicants have not shown how the elimination of G&A positions that would be redundant after the proposed transaction would make the retained employees more efficient, or how it would affect the cost of serving new customers going forward.

231. *Customer Support.* AT&T's documents show that a portion of these cost savings would result from eliminating the jobs of most T-Mobile customer representatives and the complementary infrastructure.[592] In general, this would lower the number of representatives per customer and therefore could reduce the level of service that customers would experience. This could especially harm T-Mobile customers to the extent that T-Mobile currently has superior customer service than AT&T, as one prominent customer survey has found.[593] Current AT&T customers could also receive worse service post-transaction, as current AT&T customer representatives would have to serve more customers than before. Reductions in customer service quality are, of course, not a public benefit; rather, they raise the quality-adjusted price of wireless service.[594]

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[588] *See* Moore Declaration at ¶ 37.

[589] *See* FCC-ATT-00019081 at 21 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)).

[590] *See* FCC-ATT-00019081 at 21 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19))..

[591] *See* FCC-ATT-0019081 at 21 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) **[Begin Confidential Information]** **[End Confidential Information]**

[592] *See e.g.,* FCC-ATT-00019081 at 18 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)); *see also* FCC-ATT-00018702, (AT&T, "Project Auto – Forecast & Valuation Model," Tab "Value Build" Details).

[593] *See, e.g.,* Press Release, "J.D. Power and Associates 2011 U.S. Wireless Customer Care Performance Study—Volume 1" (Feb. 3, 2011) available at http://www.jdpower.com/news/pressrelease.aspx?ID=2011010 (last visited Nov. 21, 2011); Press Release, "J.D. Power and Associates Reports: Spending Sufficient Time Explaining Mobile Device Operation Is Critical to Higher Satisfaction with the Wireless Retail Sales Process; T-Mobile Ranks Highest in Wireless Retail Sales Satisfaction for a Fourth Consecutive Time," (Feb. 17, 2011) available at http://businesscenter.jdpower.com/news/pressrelease.aspx?ID=2011016 (last visited Nov. 20, 2011); Press Release, "Consumer Reports cell-service Ratings: AT&T is the worst carrier," Consumer Reports (Dec. 6, 2010) *available at* http://news.consumerreports.org/electronics/2010/12/consumer-reports-cell-phone-survey-att-worst.html (last visited Nov. 21, 2011); ATTF-TMO-00733337 (AT&T, e-mail from Michael Perovich, Subject: Progress Report #3 for Volume 2 of the JD Power and Associates 2011 Wireless Purchase Experience Study, May 5, 2011); ATTF-TMO-00054408 (AT&T, "JD Power Wireless Satisfaction Scores, November 4" Jan 4, 2010).

[594] Even if service quality were not affected, the Applicants have not shown how these reductions would affect the costs of expanding output, here, providing customer support for additional customers. For example, the Applicants have not shown, nor is there reason to believe, that the cost to the merged company of expanding to serve, for (continued....)

232. *Customer Acquisition Costs.* The Applicants claim a saving in customer acquisition costs with a net present value of $10 billion arising from closing retail stores[595] and reductions in advertising expenditures.[596] We do not find that the Applicants have met their burden of proof in demonstrating that these savings will be passed on to benefit the public interest. Indeed, store closings would likely make customers worse off on average as the combined company would, for at least some period of time, be serving all of its customers and almost all of T-Mobile's customers with fewer stores (and therefore fewer stores per customer) than AT&T and T-Mobile would have used on a standalone basis.[597] Further, the Applicants have not shown how (or the extent to which) closing current stores would decrease the cost per gross customer addition (CPGA), or how any reduction in CPGA would benefit customers rather than the Applicants. Similarly, they have not shown that the planned reduction in advertising expenditures would lower the marginal cost of acquiring a new customer, or how any savings would be passed on to customers. We also note that AT&T has not shown how it could acquire customers more efficiently with less advertising if there is no loss in competition after the proposed transaction as the Applicants claim.

233. *Capital Costs.* The Applicants claim savings of a net present value of $10 billion in capital costs.[598] For example, the Applicants anticipate that AT&T would have to purchase less spectrum as a result of purchasing T-Mobile.[599] However, part of the purchase price of T-Mobile is accounted for by the value of its spectrum, and the Applicants have not submitted evidence regarding the relative cost of T-Mobile's spectrum versus what AT&T would need to spend otherwise. We therefore cannot verify the extent of any cost savings in this category.[600] To the extent the combination of AT&T's and T-Mobile's spectrum would lead to engineering efficiencies that would allow the combined company to serve more customers with the same amount of spectrum, that efficiency is already captured in the engineering model discussed above.

234. *Network Savings.* As part of their claimed network savings of $10 billion, the Applicants argue they will save money by decommissioning towers and backhaul facilities that will not be used post-transaction.[601] We do not consider the non-engineering cost savings resulting from eliminating the jobs of employees who would have maintained and operated these facilities and other costs associated with operating these facilities[602] to be marginal cost savings: the decommissioning of these facilities does not change the cost that AT&T would incur to expand its network to accommodate more customers beyond those savings already accounted for in AT&T's engineering efficiencies model. The Applicants have

(Continued from previous page)
example, 1000 new subscribers, would be lower than AT&T's current cost of expanding to serve 1000 new subscribers; the same number of new customers representatives would need to be hired in both instances.

[595] *See* FCC-ATT-00019081 at 16 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) **[Begin Confidential Information]**

[End Confidential Information]

[596] *See* Moore Declaration at ¶ 35.

[597] See National Hispanic Media Coalition (NHMC) and National Institute for Latino Policy Petition to Deny, at 11.

[598] *See* Moore Declaration at ¶ 36.

[599] *See* Moore Declaration at ¶ 36; *see also* FCC-ATT-00019081at 22 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) .

[600] Further, if AT&T intended to acquire the spectrum regardless of this transaction, any savings would represent a fixed cost savings. Only if a lower purchase price were to affect the amount of spectrum that AT&T would otherwise acquire, would we evaluate it as a marginal cost reduction.

[601] *See* Moore Declaration at ¶ 34; *see also* FCC-ATT-00019081 at 19 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) .

[602] *See* Moore Declaration at ¶ 34.

claimed some efficiencies and cost savings that we do expect would affect their marginal costs; however, we find them to be relatively small in magnitude.[603] First, as part of their reduction in customer acquisition costs, the Applicants expect a decrease in the cost of customer equipment (mostly handsets) due to increased volume purchases.[604] The Applicants' documents indicate they expect to obtain a **[Begin Confidential Information]** **[End Confidential Information]** reduction in the cost of equipment due to increased purchasing volume.[605] Given that AT&T would have approximately **[Begin Confidential Information]** **[End Confidential Information]** customers if the proposed transaction were consummated, this would work out to a savings of **[Begin Confidential Information]** **[End Confidential Information]** in 2012. Using the **[Begin Confidential Information]** **[End Confidential Information]** pass-through rate as provided in the Applicants' economic model, we thus estimate per customer savings in 2012 of **[Begin Confidential Information]** **[End Confidential Information]**

235. The Applicants also anticipate a reduction in interconnection and toll expenses as a result of combining their networks.[607] They have not shown what percentage of this cost savings is fixed and what percent varies according to the amount of traffic. Assuming that all of this cost is variable (an assumption highly favorable to the Applicants), the potential price reduction would be **[Begin Confidential Information]** **[End Confidential Information]** per customer per year.[608]

236. The Applicants also claim they will save in billing expenses.[609] Assuming this savings were completely passed through to consumers, we would expect an additional price reduction for each customer of less than **[Begin Confidential Information]** **[End Confidential Information]** per year.

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[603] Although not listed in their filings, the Applicants' internal documents show they expect a **[Begin Confidential Information]** **[End Confidential Information]** *See* FCC-ATT-00019081 at 22 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)). We have no evidence in the record to show how this could reduce variable costs. To the extent these costs pertain to network build out costs, such costs would be covered in the Applicants' models.

[604] *See* Moore Declaration at ¶ 35.

[605] *See* FCC-ATT-00019081 at 17 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)).

[606] As of year-end 2010, AT&T accounted for 95.5 million wireless subscribers, and T-Mobile for 33.7 million wireless subscribers, yielding approximately 129 million pro forma. *See supra* Section II.A.

[607] *See* Moore Declaration at ¶ 34. This amounts to **[Begin Confidential Information]** **[End Confidential Information]** FCC-ATT-00019081 at 20, (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)); FCC-ATT-00018702, (AT&T, "Project Auto – Forecast & Valuation Model," Tab "Value Build" Details).

[608] Using the 50 percent pass-through rate as provided in the Applicants' economic model, and dividing by the Applicants' combined 129 million customers, yields approximately **[Begin Confidential Information]** **[End Confidential Information]** *See,* Explanation of CompassLexecon Merger Simulation Model at 2.

[609] *See* Moore Declaration at ¶ 37; *see also* FCC-ATT-00019081 at 18 (AT&T, **[Begin Confidential Information]** **[End Confidential Information]** March 17, 2011 (Draft 031711c19)) (pointing to savings of about **[Begin Confidential Information]** **[End Confidential Information]** per year).

237. The total cost savings per year from the network savings just discussed that we expect to be passed on to consumers without a loss of service quality thus is just under **[Begin Confidential Information]** **[End Confidential Information]** per customer, or substantially less than **[Begin Confidential Information]** **[End Confidential Information]** percent of service revenue ARPU.[611]

238. The Applicants' claim that AT&T has a strong track record of realizing synergies from prior transactions. However, the Applicants must demonstrate the extent to which the cost savings they claim would benefit consumers. With a few small exceptions, we find the Applicants have not shown that their claimed non-network cost savings represent marginal cost reductions that would likely lower the prices consumers would otherwise pay; moreover, we find that some of the cost savings may result from actions that would harm consumers.

E. Other Benefits to AT&T and T-Mobile Customers

239. *Positions of the Parties.* According to the Applicants, the proposed transaction would give current T-Mobile customers the "highly valuable" option to take advantage of more advanced service technologies, a broader range of devices, and additional rate plans.[612] First, AT&T claims that it plans to adopt the best practices of each company, and therefore expects that its customers would benefit from T-Mobile's industry-leading customer care practices.[613] In addition, the Applicants claim that T-Mobile customers would gain access to a broader range of current devices as well as faster access to the next generation of devices.[614] Moreover, the Applicants claim that the proposed transaction would benefit current T-Mobile customers by enhancing the diversity of rate plans available to them,[615] as well as allowing them to be able to keep their current T-Mobile rate plans if they so choose, in which case, they would benefit from improved service quality and thus a lower quality-adjusted price.[616] The Applicants also claim that T-Mobile's customers would benefit from free mobile-to-mobile calling to a substantially expanded customer base.[617] Finally, the Applicants state that consumers would benefit from the internalization of roaming charges between AT&T and T-Mobile.[618]

240. In addition, the Applicants state that most of T-Mobile's GSM customers have handsets that work on AT&T's GSM network, and they expect that immediately after closing T-Mobile's customers in certain areas would benefit from their ability to access both networks[619] and that all of T-Mobile's customers would also be able to access AT&T's Wi-Fi network.[620] Finally, the Applicants

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[610] **[Begin Confidential Information]** **[End Confidential Information].**

[611] Based on Q4 2010 UBS service revenue and subscriber data, indicating an annual service ARPU of $574. *See* John C. Hodulik, Batya Levi, UBS Investment Research, *US Wireless 411* (Aug. 17, 2011).

[612] *See* Public Interest Statement at 43-45; Moore Declaration at ¶¶ 29-31. Other benefits including lower prices, improved quality or service, and increased LTE deployment are discussed elsewhere.

[613] *See* Public Interest Statement at 43; Moore Declaration at ¶ 30.

[614] *See* Public Interest Statement at 44; Moore Declaration at ¶¶ 10, 29.

[615] *See* Public Interest Statement at 44-45; Moore Declaration at ¶¶ 10, 30.

[616] *See* Public Interest Statement at 44-45; Moore Declaration at ¶ 30.

[617] *See* Public Interest Statement at 44-45; Moore Declaration at ¶ 30.

[618] *See* Willig, Orszag and Ezrielev Reply Declaration at n. 106. This benefit would come from the elimination of double marginalization (both AT&T and T-Mobile earn profit on their wholesale and their retail sales).

[619] *See* Public Interest Statement at 44; Hogg Declaration at ¶ 57.

[620] *See* Moore Declaration at ¶ 31.

claim that once the networks are integrated T-Mobile's GSM and UMTS customers would enjoy improved coverage, including superior in-building and in-home service because of the denser grid and access to 850 MHz spectrum.[621]

241. *Discussion.* We find that many of the claimed benefits are not transaction specific. First, the adoption of each company's best business practices, including customer service best practices, is not a transaction specific benefit because the improvement of specific business functions by either AT&T or T-Mobile could be achieved absent the proposed transaction. In addition, internal AT&T documents indicate that the majority of T-Mobile personnel in general and administrative and sales would be eliminated which suggests that if the combined firm were to adopt T-Mobile best business practices in these areas they would retrain AT&T employees rather than use the T-Mobile employees that have already successfully employed these practices.[622]

242. Access by T-Mobile's customers to AT&T's current and future rate plans and devices is similarly not a transaction specific benefit. Currently, T-Mobile's customers may choose an AT&T rate plan and, in turn, a current AT&T device for service simply by switching from T-Mobile to AT&T. This transaction would in fact limit T-Mobile customers because T-Mobile's customers would no longer be allowed to switch to a different T-Mobile plan. Therefore, we do not consider such access to be a transaction-specific benefit. Similarly, if T-Mobile's customers wish to have a broader mobile-to-mobile calling base, they could subscribe to an AT&T rate plan that now offers mobile-to-mobile calling to all mobile wireless subscribers regardless of their provider.[623]

243. T-Mobile's customers' unlimited access to the AT&T network while continuing on their current T-Mobile rate plans is a transaction-specific benefit since it is highly unlikely that this level of access would occur absent the proposed transaction. Similarly, eliminating the mark-up that each charges the other for roaming would like result in lower prices to end consumers. However, the Applicants do not provide any quantification of either of these benefits, and therefore, we are unable to include these benefits in our balancing of competitive harms arising from this transaction.

244. *Conclusion.* We find that these benefits are not cognizable or quantifiable. The Applicants have not demonstrated that certain of these benefits are merger specific, or if they are merger specific, we cannot verify their magnitude.

F. Broadband Deployment

245. *Background.* The Applicants claim that the proposed transaction would lead to a significant expansion of LTE-based mobile broadband coverage. Regardless of the proposed transaction, AT&T's most recently announced plans call for extending HSPA+ mobile broadband to its full wireless footprint, covering 97 percent of Americans by the end of 2012.[624] AT&T has stated that, absent the merger, they will upgrade areas covering approximately 80 percent of the United States population to LTE by 2013 and then cease further LTE expansion.[625] The company claims that if the proposed

[621] *See* Public Interest Statement at 44; Hogg Declaration at ¶¶ 57-58.

[622] *See e.g.*, FCC-ATT-00019081 at 21 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) **[Begin Confidential Information]** **[End Confidential Information]**

[623] *See* Unlimited mobile-to-mobile calling to any mobile phone is part of AT&T's unlimited messaging feature. http://www.wireless.att.com/cell-phone-service/services/serviceDetails.jsp?LOSGId=&skuId=sku4980440&catId=cat1470003 (visited Nov. 20, 2011)

[624] Joint Opposition at 81.

[625] Public Interest Statement at 55.

transaction is approved, however, the combined entity would gain the scale, scope, spectrum, and resources to continue extending LTE beyond this 80 percent threshold, ultimately upgrading the entirety of its wireless footprint within six years after closing.[626] AT&T asserts that this incremental, merger-specific upgrade from HSPA+ to LTE would bring significant economic and other public-interest benefits to 55 million Americans.[627]

246. *Position of the Parties.* The Applicants state that AT&T will not deploy LTE beyond its 2013 deployment targets absent the proposed transaction.[628] They state that, notwithstanding competitive considerations, AT&T senior management concluded in January 2010 and again in January 2011 that an LTE footprint covering more than 80 percent of the U.S. population "could not be justified."[629]

247. The Applicants assert that much of the transaction-specific LTE coverage resulting from the proposed transaction would be in rural areas[630] where the upgrade from HSPA+ would deliver higher speeds and lower latency wireless data services enabling an array of new interactive wireless services, as well as new capabilities like cloud computing.[631] The Applicants further argue that in locations where another provider has already deployed LTE, AT&T's deployment would provide, at a minimum, additional competition.[632] They claim that the additional LTE deployment would spur investment, jobs, and economic growth and help close the digital divide in rural areas and among minority groups.[633]

248. Several commenters respond that even absent the proposed transaction, AT&T would likely upgrade its full footprint to LTE in response to competition from Verizon Wireless and other mobile wireless providers.[634] Sprint argues that "just as competition has enabled nearly the entire U.S. population to enjoy access to 3G technologies today," competition will also drive 4G services to reach that level of coverage.[635] Leap states that Verizon Wireless has already announced plans to cover 97 percent of the U.S. population with LTE by the end of 2013 and that AT&T will "do everything in its power . . . to keep pace with Verizon."[636]

249. Free Press emphasizes that 3G wireless service is already available to 97 percent of the U.S. population and many rural consumers who fall within AT&T's proposed additional LTE deployment will be able to purchase LTE service from other providers such as Verizon Wireless even if AT&T does

[626] Joint Opposition at 75.

[627] Public Interest Statement at 58-61.

[628] Joint Opposition at 79.

[629] *Id.*at 80.

[630] Public Interest Statement at 56.

[631] Joint Opposition at 77-78.

[632] *Id.*

[633] Public Interest Statement at 56-60; Joint Opposition at 76-77.

[634] Free Press Petition at 42; Leap Petition at 31; Sprint Petition at 120, 124, 128-29. *See also* Letter from S. Derek Turner, Free Press, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-65, at 5 (filed Aug. 30, 2011) (Free Press Aug. 30, 2011 *Ex Parte* Letter).

[635] Sprint Petition at 129.

[636] Leap Petition at 31.

not upgrade from HSPA+ in those areas.[637] Free Press also argues that the incremental value of LTE over HSPA+ is *de minimis* based on speed tests comparing HSPA+ and LTE networks.[638]

250. *Discussion.* We agree with commenters who emphasize the need to account for other providers' publicly announced LTE deployment plans in evaluating AT&T's proposed LTE buildout commitment. Verizon Wireless has announced that it plans to deploy LTE across its entire EV-DO network footprint by the end of 2013, covering, based on American Roamer data, over 95 percent of Americans.[639] Based on AT&T-submitted maps of its proposed LTE commitment, we estimate that approximately 87 percent of the population within AT&T's proposed incremental LTE-deployment commitment areas will have access to LTE coverage from Verizon Wireless, whether or not this transaction is approved.[640] If providers other than Verizon Wireless are included, over 97 percent of Americans could have LTE coverage from a provider other than AT&T, including 94 percent of the population within AT&T's proposed incremental LTE deployment commitment areas.[641] This means that the number of people who are dependent on AT&T's buildout for LTE services, should they want them, is far fewer than the Applicants claim.

251. The analysis also suggests that AT&T will face significant competitive pressure from

[637] Free Press Petition at 41-42.

[638] Free Press Reply at 6-7.

[639] Verizon Wireless, *Verizon 4G LTE Network*, https://www.lte.vzw.com/AboutLTE/VerizonWirelessLTENetwork/tabid/6003/Default.aspx (visited Aug. 16, 2011).

[640] To produce this estimate, we overlaid census block boundaries from the 2010 Census on the maps submitted by AT&T of both its LTE Plan-of-Record (POR) footprint and its merger commitment LTE footprint. If the centroid of a census block was within each submitted footprint, then it was considered covered by AT&T's planned network. In analyzing the population associated with the covered census blocks, we found that an additional **[Begin Confidential Information]** **[End Confidential Information]** people would be covered by AT&T's LTE network with the merger commitment LTE rollout versus the LTE POR rollout. Of those **[Begin Confidential Information]** **[End Confidential Information]** would be covered by Verizon's planned LTE network. We estimated Verizon's planned LTE coverage using Verizon's EV-DO footprint as of April 2011(as provided by American Roamer), overlaid it on AT&T's submitted coverage maps, and determined the population of the census blocks that had their centroids in the overlapping areas. . *See,* Letter from Richard L. Rosen, AT&T Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-65, at 1 (filed Aug. 8, 2011) (AT&T Aug. 8, 2011 *Ex Parte* Letter) (submitted data ATT-BeforeFootprint_RANGIS1658; ATT_AfterFootprint_RANGIS 1658.)

[641] For example, in addition to Verizon Wireless, Alaska Communication Systems, U.S. Cellular, Leap, and MetroPCS and Clearwire have each announced LTE plans, and a number of rural providers have filed spectrum lease applications with the Commission in connection with Verizon's LTE in Rural America initiative. *See ACS to Bring 4G LTE to Alaska,* Juneau Empire, June 22, 2011, at http://juneauempire.com/state/2011-06-22/acs-bring-4g-lte-alaska (citing ACS spokeswoman Heather Cavanaugh); *U.S. Cellular Announces Readiness of 4G LTE Network,* Nov. 4, 2011, http://www.uscellular.com/about/press-room/2011/USCELLULAR-ANNOUNCES-READINESS-OF-4G-LTE-NETWORK.html; Eric Zeman, *Despite 2011 Launch, No Leap LTE Device Until 2012,* PhoneScoop, Apr. 13, 2011, at http://www.phonescoop.com/articles/article.php?a=7945 (citing Leap CEO Doug Hutcheson). *MetroPCS Launches First 4G LTE Services in the United States and Unveils World's First Commercially Available 4G LTE Phone,* Sept. 21, 2010, http://www.metropcs.com/presscenter/articles/mpcs-news-20100921.aspx; *Clearwire Announces Intent to Add LTE to Its Network to Accelerate Wholesale Business, Aug. 3, 2011,* http://corporate.clearwire.com/releasedetail.cfm?ReleaseID=596508.If the Verizon Rural LTE partners deploy LTE in the counties of their lease applications, MetroPCS deploys LTE to its 2G footprint, and Clearwire deploys LTE to its mobile WiMAX footprint, and other providers each deploy LTE throughout their 3G footprints, we estimate based on American Roamer and U.S. Census data that over 97 percent of Americans will have LTE coverage from a provider other than AT&T, including 94 percent of the population within AT&T's proposed LTE deployment commitment. Up to 8.4 million Americans within this group would be served by at least two LTE providers regardless of AT&T's deployment.

Verizon Wireless to extend LTE well beyond its current plans irrespective of the proposed transaction. **[Begin Confidential Information]**

[redacted]

[45] **[End Confidential Information]**

252. The eventual deployment of LTE throughout AT&T's network, even if only as a follower, would also be consistent with past and recent AT&T network deployment practice. AT&T (then Cingular) began deploying the GSM/GPRS/EDGE family of technologies, which now covers its entire footprint, in 2000, and completed a footprint-wide upgrade from TDMA to GSM/GPRS by mid-2004.[646] Since 2006, AT&T has been extending the UMTS/HSPA family of technologies, and has committed to finishing its deployment of HSPA+ to 100 percent of its footprint by the end of 2012.[647] Nothing in the record suggests that AT&T is likely to depart from its historical practice of footprint-wide

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[642] ATTF-TMO-01069730 at 12 (AT&T, "Wireless Evolution, Steering Team Review," March 18, 2010); *see also Id.* at 5; ATTF-TMO-00145224 at 12 (AT&T, "Competitor Develops Network Advantage, 3G/4G Coverage Expansion Analysis," April 14, 2010) (stating that **[Begin Confidential Information]** **[End Confidential Information]**

[643] ATTF-TMO-00200607 at 2 (AT&T, "HSPA 7.2 & LTE Planning," May 11, 2009) (stating that **[Begin Confidential Information]** **[End Confidential Information]**

[644] ATTF-TMO-01198676 at 2 (AT&T, "LTE 250M Pops by 2013, LTE 'Largely Complete by 2013' Plan," Jan. 24, 2011); *accord.* ATTF-TMO-00200607 at 2 (AT&T, "HSPA 7.2 & LTE Planning," May 11, 2009) **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-00005172 at 3 (AT&T, "Network Competitive Update," Oct. 7, 2009) (stating that **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-00004376 at 2 (AT&T, "Network Competitive Update & Business Case Scenario," Nov. 10, 2009.) (stating **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-01207918 at 2 **[Begin Confidential Information]**

[End Confidential Information]

[645] AT&T argues that its "business decision not to deploy LTE to 97 percent of the population on a standalone basis already took account of" competitive considerations from Verizon's announced plans to deploy LTE across its current 3G footprint. Joint Opposition at 82-83. As discussed below, however, we disagree with its characterization of its deployment decisions and find rather that AT&T had reached no definitive decision regarding its post-2013 LTE deployment plans prior to the announcement of this transaction.

[646] *See* Cingular Wireless LLC, SEC Form 10-Q, filed Aug. 5, 2004, at 23. As of mid-2004, Cingular had deployed EDGE technology to two-thirds of its covered POPs and planned to deploy EDGE to 100 percent of its covered POPs by the end of 2004. *Id; See also* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, WT Docket No. 05-71, *Tenth Report*, 20 FCC Rcd 15908, 15953 (2005).

[647] *See* Joint Opposition at 81.

technological upgrades with respect to LTE even absent this transaction. Indeed, AT&T's claimed transaction-specific LTE commitment would have it complete its LTE deployment by approximately 2018,[648] *i.e.*, seven years after its LTE launch this year, an upgrade path no faster than prior business-as-usual deployment cycles.

253. AT&T argues that its senior management rejected LTE deployment to AT&T's full footprint as recently as January 2011, and that this demonstrates AT&T is unlikely to upgrade its HSPA+ network to LTE beyond its current 80 percent deployment plans, absent the proposed transaction. Given that the proposed transaction was already under consideration at this time, it is unclear whether this decision provides reliable evidence of AT&T's likely deployment plans in the absence of the proposed transaction.[649] Notwithstanding that, we note that the record in fact suggests that AT&T's LTE deployment plans remained an open question prior to announcement of the proposed transaction. At the January 2011 meeting AT&T describes, the company's senior management reviewed a detailed **[Begin Confidential Information]** **[End Confidential Information]** LTE expansion plan, under which AT&T would cover 250 million pops (approximately 80 percent of the U.S. population) by 2013 and 297 million pops (approximately 97 percent of the U.S. population and AT&T's full footprint) by **[Begin Confidential Information]** **[End Confidential Information]**.[650] Mr. Stephenson, AT&T's Chairman and CEO, agreed to the 2011-2013 portion of the timeline,[651] which AT&T announced on January 5, 2011,[652] but deferred decision on the **[Begin Confidential Information]** **[End Confidential Information]** As a January 3, 2011 email from Mr. Bill Hogg, AT&T's Senior Vice President of Network Planning and Engineering, explained, **[Begin Confidential Information]**

[End Confidential Information].

254. In filings on August 8 and September 20, 2011, AT&T argues that Mr. Stephenson's decision to withhold approval of post-2013 LTE deployment essentially closed the book on any extension of LTE deployment beyond 80 percent coverage.[655] Indeed, AT&T says there was only a "slim possibility" that AT&T's post-2013 LTE plans would be revisited.[656] But AT&T rests its characterization

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[648] *See* Joint Opposition at 75.

[649] **[Begin Confidential Information]** **[End Confidential Information]**

[650] ATTF-TMO-01207918 at 2-3 **[Begin Confidential Information]** **[End Confidential Information]** *See also* Letter from Richard L. Rosen, AT&T Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-65, at 2 (filed Aug. 8, 2011) (AT&T Aug. 8, 2011 *Ex Parte* Letter).

[651] *See* ATTF-TMO-00109091 (AT&T, e-mail from John T. Stankey, Subject: LTE Plan, Jan. 3, 2011).

[652] *See* http://www.att.com/gen/press-room?pid=18885&cdvn=news&newsarticleid=31477.

[653] FCC-ATT-00051971 (AT&T, e-mail from Bill Hogg, Subject: LTE Plan, Jan. 3, 2011).

[654] ATTF-TMO-00174419 at 16 (AT&T, "LTE Strategy and Status Officer Call," Jan. 1, 2011); ATTF-TMO-01066912 at 2 (AT&T, NP&E 3 Year Plan (3Y), Mobility RAN," Feb. 14, 2011).

[655] AT&T Aug. 8, 2011 *Ex Parte* Letter at 2-3; Letter from Maureen R. Jeffreys, AT&T Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-65, at 2-3 (filed Sept. 20, 2011) (AT&T Sept. 20, 2011 *Ex Parte* Letter).

[656] AT&T Sept. 20, 2011 *Ex Parte* Letter at 2.

of the decision principally on a January 3, 2011 email from Mr. John Stankey, President and CEO of AT&T Operations, reporting the outcome of the meeting with Mr. Stephenson that day. AT&T emphasizes Mr. Stankey's statement, characterizing his own view of the LTE plan, **[Begin Confidential Information]** **[End Confidential Information]** But in language AT&T omits, Mr. Stankey also said of Mr. Stephenson's decision, **[Begin Confidential Information]** **[End Confidential Information]** Mr. Stankey also **[Begin Confidential Information]**

[End Confidential Information] Given these additional statements, we cannot agree that Mr. Stankey's email suggests further consideration of LTE deployment had been ruled out, as opposed to left undecided.

255. Moreover, consistent with Mr. Stankey's report, following the January outcome, Mr. Hogg told the LTE planning team that AT&T leadership **[Begin Confidential Information]**

[End Confidential Information] As AT&T acknowledges, Mr. Hogg **[Begin Confidential Information]**

[End Confidential Information] To the contrary, the record suggests not only that AT&T staff continued to consider options for expanded LTE deployment after January 11[662] but that **[Begin**

[657] ATTF-TMO-00109091 (AT&T, e-mail from Bill Hogg, Subject: LTE Plan, Jan. 3, 2011)..

[658] ATTF-TMO-00109091 (AT&T, e-mail from Bill Hogg, Subject: LTE Plan, Jan. 3, 2011).

[659] FCC-ATT-00051971 (AT&T, e-mail from Bill Hogg, Subject: LTE Plan, Jan. 3, 2011).; *see also* ATTF-TMO-01392311 (AT&T, e-mail from David A. Carroll, Subject: Action Item From Hogg: FW: LTE Plan, Jan. 3, 2011) **[Begin Confidential Information]** **[End Confidential Information]**; ATTF-TMO-01392321 (AT&T, e-mail from David A. Carroll, Subject: FW: LTE Plan, Jan. 3, 2011) (stating that **[Begin Confidential Information]** ; **[End Confidential Information]** ATTF-TMO-01392295 (AT&T, e-mail from Thomas Keathley, Subject: LTE 8-16-20-17 v6a &b.pptx, Jan. 4, 2011) (stating that Bill Hogg asked them to**[Begin Confidential Information]** **[End Confidential Information]**

[660] *See* ATTF-TMO-01392299 (AT&T, e-mail from Bill Hogg, Subject: FW: LTE Plan, Jan. 3, 2011) (stating that **[Begin Confidential Information]** **[End Confidential Information]**

[661] AT&T Aug. 8, 2011 *Ex Parte* Letter at 4.

[662] *See* ATTF-TMO-01392156 (AT&T, e-mail from Megan Klenzak, Subject: 4G Everywhere Case, Jan. 24, 2011) (stating that **[Begin Confidential Information]** **[End Confidential Information]**

Confidential Information]

[End Confidential Information]

256. AT&T also relies on a declaration from Mr. Rick Moore, Senior Vice President of Corporate Development, that, prior to this transaction, AT&T's "senior management concluded that an 80% build was the limit our company could justify to our shareholders."[664] But a decision not to say "yes" at a particular moment is not the same as saying "no" forever. Although AT&T approved only the 80% build in January, as noted above, the post-2013 build **[Begin Confidential Information]** **[End Confidential Information]** In short, the record does not support AT&T's claim that, prior to the company's approval of this transaction, future consideration of an expanded LTE deployment was a "slim possibility."

257. Finally, AT&T argues that the proposed transaction would give it a variety of resources – including additional spectrum, a larger capital budget, and negotiating leverage against suppliers – that would improve the business case for LTE expansion, and that these new resources explain why AT&T's proposed LTE deployment commitment differs from its likely course if the proposed transaction is not completed.[666] But, despite the Commission's requests,[667] AT&T has declined to quantify the claimed transaction-related reductions in its costs of LTE expansion or increases in its return on that expansion.[668]

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[663] *See* ATTF-TMO-01392156 (AT&T, e-mail from Megan Klenzak, Subject: 4G Everywhere Case, Jan. 24, 2011) **[Begin Confidential Information]** **[End Confidential Information]**; ATTF-TMO-01392237 (AT&T, e-mail from David Carroll Subject: 4G Everywhere Case, Jan. 24, 2011) (stating that **[Begin Confidential Information** **[End Confidential Information]**; ATTF-TMO-01065893 at 7 (AT&T, "RAN Fundamental Planning, 2011 Priorities," Feb. 8, 2011)(stating that **[Begin Confidential Information]** **[End Confidential Information]** ATTF-TMO-01392234 (AT&T, e-mail from Diana Gillis, Subject: LTE and 3G Cell Site Forecast Jan. 19, 2011) (listing site deployment in **[Begin Confidential Information]** **[End Confidential Information]**

[664] Moore Declaration at ¶ 13.

[665] ATTF-TMO-00109091 (AT&T, e-mail from Bill Hogg, Subject: LTE Plan, Jan. 3, 2011).

[666] Response of AT&T Inc. to General Information Request Dated May 27, 2011, filed June 23, 2011, at 40-43 ("AT&T Information Request I Response"); AT&T Sept. 20, 2011 *Ex Parte* Letter at 7-8.

[667] *See* Wireless Bureau Information and Discovery Request for AT&T (May 27, 2011), ¶31(a), WT Docket No. 11-65; Letter dated Aug. 24, 2011 from Renata Hesse, Senior Counsel to the Chairman for Transactions, to Richard L. Rosen, Esq., Arnold & Porter LLP at 2.

[668] AT&T Sept. 20, 2011 *Ex Parte* Letter at 3 ("AT&T has not precisely quantified this improvement [in the business case for an expanded LTE footprint] but believes the transaction would result in lower costs and higher revenues."). *See also id.* at 3, 7 (describing the decision to commit to LTE expansion in connection with this transaction as a "top down" decision from senior management that "did not require specific quantification" of transaction-related changes in costs or revenues). AT&T has stated that this transaction would give AT&T AWS spectrum for LTE deployment in **[Begin Confidential Information]** **[End Confidential Information]** where AT&T lacks suitable LTE spectrum today, including areas containing **[Begin Confidential Information]** **[End Confidential Information]** people within AT&T's proposed LTE deployment commitment. In addition, AT&T claims the transaction would supplement AT&T's LTE spectrum in deployment in **[Begin Confidential Information]** **[End Confidential Information]** where AT&T holds less than 20 MHz of LTE-suitable spectrum today, including areas accounting for nearly **[Begin Confidential Information]** **[End Confidential Information]** people within AT&T's proposed LTE deployment commitment. AT&T argues (continued....)

In the absence of any quantitative evidence, we cannot credit AT&T's claim that the proposed transaction would decisively alter the economics of AT&T's LTE deployment.

258. *Conclusion.* Extending the reach of each new generation of broadband technology, particularly in rural America, has long been a Commission priority. But, for the purposes of this proceeding, the Commission can only consider those benefits that are unlikely to be realized absent the proposed transaction. In the absence of this transaction, AT&T is likely to face competitive pressures to deploy LTE widely within its network, and such a deployment would be consistent with the company's historical practice. The Applicants have failed to demonstrate that, absent the proposed transaction, AT&T will likely deploy LTE to substantially fewer areas than it has committed to cover if the proposed transaction is approved, or that LTE upgrades will likely proceed significantly more slowly in the absence of the proposed transaction, or that AT&T provides the only vehicle of LTE access for those individuals unsatisfied with AT&T's HSPA+ service even in the areas of the proposed buildout commitment. Accordingly, we have serious doubts that the proposed transaction would produce cognizable benefits with regard to LTE coverage.

G. Jobs

259. As part of its public-interest analysis, the Commission historically has considered employment-related issues such as job creation, commitments to honor union bargaining contracts, and efficiencies resulting from workforce reduction.[669] Although, in past transactions, the Commission has found that labor issues are often not transaction-specific and/or are best addressed by state agencies, the NLRB, and the EEOC,[670] when Applicants can demonstrate that a number of U.S. jobs will be created as a result of a proposed merger, the Commission will consider this as part of its public interest analysis. As with all claimed benefits, the Applicants have the burden of proof regarding merger specificity, quantification, and verification.[671]

(Continued from previous page)
that "[t]his additional spectrum obviates the need for AT&T to purchase such spectrum in secondary markets, assuming it was available in the marketplace." *Id.* at 7. AT&T has not, however, quantified these cost savings, or provided evidence suggesting that it will be unable to obtain needed spectrum in secondary markets absent this transaction. In contrast, the January LTE expansion plan prepared by AT&T's network engineering team appears to assume that AT&T could acquire needed spectrum on secondary markets or repurpose existing spectrum to fill AT&T's LTE deployment needs. The plan estimated the cost of *all* needed spectrum for the deployment post-2013 deployment at **[Begin Confidential Information]**
at 2. 17. **[End Confidential Information]** This estimate was not included in the **[Begin Confidential Information]** **[End Confidential Information]** total for the incremental capital expenditure of the LTE expansion, and AT&T elsewhere emphasizes the **[Begin Confidential Information]** **[End Confidential Information]** capital cost estimate, not the additional spectrum cost, as the reason for AT&T's January decision not to approve full LTE deployment at that time. *See, e.g.*, AT&T Sept. 20, 2011 *Ex Parte* Letter at 2 ("AT&T found that it would cost **[Begin Confidential Information]** **[End Confidential Information]** . . . to provide LTE service to areas outside the Plan of Record. The incremental revenue anticipated from this expanded deployment did not justify such an enormous capital expenditure.").

[669] *See e.g.*, Applications of Nextel Communications, Inc. and Sprint Corporation For Consent to Transfer Control of Licenses and Authorizations, WT Docket No. 05-63, *Memorandum Opinion and Order,* 20 FCC Rcd 13967, 14029-30 ¶ 168-69 (2005) (*Sprint-Nextel Order*); *Cingular-AT&T Wireless Order*, 19 FCC Rcd at 21610-11 ¶ 235; *Comcast-NBCU Order*, 26 FCC Rcd at 4330 ¶224.

[670] *Comcast-NBCU Order,* 26 FCC Rcd at 4329-30 ¶223.

[671] *See e.g., Sprint-Nextel Order,* 20 FCC Rcd at 14029-30 ¶¶ 168-69 (explaining the standard and noting that it had not been met in that case). Applicants typically ask us to consider job reduction as a cost-reducing efficiency, consistent with general business practices in which transactions lead to the elimination of positions that are no longer required post-merger. Not surprisingly, to date, there are no examples of Applicant's meeting the standard and receiving credit for creating merger-specific jobs.

260. In this case, since announcing the proposed transaction on March 20, 2011, AT&T has made a number of public claims with respect to the employment-related implications of its acquisition of T-Mobile, for example via an extensive advertising campaign focused on the Washington, D.C. area.[672] After repeated requests from the Commission,[673] a version of these claims and some supporting documents have been placed in the record for this proceeding. It is only these materials in our record – as opposed to other public statements – that we are able to consider in analyzing this transaction.

261. The Applicants' fundamental assertion is that "[AT&T's] acquisition of T-Mobile USA from Deutsche Telekom will yield substantial public interest benefits, including thousands of new jobs through the creation of a more robust national wireless infrastructure."[674] These jobs are claimed to arise as the net result of the proposed transaction's impact on both direct employment, that is jobs at the combined entity itself or jobs that it directly outsources, and also indirect employment, that is jobs created in other industries solely due to AT&T's expanded build out of LTE.[675] In the remainder of this section we examine the record regarding the prospects for direct and indirect job creation as a result of the proposed transaction. As explained below, we find no dispute that the proposed transaction will result in fewer total direct jobs across the business, notwithstanding Applicants' commitment that there will be no reduction in the Applicants' U.S.-based call center employees if the proposed transaction closes. Based on the evidence in the record, the effect on indirect jobs also appears likely to be negative. As a result, we cannot find that the Applicants have met their burden of proof with respect to their claim of a job-related public-interest benefit resulting from the proposed transaction.

262. *Direct employment.* In assessing the effect of the proposed transaction on direct U.S. jobs, the central question is whether the merged entity will support a larger or smaller number of domestic positions than the Applicants on a stand-alone basis.[676] We note that the Applicants have stated "payroll and other job-related savings account for a range of approximately **[Begin Confidential Information]**

[672] *See e.g.,* http://www.adweek.com/adfreak/att-ads-cast-merger-T-Mobile-jobs-creator-135128; Letter from Regina M. Keeney, Esq., Lawler, Metzger, Keeney & Logan, LLC to Marlene H. Dortch, Secretary, FCC (November 7, 2011).

[673] See WT Docket Number 11-65, Wireless Bureau Information and Discovery Request for AT&T (May 27, 2011), ¶36 provides: "Provide all plans, analyses, and reports discussing the creation or loss of jobs if the Proposed Transaction were to be consummated." On October 13, 2011 – noting that "Our review of the information currently in our record suggests that AT&T's responses on this issue remain incomplete. Indeed, AT&T to date has produced almost nothing in response to Request 36." – the Commission renewed its request for AT&T to submit documents and information responsive to this request including "All analyses, reports, data or other documents…that analyze the size and location of AT&T's workforce both before and as anticipated after the merger…includ[ing]…the 'detailed analysis focused specifically on identifying opportunities with the T-Mobile merger to bring good-paying wireless call center jobs back to the United States' that AT&T stated it had developed." WT Docket Number 11-65, Letter dated October 13, 2011 from Rick Kaplan, Chief Wireless Telecommunications Bureau to Richard L. Rosen, Esq., Arnold & Porter LLP regarding incomplete response to Request No. 36 in the May 27, 2011 Information and Discovery Request for AT&T.

[674] Letter from Robert W. Quinn, Jr., Sr. VP Federal Regulatory, AT&T Services, Inc. to Marlene H. Dortch, Secretary, FCC (October 13, 2011) ("Quinn Oct. 13 Letter") at 1.

[675] See, e.g., Eighth Supplemental Response of AT&T Inc. to Information and Discovery Request Dated May 27, 2011, to Supplemental Request for Information Dated June 27, 2011 and to Further Requests for Information Dated October 13, 2011 (October 31, 2011) ("AT&T's Eighth Response"), at 10 ("But AT&T's job-related commitments [*i.e.,* direct jobs] are just one part of the reason that this merger is in this nation's economic interest. AT&T's LTE commitment will trigger even larger spillover effects for the economy as a whole, adding many thousands of new jobs in the process [*i.e.*, indirect jobs].")

[676] For the purposes of assessing the net effect on U.S. jobs, we consider both company employees and positions that the company outsources domestically.

[End Confidential Information] of the total synergies associated with the proposed transaction."[677] As the Applicants assume for financial planning purposes that the total transaction synergies will represent a present value of approximately **[Begin Confidential Information]**

[End Confidential Information], which must necessarily correspond to a significant number of total direct job losses.[679] This is consistent with AT&T's statements elsewhere in the record that "jobs serving redundant functions would be eliminated to reduce costs"[680] and that the proposed transaction will enable cost reductions by "eliminating duplicative functions" and "tak[ing] advantage of scale economies in financing, marketing and other redundancies."[681] It also comports with the CWA's observation regarding the net reduction in jobs resulting from prior AT&T wireless mergers, namely that "[I]n 2002, there were 70,000 employees at AT&T Mobility and its predecessor companies. Since then, AT&T merged with Cingular, Dobson and Centennial. Today, there are 67,000 employees at AT&T Mobility."[682] Direct employment cannot therefore be part of a public interest benefit with respect to job creation.

263. In the context of the undisputed reduction in total direct jobs resulting from the proposed transaction, we note that the Applicants have nonetheless proposed three commitments affecting a subset of employees, namely that: (i) "T-Mobile non-management employees whose job functions are no longer required because of the merger will be offered another position in the combined company;"(ii) "[T]he merger will not result in any job losses for U.S.-based wireless call center employees of T-Mobile or AT&T who are on the payroll when the merger closes"; (iii) "AT&T has committed that it will bring back 5,000 wireless call center jobs to the U.S. that today are outsourced to other countries."[683] After

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[677] AT&T's Eighth Response at 6. Indeed the Applicants are also claiming public interest benefits from the efficiencies due to cost reductions that include reduced direct employment in many business functions, as discussed above in Section. *See also supra* Section V.

[678] *See, e.g.*, FCC-ATT 00002097 "Project Auto, Board of Directors Briefing" Mar. 20, 2011 at FCC-ATT 00002106

[679] *See, e.g.*, FCC-ATT-00056645 (AT&T, "T Mobile Sub-Team Headcount") (estimating that **[Begin Confidential Information]** **[End Confidential Information]** jobs; FCC-ATT-00019081 at 16 - 21 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19)) (discussing expected synergies due to direct job losses by business function, e.g., **[Begin Confidential Information]**

[End Confidential Information]

[680] Quinn Oct. 13, 2011 Letter at 2. We note that in the same place, AT&T points out that job reduction will result from "attrition." We do not regard this as material to the discussion of *whether* net jobs are being created or destroyed as a result of the transaction; it speaks rather to *how* any job reductions will be realized.

[681] Joint Opposition at 93. Other commenters have made similar observations, see, e.g., Leap Petition at 32-33 and Sprint Petition at 76-77. We also note that cost saving efficiencies from job reductions would reasonably be expected in most mergers and have, been claimed by AT&T in previous transactions. *See, e.g., SBC-ATT Order* at ¶ 202; *AT&T-BellSouth Order* at ¶ 219.

[682] Letter from Debbie Goldman, Telecommunications Policy Director, CWA to Marlene Dortch, Secretary, FCC, November 8, 2011, ("Goldman Nov. 8 Letter") at 3.

[683] AT&T's Eighth Response at 7-8.

considering each of these commitments, we conclude that even if fulfilled, they do not change the fact that the proposed transaction will result in a net loss of direct jobs. Further, taking each commitment in turn, we note that: (i) It is not clear how close the offered "position in the combined company" would be to an employee's "no longer required" current job. Presumably the acceptance rate will vary materially, *e.g.*, based on the relative compensation, location, and function of the newly offered position, potentially leading to a large *de facto* reduction in direct employment;[684] (ii) This second commitment neither specifies for how long the jobs will remain in the United States nor applies to domestically-outsourced positions, which account for **[Begin Confidential Information]** **[End Confidential Information]** current U.S.-based call center jobs.[685] Indeed the Applicants state that "AT&T anticipates some reduction in its use of domestic outsourced wireless call center resources."[686] Furthermore, the turnover of call center employees is high,[687] so that even if employees are retained on the day of closing, if new employees are not hired to compensate for normal attrition, the number of domestic call-center jobs as a result of the proposed transaction could dwindle rapidly over time; (iii) According to their latest analysis prepared to support this third commitment,[688] the Applicants today, operating as stand-alone companies, between them account for **[Begin Confidential Information]**

[End Confidential Information] fewer than AT&T's claim, and certainly not enough to outweigh the direct job losses in other areas.[689]

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[684] FCC-ATT-00011023 **[Begin Confidential Information]** . **[End Confidential Information]**

[685] *See* FCC-ATT-00056644 (AT&T "Center Resources Spreadsheet" indicating that AT&T currently has **[Begin Confidential Information]** . **[End Confidential Information]**

[686] AT&T's Eighth Response, at 9

[687] FCC-ATT-00055961 at 7 (AT&T, "2011 Mobility Staffing Plan," Feb. 2, 2011)and FCC-ATT-00056815 at 17 (indicating that attrition at AT&T's own wireless call centers is currently about **[Begin Confidential Information]** **[End Confidential Information]** of the non-management employee base per year).

[688] FCC-ATT-00056644 "Center Resources Spreadsheet" , note 11, along with FCC-ATT-00056629, as "the detailed analysis supporting the job-related commitments announced August 31, 2011

[689] We note that this is the most favorable scenario presented in FCC-ATT-00056644. with respect to U.S. jobs. Other scenarios presented, which are consistent with earlier planning documents such as FCC-ATT-0005300, would reduce total call center jobs by **[Begin Confidential Information]** **[End Confidential Information]**. We also note that as the companies moved the jobs overseas in the first place (and may do so again in the future), it is not clear the degree to which they should get credit for committing to move them back. Furthermore, AT&T has made such job repatriation claims almost annually, irrespective of any transactions, casting doubt on the commitment's merger specificity. See, e.g., Press Release, AT&T Inc., AT&T Nearing Completion of Program to Move 5,000 Outsourced Jobs Back In-House (Jan. 29, 2009) available at http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26507&mapcode=corporate|mk-employees; Press Release, AT&T Inc., AT&T Nevada Opens New Las Vegas Call Center (Oct. 15, 2008) available at http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26251&mapcode=corporate; Press Release, AT&T Inc., AT&T to Bring 2,000 Outsourced Jobs In-House (Sept. 21, 2006) available at http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=22760&mapcode=corporate; *see also* David Saleh Rauf, *Union* (continued....)

264. *Indirect employment.* In their most recent responses, the Applicants do not attempt to give specifics or quantify their claims with respect to the number of indirect jobs that will be created by the proposed transaction, making it impossible to assess whether any indirect employment gains, even if transaction specific and realized, will outweigh the direct employment losses described above.[690] Instead, the Applicants argue that the proposed transaction will result in "many thousands" of indirect jobs[691] being created because "AT&T has committed that, if this proposed transaction is approved, it will deploy LTE to more than 97 percent of Americans – approximately 55 million more Americans than under AT&T's current plans"[692] and that this transaction-specific incremental investment will in turn create jobs via a multiplier effect: "Specifically, Deloitte states that 'the estimated jobs multiplier for wireless broadband is 14.67. That is, an increase of $1 million in wireless broadband investment results in roughly 15 new jobs.'"[693]

265. In assessing the Applicants' assertion regarding indirect jobs, we note that the Commission does not consider indirect jobs that *might* result from possible future spectrum-related deployment as a public interest benefit in the absence of concrete evidence.[694] For example, in approving the Sprint/Nextel merger, the Commission considered the Applicants' claim that the development and deployment of spectrum holdings in the 2.5 GHz band would "generate economic growth and jobs in the U.S. by propelling the development of innovative applications and services...."[695] The Commission explained that it would not consider such "theoretical and speculative" assertions as public interest benefits.[696] Furthermore, for the reasons described in our discussion on broadband deployment,[697] we are

(Continued from previous page)
Pressures AT&T to Bring Jobs Home, SAN ANTONIO EXPRESS-NEWS, Sept. 5, 2009, available at http://www.mysanantonio.com/business/local/article/Union-pressures-AT-T-to-bring-jobs-home-844776.php; Jon Gambrell, *AT&T Brings 175 Jobs Back to U.S. / Call Center Work Had Been Outsourced*, HOUS. CHRON., Sept. 20, 2007, available at http://www.chron.com/business/article/AT-T-brings-175-jobs-back-to-U-S-1820027.php

[690] Earlier, in AT&T Opposition, page 85, the Applicants did cite a quantification performed by the Economic Policy Institute (EPI) ("Applying its analysis to the proposed merger, EPI estimates that the additional investment of $8 billion will result in approximately 55,000-96,000 new jobs, which includes direct jobs, supplier jobs, and 'induced' jobs."). This same study has been cited more recently by CWA (Goldman Nov. 8 Letter, p.1) and also discussed by Prof. David Neumark; *see* Professor David Neumark , Notice of Ex Parte Presentation in WT Docket. No 11-65, (Sept. 15, 2011) ("Neumark Sept. 15 Letter"). We note that EPI has pointed out that their report does not in fact claim that the proposed merger will create jobs, but rather "describes the jobs impact of a prototypical investment in wireless infrastructure. The report then finds that a $1 billion investment in wireless infrastructure would create approximately 12,000 job-years of work – a calculation that applies equally to AT&T, Sprint, T-Mobile, and any other telecom company that makes wireless infrastructure investments. At the end of the report, we note that AT&T has claimed that it plans to increase net investment in wireless broadband infrastructure by $8 billion over seven years as a result of the proposed merger with T-Mobile. The report did not analyze the veracity of this claim, but found that these plans would create between 55,000 and 96,000 job-years if they were to come to fruition...The report did not examine whether or not the merger actually would result in a net increase of investment."

[691] AT&T's Eighth Response at 10.

[692] *Id.* at.11.

[693] *Id.* at 13

[694] *See e.g., Sprint-Nextel Order,* 20 FCC Rcd at 14029-30 ¶¶ 168-169.

[695] *Id.*

[696] *Id.* at 14030, ¶ 169 ("Although the Commission has previously noted the consumer benefits that flow from expanded footprints for nationwide carriers, including the provision of enhanced services and/or lower prices to consumers across the country, we decline to attribute specific public interest benefits to the merger related to spectrum holdings in the 2.5 GHz band. The Applicants describe WIMS as their "currently envisioned" plans for the 2.5 GHz band. They also admit that technology is evolving and key standard-setting processes are underway. (continued....)

not able to find that the claimed incremental LTE build out is indeed transaction specific, so that any job claims based on it cannot be credited. Furthermore, the Applicants have stated in the record as a claimed efficiency that the proposed transaction is expected to significantly reduce the total capital invested by the combined entity compared to the stand-alone companies.[698] Thus, even if we were to both credit the incremental build out as a benefit of the proposed transaction and also take the value of the jobs-to-capital-expenditure multiplier as accurate,[699] the proposed transaction would in fact be expected to result in a significant reduction of indirect jobs because of the lower total network investment by the combined entity compared to AT&T and T-Mobile operating as separate competitors.

VI. RECOMMENDATION

266. Commission staff finds that the Applicants have failed to carry their burden of proving that the proposed transaction, on balance, will serve the public interest. Upon the careful examination summarized in this document, the staff concludes that significant harms to competition are likely to result, primarily in the form of increased prices for consumers, reduced incentives for innovation, and decreased consumer choice. In addition, there are serious allegations of other harms that require further investigation. Staff further finds that the bulk of the Applicants' proffered benefits are inadequately supported by the data supplied, achievable through means other than the elimination of a competitor, or otherwise not cognizable under the Commission's public interest standard. Staff therefore recommends that the Commission designate the proposed transaction for hearing pursuant to § 309(e) of the Communications Act.

(Continued from previous page)
We agree that if the merger were to facilitate the national development of WIMS-type services, the ensuing opportunity for consumers to enjoy a new broadband service would amount to a significant public interest benefit. In the absence of concrete plans for the actual development and deployment of WIMS, however, any attribution of public interest benefits from this merger as it relates to the 2.5 GHz band would be theoretical and speculative....Therefore, we do not factor into our analysis public interest benefits with regard to the 2.5 GHz band").

[697] *See* Section V.F., *supra.*

[698] *See generally,* FCC-ATT-00019081 (AT&T, "Project Auto, Mercury transaction - executive briefing," March 17, 2011 (Draft 031711c19) (detailing business cases and synergy estimates). *See also,* Quinn Oct. 13 Letter, at 5; Free Press *Ex Parte*, Sept. 19. 2011, at 3; and Neumark Sept. 15 Letter (discussing the issue of reduced total capex as a result of the merger). .

[699] We note that the study cited by AT&T ["The impact of 4G technology on commercial interactions, economic growth, and U.S. competitiveness" Deloitte, footnote 32] in turn takes the 14.67 jobs multiplier from a January 2009 report commissioned by the Fiber-to-the-Home Council in the context of a discussion of tax policy. The multiplier may not, therefore, be entirely reliable.

Appendix A: CMAs that Trigger the Concentration Screen

CMA	Market Name
1	New York-Newark, NY-NJ
2	Los Angeles-Anaheim, CA
3	Chicago, IL
4	Philadelphia, PA
5	Detroit/Ann Arbor, MI
6	Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH
7	San Francisco-Oakland, CA
8	Washington, DC-MD-VA
9	Dallas-Fort Worth, TX
10	Houston, TX
11	St. Louis, MO-IL
12	Miami-Fort Lauderdale-Hollywood, FL
13	Pittsburgh, PA
14	Baltimore, MD
15	Minneapolis-St. Paul, MN-WI
16	Cleveland, OH
17	Atlanta, GA
18	San Diego, CA
19	Denver-Boulder, CO
20	Seattle-Everett, WA
21	Milwaukee, WI
22	Tampa-St. Petersburg, FL
23	Cincinnati, OH-KY-IN
24	Kansas City, MO-KS
25	Buffalo, NY
26	Phoenix, AZ
27	San Jose, CA
28	Indianapolis, IN
29	New Orleans, LA
30	Portland, OR-WA
31	Columbus, OH
32	Hartford-New Britain-Bristol, CT
33	San Antonio, TX
34	Rochester, NY
35	Sacramento, CA
36	Memphis, TN-AR-MS
37	Louisville, KY-IN
38	Providence-Warwick-Pawtucket, RI
39	Salt Lake City-Ogden, UT
40	Dayton, OH
41	Birmingham, AL
42	Bridgeport-Stamford-Norwalk-Danbury, CT

CMA	Market Name
43	Norfolk-Virginia Beach-Portsmouth, VA/NC
44	Albany-Schenectady-Troy, NY
45	Oklahoma City, OK
46	Nashville-Davidson, TN
47	Greensboro-Winston-Salem-High Point, NC
48	Toledo, OH-MI
49	New Haven-West Haven-Waterbury-Meriden, CT
50	Honolulu, HI
51	Jacksonville, FL
52	Akron, OH
53	Syracuse, NY
54	Gary-Hammond-East Chicago, IN
55	Worchester-Fitchburg-Leominster, MA
56	Northeast Pennsylvania, PA
57	Tulsa, OK
58	Allentown-Bethlehem-Easton, PA-NJ
59	Richmond, VA
60	Orlando, FL
61	Charlotte-Gastonia, NC
62	New Brunswick-Perth Amboy-Sayreville, NJ
63	Springfield-Chicopee-Holyoke, MA
64	Grand Rapids, MI
66	Youngstown-Warren, OH
67	Greenville-Spartanburg, SC
68	Flint, MI
69	Wilmington, DE-NJ-MD
70	Long Branch-Asbury Park, NJ
71	Raleigh-Durham, NC
72	West Palm Beach-Boca Raton, FL
73	Oxnard-Simi Valley-Ventura, CA
74	Fresno, CA
75	Austin, TX
76	New Bedford-Fall River, MA
77	Tuscon, AZ
78	Lansing-East Lansing, MI
79	Knoxville, TN
80	Baton Rouge, LA
81	El Paso, TX
82	Tacoma, WA
83	Mobile, AL
84	Harrisburg, PA
85	Johnson City-Kingsport-Bristol, TN-VA
86	Albuquerque, NM
87	Canton, OH
88	Chattanooga, TN-GA

CMA	Market Name
89	Wichita, KS
90	Charleston-North Charleston, SC
91	San Juan-Caguas, PR
92	Little Rock-North Little Rock, AR
93	Las Vegas, NV
94	Saginaw-Bay City-Midland, MI
95	Columbia, SC
96	Fort Wayne, IN
97	Bakersfield, CA
98	Davenport-Rock Island-Moline, IA/IL
99	York, PA
100	Shreveport, Louisiana
101	Beaumont-Port Arthur, TX
102	Des Moines, IA
103	Peoria, IL
104	Newport News-Hampton, VA
105	Lancaster, PA
106	Jackson, MS
107	Stockton, CA
108	Augusta, GA/SC
109	Spokane, WA
111	Vallejo-Fairfield-Napa, CA
112	Corpus Christi, TX
114	Lakeland-Winter Haven, FL
115	Utica-Rome, NY
116	Lexington-Fayette, KY
117	Colorado Springs, CO
118	Reading, PA
119	Evansville, IN/KY
120	Huntsville, AL
121	Trenton, NJ
123	Santa Rosa-Petaluma, CA
124	Santa Barbara-Santa Maria-Lompoc, CA
126	Salinas-Seaside-Monterey, CA
127	Pensacola, FL
128	McAllen-Edinburg-Mission, TX
129	South Bend-Mishawaka, IN
130	Erie, PA
132	Kalamazoo, MI
133	Manchester-Nashua, NH
134	Atlantic City, NJ
135	Eugene-Springfield, OR
136	Lorain-Elyria, OH
137	Melbourne-Titusville-Palm Bay, FL
138	Macon-Warner Robins, GA

CMA	Market Name
139	Montgomery, AL
142	Modesto, CA
143	Johnstown, PA
144	Orange County, NY
145	Hamilton-Middletown, OH
146	Daytona Beach, FL
147	Ponce, PR
148	Salem, OR
149	Fayetteville, NC
150	Visalia-Tulare-Porterville, CA
152	Portland, ME
153	Columbus, GA-AL
154	New London-Norwich, CT
155	Savannah, GA
156	Portsmouth-Dover-Rochester, NH-ME
157	Roanoke, VA
159	Provo-Orem, UT
160	Killeen-Temple, TX
161	Lubbock, TX Counties - Lubbock
162	Brownsville-Harlingen, TX
163	Springfield, MO
164	Fort Myers, FL Counties - Lee
166	Hickory, NC
167	Sarasota, FL
168	Tallahassee, FL
169	Mayaguez, PR
170	Galveston-Texas City, TX
171	Reno, NV
173	Biloxi-Gulfport, MS
174	Lafayette, LA
175	Santa Cruz, CA
176	Springfield, IL
177	Battle Creek, MI
179	Topeka, KS
180	Springfield, OH
182	Fayetteville-Springdale, AK
183	Asheville, NC
184	Houma-Thibodaux, LA
185	Terre Haute, IN
189	Racine, WI
190	Boise City, ID
192	Gainesville, FL
193	Benton Harbor, MI
194	Waco, TX
195	Cedar Rapids, IA

CMA	Market Name
196	Champaign-Urbana-Rantoul, IL
197	Lake Charles, LA
198	St. Cloud, MN
199	Steubenville-Weirton, OH-WV
201	Waterloo-Cedar Falls, IA
202	Arecibo, PR
203	Lynchburg, VA
204	Aguadilla, PR
206	Longview-Marshall, TX
207	Jackson, MI
208	Fort Pierce, FL
209	Clarksville-Hopkinsville, TN/KY
210	Fort Collins-Loveland, CO
211	Bradenton, FL
212	Bremerton, WA
214	Richland-Kennewick-Pasco, WA
215	Chico
216	Janesville-Beloit, WI
217	Anderson, IN
218	Wilmington, NC
220	Abilene, TX
221	Fargo-Moorehead, ND-MN
222	Tuscaloosa, AL
223	Elkhart-Goshen, IN
225	Altoona, PA
226	Florence, AL
227	Anderson, SC
228	Vineland-Millville-Bridgeton, NJ
229	Medford, OR
230	Decatur, IL
232	Eau Claire, WI
233	Wichita Falls, TX
234	Athens, GA
237	Tyler, TX
238	Sharon, PA
239	Joplin, MO
241	Pueblo, CO
242	Olympia, WA
243	Greeley, CO
244	Kenosha, WI
245	Ocala, FL
246	Dothan, AL
247	Lafayette, IN
249	Anniston, AL
250	Bloomington-Normal, IL

CMA	Market Name
252	Pascagoula, MS
254	Redding, CA
257	Hagerstown, MD
258	Jacksonville, NC
260	Lawton, OK
261	Albany, GA
262	Danville, VA
264	Florence, SC
265	Fort Walton Beach, FL
270	Bellingham, WA
271	Kokomo, IN
272	Gadsden, AL
273	Kankakee, IL
274	Yuba City, CA
275	St. Joseph, MO
278	Columbia, MO
279	Lewiston-Auburn, ME
280	Burlington, NC
281	Laredo, TX
282	Bloomington, IN
283	Panama City, FL
284	Elmira, NY
285	Las Cruces, NM
286	Dubuque, IA
287	Bryan-College Station, TX
288	Rochester, MN
292	Sherman-Denison, TX
293	Owensboro, KY
295	Midland, TX
296	Iowa City, IA
300	Victoria, TX
301	Lawrence, KS
302	Enid, OK
303	Aurora-Elgin, IL
304	Joliet, IL
307	Alabama 1 - Franklin
310	Alabama 4 - Bibb
311	Alabama 5 - Cleburne
312	Alabama 6 - Washington
313	Alabama 7 - Butler
314	Alabama 8 - Lee
318	Arizona 1 - Mohave
319	Arizona 2 - Coconino
321	Arizona 4 - Yuma
322	Arizona 5 - Gila

CMA	Market Name
323	Arizona 6 - Graham
339	California 4 - Madera
340	California 5 - San Luis Obispo
342	California 7 - Imperial
343	California 8 - Tehama
345	California 10 - Sierra
346	California 11 - El Dorado
347	California 12 - Kings
350	Colorado 3 - Garfield
353	Colorado 6 - San Miguel
357	Connecticut 1 - Litchfield
358	Connecticut 2 - Windham
359	Delaware 1 - Kent
361	Florida 2 - Glades
362	Florida 3 - Hardee
363	Florida 4 - Citrus
364	Florida 5 - Putnam
365	Florida 6 - Dixie
366	Florida 7 - Hamilton
367	Florida 8 - Jefferson
370	Florida 11 - Monroe
371	Georgia 1 - Whitfield
372	Georgia 2 - Dawson
373	Georgia 3 - Chattooga
375	Georgia 5 - Haralson
382	Georgia 12 - Liberty
383	Georgia 13 - Early
384	Georgia 14 - Worth
385	Hawaii 1 - Kauai
386	Hawaii 2 - Maui
387	Hawaii 3 - Hawaii
388	Idaho 1 - Boundary
391	Idaho 4 - Elmore
392	Idaho 5 - Butte
393	Idaho 6 - Clark
398	Illinois 5 - Mason
403	Indiana 1 - Newton
406	Indiana 4 - Miami
407	Indiana 5 - Warren
411	Indiana 9 - Decatur
415	Iowa 4 - Muscatine
416	Iowa 5 - Jackson
427	Iowa 16 - Lyon
431	Kansas 4 - Marshall
432	Kansas 5 - Brown

CMA	Market Name
437	Kansas 10 - Franklin
442	Kansas 15 - Elk
443	Kentucky 1 - Fulton
445	Kentucky 3 - Meade
446	Kentucky 4 - Spencer
448	Kentucky 6 - Madison
449	Kentucky 7 - Trimble
453	Kentucky 11 - Clay
460	Louisiana 7 - West Feliciana
462	Louisiana 9 - Plaquemines
463	Maine 1 - Oxford
464	Maine 2 - Somerset
465	Maine 3 - Kennebec
466	Maine 4 - Washington
467	Maryland 1 - Garrett
468	Maryland 2 - Kent
469	Maryland 3 - Frederick
470	Massachusetts 1 - Franklin
471	Massachusetts 2 - Barnstable
472	Michigan 1 - Gogebic
473	Michigan 2 - Alger
474	Michigan 3 - Emmet
475	Michigan 4 - Cheboygan
476	Michigan 5 - Manistee
477	Michigan 6 - Roscommon
478	Michigan 7 - Newaygo
479	Michigan 8 - Allegan
480	Michigan 9 - Cass
487	Minnesota 6 - Hubbard
488	Minnesota 7 - Chippewa
491	Minnesota 10 - Le Sueur
492	Minnesota 11 - Goodhue
493	Mississippi 1 - Tunica
494	Mississippi 2 - Benton
495	Mississippi 3 - Bolivar
496	Mississippi 4 - Yalobusha
497	Mississippi 5 - Washington
498	Mississippi 6 - Montgomery
499	Mississippi 7 - Leake
500	Mississippi 8 - Claiborne
503	Mississippi 11 - Lamar
504	Missouri 1 - Atchison
507	Missouri 4 - De Kalb
510	Missouri 7 - Saline
511	Missouri 8 - Callaway

CMA	Market Name
512	Missouri 9 - Bates
514	Missouri 11 - Moniteau
515	Missouri 12 - Maries
516	Missouri 13 - Washington
517	Missouri 14 - Barton
518	Missouri 15 - Stone
521	Missouri 18 - Perry
544	Nevada 2 - Lander
545	Nevada 3 - Storey
546	Nevada 4 - Mineral
550	New Jersey 1 - Hunterdon
551	New Jersey 2 - Ocean
552	New Jersey 3 - Sussex
553	New Mexico 1 - San Juan
556	New Mexico 4 - Santa Fe
558	New Mexico 6 - Lincoln
559	New York 1 - Jefferson
562	New York 4 - Yates
563	New York 5 - Otsego
569	North Carolina 5 - Anson
570	North Carolina 6 - Chatham
575	North Carolina 11 - Hoke
576	North Carolina 12 - Sampson
577	North Carolina 13 - Greene
578	North Carolina 14 - Pitt
579	North Carolina 15 - Cabarrus
587	Ohio 3 - Ashtabula
591	Ohio 7 - Tuscarawas
592	Ohio 8 - Clinton
593	Ohio 9 - Ross
594	Ohio 10 - Perry
598	Oklahoma 3 - Grant
599	Oklahoma 4 - Nowata
600	Oklahoma 5 - Roger Mills
601	Oklahoma 6 - Seminole
602	Oklahoma 7 - Beckham
604	Oklahoma 9 - Garvin
606	Oregon 1 - Clatsop
607	Oregon 2 - Hood River
609	Oregon 4 - Lincoln
611	Oregon 6 - Crook
617	Pennsylvania 6 - Lawrence
621	Pennsylvania 10 - Bedford
623	Pennsylvania 12 - Lebanon
624	Rhode Island 1 - Newport

CMA	Market Name
625	South Carolina 1 - Oconee
628	South Carolina 4 - Chesterfield
629	South Carolina 5 - Georgetown
630	South Carolina 6 - Clarendon
632	South Carolina 8 - Hampton
633	South Carolina 9 - Lancaster
640	South Dakota 7 - Sully
641	South Dakota 8 - Kingsbury
644	Tennessee 2 - Cannon
645	Tennessee 3 - Macon
647	Tennessee 5 - Fayette
648	Tennessee 6 - Giles
649	Tennessee 7 - Bledsoe
650	Tennessee 8 - Johnson
651	Tennessee 9 - Maury
660	Texas 9 - Runnels
662	Texas 11 - Cherokee
667	Texas 16 - Burleson
668	Texas 17 - Newton
669	Texas 18 - Edwards
670	Texas 19 - Atascosa
671	Texas 20 - Wilson
673	Utah 1 - Box Elder
674	Utah 2 - Morgan
676	Utah 4 - Beaver
683	Virginia 3 - Giles
686	Virginia 6 - Highland
689	Virginia 9 - Greensville
690	Virginia 10 - Frederick
691	Virginia 11 - Madison
693	Washington 1 - Clallam
694	Washington 2 - Okanogan
697	Washington 5 - Kittitas
698	Washington 6 - Pacific
699	Washington 7 - Skamania
700	Washington 8 - Whitman
701	West Virginia 1 - Mason
702	West Virginia 2 - Wetzel
703	West Virginia 3 - Monongalia
704	West Virginia 4 - Grant
712	Wisconsin 5 - Pierce
723	Puerto Rico 1 - Rincon
724	Puerto Rico 2 - Adjuntas
725	Puerto Rico 3 - Ciales
726	Puerto Rico 4 - Aibonito

CMA	Market Name
727	Puerto Rico 5 - Ceiba
729	Puerto Rico 7 - Culebra
731	Virgin Islands 2 - St. Croix Island
732	Guam
733	American Samoa
734	Northern Mariana Islands

Appendix B: CMAs that Trigger the Spectrum Screen

CMA Number	CMA Name
1	New York-Newark, NY-NJ
2	Los Angeles-Anaheim, CA
3	Chicago, IL
4	Philadelphia, PA
5	Detroit-Ann Arbor, MI
6	Boston-Brockton-Lowell, MA-NH
7	San Francisco-Oakland, CA
8	Washington, DC-MD-VA
9	Dallas-Fort Worth, TX
10	Houston, TX
12	Miami-Fort Lauderdale, FL
13	Pittsburgh, PA
14	Baltimore, MD
17	Atlanta, GA
18	San Diego, CA
19	Denver-Boulder, CO
20	Seattle-Everett, WA
22	Tampa-St. Petersburg, FL
24	Kansas City, MO-KS
25	Buffalo, NY
26	Phoenix, AZ
27	San Jose, CA
30	Portland, OR-WA
31	Columbus, OH
32	Hartford-Bristol, CT
33	San Antonio, TX
34	Rochester, NY
35	Sacramento, CA
38	Providence-Warwick, RI
39	Salt Lake City-Ogden, UT
42	Bridgeport-Stamford-Danbury CT
44	Albany-Schenectady-Troy, NY
45	Oklahoma City, OK
46	Nashville-Davidson, TN
49	New Haven-Waterbury-Meriden CT
50	Honolulu, HI
51	Jacksonville, FL
53	Syracuse, NY
54	Gary-Hammond-East Chicago, IN
55	Worchester-Leominster, MA
56	Northeast Pennsylvania, PA
57	Tulsa, OK
58	Allentown-Bethlehem, PA-NJ
60	Orlando, FL

CMA Number	CMA Name
62	New Brunswick-Perth Amboy, NJ
63	Springfield-Holyoke, MA
64	Grand Rapids, MI
66	Youngstown-Warren, OH
68	Flint, MI
69	Wilmington, DE-NJ-MD
70	Long Branch-Asbury Park, NJ
72	West Palm Beach-Boca Raton, FL
73	Oxnard-Simi Valley-Ventura, CA
74	Fresno, CA
75	Austin, TX
76	New Bedford-Fall River, MA
77	Tucson, AZ
78	Lansing-East Lansing, MI
79	Knoxville, TN
81	El Paso, TX
82	Tacoma, WA
84	Harrisburg, PA
86	Albuquerque, NM
87	Canton, OH
88	Chattanooga, TN-GA
89	Wichita, KS
91	San Juan-Caguas, PR
93	Las Vegas, NV
96	Fort Wayne, IN
97	Bakersfield, CA
99	York, PA
100	Shreveport, LA
101	Beaumont-Port Arthur, TX
105	Lancaster, PA
107	Stockton, CA
108	Augusta, GA-SC
111	Vallejo-Fairfield-Napa, CA
112	Corpus Christi, TX
114	Lakeland-Winter Haven, FL
115	Utica-Rome, NY
117	Colorado Springs, CO
118	Reading, PA
121	Trenton, NJ
123	Santa Rosa-Petaluma, CA
124	Santa Barbara, CA
126	Salinas-Seaside-Monterey, CA
128	McAllen-Edinburg-Mission, TX
130	Erie, PA
132	Kalamazoo, MI
133	Manchester-Nashua, NH
134	Atlantic City, NJ

CMA Number	CMA Name
135	Eugene-Springfield, OR
137	Melbourne-Titusville, FL
142	Modesto, CA
143	Johnstown, PA
144	Orange County, NY
146	Daytona Beach, FL
147	Ponce, PR
150	Visalia-Tulare-Porterville, CA
151	Poughkeepsie, NY
156	Portsmouth-Rochester, NH-ME
159	Provo-Orem, UT
162	Brownsville-Harlingen, TX
167	Sarasota, FL
168	Tallahassee, FL
169	Mayaguez, PR
170	Galveston-Texas City, TX
171	Reno, NV
175	Santa Cruz, CA
192	Gainesville, FL
193	Benton Harbor, MI
197	Lake Charles, LA
199	Steubenville-Weirton, OH-WV
200	Parkersburg-Marietta, OH-WV
202	Arecibo, PR
204	Aguadilla, PR
208	Fort Pierce, FL
210	Fort Collins-Loveland, CO
211	Bradenton, FL
212	Bremerton, WA
220	Abilene, TX
229	Medford, OR
234	Athens, GA
238	Sharon, PA
242	Olympia, WA
243	Greeley, CO
244	Kenosha, WI
257	Hagerstown, MD
260	Lawton, OK
262	Danville, VA
266	Glens Falls, NY
270	Bellingham, WA
281	Laredo, TX
285	Las Cruces, NM
287	Bryan-College Station, TX
295	Midland, TX
298	Bismarck, ND
300	Victoria, TX

CMA Number	CMA Name
301	Lawrence, KS
302	Enid, OK
303	Aurora-Elgin, IL
304	Joliet, IL
311	Alabama 5 - Cleburne
313	Alabama 7 - Butler
318	Arizona 1 - Mohave
321	Arizona 4 - Yuma
322	Arizona 5 - Gila
334	Arkansas 11 - Hempstead
335	Arkansas 12 - Ouachita
338	California 3 - Alpine
339	California 4 - Madera
341	California 6 - Mono
342	California 7 - Imperial
343	California 8 - Tehama
345	California 10 - Sierra
346	California 11 - El Dorado
350	Colorado 3 - Garfield
352	Colorado 5 - Elbert
353	Colorado 6 - San Miguel
354	Colorado 7 - Saguache
359	Delaware 1 - Kent
360	Florida 1 - Collier
361	Florida 2 - Glades
363	Florida 4 - Citrus
369	Florida 10 - Walton
370	Florida 11 - Monroe
371	Georgia 1 - Whitfield
372	Georgia 2 - Dawson
373	Georgia 3 - Chattooga
374	Georgia 4 - Jasper
375	Georgia 5 - Haralson
381	Georgia 11 - Toombs
384	Georgia 14 - Worth
385	Hawaii 1 - Kauai
387	Hawaii 3 - Hawaii
394	Illinois 1 - Jo Daviess
395	Illinois 2 - Bureau
403	Indiana 1 - Newton
429	Kansas 2 - Norton
432	Kansas 5 - Brown
434	Kansas 7 - Trego
439	Kansas 12 - Hodgeman
440	Kansas 13 - Edwards
445	Kentucky 3 - Meade
449	Kentucky 7 - Trimble

CMA Number	CMA Name
458	Louisiana 5 - Beauregard
468	Maryland 2 - Kent
475	Michigan 4 - Cheboygan
476	Michigan 5 - Manistee
477	Michigan 6 - Roscommon
478	Michigan 7 - Newaygo
480	Michigan 9 - Cass
487	Minnesota 6 - Hubbard
488	Minnesota 7 - Chippewa
495	Mississippi 3 - Bolivar
497	Mississippi 5 - Washington
499	Mississippi 7 - Leake
500	Mississippi 8 - Claiborne
544	Nevada 2 - Lander
545	Nevada 3 - Storey
547	Nevada 5 - White Pine
553	New Mexico 1 - San Juan
557	New Mexico 5 - Grant
558	New Mexico 6 - Lincoln
559	New York 1 - Jefferson
561	New York 3 - Chautauqua
562	New York 4 - Yates
563	New York 5 - Otsego
564	New York 6 - Columbia
583	North Dakota 4 - McKenzie
584	North Dakota 5 - Kidder
587	Ohio 3 - Ashtabula
591	Ohio 7 - Tuscarawas
595	Ohio 11 - Columbiana
597	Oklahoma 2 - Harper
598	Oklahoma 3 - Grant
601	Oklahoma 6 - Seminole
602	Oklahoma 7 - Beckham
606	Oregon 1 - Clatsop
610	Oregon 5 - Coos
612	Pennsylvania 1 - Crawford
613	Pennsylvania 2 - McKean
617	Pennsylvania 6 - Lawrence
618	Pennsylvania 7 - Jefferson
619	Pennsylvania 8 - Union
621	Pennsylvania 10 - Bedford
622	Pennsylvania 11 - Huntingdon
623	Pennsylvania 12 - Lebanon
624	Rhode Island 1 - Newport
628	South Carolina 4 - Chesterfield
629	South Carolina 5 - Georgetown
633	South Carolina 9 - Lancaster

CMA Number	CMA Name
635	South Dakota 2 - Corson
637	South Dakota 4 - Marshall
643	Tennessee 1 - Lake
645	Tennessee 3 - Macon
647	Tennessee 5 - Fayette
649	Tennessee 7 - Bledsoe
650	Tennessee 8 - Johnson
660	Texas 9 - Runnels
663	Texas 12 - Hudspeth
667	Texas 16 - Burleson
668	Texas 17 - Newton
670	Texas 19 - Atascosa
671	Texas 20 - Wilson
672	Texas 21 - Chambers
673	Utah 1 - Box Elder
674	Utah 2 - Morgan
676	Utah 4 - Beaver
678	Utah 6 - Piute
681	Virginia 1 - Lee
682	Virginia 2 - Tazewell
688	Virginia 8 - Amelia
690	Virginia 10 - Frederick
691	Virginia 11 - Madison
692	Virginia 12 - Caroline
693	Washington 1 - Clallam
697	Washington 5 - Kittitas
698	Washington 6 - Pacific
699	Washington 7 - Skamania
701	West Virginia 1 - Mason
702	West Virginia 2 - Wetzel
704	West Virginia 4 - Grant
705	West Virginia 5 - Tucker
707	West Virginia 7 - Raleigh
723	Puerto Rico 1 - Rincon
724	Puerto Rico 2 - Adjuntas
725	Puerto Rico 3 - Ciales
726	Puerto Rico 4 - Aibonito
727	Puerto Rico 5 - Ceiba
728	Puerto Rico 6 - Vieques
729	Puerto Rico 7 - Culebra
730	Virgin Islands 1 - St. Thomas
731	Virgin Islands 2 - St. Croix

APPENDIX C

ECONOMIC ANALYSIS

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I. INTRODUCTION

1. This Economic Analysis describes the Applicants' (AT&T Inc. ("AT&T") and T-Mobile USA, Inc. ("T-Mobile")) Merger Simulation Model ("Economic Model") and other analyses to evaluate the potential price effects from the Applicants' proposed transaction. It primarily addresses price effects that may result from unilateral incentives and efficiencies and leaves the discussion of other competitive harms to the main body of the Staff Analysis and Findings ("Staff Analysis").[1] As discussed in the Staff Analysis, we find that if the proposed transaction is allowed to proceed, AT&T would have the incentive and ability to impose substantial unilateral price increases. This conclusion is supported by two analyses set forth in this Appendix. First, the unilateral pricing pressure measures generated by the proposed transaction suggest that the transaction would make AT&T's post-transaction demand less elastic, conferring on the combined firm a unilateral incentive to raise price. Second, with more reasonable assumptions, the Applicants' Economic Model predicts that the transaction would result in substantial price increases, even accounting for efficiencies. The sections below provide details of the technical analysis and modeling supporting these conclusions.

II. UNILATERAL PRICE EFFECTS

2. Unilateral effects concern the incentive for AT&T to impose post-transaction price increases regardless of the responses from other mobile wireless providers. The transaction may raise the profitability of a unilateral price increase strategy by eliminating T-Mobile as an independent competitor and substitute product for mobile wireless consumers. In the unilateral effects model most commonly employed in differentiated products settings, AT&T would have an increased incentive after the transaction to raise prices because some of the sales that would previously have been lost after a price increase would be recaptured by T-Mobile products with which it formerly competed but it now owns. The profitability of that price increase depends upon the degree of substitution between the products sold by the two firms and the relative profit margins of the products.

3. The common unilateral effects simulation model assumes that both merging firms would continue to sell their products in the market, but that the merged firm would maximize the two firms' profits jointly. This modeling approach captures one aspect of the competitive problem raised by the

[1] Most of the technical economic modeling submitted into the record was related to unilateral effects so we focus on this potential harm.

proposed transaction, but this common model has limited ability to predict the magnitude of the harm when applied to this transaction because AT&T does not intend to offer T-Mobile service plans to new subscribers after the transaction, while allowing current T-Mobile subscribers to continue service under their existing pricing plans.[2] As a result of this decision, all mobile wireless providers (not just AT&T) may have an incentive to impose unilateral price increases; the demand each firm faces would become less elastic due to some fraction of current subscribers losing T-Mobile as their second choice and therefore having to switch to their third choice if faced with a price increase. Less elastic demand results in an increased incentive to impose unilateral price increases at all firms since fewer customers would switch to a competing firm when faced with higher prices. The magnitude of likely price increases depends, in part, on the relative attractiveness of the third choice for the group of subscribers for whom T-Mobile was their second choice. All else equal, the less attractive the third alternative is relative to T-Mobile, the greater is the incentive for post-transaction price increases among all mobile wireless providers.

A. Upward Pricing Pressure

4. The Gross Upward Pricing Pressure Index ("GUPPI") measures the value of lost sales from one merging firm to the other following a price increase.[3] The GUPPI provides an indication of the potential for adverse unilateral effects by measuring the incentive of the merged firm to raise the price of one product to divert sales and raise the profits on another product against which it formerly competed, but it now owns.

5. The theory on which the GUPPI is based assumes that a single owner jointly maximizes the profits of both firms after a merger, which does not hold for this transaction. In addition, the GUPPI estimates we present do not account for many potentially important additional factors that may affect pricing, including: (a) product repositioning; (b) market entry; (c) transaction-specific marginal cost reductions; (d) quality improvements; (e) exclusionary effects; (f) oligopoly interaction, if it is other than Bertrand-Nash conduct, including the possibility of post-transaction coordination; and (g) price adjustments from other, non-merging firms. The first four factors would tend to reduce upward pricing pressure while the latter three would be expected to exacerbate potential price increases.

6. Despite these limitations, we present GUPPI calculations as a measure of the competitive constraint that T-Mobile currently exerts on AT&T prices.[4] Following the transaction, the value of lost

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[2] Application Public Interest Statement, Declaration of Dennis W. Carlton, Allan Shampine, and Hal Sider ("Carlton Declaration") at ¶ 64. Put differently, the Applicants' view of the proposed transaction allows the price of T-Mobile products to rise, as do we, but we go further in our review in Section IV of the Staff Analysis by taking the view that T-Mobile prices would in effect rise all the way to the level at which the demand for T-Mobile products is choked off. Our review of the Applicants' Economic Model shows that our concerns about competitive harm do not depend on our assumption. We prefer our approach conceptually as likely to generate a more reliable prediction of the magnitude of harm, though our approach would be difficult and perhaps impossible to implement quantitatively in a formal model with the information in our record. The combined firm could, in principle, achieve cost savings from closing T-Mobile service plans and no longer marketing the T-Mobile brand that would not be available under the Applicants' Economic Model where it would continue to sell both firms' products, but in practice, our review of the claimed efficiencies in Section V of the Staff Analysis concludes those potential cost savings are largely of the type that typically do not lead to lower prices or other benefits for end users and/or are unsupported in the record. *See* Staff Analysis at ¶ 135.

[3] See Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, (Aug. 19, 2010) ("*DOJ/FTC Horizontal Merger Guidelines*") at §6.1.

[4] In the setting in which the GUPPI is most commonly employed (a merger between sellers of differentiated products where the merged firm intends to continue to sell both firms' products), the GUPPI is better understood as a barometer for gauging the potential for post-merger price increases. *See id.* .*See, also, e.g.*, Serge Moresi, "The (continued....)

sales from firm one (AT&T) that are now recaptured by the now owned second firm (T-Mobile) can be expressed as:

$$GUPPI_1 = D_{21} * M_2 * P_2/P_1$$

where D_{21} is the fraction of customers leaving firm one that would choose to buy instead at firm two following a price increase, known as the "diversion ratio," M_2 is the percentage profit margin at firm two, and P_2 and P_1 are the prices at the respective firms.[5] The GUPPI calculation for firm two is analogous.

7. The GUPPI formulas do not take into account potential marginal cost reductions that may result from merger-specific efficiencies. Any reductions in marginal cost would create downward pricing pressure that may partially or fully offset the upward pricing pressure calculated above. An alternative measure of the competitive constraint that T-Mobile currently exerts on AT&T prices, the Compensating Marginal Cost Reduction (CMCR),[6] is closely related to the GUPPI. Given the same assumptions underlying the GUPPI, the CMCR provides the percentage reduction in marginal costs that would be required to occur at both of the combined firms to just offset the upward pricing pressure (i.e. GUPPI=0 percent).[7] The CMCR for firm one is given by the following formula:

$$CMCR_1 = [M_1*D_{12}*D_{21}+M_2*D_{21}*(P_2/P_1)] / (1-M_1)*(1-D_{12}*D_{21})$$

where D_{12} is the fraction of customers leaving firm two that would choose to buy instead at firm one, M_1 is the percentage profit margin at firm one and the remaining variables are as previously defined.[8] The CMCR for firm two is analogous. In the sections that follow, we first discuss the parameters required to calculate the GUPPI and CMCR and then present the estimates of each.

1. Buyer Substitution

8. The degree of buyer substitution between the products of the merging firms is one of the central components of any analysis of the unilateral effects of a merger between sellers of differentiated products, whereby the greater the degree of buyer substitution, the larger the predicted unilateral pricing effects would be.[9] The standard economic measure of the degree of substitution between the products of

(Continued from previous page)

Use of Upward Price Pressure Indices in Merger Analysis", The Antitrust Source, www.antitrustsource.com, February 2010 (visited November 28, 2011). In our setting, in which the combined firm intends to sell only one firms' products, we rely on the GUPPI as a way to calibrate the magnitude of diversion ratios, and assess whether they are sufficiently large as to suggest that the transaction would make demand noticeably less elastic, conferring a unilateral incentive to raise price.

[5] *See* Steven C. Salop & Serge Moresi, *Updating the Merger Guidelines: Comments* (Public Comment to Horizontal Merger Guidelines Review Project Nov. 2009) at 19-20, available at http://www.ftc.gov/os/comments/horizontalmergerguides/545095-00032.pdf (last visited Nov. 27, 2011).

[6] Unlike merger simulation models or elasticity and pass-through rate estimation, the CMCR does not depend on the assumed functional form of demand. The CMCR depends only on diversion ratios or demand elasticities measured at the pre-merger equilibrium and does not require knowledge of how these values may differ at the new post-merger equilibrium. *See* Froeb, Luke and Steven Tschantz, and Gregory Werden, Pass-Through Rates and the Price Effects of Mergers, *International Journal of Industrial Organization*, 23 (2005) 703-715. Available at SSRN: http://ssrn.com/abstract=274848.

[7] As the Applicants note, both firms would not be required to exhibit marginal cost reductions as large as the CMCR if one firm were to have marginal cost savings greater than its CMCR as a result of the transaction. *See* Joint Opposition of AT&T Inc. and T-Mobile USA Inc. to Petitions to Deny and Reply to Comments ("Joint Opposition" at ¶ 84.

[8] *See* Gregory Werden, *A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of Differentiated Products*, 44 Journal of Industrial Economics 409 (1996), Equation 5.

[9] *See DOJ/FTC Horizontal Merger Guidelines* at §6.1. "Unilateral price effects are greater, the more the buyers of products sold by one merging firm consider products sold by the other merging firm to be their next choice.", at 20.

two firms is the cross-price elasticity of demand, defined as the percentage change in the quantity demanded of a product divided by the percentage change in the price of a product at a competing firm.[10] In other words, it measures the degree to which buyers would substitute to the other firm's products in response to a price increase.

9. The diversion ratio used in the GUPPI calculations is a measure of buyer substitution closely related to the cross-price elasticity.[11] In the mobile wireless market, the Local Number Portability ("LNP") data is one source for estimating this measure of buyer substitution. The LNP data track the number of customers who port their mobile wireless telephone number from one provider to another in each month by rate center. From these data, we calculate an estimator for D_{21} (the diversion ratio) as the percentage of customers for each firm that ported their number to each competing provider in the fourth quarter of 2010. Table 1 shows that **[Begin Confidential Information]** **[End Confidential Information]** percent of customers that ported their number from T-Mobile chose AT&T as their new provider, while **[Begin Confidential Information]** **[End Confidential Information]** percent of subscribers that left AT&T chose T-Mobile. The data indicate that T-Mobile is the **[Begin Confidential Information]** **[End Confidential Information]** largest destination for customers leaving AT&T and its share of porting customers is **[Begin Confidential Information]** **[End Confidential Information]**

Table 1. National Diversion Rate Calculations from Local Number Portability Data
[Begin Confidential Information]

[End Confidential Information]

10. The porting data have some potential shortcomings for measuring diversion ratios. Since customers who port their numbers are not necessarily responding to a price or quality change, diversion ratio calculations from porting data implicitly assume that customers would switch providers in response to a price or quality change with the same substitution patterns as have been observed for all customers who port for any reason. An additional potential problem with the porting data is that they do not contain

[10] In differential calculus notation, the cross-price elasticity of firm *i* with respect to a price change of firm *j* is given by $\varepsilon_{ij} = (\partial X_i/\partial P_j) * (P_j/X_i)$. *See* Dennis Carlton and Jeffrey Perloff, *Modern Industrial Organization*, 647-648, Pearson Addison Wesley, Fourth Edition, 2005.

[11] The diversion ratio of customers leaving firm *i* due to a price increase that choose firm *j* is given by $D_{ji} = (\partial X_j/\partial P_i) / (\partial X_i/\partial P_i)$. The diversion ratio and cross-price elasticity can be shown to be related by multiplying and dividing the formula for the cross-price elasticity by the term $(\partial X_j/\partial P_j) * X_j$ and simplifying, which yields $\varepsilon_{ij} = D_{ij} * X_j/X_i * \varepsilon_{jj}$.

the full universe of subscribers that switch providers in a given month, but rather only switchers who choose to keep their mobile wireless telephone numbers. This gives rise to potential sample selection bias, as those that port their mobile wireless telephone number may be a non-random sample of subscribers. However, we have no evidence that those who port their numbers are systematically different from those who do not, and no evidence that those who port would react differently to a price increase than those who do not.

11. Porting data is not the only source for estimating what the expected diversion ratios would be in response to a price increase. In their Economic Model, the Applicants calculate diversion ratios from market shares and shares of gross subscriber additions.[12] Following a price increase, they assume customers that switch providers would choose alternative mobile wireless providers in proportion to the market shares or shares of gross additions of the remaining firms. In this case, the diversion ratio is given by:

$$D_{21} = S_2 / (1 - S_1)$$

where S_1 is the share of subscribers or gross additions of the firm that raises price and S_2 is the share or gross additions of the firm the customers would switch to. The assumption that diversion is proportional to subscriber market shares is frequently employed in calculating diversion ratios for antitrust analysis when better data is unavailable.[13]

12. In this case, we conclude that the porting data is a better source than subscriber shares for measuring diversion ratios because diversion ratios based on market shares only track true diversion ratios to the extent that the second choices of customers are proportional to first choices.[14] This assumption about the substitution patterns is inflexible and does not allow for the possibility that a firm with a substantially smaller market share may be a close substitute for a much larger firm.[15] In addition, the data on gross additions used by AT&T may be unreliable. AT&T documents show that **[Begin Confidential Information]**

[End Confidential Information].[16] In addition, we note that T-Mobile documents and data confirm that of those customers who leave T-Mobile, substantial numbers choose

[12] *See* Letter from Richard L. Rosen, Counsel, AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 23, 2011) ("Applicants' Economic Model Ex Parte (Aug. 23, 2011)"), attaching Explanation of the Compass Lexecon Merger Simulation Model, Dennis W. Carlton and Mark A. Israel (Aug. 23, 2011) ("Explanation of Compass Lexecon Merger Simulation Model (Aug. 23, 2011)") at 3, n. 8.

[13] *See* Carl Shapiro, *Mergers with Differentiated Products*, Antitrust, Spring 1996, available at http://faculty.haas.berkeley.edu/shapiro/diversion.pdf (last visited Nov. 27, 2011) at 25-26.

[14] If proportional diversion holds, then consumer preferences are said to satisfy the Independence of Irrelevant Alternatives (IIA) assumption. The IIA assumption which essentially implies that "if a single good is eliminated from the choice set, consumers who were choosing the eliminated good will distribute themselves among the remaining goods according to the overall market shares of those goods." has been shown not to hold in many demand studies, *see e.g.* Hausman, Leonard and Zona, *Competitive Analysis with Differentiated Products*, Annales d'Economies et de Statistique, 1994, 34, 159-180, at 160.

[15] Moreover, as with diversion ratios based on porting, diversion ratios based on shares do not necessarily correspond to the substitution patterns that would arise in response to changes in price.

[16] ATTF-TMO-00831013, SMART Flow Share Accurately Reports Verizon Wireless Net Adds for the Second Half of 2008; ATTF-TMO-00838106, Email from Jeffrey Ezell to David Christopher and Andrew Wilson, Feb. 14, 2011.

AT&T.[17]

13. The difference between the two diversion ratio methodologies is highlighted in Table 2, which compares the diversion ratios calculated from the porting data to those that would result from assuming that diversion is proportional to market shares. The comparison shows that AT&T and T-Mobile are closer substitutes when calculating diversion ratios utilizing porting data than would be expected from their respective market shares. This may be due to the two firms using compatible Global System for Mobile Communications ("GSM") technologies that may be appealing to similar customers. The porting data show that AT&T customers move to T-Mobile **[Begin Confidential Information]** **[End Confidential Information]** percentage points more than predicted by their market shares, while AT&T subscribers tend to migrate substantially less than market shares predict to many of the regional providers.[18] Likewise, T-Mobile customers move to AT&T **[Begin Confidential Information]** **[End Confidential Information]** percentage points more than predicted by diversion proportional to market shares. In contrast, T-Mobile customers switch at rates well below those predicted by market shares to **[Begin Confidential Information]** **[End Confidential Information]** Unlike AT&T customers, T-Mobile customers switch more than predicted by their market shares to smaller low-cost providers, which may reflect the greater price sensitivity of many T-Mobile customers relative to current AT&T customers.[19]

Table 2. Difference between Diversion Rates Based on Porting and Market Shares
[Begin Confidential Information]

14. Since customers must keep their telephone number in order to be in the sample, the porting data do not track customers that may choose to no longer have a mobile wireless device and exit the market. As a result, the diversion ratios reported above in effect assume that all customers that would leave a firm after a price increase would switch to a competing firm. However, in response to a price

[17] *See, e.g.,* DTTM-FCC 00071155, Churn Reduction Discussion Appendix June 29 2010 at 8 (showing **[Begin Highly Confidential]** **[End Highly Confidential]**

[18] **[Begin Confidential Information]** **[End Confidential Information]**

[19] T-Mobile customers also switch disproportionately to Sprint, which may be due to both the lower plan price offerings of Sprint, and T-Mobile's prepaid customers switching to Sprint's low-cost pre-paid brands (e.g., Boost Mobile and Virgin Mobile).

increase at one firm, it is likely that some fraction of that firm's customers would choose to discontinue service instead of establishing service at a new firm. To correct the diversion ratios for market exit, we multiply the diversion ratios reported above by the "recapture rate," defined as the fraction of customers that leave a firm due to a price increase that do not exit the mobile wireless market.[20] These adjusted diversion ratios are used in all of our analyses below.

15. The Applicants implicitly assume a recapture rate of only 60 percent in their Economic Model. They assume that following a one percent price increase, **[Begin Confidential Information]** **[End Confidential Information]** percent of customers would switch to a competing firm and **[Begin Confidential Information]** **[End Confidential Information]** percent would exit the market.[21] This assumption implies that only 60 percent of subscribers that leave due to price increase by one firm would choose to continue mobile wireless service at another firm and 40 percent of customers would discontinue wireless service rather than switching to another provider.[22] Based on our review of AT&T and T-Mobile internal churn studies, we conclude that the Applicants' recapture rate assumption is not supported by the evidence.[23] These internal churn studies find that less than **[Begin Confidential Information]** **[End Confidential Information]** of customers that switch from AT&T and T-Mobile do not re-establish service with another provider. Based on this evidence, we assume a recapture rate of **[Begin Confidential Information]** **[End Confidential Information]** percent in our analyses and report results based on this assumption.[24] Since many of the reasons why customers did not switch to a competing firm in the surveys would not apply in the case of a post-transaction price increase (e.g. death, employer provided phone etc.), our assumption is likely too low, and therefore likely to lead us to understate the potential for harm from the transaction. We also calculate results assuming full recapture as a reference point for the GUPPIs and CMCRs.

2. Profit Margins and Prices

16. Based on internal documents, the Applicants estimated that T-Mobile's profit margin is between **[Begin Confidential Information]** **[End Confidential Information]** percent.[25]

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[20] For more on recapture rates, *see* Farrell, Joseph and Carl Shapiro, *Recapture, Pass-Through and Market Definition,* Antitrust Law Journal, Vol. 76, No. 3, pp 585-604, 2010. Also, Farrell and Shapiro, *Improving Critical Loss Analysis*, Antitrust Source, pp 1- 17, Feb. 2008.

[21] *See* Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at 4. The Applicants assume that the industry elasticity, defined as the percent of customers that are lost to the industry given a 1% price change of a good, is **[Begin Confidential Information]** **[End Confidential Information]**.

[22] This is calculated as:.015/(.01+.015) = 60%.

[23] Based on data from ATTF-TMO-00472641, AT&T Churn Tracking / Customer Retention Study, Nov. 2010, at 66, we calculate that **[Begin Confidential Information]**

[End Confidential Information]

[24] Based on the Applicants' assumed own-price elasticity, our recapture rate would imply an industry elasticity of **[Begin Confidential Information]**

[End Confidential Information]. This is similar to values estimated in the economic literature which find wireless industry elasticities between -.36 and -.51. *See*, Mark J. Rodini, Glenn A. Woroch, and Michael R. Ward, *Going Mobile: Substitutability Between Fixed and Mobile Access*, Telecommunications Policy 27 (2003) 457-476. As a robustness check, we also run the Economic Model assuming an industry elasticity at the top of this estimated range.

[25] *See* Explanation of the Compass Lexecon Merger Simulation Model at 3, n.7. The higher profit margin is the result of setting marginal capital expenditures at zero today, as they assumed in their Economic Model.

The Applicants were unable to calculate a similar measure for AT&T or other mobile wireless providers and consequently applied the T-Mobile estimate to all other firms.

17. From our review of the evidence, we find that the Applicants' calculation for T-Mobile's economic profit margin is likely too low and, consistent with reported financial margins, that AT&T's profit margin is also considerably higher than Applicants assumed.[26] Assuming lower profit margins for AT&T and T-Mobile lowers the value of diverted sales in the GUPPI calculation, and therefore understates harms.[27] The Applicants profit margin calculation for T-Mobile is likely too low because it only calculates the margin over a maximum customer lifetime of 24 months.[28] The average T-Mobile (and AT&T) customer lifetime is considerably longer than 24 months, so if customer renewal costs are lower than initial customer acquisition costs, then the profit margin estimated by the Applicants would be lower than the true profit margin.

18. Internal AT&T documents show that their recurring monthly profit margin excluding fixed costs is **[Begin Confidential Information]** **[End Confidential Information]** percent for each AT&T subscriber.[29] However, this figure does not account for one-time subscriber acquisition and upgrade costs over the customer lifetime. Because the AT&T documents also provide estimates of the fraction of the total cost of providing mobile wireless service that is variable versus fixed, we can adjust the profit margin appropriately. AT&T estimates the fraction of sales, marketing, network system, customer service, billing and bad debt, IT and commissions that are variable costs. Using these estimates and the amount spent in each category from the same document, we calculate that **[Begin Confidential Information]** . . . **[End Confidential Information]** percent of recurring expenses are variable costs.[30] We assume that 100 percent of equipment costs are variable. From this information, we calculate the profit margins for each firm shown in Table 3 based on reported financial data for the third quarter of 2010 as follows.[31] First, we take the total cost of service as reported by each firm excluding equipment

[26] *See* John C. Hodulik, Batya Levi, *US Wireless 411*, UBS Investment Research, (Aug. 17, 2011).

[27] In the Economic Model, a reduction in margins also reduces potential harms. That is, assuming a lower profit margin for AT&T makes their demand become more elastic, which reduces their incentive to raise price after the transaction.

[28] *See* Letter from Phillip W. Horton, Counsel for AT&T Inc. to Marlene H. Dortch, Secretary, FCC (Aug. 24, 2011) submitting confidential documents reference in White Paper of Prof. Dennis W. Carlton and Dr. Mark A. Israel ("Applicants' Confidential Documents to Economic Model Ex Parte (Aug. 24, 2011)") at Attachment 2, HC.XLSX.

[29] *See* ATTF-TMO-00546820, AT&T LTV Deep Dive Discussion Document, May 9, 2011; ATTF-TMO-00741790, AT&T Aligning on Common LTVs, Workshop Document, May 28, 2011.

[30] *See* ATTF-TMO-00741790, AT&T Aligning on Common LTVs, Workshop Document, May 28, 2011, at 18; ATTF-TMO-00546820, AT&T LTV Deep Dive Discussion Document, May 9, 2011, at 15. We also note that our assumption is conservative based on additional evidence in these documents. AT&T estimates that only **[Begin Confidential Information]** . . . . **[End Confidential Information]** in monthly recurring subscriber expenses are variable costs, or **[Begin Confidential Information]** . . **[End Confidential Information]**, which is lower than we assumed. Using this lower percentage of costs that are variable would produce higher profit margins and greater competitive harms.

[31] We estimate these in the third quarter of 2010 due to data availability issues for later quarters. AT&T data see http://phx.corporate-ir.net/phoenix.zhtml?c=113088&p=irol-SECText&TEXT=aHR0cDovL2lyLmludC53ZXN0bGF3YnVzaW5lc3MuY29tL2RvY3VtZW50L3YxLzAwMDA3MzI3MTctMTAtMDAwMDkxL3htbA%3d%3d at 23' for T-Mobile see http://www.t-mobile.com/Cms/Files/Published/0000BDF20016F5DD010312E2BDE4AE9B/5657114502E70FF3012B59F6EC3E60E2/file/TMUSQ32010PressReleaseFinal[1].pdf at 12; for Sprint see http://investors.sprint.com/docs.aspx?iid=4057219 at 26; for Verizon Wireless see http://news.verizonwireless.com/investor/pdf/CELLCO_PARTNERSHIP_10Q_2010_3Q%20Final.pdf at 17-18; for (continued....)

costs and then multiply this by **[Begin Confidential Information]** **[End Confidential Information]** to obtain an estimate of variable costs excluding equipment costs. Then we add all equipment costs to arrive at total variable costs. From this value and the total revenues reported by each firm, we calculate the profit margins shown in the last row of the table.

Table 3. Profit Margin Calculation for all Firms

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Note: Data in millions, except for Leap, MetroPCS and Leap & MetroPCS which are in thousands. Source: Company Finanaical Data, *see supra.* n.31.

[End Confidential Information]

19. Our GUPPI and CMCR calculations employ the Average Revenue Per User ("ARPU") reported for each firm as the measure of price.[32] In the fourth quarter of 2010, we calculate from data submitted by the Applicants that AT&T's ARPU for prepaid and postpaid subscribers was **[Begin Confidential Information]** **[End Confidential Information]** while T-Mobile's was **[Begin Confidential Information]** **[End Confidential Information]**.

3. Results

20. Adverse unilateral effects are sometimes considered unlikely if the GUPPI is less than 5 percent.[33] Table 4 shows that the GUPPI values for this transaction exceed that threshold for AT&T, and are well above it for T-Mobile. The magnitude of the T-Mobile GUPPIs range from 24 to 27 percent, suggesting that T-Mobile is a significant rival for AT&T. The pricing pressure index for AT&T branded products is lower than T-Mobile's pricing pressure index but it is still substantial and ranges from 6.6 to 7.3 percent. These data suggest that the transaction would make AT&T's post-transaction demand less elastic, conferring on the combined firm a unilateral incentive to raise price.[34]

(Continued from previous page)
Leap see http://investor.leapwireless.com/phoenix.zhtml?c=95536&p=irol-sec at 2; or MetroPCS see http://investor.metropcs.com/phoenix.zhtml?c=177745&p=irol-sec&seccat01.3_rs=31&seccat01.3_rc=10 at 2.

[32] *See* Information Request at Attachment B. These are calculated from the data as the total subscriber weighted average of prepaid and postpaid ARPU across all Cellular Market Areas ("CMAs"). The ARPU values for the Economic Model are calculated in the same manner.

[33] *See* Carl Shapiro remarks as prepared for the American Bar Association Section of Antitrust Law Fall Forum, (Nov. 18, 2010), available at http://www.justice.gov/atr/public/speeches/264295.pdf (last visited Nov. 27, 2011) at 24.

[34] Under an assumption of linear demand, Bertrand-Nash conduct, constant marginal cost, no merger efficiencies, and no change in the prices of other firms (including the merging partner), prices would be expected to rise by half of the GUPPI. *See* Carl Shapiro, *Unilateral Effects Calculations*, October 2010, available at http://faculty.haas.berkeley.edu/shapiro/unilateral.pdf (last visited Nov. 27, 2011) ("Unilateral Effects Calculation").
(continued....)

21. The CMCR calculations for each firm are also shown in Table 4. To offset the upward pricing pressure that would result from the transaction, we estimate that AT&T's marginal costs would have to fall by 25 percent and T-Mobile's by 57 percent. If projected marginal cost savings at each firm are lower than these values, the transaction would likely result in higher consumer prices for mobile wireless services.

Table 4. GUPPI and CMCR Calculations
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B. Porting Data Analysis

22. In the previous section, we used diversion rates generated by ports between providers and the Applicants used general market share and share of gross adds to generate their diversion ratios. To understand the potential impact of the transaction on prices, it would be useful to see if consumers' responses to pricing changes are consistent with the conclusion that AT&T and T-Mobile are substitutes for consumers.[35] We obtained porting data from wireless providers that show the monthly porting activity (number of people who enter or leave a provider's specific pricing plan from other providers while preserving their telephone numbers) for each plan.[36] These porting data are a subset of all customers who actually enter or leave a specific plan, but it allows one to observe the substitution pattern, and hence the diversion rate between providers, when there is a price change.

23. In the period under consideration (January 2008 – March 2011), there were several price

(Continued from previous page)
Shapiro also shows that half the GUPPI will substantially understate expected price increases after accounting for pricing feedback. *See* Unilateral Effects Calculation at 6. For a more general derivation under asymmetric linear demand, *see* Hausman, Moresi and Rainey, *Unilateral Effects of Mergers with General Linear Demand* (Sep. 2010) available at http://www.crai.com/uploadedFiles/Publications/Unilateral%20Effects-of-Mergers-with-General-Linear-Demand-Hausman-Moresi-Rainey.pdf (last visited November 28, 2011).

[35] This dataset comprises porting activity of all plans that had subscribers in any given month and year. It may have some plans that are closed to new subscribers, but with legacy subscribers who port from the plan. In the figures below we use the in-ports data that show the number of subscribers who are porting to a particular plan from other providers. For example, we know the number of subscribers who enter a particular T-Mobile plan, and whether they originated from AT&T, Verizon Wireless, Sprint, MetroPCS, U.S. Cellular, Leap or elsewhere.

[36] *See* Response of AT&T, T-Mobile, Verizon Wireless, Sprint, Metro PCS to Commission Information Requests at Attachments A and B.

changes as shown in Table 5.[37] The first major price change was instituted by T-Mobile when it dropped the price on its Unlimited Family Talk Plan from $199.99 to $149.99, in May 2008 – long before any other major provider reduced the price of their unlimited plans.

Table 5. Major Price Changes: January 2008 – March 2011

Date	Provider	Change description
Jun-08	T-Mobile	Price drop from $199.99 to $149.99 on their Unlimited Family Talk Plan
Jul-09	**MetroPCS**	**Price drop from $45 to $40 on their Unlimited talk/text/data plan**
Aug. 2009	Leap	Price drop from $45 to $40 on their Unlimited talk/text/data plan
Sep. 2009	Sprint	Unlimited talk plan offered at $69.99
Oct. 2009	**T-Mobile**	**Price drop on Unlimited Talk Plan & new Unlimited Talk/Text/Data Plans starting at $59.99**
Jan. 2010	MetroPCS	Made the $40 price of their Unlimited talk/text/data plan inclusive of taxes and fees
Jan. 2010	AT&T	Dropped all unlimited plan price by $30
Jan. 2010	Verizon Wireless	Dropped all unlimited plan price by $30

24. Source: Response of AT&T, T-Mobile, Verizon Wireless, Sprint, MetroPCS and Leap to Information Requests to Applicants and Third Parties at Attachments A and B and industry news reports

25. To compare how close substitutes T-Mobile and MetroPCS are for AT&T customers, we focus on the 2009 price changes by T-Mobile and MetroPCS. As seen from Table 5, on July 30, 2009, MetroPCS (followed shortly by Leap) dropped the price on its "Unlimited Talk, Text and Data" plan from $45 to $40. In October 2009, T-Mobile instituted a broad range of price decreases. The "Unlimited Family Talk" plan price was reduced to $79.99, while the individual "Unlimited Talk" plan price was reduced from $99.99 to $49.99. At the same time T-Mobile also introduced a whole array of new low-priced individual plans such as the "Even More Plus Unlimited Talk and Text" ($59.99) and the "Even More Plus Unlimited Talk Text Web" ($79.99), and family plans such as the "FT Even More Plus Unlimited Family Talk and Text" ($99.99) and the "FT Even More Plus Unlimited Talk Text Web" ($139.99).

26. Not surprisingly, these relatively large price drops and introductions of new low-price plans attracted subscribers from other providers. We can use the porting data in conjunction with the price changes, to examine how AT&T subscribers reacted to the T-Mobile and MetroPCS price changes.

[37] Response of AT&T, T-Mobile, Verizon Wireless, Sprint, MetroPCS, and Leap to Information Requests to Applicants and Third Parties at Attachments A and B.

Figure 1

[Begin Confidential Information]

[End Confidential Information]

27. Figure 1 above shows the number of subscribers who port in to T-Mobile and MetroPCS from AT&T for all plans before and after the price changes. AT&T subscribers reacted to changes in T-Mobile's pricing structure, while remaining relatively unresponsive to MetroPCS price reductions. Total ports to T-Mobile from AT&T (top line on the graph) increased significantly after the price change. Thus, it appears that AT&T subscribers view T-Mobile as a substitute from their reaction to T-Mobile plan price changes. Total ports to MetroPCS from AT&T (bottom line on the graph), however, do not sharply increase after MetroPCS dropped the price on its unlimited plans, and are substantially lower than ports to T-Mobile. Thus, it appears that AT&T subscribers view T-Mobile to be a closer substitute than MetroPCS.

28. It is also useful to consider how subscribers from other providers react to new device introductions by AT&T. Figure 2 below shows the number of subscribers who port from T-Mobile, **[Begin Confidential Information]** **[End Confidential Information]** to AT&T, for all AT&T plans when AT&T introduced its new iPhone models.

Figure 2

[Begin Confidential Information]

[End Confidential Information]

29. Porting from T-Mobile to AT&T increases significantly after every iPhone model introduction, an effective increase in the relative quality of AT&T service. In contrast, **[Begin Confidential Information]** **[End Confidential Information]** to AT&T is less responsive to AT&T's product introductions and is much smaller. The relatively high substitutability between AT&T and T-Mobile in response to price and quality changes provide support for our conclusion based on overall porting data that AT&T and T-Mobile are relatively close substitutes that compete vigorously with each other for subscribers.

C. Merger Simulation Model

30. The potential for unilateral pricing effects from a merger can be thought of as arising from the resolution of conflicting forces: the upward pricing pressure due to the loss of a competitor and possible downward pricing pressure resulting from efficiencies that reduce the marginal costs of production. The Applicants submitted a Merger Simulation Model ("Economic Model"), which, together with their theoretical Network Engineering Cost Model ("Engineering Model"), provides the basis for their argument that efficiencies resulting from the transaction would be sufficient to overcome any increased incentive to raise prices.[38] The Applicants' Engineering Model, discussed in Appendix D,

[38] *See* Letter from Richard L. Rosen, Counsel, AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 19, 2011) attaching Economic Analysis ("Applicants' Economic Model (Aug. 19, 2011)"); Letter from Richard L. Rosen, Counsel, AT&T, Inc., and Nancy J. Victory, Counsel for (continued....)

claims that the combined firm would have significantly lower marginal costs than either AT&T or T-Mobile would as standalone firms.[39] The Applicants' Economic Model uses the Engineering Model's marginal cost estimates and estimates of cross-price elasticities derived from shares of gross subscriber additions to predict how prices would likely change as a result of the transaction.[40]

31. The Applicants claim their Economic Model demonstrates that the transaction-specific cost efficiencies and quality benefits outweigh any potential anticompetitive harm.[41] On the basis of their Models, they argue that the transaction is pro-competitive because mobile wireless industry prices would fall and output would rise in comparison to the wireless industry without the transaction.[42] They find that in 2015, quality-adjusted prices would fall between 3.8 and 9.4 percent in the 15 markets studied.[43] They also find that due to these price reductions, the transaction would also raise wireless industry output in 2015 by 9.0 to 22.4 percent depending on the market studied.[44] We find that the Applicants' Economic Model is deficient in a number of ways and does not support their conclusion that the transaction would result in lower prices. As a preliminary matter, we note that the Applicants' estimates of lower prices are only for 2014 and 2015, after claimed network efficiencies have been achieved. However, even without changing the Applicants' assumptions or methodology, their Economic Model predicts unilateral effects alone would cause prices to rise in 2012 in nearly every CMA.

32. In addition, the critical input to the Applicants' Economic Model, the marginal cost estimate derived from the Engineering Model, is flawed.[45] AT&T made many assumptions in developing its Engineering Model that overstated the benefits of the transaction relative to the non-transaction state of the world. One notable example is that the Engineering Model's cell-splitting algorithm contains an error that effectively builds cell sites uniformly across a CMA instead of targeting congested sites. As a result, after cell splits are implemented in their Engineering Model, nearly all of the congested sites remain overloaded. The Engineering Model then resolves these congestion issues by building more expensive Outdoor Distributed Antenna Systems ("oDas") and Indoor Distributed Antenna Systems ("iDas") . The result of this error is that marginal cost estimates are overstated for two reasons: (1) cell site splits raise costs without relieving congestion and; (2) expensive oDas and iDas systems are required to relieve traffic congestion that should have been relieved by cell splits. As shown in Appendix D, both of these factors disproportionately affected the standalone firms due to their smaller spectrum holdings and led the

(Continued from previous page)
Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 11, 2011) attaching Engineering Analysis ("Applicants' Engineering Model (Aug. 11, 2011)").

[39] *See* Engineering Analysis, Appendix D.

[40] The Applicants' Economic Model assumes Bertrand differentiated products competition where each firm sells a single product and faces a linear demand curve. For a description of the model, *see* Explanation of the Compass Lexecon Merger Simulation Model (Aug. 23, 2011).

[41] *See* Letter from Richard L. Rosen, Counsel, AT&T, Inc., and Nancy J. Victory, Counsel for Deutsche Telekom AG, to Marlene H. Dortch, Secretary, FCC (Aug. 23, 2011), attaching Presentation On Competitive Effects of the AT&T-T-Mobile Transaction (August 23, 2011) ("Competitive Effects of AT&T-T-Mobile Transaction") at 3.

[42] *See* Competitive Effects of AT&T-T-Mobile Transaction (Aug. 23, 2011) at 3.

[43] *See* Competitive Effects of AT&T-T-Mobile Transaction (Aug. 23, 2011) at 6.

[44] *See* Competitive Effects of AT&T-T-Mobile Transaction (Aug. 23, 2011) at 5.

[45] A detailed analysis of the Engineering Model's marginal cost calculation and other associated problems can be found in the Engineering Analysis, Appendix D.

Applicants to dramatically overstate the estimated cost savings of the transaction.[46]

33. Like the Engineering Model, the Economic Model contains a serious flaw in its implementation that renders its predictions of little value. The Economic Model assumes that marginal network costs are zero in 2011 for both AT&T and T-Mobile at current output levels.[47] The Economic Model then predicts future output levels for each firm, where an increase in output is understood by the Applicants to mean "an increase in the number of subscribers, an increase in usage by the same number of subscribers, or a blend of the two."[48] In their Economic Model, the Applicants normalize total industry output to be 100 in 2011, but this changes in subsequent years as costs and prices change.[49] Importantly, Table 6 below, which shows output shares as a fraction of total 2011 industry output, demonstrates that the Applicants predict that the normalized output for standalone AT&T in 2014 and 2015 would be *lower* than their 2011 output in *every* market. T-Mobile's output is predicted to be lower in nine of the 15 CMAs in 2015, and only slightly above its 2011 output in the other CMAs. However, if this were the case, the marginal network costs would be zero for AT&T and T-Mobile since their output is predicted to be below 2011 levels. Rather than being on a steeply increasing portion of the marginal cost curve as the Applicants claim, their Economic Model predicts that they would have marginal costs of zero.

Table 6. Normalized Output Predicted by Applicant's Model (Absent Merger)

[46] As discussed in Appendix D, there are other flaws in the Engineering Model that also lead it to overstate the marginal cost more for the standalone firms than for the combined firm so that even fixing this major error would not make the Engineering Model reliable. *See* Engineering Analysis, Appendix D.

[47] *See* Explanation of the Compass Lexecon Merger Simulation Model (Aug. 23, 2011) at n.13.

[48] *See* Explanation of the Compass Lexecon Merger Simulation Model (Aug. 23, 2011) at 6.

[49] *See* Explanation of the Compass Lexecon Merger Simulation Model (Aug. 23, 2011) at n.6.

[End Confidential Information]

34. This critical flaw results from a lack of feedback between the two Models. The Engineering Model estimates the annual incremental costs of building enough capacity to meet demand on the basis of exogenous network demand assumptions.[50] The Economic Model then predicts what network demand would be on the basis of these costs and predicts the far lower demand shown in Table 6. If these estimates were then fed back into the Engineering Model, a much lower network demand assumption would result in far lower marginal cost predictions. As implemented by the Applicants, their Engineering Model predicts that marginal network costs would be very high in 2014 and 2015 without the transaction and the Economic Model predicts they would be zero. This discrepancy makes the benefits of the transaction indeterminate since the latter case would imply that the public interest benefits due to network cost savings would be zero.

35. The Economic Model also only accounts for unilateral pricing effects in retail wireless markets and ignores the potential for coordinated effects in those markets, harms in the enterprise and government services market, or the harms involving roaming, wholesale services, backhaul, and handsets we considered.[51] In addition, the Applicants chose input parameters that generally lead to understated potential harms in their implementation of the Economic Model.

36. Even without accounting for all of these deficiencies in the Economic Model, we show that by only using a more reasonable marginal cost input from the Engineering Model (but not correcting that input for every problem we have identified) and AT&T's Long Term Evolution ("LTE") percentage, the Applicants' Economic Model predicts higher industry prices and lower output for every year after the transaction in nearly all CMAs and a weighted average price increase across the CMAs of one percent in 2014 and 0.7 percent in 2015.[52] This implies that even after accounting for the Applicants' projected network efficiencies, mobile wireless prices would still be higher with the transaction than without. Given the Engineering Model marginal cost issue along with all of the other problems highlighted above, we find that the Applicants' Economic Model is insufficient to support their claims because it is materially unreliable for predicting the outcome of this transaction. In the following sections, we present the predictions of a modified version of the Economic Model only to show that the evidence the Applicants submitted does not affirmatively show the transaction is in the public interest, and actually supports a conclusion that the transaction would likely result in competitive harms.

a. Model Derivation

37. Below, we explain mathematically the structure of the Applicants' Economic Model that assumes Bertrand differentiated products competition where each of the five firms is assumed to produce a single good in each period at constant marginal cost.[53] Demand is assumed to be linear so that the quantity sold, X, for firm i is given by:

$$X_i = a_i + \sum_j b_{ij} * P_j$$

[50] *See* Applicants' Economic Model (Aug. 19, 2011)") at 110811 MultiYearModelv3 0.xlsx at cells I-M 13:19.

[51] *See* Staff Analysis.

[52] Specifically, we implement the correction to the cell-splitting algorithm described in Appendix D and set the AT&T LTE penetration rate in the Engineering Model to **[Begin Confidential Information]** **[End Confidential Information]** but conservatively leave the T-Mobile LTE assumption unchanged. *See* Engineering Analysis, Appendix D. If we only correct for the cell-splitting error and do not adjust the LTE penetration, the weighted average price increase is still positive in both 2014 and 2015.

[53] The five firms in the Economic Model are AT&T, T-Mobile, Verizon Wireless, Sprint and a firm composed of all other firms and denoted as "Other". Our derivation of the Economic Model closely follows that of the Applicants. *See* Explanation of the Compass Lexecon Merger Simulation Model (Aug. 23, 2011).

where a_i is the intercept, b_{ij} is the slope parameter on the price of good j in the demand equation of firm i, and P_j is the price of good j.

Firm i's profit function can be written as:

$$\prod_i = [P_i - C_i]*X_i$$

where C_i is the marginal cost of producing the product of firm i. To solve for the optimal price for firm i we substitute the equation for X_i into the profit function and differentiate with respect to P_i to obtain the following first order condition of profit maximization:

$$0 = X_i + b_{ii} * [P_i - C_i]$$

which can be rewritten as:

$$M_i = -1 / \varepsilon_{ii}$$

where M_i is the margin for firm i and ε_{ii} is the own-price elasticity of the product sold by firm i.[54] From the above equation, we can solve for the own-price elasticities from the assumed profit margins for each firm.

The firm specific demand parameters can be solved from the cross-price elasticities (ε_{ij}) using the following relationship:

$$\varepsilon_{ij} = \partial X_i / \partial P_j * P_j / X_i$$
$$= b_{ij} * P_j / X_i$$

solving for b_{ij} we have:

$$b_{ij} = \varepsilon_{ij} * X_i / P_j$$

To obtain estimates of b_{ij} we need estimates of the cross-price elasticities, which can be obtained from observed diversion ratios. By definition, the diversion ratio from product i to j is given by:

$$D_{ji} = \partial X_j / \partial P_i \; / \; \partial X_i / \partial P_i$$
$$= \varepsilon_{ji} * X_j \; / \; \varepsilon_{ii} * X_i$$

Solving for ε_{ji} we have the following expression for the cross-price elasticities:

$$\varepsilon_{ji} = D_{ji} * X_i / X_j * \varepsilon_{ii}$$

or equivalently:

$$\varepsilon_{ij} = D_{ij} * X_j / X_i * \varepsilon_{jj}$$

However, we do not observe diversion out of the market from price changes. Therefore, we assume a recapture rate of **[Begin Confidential Information]** [55] **[End Confidential Information]** and adjust the diversion ratios calculated from the porting data accordingly. Finally, we can solve for the a_i parameters from the equation below:

$$a_i = X_i - \sum_j b_{ij} * P_j$$

38. Post-transaction, the combined firm would choose prices for AT&T and T-Mobile to

[54] The own-price elasticity is defined as: $\partial X_i / \partial P_i * P_i / X_i$, or the derivative of own quantity with respect to own-price multiplied by the ratio of own-price to own-quantity. In other words, the percent change in own-quantity divided by the percent change in own-price.

[55] *See supra* ¶ 15.

maximize the total profits of both firms. If AT&T is firm j and T-Mobile is firm k, the new first order condition for the optimal AT&T price is now:

$$0 = X_j + b_{jj} * [P_j - C_j] + b_{jk} * [P_k - C_k]$$

since AT&T now takes into account the effect an AT&T price change has on the quantity demand of T-Mobile.[56] The new first order condition for T-Mobile is analogous.

b. Quality Module

39. The Applicants argue that the transaction would not only lower the marginal cost of adding a subscriber but would also improve the signal strength quality of the network due to a denser cellular network.[57] This section describes how the Applicants incorporate the claimed quality improvement into their simulation.[58] The quality-adjusted price is defined as follows:

$$P^* = P + \Delta P^Q$$

where P is the previously defined nominal price and ΔP^Q is the equivalent price change for the network quality improvement. Quality improvements are estimated from a network integration model of the impact that combining the two networks would have on signal strength and in reducing 3G device roaming on the 2G network.[59] These quality improvements are then translated into percentage reductions in churn that result from the improvements.[60] The equivalent price change, ΔP^Q, is then formed by estimating the equivalent price change that would be required to obtain the same reduction in churn that would result from the estimated quality improvements.[61] This quality-adjusted price change is incorporated into the relative demand for AT&T and T-Mobile by defining a new intercept:

$$a^Q = a + b\,(\Delta P^Q)$$

which results in the following demand equation for T-Mobile and AT&T after the transaction:

$$X_i = a_i + \sum_j b_{ij} * P_j^*$$

We do not credit the Applicants' estimates of quality-adjusted prices because there remain a number of material questions of fact that cannot be substantiated based on the information submitted into the record. First, the Applicants did not provide the backup materials necessary to verify the engineering analysis of signal quality and 3G roaming improvements they claim would result from integrating the networks. Since, we cannot determine if there are substantial flaws in the assumptions of the network integration model, similar to our findings for the engineering cost model, we are unable to credit the quality improvement estimates.

40. Second, the network integration analysis is only performed for four major metropolitan areas and the results for all other markets are extrapolated on the basis of these areas.[62] We conclude that

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[56] As previously mentioned, the Applicants' Economic Model adopts the Applicants' assumption that T-Mobile products would continue to be offered by the combined firm. *See supra* at ¶ 3.

[57] Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at 8.

[58] *See also*, Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011).

[59] Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at 8-9.

[60] Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at 9.

[61] Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at 9-10.

[62] The four markets are New York City, New York; Los Angeles, California; San Francisco, California; and Washington, District of Columbia. Applicants' Economic Model (Aug. 19, 2011) at Tables.xlsx.

it is unlikely that these four markets are representative of the quality improvements and churn reduction that would result from network integration in all other markets due to the substantial differences in quality improvement requirements between dense urban, suburban, and rural markets. For example, signal quality gains inside of buildings may reduce churn for urban and some suburban subscribers, but may not provide the same churn reduction in rural markets.

41. Third, the elasticity the Applicants used to convert the quality improvements into price equivalents is only for T-Mobile and is also not supported by any churn data analysis. Rather it is an unsupported assertion based on an assumption used without justification or other indicia of credibility in a single internal marketing report.

42. Fourth, the Applicants make a simple mathematical error in calculating the reduction in churn from their assumed increase in signal strength. Instead of dividing by X_0, Applicants used X_1 as their denominator.[63] To correctly assess a percentage change requires using the original number as the base. This simple error causes the Applicants' estimated quality effect on churn to be overstated by about 20 percent.

43. Finally, in their Economic Model, the Applicants assumed that cell density would not change for the standalone firms. However, the Engineering Model assumes that the standalone firms would increase their cell sites. Comparing the network buildout of the combined firm with the 2012 networks of the standalone firms overstates the relative quality benefit for the merged firm. Table 7 below shows that the Applicants' Engineering Model predicts substantially larger decreases in distance between cell sites for the standalone firms relative to the combined firm. In addition to overstating any quality benefits, this lack of consistency between the two models casts additional doubt on their reliability.

Table 7. Average Distance in Miles between Cell Site with and without the Transaction
[Begin Confidential Information]

Source: Applicants' Engineering Model (Aug. 11, 2011) **[End Confidential Information]**

44. For all of these reasons, we find no basis to adopt the Applicants' quality adjustments to the prices in their Economic Model. The remainder of the Appendix proceeds on that basis.

[63] Applicants use the formula, $(X_0 - X_1)/X_1$ instead of $(X_0 - X_1)/X_0$. Applicants' Economic Model (Aug. 19, 2011) at Tables.xlsx, worksheets SS – NY, SS – LA, SS – SF, SS – DC.

c. Inputs

45. Table 8 provides summary data of the key inputs we use in the simulation model for each market. We use NRUF data to calculate the market shares for each firm shown below. Market share is used as the output measure for each firm in the simulation model (i.e. X_i in the model derivation). We include the four major national mobile wireless providers (AT&T, T-Mobile, Verizon Wireless, and Sprint) and all other providers in each market combined in the "Other" category.[64] ARPU data submitted by each provider are used as our measure of prices.[65] ARPU is calculated as the subscriber weighted average of monthly ARPU in the fourth quarter of 2010. The "Other" category in ARPU includes only data submitted by Leap and Metro PCS. Finally, each firm's margin is assumed not to vary by CMA and to be the same as we found in Table 3. We then solve for the baseline marginal costs shown in Table 8 from the assumed margins and ARPUs.[66]

Table 8. Baseline Simulation Model Parameter Inputs

[Begin Confidential Information]

[End Confidential Information]

[64] MetroPCS and Leap never operate in the same market and both of them are absent in some markets. Verizon Wireless does not provide facilities-based service in the Puerto Rico Territory.

[65] *See* Response of AT&T, T-Mobile, Verizon Wireless, Sprint, Metro PCS to Commission Information Requests at Attachments A and B.

[66] Since M=(P-C)/P we can solve for the costs as C=(1-M)*P.

(i) Marginal Costs

46. The Applicants add a two-year forward moving average estimate of network marginal costs for 2014 and 2015, derived from the Engineering Model, to AT&T's and T-Mobile's baseline marginal costs under both a standalone and a consummated transaction scenario. This produces four sets of marginal cost estimates for each year, one for each of the two firms under two scenarios – standalone and a combined firm. The Economic Model is then used to estimate pricing effects for 2014 and 2015 under the two alternative scenarios in order to compare predicted prices for each scenario. The Applicants assume that the marginal costs of the non-combining firms remain fixed at the 2011 baseline levels in all years.[67]

47. We follow the Applicants approach for incorporating the Engineering Model estimates into the economic simulation model.[68] We add the revised engineering network marginal cost estimate to the baseline marginal cost estimates. We also use **[Begin Confidential Information]** [illegible] **[End Confidential Information]** percent of revenues as the measure of other non-network synergies as discussed in the Staff Analysis rather than the **[Begin Confidential Information]** [illegible] **[End Confidential Information]** percent assumed by the Applicants. The resulting differences between the marginal costs of the combined firm and AT&T and T-Mobile on a standalone basis are shown in Table 9 below. Projected cost savings generally increase across the years as the networks become fully integrated and are usually larger for AT&T. However, in contrast to the dramatic marginal cost savings projected by the Applicants, we find that the revised model predicts only modest efficiency gains in most markets.

48. The estimated GUPPIs and CMCRs for each market are also shown in Table 9, using **[Begin Confidential Information]** [illegible] **[End Confidential Information]** as the recapture rate. As we found in the previous estimates using national shares, the AT&T upward pricing pressure metrics exceed five percent in most markets while the T-Mobile GUPPI's are again substantially higher.[69] We also calculate the CMCR estimates for each market and compare them to the estimated marginal cost reductions. Even in the later years, when marginal cost savings from the transaction are projected to be the greatest, the projected efficiencies for each firm are not large enough to offset the upward pricing pressure that would result from the transaction. For example, in 2015 the simulation model reports a 10.8 percent reduction in T-Mobile's marginal cost and a 2.7 percent reduction in AT&T's marginal cost. In contrast, the CMCRs are much higher at 77.6 percent and 39.9 percent respectively. This supports the conclusion that the transaction would lead to higher consumer mobile wireless prices and may not be in the public interest.

[67] As a robustness check, we estimated the simulation model assuming that other firms' marginal costs increase by the minimum of the amount AT&T and T-Mobile' marginal costs increased in the Economic Model with the corrected cell-split algorithm and LTE penetration and found no substantial difference in the Economic Model predictions.

[68] We note there is a slight inconsistency with this method, but as Applicants note, it has a minimal impact on the difference between the standalone and combined firm calculations. *See* Carlton and Israel, Explanation of the Compass Lexecon Merger Simulation Model, (Aug. 23, 2011) at n. 13.

[69] See Table 4 above for the national GUPPI estimates.

Table 9. Percentage Difference in Marginal Costs between Merged and Standalone Firms, 2012-2015

[Begin Confidential Information]

[End Confidential Information]

(ii) Diversion Ratios

49. The final component needed to estimate the simulation model is the diversion ratios for each market. We estimate these from the LNP data for the fourth quarter of 2010.

d. Results

50. The Applicants' Engineering Model shows that the claimed efficiency benefits would appear gradually over the next several years. The Applicants only presented results from their Economic Model for 2014 and 2015, but given that the Engineering Model also estimates marginal costs in 2012 and 2013, it is straightforward to use these cost inputs to predict the pricing effects of the transaction for the intervening years. Table 10 calculates the expected change in nominal industry prices relative to no transaction based on the revised Economic Model. The Applicants' Economic Model predicts that the transaction is expected to raise mobile wireless industry prices in all 15 CMAs in every year. The price effects are generally larger during the earlier years due to smaller predicted transaction related efficiencies, but they remain positive even in the later years. Overall, the weighted average expected price increase is at least six percent every year.

Table 10. Percent Difference in Nominal Prices Relative to No Merger, 2012-2015

Market	2012	2013	2014	2015
New York	8.3%	8.2%	7.7%	6.8%
Los Angeles	7.3%	7.1%	6.9%	6.3%
San Francisco	6.1%	5.9%	5.8%	5.9%
Washington, DC	5.9%	5.8%	5.3%	4.7%
Miami	7.0%	7.0%	7.0%	6.5%
San Diego	6.5%	6.4%	6.5%	6.4%
Buffalo	4.3%	4.2%	3.7%	3.1%
Portland, OR	7.3%	7.1%	6.5%	5.9%
Charleston, SC	2.4%	2.3%	2.3%	2.5%
San Juan	6.9%	6.7%	6.5%	6.4%
Shreveport	1.0%	0.8%	0.7%	1.0%
Portland, ME	3.1%	2.9%	3.4%	3.6%
Boise City	3.0%	2.9%	3.1%	3.0%
Gainesville	2.8%	2.6%	2.4%	2.3%
Waco	2.7%	2.4%	2.5%	2.7%
Wtd. Ave. (excl PR)	**7.1%**	**6.9%**	**6.6%**	**6.0%**

Note: The price change estimate is the change of all firms' price changes in the market, weighted by market share. Calculations based on Applicants Economic Model using updated inputs.

51. Similarly, the Applicants' Economic Model predicts that industry output would decline due to higher prices. Table 11 presents the percentage changes in overall mobile wireless industry output for the standalone and combined firm scenarios. The patterns are qualitatively similar to those previously observed for prices. With the transaction, industry output is predicted to decline in nearly every market with larger reductions in output observed for the earlier years.

Table 11. Percent Difference in Nominal Output Relative to No Merger, 2012-2015

Market	2012	2013	2014	2015
New York	-1.6%	-1.5%	-1.5%	-1.3%
Los Angeles	-1.3%	-1.3%	-1.3%	-1.2%
San Francisco	-1.1%	-1.1%	-1.1%	-1.1%
Washington, DC	-1.1%	-1.1%	-1.0%	-0.9%
Miami	-1.3%	-1.3%	-1.3%	-1.2%
San Diego	-1.2%	-1.2%	-1.2%	-1.2%
Buffalo	-0.8%	-0.8%	-0.7%	-0.6%
Portland, OR	-1.3%	-1.3%	-1.2%	-1.1%
Charleston, SC	-0.4%	-0.4%	-0.4%	-0.5%
San Juan	-1.3%	-1.2%	-1.2%	-1.2%
Shreveport	-0.2%	-0.1%	-0.1%	-0.2%
Portland, ME	-0.6%	-0.5%	-0.6%	-0.7%
Boise City	-0.6%	-0.5%	-0.6%	-0.6%
Gainesville	-0.5%	-0.5%	-0.5%	-0.5%
Waco	-0.5%	-0.4%	-0.5%	-0.5%
Wtd. Avg. (excl. PR)	**-1.3%**	**-1.3%**	**-1.2%**	**-1.2%**

Note: The output change estimate is the change of all firms' price changes in the market, weighted by market share. Calculations based on Applicants Economic Model using updated inputs.

52. To test the sensitivity of these results, Table 12 shows the output of the Economic Model with different assumptions. We have used the Applicants assumptions for diversion rates (using share of gross adds rather than the porting data to determine the diversion rates), for the profit margin (**[Begin Confidential Information]** . **[End Confidential Information]** percent for all firms), the LTE penetration (**[Begin Confidential Information]** . **[End Confidential Information]** percent for standalone AT&T and **[Begin Confidential Information]** **[End Confidential Information]** percent for T-Mobile), and we have also estimated the Economic Model allowing the costs of the other firms to increase and using -0.5 as the industry elasticity. In each case, the Economic Model predicts that unilateral effects alone will cause prices to be higher and output to be lower every year.

Table 12. Weighted Average National Price Differences and Output Relative to No Transaction Using Alternative Model Specifications

[End Confidential Information]

53. Overall, the output and pricing predictions we obtain from a more reasonable implementation of the Engineering and Economic Models are substantially different from the Applicants' findings. This further demonstrates the unreliability and sensitivity of their models and shows that they have not met their burden that the transaction is in the public interest.

II. CONCLUSION

54. The Applicants submitted an Economic Model to demonstrate the price effects of their proposed transaction. Contrary to their assertions, the Economic Model does not provide any basis to conclude that there would be no harm to consumers. Instead, this Appendix shows that the Economic Model is unreliable. In addition, when given more reasonable inputs, the Economic Model shows that unilateral incentives are expected to cause prices to increase, harming consumers.

Appendix D

Engineering Analysis

Para #

The contents of the Appendix is Highly Confidential

Appendix E

Glossary of Acronyms and Selected Terms

2G	Second Generation
3G	Third Generation
3GPP	3rd Generation Partnership Project
4G	Fourth Generation
ALJ	Administrative Law Judge
American Roamer	American Roamer is an independent consulting firm that tracks service provision for mobile voice and mobile data services. It provides coverage boundary maps of facilities-based mobile wireless providers based on the coverage boundaries provided to it by network operators.
ARPU	Average Revenue Per User
AT&T	AT&T Inc.
ATC	Ancillary Terrestrial Component
AWS	Advanced Wireless Service
Backhaul	Backhaul refers to the connections linking cell sites to wireline networks and carrying wireless voice and data traffic for routing and onward transmission.
BCCH	Broadcast Control Channel. GSM networks use BCCHs to broadcast general network information to all subscribers.
Carrier	A radio frequency channel used for a particular mobile wireless technology.
CDMA	Code Division Multiple Access
CEA	Component Economic Area
Channel pooling	Combining two separate blocks of spectrum into one single block.
CMA	Cellular Market Area
CMCR	Compensating Marginal Cost Reduction
CWA	Communications Workers of America
DAS	Distributed Antenna System. DAS can improve indoor coverage in in high-traffic areas such as office buildings and shopping malls.
Deutsche Telekom	Deutsche Telekom AG
DOJ	U.S. Department of Justice
DTV	Digital Television
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EDGE	Enhanced Data Rates for GSM Evolution
EEOC	Equal Employment Opportunity Commission
FCC or Commission	Federal Communications Commission
G&A	General & Administrative
GPRS	General Packet Radio System
GSM	Global System for Mobile Communications
GUPPI	Gross Upward Pricing Pressure Index
HHI	Herfindahl-Hirschman Index. The HHI is a widely-used measure of market concentration. It is calculated by summing of the squares of the market shares (expressed as whole numbers) of each firm participating in the market.

HSPA	High Speed Packet Access
iDAS	Indoor Distributed Antenna System
ILEC	Incumbent Local Exchange Carrier
KMOU	Thousands of minutes of use
LTE	Long Term Evolution
MHz-POPs	The amount of spectrum in a given license or set of frequencies multiplied by the population covered by the geographic area of the license.
Mobile broadband	For purposes of this report, all 3G and 4G network technologies – CDMA EV-DO, EV-DO Rev. A, WCDMA/UMTS, HSPA, HSPA+, LTE, and mobile WiMAX – are considered mobile broadband technologies.
MOUs	Minutes of Use
MSS	Mobile Satellite Service
MVNE	Mobile Virtual Network Enabler
MVNO	Mobile Virtual Network Operator
NLRB	National Labor Relations Board
NRUF	Number Resource / Utilization Forecast [EXPLAIN]
oDAS	Outdoor Distributed Antenna System
OTT	Over the Top
PCS	Broadband Personal Communications Service
POPs	Population (the number of people included in a geographic area)
RFP	Request for Proposal
Roaming	Roaming arrangements between wireless service providers enable customers of one provider to receive services from another provider's network when they are in areas that their provider's network does not cover.
Smartphone	While there is no industry standard definition of a smartphone, the Commission has considered the distinguishing features of a smartphone to be an HTML browser that allows easy access to the full, open Internet; an operating system that provides a standardized interface and platform for application developers; and a larger screen size than a traditional, voice-centric handset. Many smartphones also have touch screens and/or a QWERTY keypad, and run an operating system that offers a standard platform for application developers to create and sell device software through an application store.
Special Access	Non-switched point-to-point telecommunications service provided over dedicated facilities that run directly between two designated locations.
TDM	Time Division Multiplexing
T-Mobile	T-Mobile USA
UMTS	Universal Mobile Telecommunications System
WCDMA	Wideband CDMA
WCS	Wireless Communications Service