CASE 1

The Proposed Merger of *AT&T and T-Mobile*: Rethinking Possible (2011)

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INTRODUCTION

On March 20, 2011, AT&T announced a $39 billion agreement to acquire Deutsche Telecom's (DT) U.S. wireless subsidiary, T-Mobile USA ("T-Mobile"). Because the acquisition involved the transfer of electromagnetic spectrum licenses from DT to AT&T, the acquisition had to pass Federal Communications Commission (FCC) review as well as antitrust review at the Department of Justice's Antitrust Division (DOJ). The DOJ's review addressed standard competition concerns, while the FCC's mandate was broader. The FCC review requires the parties to make an affirmative showing on the public record that the merger is in the public interest. The FCC record presents a unique opportunity to assess in detail the parties' arguments for an acquisition that was abandoned before trial.[1]

The proposed acquisition met with significant government and public resistance. The DOJ determined quickly that the transaction would violate

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[1] The complete FCC public record for this transaction can be found at http://transition.fcc.gov/transaction/att-tmobile.html#appdocs.

the antitrust laws, and filed suit to block the merger in August of 2011. Within weeks, Sprint Nextel and C Spire Wireless filed private antitrust suits to block the merger. The FCC released a Staff Report detailing staff opposition to the merger in late November after the FCC's announcement that it was considering an order to oppose the merger caused AT&T to withdraw the application for license transfer.[2] The parties abandoned the transaction on December 19, 2011. AT&T paid DT a breakup fee that was valued at $4 billion, which was the largest in U.S. antitrust history.

The case is interesting for a number of reasons: First, the parties' main justification was an efficiencies claim, arguing that both AT&T and T-Mobile were capacity constrained and that absent the merger each could not expand output inexpensively and therefore compete vigorously, which in turn would cause prices to increase over time. The merger would allow inexpensive capacity expansion leading to more vigorous competition. The DOJ's Complaint dismissed the efficiency claims in one sentence, while the majority of the FCC's Staff Report focused on evaluating the efficiency arguments and ultimately concluded that the parties had not supported their claims.

Second the FCC evaluates mergers under its "public interest standard," which "necessarily subsumes and extends beyond the traditional parameters of review under antitrust law."[3] The FCC's broader standard shaped the parties' arguments, including claims that the merger would increase economy-wide employment and that AT&T would bring wireless broadband to rural America only if the merger were allowed. This case illustrates how parties might expect different arguments to affect decisions at the different agencies. While the FCC and DOJ worked closely together during the process, the staffs at the two agencies operate under different statutes and have a somewhat different focus.

Third, this case would have required supplementing the unilateral effects analysis outlined in the *Merger Guidelines*. In particular AT&T planned to allow existing T-Mobile customers to maintain their rate plans, but to cease offering T-Mobile products to new customers. Thus, AT&T would not "recapture" customers if it raised prices of AT&T products because no customers that left AT&T in response to the price increase could purchase T-Mobile products. Here a unilateral incentive for AT&T to raise price would be based in part on the notion that with T-Mobile no longer being an option, AT&T's demand would become less elastic. Interestingly, a similar unilateral incentive would apply to all other providers as well.

Finally, the case underscores an important ongoing public policy choice with respect to maintaining competition in telecommunications. The merger would likely have resulted in significant fixed costs savings.

[2] FCC (2011) (hereinafter FCC Staff Report).

[3] FCC (1997), ¶ 2.

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However both agencies were willing to forgo these static cost savings in favor of allowing competition to guide the evolution of the market.

BACKGROUND

Wireless services are provided by a network of interconnected antennas to which handsets (and other wireless devices such as laptops and tablets) connect "over the air" to send and receive telecommunications signals. Providers primarily purchase the right to make these over-the-air connections at specific frequencies by purchasing the spectrum licenses from the FCC to use those frequencies in specific geographic locations.[4] The more spectrum that a provider has, the more connections it can make for a given antenna network.

A provider can provide service over its own facilities only where it has antennas. The provider can extend its service to areas beyond its facilities footprint by purchasing service from another provider that has facilities in the areas: typically through a roaming agreement or rarely by purchasing wholesale service for resale. A provider can only roam on another network that uses the same transmission technology.

Only the four largest providers—Verizon, AT&T, T-Mobile, and Sprint—have "national" networks. The two smaller of these providers, T-Mobile and Sprint, have less extensive geographic networks, and consequently T-Mobile complements its own facilities with roaming on AT&T's network (because they both use the same technology, which is known as GSM), while Sprint fills out portions of its footprint by purchasing roaming from Verizon (because they both use the same technology known as CDMA).

Smaller providers such as MetroPCS, Leap, US Cellular, C Spire, and others do not have their own facilities in significant portions of the country and therefore rely on relationships with at least one of the four national providers along with other providers to provide national coverage.[5]

At the time of the merger, the four national providers were in the process of upgrading or planning to upgrade their networks to provide so-called fourth generation, or 4G, service.[6] The U.S. market was gravitating to

[4] Such connections may also be made through a WiFi connection using unlicensed spectrum.

[5] While most providers sign roaming agreements, Leap recently signed a wholesale agreement with Sprint to resell Sprint. MetroPCS operated the fifth largest network, covering only 34 percent of the population. U.S. Department of Justice (2011) (hereinafter DOJ Complaint), p. 2.

[6] 4G refers to a mobile communication standard that was established by the International Telecommunications Union (ITU), which includes among other things an all packet switched network, peak nonmobile download speeds of 1Gbit/s, and speeds of 100Mbits/s for highly mobile access (e.g., while traveling in a car). http://www.itu.int/ITU-R/index.asp?category=information&rlink=imt-advanced&lang=en. This is in comparison to the 3G standard that requires a peak rate of 56 Mbit/s. As a practical matter actual speeds depend on considerations such as handset, network configuration, and distance from the nearest cell tower.

"Long Term Evolution" (LTE) technology, because it would be relatively inexpensive to upgrade both GSM and CDMA technologies to LTE. Verizon had already deployed LTE in a portion of its network covering 200 million people and was planning to expand LTE to its entire footprint by the end of 2013. AT&T had approved LTE deployment to cover 80% of the U.S. population and claimed that increasing this to 97% of the population was contingent on the merger. Sprint had been providing 4G speeds over Clearwire's WiMAX network, which covered about 130 million people, but was considering a move to LTE. T-Mobile had been upgrading its network to Hi-Speed Packet Access (HSPA+), the technology that was being deployed in most of Europe, providing speeds that T-Mobile advertised as 4G. HSPA+ provided speeds comparable to LTE in many instances but had peak speeds that were not as high as LTE peak speeds.

Of the smaller providers, only MetroPCS had deployed LTE technology, but it had done so using a small amount of bandwidth, which would yield slower speeds than those expected on AT&T's and Verizon's networks, suggesting that MetroPCS had done so primarily because LTE allowed for more calls to be carried on the same amount of bandwidth rather than to provide faster speeds.[7]

It is important to understand that when a provider adds new technology it continues to operate its legacy technologies in large part because customers have handsets that are only compatible with the legacy technologies, and because newer technologies are not immediately deployed across an entire network. Thus, adding new technology requires either having unused spectrum or clearing older services from spectrum that is currently in use.

As of the start of 2011, there were approximately 306 million wireless subscribers in the U.S. As can be seen in Table 1–1, Verizon and AT&T were the two largest providers, with each accounting for a little over 30 percent of subscribers. Sprint and T-Mobile also provided near nationwide facilities-based wireless service. After these four, there were smaller providers with more limited geographic reach. MetroPCS and Leap each had networks that covered about one-third of the U.S. population. There was very little overlap between their two networks. MetroPCS served roughly eight million subscribers, while Leap served 5.5 million customers. Together with regional providers—C-Spire, US Cellular, and newly formed Alltel—the smaller providers jointly serve six percent of U.S. wireless customers.

Providers often divide customers into two groups: postpaid and prepaid customers. Postpaid customers typically enter into a contract to purchase service over a specified duration (often two years) and pay at the end of each month. Prepaid customers generally prepay their monthly

[7] LTE can be deployed on specific bandwidths of 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 20 MHz, and 40 MHz. Larger bandwidth results in faster speeds. At the bandwidth that is used by MetroPCS, 1.4 MHz–5 MHz, speeds would not exceed to any great extent 3G speeds. See e.g. Cheng (2011). Verizon's deployment of LTE is typically on 20 MHz. See Fitchard (2011a).

TABLE 1-1
Wireless Subscribers and Population Coverage, 2010

	Subscribers (000) (Year End 2010)	Population Coverage (October 2010)
Verizon	94,135	285 million
AT&T	95,536	282 million
T-Mobile	33,734	250 million
Sprint	49,910	263 million
MetroPCS	8,155	85 million
Leap	5,518	81 million

Source: FCC 15th Annual Wireless Competition Report Table 3, p. 34 (subscribers) and Table 1, p. 33 (coverage).

service charge at the beginning of the month and can terminate service at any time with no penalty. Postpaid customers tend to buy higher valued services, tend to produce higher average revenue per user (ARPU), and tend to churn (switch providers) less than do prepaid customers. They also tend to have higher credit scores. The vast majority of the customers that are served by the four national providers are postpaid customers, though Sprint and T-Mobile have been increasing their proportion of prepaid customers. Smaller providers that have been established for a long time (such as US Cellular) offer both postpaid and prepaid services. Newer providers such as Leap and MetroPCS offer only prepaid services.

Increased demand for data is expected to exceed the ability of networks to supply service at current prices given current spectrum levels, which would lead to capacity constraints.[8] Being capacity constrained means that some cell sites are unable to handle all connections at a given time, which results in dropped calls or slower data streams.

There are three major technical ways to solve such congestion problems: First, a provider could add more spectrum to its system, which would allow each site to handle more connections at a given time. Second, a provider could "cell split" by adding more physical infrastructure, such as a macro cell site (which is a cell tower that covers a wide area) or a Distributed Antenna Systems (DAS) (which is a set of smaller antennas placed close together that jointly cover a specific area). Such "cell splitting" would divide a given number of customers in an area among more cell sites, relieving the congestion. Third, a provider could implement

[8] This is often referred to as the "spectrum crunch." In fact the FCC's National Broadband Plan, Federal Communications Commission (2010), recommended that the FCC make available an additional 500 MHz of spectrum to wireless providers by 2020 to alleviate this spectrum crunch. See also, Council of Economic Advisers (2012).

more spectrally efficient technology, such as moving customers from analog to digital or from 2G to 3G and 4G phones.

THE PARTIES' POSITIONS

In their initial public interest statement,[9] AT&T and T-Mobile argued that the merger should have been approved for four reasons: (1) It would create large synergies; (2) There were no competitive problems; (3) It would lead the merged entity to expand broadband deployment in furtherance of the FCC's broadband goals;[10] and (4) It would create jobs. The first two categories of argument are standard antitrust issues. The third, deployment of advanced communications services, is a reasonable issue for the FCC to consider under its public interest standard. The fourth, jobs, has been considered under the Commission's public interest standard in the past, but the Commission imposes the burden on the parties to quantify these claims specifically and show that they are merger-specific. This section addresses each of these claims.

Synergies

The parties' major argument was that AT&T and T-Mobile's existing networks would become severely capacity-constrained as increasing demand for data services put additional load on their networks. The parties argued that in the absence of the merger they would each be required to spend much more money to build out their physical infrastructure. The large increase in needed cell sites would increase the incremental cost of expanding output, which would cause increased prices and restricted output as demand for service increased over time.

They argued that the merger would solve congestion in two major ways: First, integrating some of T-Mobile's existing (uncongested) cell sites into AT&T's existing network would reduce the need to build additional cell sites. Second, they would have combined existing T-Mobile and AT&T legacy services (such as 2G and 3G services) onto less spectrum, which would release more spectrum on which to deploy 4G LTE services.[11] The freed spectrum would lower their cost of expanding output and lead to lower prices.

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[9] AT&T (2011a) (hereinafter Public Interest Statement). In the Public Interest Statement, AT&T also appealed to American leadership in mobile broadband innovation but subsequently did not advocate this point.

[10] See FCC (2009), which outlined recommendations for bringing broadband to all parts of the United States.

[11] AT&T (2011b) claimed that it would be expensive and lengthy to provide incentives for customers to convert from 2G service to more spectrally efficient service.

Aside from the network synergies claimed above, AT&T also claimed significant other savings that would over the next 10 years exceed the $39 billion purchase price. These savings would arise from eliminating T-Mobile sales, support, and administrative personnel along with eliminating network operating costs by combining networks and eliminating the need to buy more spectrum in future auctions.

AT&T's primary support for its network synergy claims came from an engineering model and an economic model that were designed to compare the engineering costs that AT&T would incur with and without the merger and then, using these costs, to compare the prices and output levels that would arise with and without the merger.

The Engineering Model

AT&T developed an engineering analysis to estimate the marginal cost of additional output for AT&T and T-Mobile as standalone entities and as a combined firm in 15 sample markets. The model used third-party estimates to determine the growth in "traffic" (voice plus data) on the networks, projected what the network technologies would be in place each year (e.g., how much spectrum was devoted to 2G, 3G, and 4G technologies), determined where the networks would need additional capacity based on the probabilities that a call would be blocked (not completed) at the busy cell sectors, and then projected the cost to relieve those constraints to meet a standard level of service across the network in each city.

To determine the blocking probabilities that identified the congested cells, the model assumed a distribution of traffic. Once the model determined the specific cells that would be congested, the model next added a limited number of additional macro cells in the city; and then, where those additional macro cells were insufficient to alleviate the constraints, it deployed more expensive DAS in a targeted manner.

The engineering model predicted higher marginal capacity costs for the stand-alone entities than it predicted for the merged entity because the merged firm could use uncongested spectrum and cell sites on one network to relieve congested sites on the other and because it could dedicate more spectrum to higher-speed services after reconfiguring its networks to provide its existing services more efficiently. As a result, the merged firm needed fewer macro cells and subsequently fewer expensive DAS deployments, lowering its projected marginal cost.

The parties argued that, because of these substantial cost efficiencies, the merged firm would have an economic incentive to increase output relative to the two stand-alone firms.

The Economic Model

The parties' economic analysis used the marginal cost projections from the engineering analysis to estimate the effects of the proposed transaction on

prices and output in each of the markets with a merger simulation model. They concluded that "[i]n each market, the merger simulations project that industry output will rise and average price adjusted for quality will fall as a result of the transaction."[12]

The economic model addressed price increases that could result from unilateral incentives and offsetting efficiencies. The parties analyzed coordinated effects and exclusionary incentives separately from the model and concluded that the merger would not increase the risk of anticompetitive behavior. In their simulation, the parties adopted a typical unilateral effects model where both merging firms' brands would continue to be sold after the merger, but the single firm would maximize joint profits.

There were several key inputs to the economic model: the marginal cost estimates from the engineering model, the degree of buyer substitution among the five wireless firms (AT&T, T-Mobile, Verizon, Sprint, and a composite "other" firm), and the firms' profit margins.[13] The parties based their estimates of buyer substitution on providers' shares of gross customer additions.

On the basis of the model, the parties claimed that in 2015 prices would be between 3.8 and 9.4 percent lower and that output would be between 9.0 and 22.4 percent higher in the 15 markets studied if the merger were consummated than if it were not.[14]

Other Synergies

In addition to the marginal cost savings that the companies claimed that they would realize from operating their networks together, the parties listed several other areas in which the merger would generate substantial cost savings that would redound to the benefit of consumers. Together, these other synergies would have a net present value in excess of the purchase price of $39 billion.

Combining the operations of the two networks would allow AT&T to decommission towers and eliminate or combine backhaul facilities (i.e., lines that connect cell towers to the wired network). They would also lower general and administrative expenses and eliminate a substantial number of T-Mobile customer service representatives and the associated infrastructure, which would save $10 billion.[15] Another $10 billion would be saved from a reduction in customer acquisition costs by closing retail stores and a reduction in advertising expenses.[16] In addition, they would save more than

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[12] AT&T (2011d).

[13] Other inputs include the recapture rate (the percentage of customers who would switch to another wireless provider rather than exit the market), prices, and an adjustment for signal quality.

[14] See AT&T (2011e, pp. 5–6). The analysis for the merged firm prices incorporates a quality adjustment because of the increased number of cell sites and increased signal strength.

[15] Moore (2011, ¶ 37); FCC Staff Report, ¶ 230.

[16] FCC Staff Report, ¶ 232. (Citing FCC-ATT-00019081 at 16, AT&T "Project Auto, Mercury Transaction—Executive Briefing," March 17, 2011.).

$10 billion in capital costs. For example, they claimed that they would not have to buy as much spectrum if the merger were to go through.[17] An increase in their size would also allow them to purchase handsets at lower prices and reduce their average cost of billing.

The parties also claimed that customers would benefit from increased quality on the combined network: T-Mobile customers would have better service where AT&T has a stronger signal or more advanced network build-out (and vice versa), and T-Mobile customers would also have access to the AT&T WiFi network and a greater array of handsets. In addition, AT&T would adopt customer service best practices.

Competition

AT&T argued that the merger would have no adverse unilateral or coordinated competitive impacts.[18]

Unilateral Effects

AT&T and T-Mobile's two arguments can be summed up in a single sentence: "T-Mobile USA and AT&T are not close competitors, and other providers already fill or could easily move to fill the competitive role that T-Mobile USA occupies today."[19]

The main evidence for AT&T and T-Mobile's not being close competitors was that the characteristics of most AT&T customers were significantly different from most of T-Mobile's customers. The parties claimed that T-Mobile customers were primarily value-conscious customers.[20]

The parties also argued that T-Mobile likely would not be a strong competitor in the marketplace on a going-forward basis because T-Mobile had lost market share in the two years leading up to the merger announcement, primarily because T-Mobile was late in deploying 3G technologies. Further, T-Mobile would not be a strong competitor in the future because it had "no clear path to LTE," which meant that it did not have a plan of record to offer 4G LTE-based services. This lack of a clear path was due in large part to the fact that T-Mobile did not have enough spectrum on which to launch an LTE service.

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[17] Moore (2011, ¶ 36); FCC Staff Report, ¶ 233.

[18] Several parties, including Sprint, argued that the merger would enable AT&T to raise their rivals' costs of obtaining key inputs such as the most up-to-date handsets and backhaul. The DOJ complaint did not address these raising rivals' costs issues, while the FCC Staff Report stated that these allegations raised important questions of fact that would be referred to an administrative law judge (ALJ) for further study. We do not address these issues in this chapter.

[19] AT&T (2011a, p. 70).

[20] AT&T (2011a, p. 102); Carlton et al. (2011a, ¶ 145).

In addition DT claimed that it was limiting new investment in the U.S. market to focus on its European holdings and would not be making the types or level of investment that were needed to keep T-Mobile USA competitive going forward.

The parties' other main line of reasoning was that there were many other competitors from which customers could choose. They stated that the Commission had found that three-quarters of Americans lived in locations in which they could choose from among at least five facilities-based providers. They argued that neither Verizon nor Sprint faced spectrum constraints and were therefore positioned to continue to roll out their 4G networks. They noted that Verizon was the largest provider and had the most extensive 4G network and often targeted AT&T directly in its advertising. Sprint, they argued, had been losing market share; but with its rollout of its 4G service on Clearwire's WiMAX facilities Sprint had just recently turned its business around and was again adding customers. With access to a large amount of spectrum in the 2.3 GHz bands, Sprint had the flexibility to roll out a 4G LTE service while maintaining its 4G WiMAX network.

The applicants argued that smaller providers had either 3G or 4G service and were offering smartphones, "all you can eat" services,[21] no contract commitments, and had been winning customers from larger providers and the "postpaid contract world." They noted that two providers in particular, MetroPCS and Cricket/Leap, had grown quickly. In addition, Leap and Metro roamed on each other's networks and combined had a footprint about as large as Sprint's.[22] Additionally, there were specific cities in which Leap or MetroPCS had double-digit market shares, which in some cases were larger than T-Mobile's share. Other regional providers such as US Cellular (6 million customers) and C-Spire (9 million customers) also competed by offering 3G service and advertising nationwide data services at prices that were lower than those of AT&T and Verizon.

The record also contained competing inferences regarding likely price effects of the merger based on diversion among providers. Sprint Nextel calculated a large value for the "Gross Upward Pricing Pressure Index" (GUPPI), indicating that the merger could be problematic. In response to this analysis, the applicants argued that the GUPPI analysis was inappropriate because it did not account for the increase in quality that would result from the merger. They also argued that Sprint's specific calculations were flawed both because they used AT&T's average variable cost instead of its marginal cost, which would be much higher because of capacity constraints, and because Sprint used diversion ratios that were based on overall market

[21] "All you can eat" pricing is a pricing plan where a customer can purchase unlimited use of a specific service for a fixed monthly rate.

[22] AT&T (2011a, p. 83). Leap and MetroPCS each have networks that cover about one-third of the country's population, and there is very little overlap, so that their combined networks cover about two-thirds of the population.

share instead of shares of recent gross additions. AT&T produced GUPPIs that used diversion ratios that were based on gross additions that were " . . . not very far from the threshold that is used at the Antitrust Division in determining whether GUPPI levels raise unilateral effects concerns."[23] Applicants did not provide GUPPI calculations that accounted for increased quality or that used what they believed to be the appropriate marginal cost level but rather argued that they " . . . [did] not endorse the approach . . . " of using GUPPI at all.[24]

Coordinated Effects

The parties' claims that there were no concerns regarding coordinated effects centered on four major themes: First, the industry structure and characteristics did not lend themselves to coordination. There were many different providers with diverse business strategies that competed on many dimensions including price, the structure of pricing plans (such as minutes, texts, and data usage in a tier), the quality of service, the scope of coverage, and the variety of available handsets. Different providers competed in different geographic areas. This diversity meant that pricing was complex, which made it unlikely that each firm could monitor what every other firm was doing and react to deviations from coordination. Additionally the diversity implied that providers' incentives would differ with regards to coordination.

Second, the growth in both demand and technological improvement created a dynamic marketplace that would require constant changes to account for new demand and services. These changes would create incentives for providers to become early adopters of new technologies and services, which would reduce incentives and ability of providers to coordinate.

Third, T-Mobile was not a maverick, but Leap, MetroPCS, and Sprint were each in a position to be a maverick. Mavericks are often firms that engage in disruptive competition. However, in the past two years T-Mobile's share had been declining. Further the FCC annual Competition Reports did not indicate that T-Mobile initiated any of the major pricing initiatives or recent innovations in service. They also argued that T-Mobile's prices' being lower than AT&T or Verizon's while T-Mobile was losing market share were indicative of T-Mobile's having lower quality service and "suggest that T-Mobile USA does not have a unique role in constraining the prices charged by AT&T and other carriers."[25] Also, as discussed above, they claimed that T-Mobile had no clear path to LTE.

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[23] Carlton et al. (2011b, ¶ 87).

[24] Carlton et al. (2011b, ¶ 88).

[25] Carlton et al. (2011a, ¶ 157).

Fourth, they claimed that the increase in capacity that would result from the merger would lower AT&T's cost of expanding. This lower cost would make AT&T less willing to coordinate by restricting output.

Buildout

AT&T argued that additional scale, scope, and spectrum and lower capital costs from the merger would enable it to expand its planned LTE footprint from covering 80 percent of the U.S. population to covering 97 percent.[26] They claimed that AT&T's senior management had decided in January 2010 and again in January 2011 (before the announcement of the merger) that expanding its footprint beyond 80 percent of the U.S. population "could not be justified."[27]

The applicants claimed that the additional 4G LTE buildout due to the merger would provide higher data transmission rates and less signal delay than would the HSPA+ coverage that they would otherwise use to serve those areas. In some areas, the new 4G service would be the only 4G service, and in other areas the new 4G service would provide competition to another provider's 4G service. In either case the service expansion would provide substantial benefits to residents (and travelers) in those areas and help bring wireless broadband to unserved areas, which was a Commission priority.[28]

Jobs

The FCC's public interest standard opened the door for AT&T to argue that the merger would increase jobs in the U.S. The parties claimed that the merger, because of the increased buildout in rural areas, would lead to "thousands of new jobs through the creation of a more robust national wireless infrastructure."[29] They argued that because of the increased investment and coverage in rural areas that would not otherwise have AT&T 4G service, there would be increased economic activity and in additional employment.

AT&T cited a report by the Economic Policy Institute and a study by Deloitte to claim that "investments of $1 million in wireless broadband would result in 15 new jobs."[30] As a result, the parties claimed that the new rural investment would create tens of thousands of new jobs. In addition to

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[26] AT&T (2011i, p. 81); AT&T (2011a, p. 55).

[27] AT&T (2011i, p 79).

[28] AT&T (2011a, pp. 56–60); AT&T (2011i, pp. 76–78); FCC (2009); FCC (2010, pp. 5, 227, 269).

[29] AT&T (2011f).

[30] AT&T (2011g).

the indirect job effect, the parties promised to bring 5,000 call-center jobs back to the United States.

FCC AND DOJ ANALYSIS

The two agencies' staffs cooperated in their independent investigations. Both found that the merger would reduce competition and that any claimed efficiencies that were credible would not compensate for the competitive harms. The FCC further found that the merger generated no other significant public interest benefits.

Efficiencies

The DOJ Complaint addressed the parties' efficiencies argument with only a single sentence stating that the parties "cannot demonstrate merger-specific, cognizable efficiencies sufficient to reverse the acquisition's anticompetitive effects."[31] Presumably the DOJ would have addressed efficiencies in more detail in a court proceeding. The FCC Staff Report focused extensively on the efficiencies.

At a high level, the FCC staff did not rely on the parties' models because they were unrealistic in their design and use of inputs and the models' outputs were inconsistent with history and with contemporaneous business documents. The models concluded that applicant's costs of expansion absent the merger would cause them to be noncompetitive. However, past capacity expansions had not caused them to be noncompetitive, and the applicants' documents did not indicate concern about becoming noncompetitive.

The FCC staff's rejection of the applicants' analysis was based on finding that the engineering model did not reflect a reasonable network design and that it used a number of arbitrary and unrealistic key input values. These errors were all biased toward finding efficiencies. In addition, the sample of markets upon which the model was based were not representative of the network as a whole, but focused more heavily on capacity-constrained markets, so that the model's output overstated the benefits of the merger when extrapolated to the entire United States. Further, the engineering and economic models contained a number of internal inconsistencies and produced several predictions that were inconsistent with AT&T's own business documents. Finally, the engineering model was not, as applicants claimed, based on their ordinary course of business practices for forecasting network expansion, but was developed specifically for the purpose of the regulatory proceeding and did not reflect reasonable business practices.

[31] DOJ Complaint, p. 20.

Engineering model and arguments

The FCC staff presented a detailed analysis of the parties' engineering model. The FCC staff agreed that operating a single network with more spectrum and cell sites held the promise of more efficient operation. However, the FCC found that the engineering model was not reliable or realistic enough to support the parties' claims of significant marginal cost savings and that it overstated the increase in costs for the stand-alone firms relative to the merged firm.

The primary reason that the FCC staff rejected the applicants' engineering model was that it vastly overestimated the amount of additional infrastructure that AT&T and T-Mobile would have to build as specific sites became congested. When cells are congested in practice, network engineers build new cell sites near the congested sites to alleviate the congestion; this is a process that is called "cell splitting." The engineering model initially assumed a traffic distribution that determined the amount of traffic on each site and therefore which sites were congested. It then calculated the number of additional cell sites that were needed to alleviate congestion.

After the additional sites were added, the model recalculated the traffic distribution. The problem was that the algorithm in the engineering model essentially placed new towers *uniformly* across the city, rather than located to split the congested sites. Thus, these new sites only minimally increased network capacity at the source of congestion. As a result, the originally congested cells typically remain congested—the cell splitting expense was largely ineffective and wasted in the model.

Since the model still reported congested cells after the new cell sites were added, it then built DAS in the congested locations. Expensive DAS further increased the estimated cost of alleviating congestion.[32]

This modeling choice overstated expansion costs for both the stand-alone firms and the merged firm. However, because the merged firm would experience less congestion than would the stand-alone firms, this error overstated expansion costs of the stand-alone firms relative to the merged firm's expansion cost, thereby overstating the cost savings that would result from the merger. When FCC staff corrected for this mistake and reran the model in a way that built new cell sites only near congested cell sites, the vast majority of the claimed efficiencies vanished from the model.

The FCC also found that the traffic estimates that were used for 2015 were significantly higher than demand projections that were used in internal documents. This high traffic assumption overstated the need for capacity expansion and consequently also overestimated the marginal cost savings from the merger.

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[32] The FCC also found that the parties' cost estimates for DAS were substantially higher than internal AT&T documents indicated. In some cases DAS costs in the model were more than twice the costs that AT&T expected to incur, further overstating the benefits of the merger. FCC Staff Report, ¶ 177.

The parties generated output from the engineering model for each year from 2012 to 2015. In their advocacy, however, they only reported results for 2014 and 2015, after substantial capital expenditures to transition the networks to LTE, so those expenditures were ignored in the presentations. The engineering model, even without changing the cell-splitting algorithm, showed no appreciable efficiency gains from the merger in the three years immediately following the merger. Further, the model ignored the possibility of substantial transition costs (network integration, network transition, and associated handset replacement) that would occur in the period 2011–2013. Because the transition costs would increase the marginal costs for the first three years but were not incorporated into the engineering model, it underestimated the marginal costs for the merged firms for the period 2011–2013 and would likely have led to increased marginal costs of capacity during the transition years, which diminished the present value of efficiency gains.

Economic Model

The economic model took the marginal cost estimates from the engineering model and calculated equilibrium prices with and without the merger to determine the benefits of the claimed efficiencies. The results were unpersuasive for several reasons:

First, the reliance on the marginal cost estimates from the engineering model meant that the economic model suffered from all of the flaws discussed above, such as the cell-splitting algorithm and DAS costs. The second major flaw in the economic model was that its predicted output levels were implausibly low. In fact, the output levels that were predicted by the economic model for 2014 and 2015 absent the merger were below the 2011 output levels that were used in the engineering model.

The economic model also suffered from the problem that it was based on 15 cities, almost all of which experienced congestion. There were many cities in the United States where congestion was not likely by 2015. By calculating costs in these congested cities and extrapolating to the entire country, the model overstated the effects of network congestion.

Despite these issues, the FCC staff attempted to use the economic model to understand the impact of the merger. First, the FCC staff ran the economic model for 2012 without any changes to the parties' assumptions and found that prices would be higher as a result of the merger.[33] As discussed in the previous section, prices were higher in the early years because the efficiencies were expected to take several years to be realized.

The cell-splitting algorithm had the biggest impact on the economic model. In addition, the FCC staff questioned several other assumptions in

[33] FCC Staff Report, ¶ 158. The 2012 predicted price increase ignored the possibly substantial transition costs that would increase the marginal cost calculations for the period 2011–2013 but that were not in the cost model.

the economic model—the diversion ratios, the profit margins, the rate at which customers would leave the industry, and the degree of quality improvement. The FCC Staff Report detailed how it believed that each of the parties' assumptions favored the conclusion that the merger would lead to lower prices, and how assumptions that were more consistent with parties' business documents reduced the estimated benefits of the merger.

The FCC staff reran the models—adjusting the cell-splitting algorithm and the assumptions about diversion ratios, profit margins, exit rates, LTE penetration, and quality adjustments—and showed that the model predicted higher prices and lower output in every year in every geographic area. On average, the model predicted that prices would be six percent higher each year, not lower as the parties claimed.

Other efficiencies

The FCC staff was able to find internal documents that supported a large range of cost savings from combining operations and eliminating the need to purchase spectrum in the future. Thus they did not challenge the legitimacy of these cost savings. However a detailed analysis of these efficiencies showed that almost none of them would result in lower marginal costs. The FCC staff found that eliminating administrative, sales, and support staff along with reducing the need for maintenance due to the decommissioning a significant amount of T-Mobile cell sites would not lower the merged firm's cost of increasing its output, and therefore would not likely be passed through to consumers. The FCC staff estimated that the likely marginal cost reductions from these efficiencies would be small.[34]

Competitive Analysis

Market definition

Both agencies defined a "mobile wireless telecommunications services" product market,[35] which means for the purposes of market definition that they did not distinguish between different services such as data or voice and texting, or whether the connected device was a simple feature phone, a smart phone, or a laptop. The applicants had a similar definition. Both agencies distinguished between business customers[36] and retail customers who

[34] FCC Staff Report, ¶ 237. Because the parties discounted coordinated and exclusionary effects, they relied on the economic model, which only incorporated unilateral effects, to assess the potential impact of the merger. To the extent that the other anticompetitive effects would occur, the economic model did not account for such harms.

[35] DOJ Complaint, pp. 6–7.

[36] Typically a business or "enterprise" customer negotiates two deals: The first is for service for which the enterprise itself will pay. The second is for a price that any of its employees will pay if the employee is responsible for paying the bill. Thus employees of an enterprise that negotiates such a deal can purchase at a discount relative to the advertised retail prices.

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TABLE 1-2
HHI Measures

	HHI Level	Change in HHI
All customers	3100	700
Enterprise customers	3400	300

Source: DOJ Complaint, p. 12.

purchase service for themselves and their families, and defined separate product markets for these two categories of customers.

Consistent with the practice at the FCC and with DOJ precedent, the DOJ defined each cellular market area (CMA) as a local geographic market for retail customers, where a CMA can be thought of roughly as a metropolitan region.[37] AT&T agreed. However, many decisions (for residential as well as business customers) such as pricing plans, technology rollouts, handset portfolio, and advertising are made at the national level. Citing an AT&T submission from a recent merger proceeding, the DOJ stated, " . . . the predominant forces driving competition among wireless providers operate at a national level."[38] Thus, "because competition operates at a national level, it is appropriate to consider the competitive effects of the transaction at a national level."[39] Business customers often make a single purchase to serve mobile communications needs in different locations across the United States, so the DOJ and FCC treated the geographic market for business customers as national.

Both the DOJ and FCC staff started their analysis by looking at the seller concentration and change in concentration from the merger. Overall Herfindahl-Hirschman Index (HHI) analysis showed the market to be concentrated. See Table 1-2.

Such concentration was found in local markets as well. In 96 of the top 100 CMAs (which cover over 50 percent of the U.S. population) the post-merger HHI exceeded 2500, the level at which a merger would be presumed to cause competitive harm, and in 91 of those markets the merger would have increased the HHI by more than 200.[40] These high HHIs indicated that there was serious concern regarding competitive effects and indicated that a detailed analysis to identify such effects, if any, was necessary.

[37] See http://wireless.fcc.gov/auctions/data/maps/CMA.pdf for a map of all CMAs.

[38] DOJ Complaint, p. 10.

[39] DOJ Complaint, p. 10.

[40] DOJ Complaint, pp. 11–12.

Unilateral effects

Both agencies rejected the claims that AT&T and T-Mobile were not close competitors. The DOJ Complaint cited documents showing that AT&T added faster (HSPA+) handsets to its portfolio in response to T-Mobile's introducing them in its portfolio. The FCC Staff Report cited documents that showed that AT&T accelerated its deployment of HSPA+ in its network in response to T-Mobile's upgrading its HSPA technology. Other documents indicated that in 2009 AT&T developed a calling plan in direct response to a plan that was offered by T-Mobile.[41] T-Mobile also targeted AT&T directly in its television advertising.

The FCC Staff Report contained analysis that also indicated that AT&T and T-Mobile services were close substitutes. It showed that the diversion ratios between AT&T and T-Mobile based on Local Number Portability (LNP) porting data were higher than those assuming diversion was proportional to market share and much higher than those used in the parties' economic model. The FCC Staff Report also used the parties' porting and churn data to show that a significant number of customers switched from AT&T to T-Mobile in response to T-Mobile price reductions and switched from T-Mobile to AT&T in response to AT&T's new product introductions.[42] These diversions, in response to price changes, were similar to the shifts from the overall LNP data that showed that customers viewed the two firms as substitutes. Using business document estimates of margins, along with the diversion ratios that were calculated above, the FCC Staff calculated GUPPI values from AT&T to T-Mobile and from T-Mobile to AT&T that exceeded thresholds that cause concern at the antitrust agencies.

In addition to such standard unilateral effects, the FCC Staff Report analysis went beyond traditional unilateral effects models. Because AT&T planned to cease making T-Mobile services available to new customers, it would not "recapture" customers who would normally switch to T-Mobile in response to an AT&T price increase. However, the merger would still make AT&T's demand more inelastic because AT&T's customers would have one fewer provider choice. Thus, some customers who would have left AT&T for T-Mobile would stay. This same logic applied to all other providers. Each remaining provider would face less elastic demand because its customers would have one fewer provider from which to

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[41] FCC Staff Report, ¶ 57. In April of 2009 AT&T developed a response to T-Mobile's Family Time Unlimited Plan called Family Talk Unlimited.

[42] FCC Staff Report, ¶ 57. Porting data could be problematic because not all of the customers that change wireless providers port their numbers. FCC Staff Report, Appendix C, ¶ 20. It is possible that customers who port their numbers behave differently than those who do not. However, the finding that providers' shares of customers who port their numbers are similar to overall market shares suggests that porting customers do not behave significantly differently from the customer population as a whole.

choose. Thus, the unilateral effect would have applied to every provider in the industry.[43]

Effects that were more closely tied to analysis laid out in the *Merger Guidelines*, such as UPPI analysis, included AT&T's having a reduced incentive to support T-Mobile legacy customers with new technology than T-Mobile would have. AT&T's incentive would be lower, both because new products for the legacy plan customers would not attract new AT&T customers, and because many customers who would vacate these legacy plans would switch to AT&T. The reduced investment incentive would harm legacy T-Mobile customers. Additionally there would be a reduced incentive for AT&T to lower prices as technology improved (which would reduce costs) because some customers that would switch to AT&T would be leaving T-Mobile plans, so the gain to the merged firm would be lower than to AT&T alone.

The agencies both found that Leap and MetroPCS (as well as smaller regional providers) would not likely constrain anticompetitive behavior. They did not dispute the parties' claims that these providers used (or had access to) the same network technologies as the national providers. However, none of the smaller providers had facilities covering more than one-third of the population. As a result, none could offer nationwide coverage without purchasing service from another provider, limiting their competitive impact. Smaller providers also lacked spectrum to expand service significantly in areas in which they had facilities.

Further, Leap and MetroPCS focused on niche portions of the market and could not reasonably compete for high-end customers. For example, they offered only prepaid service and did not have the billing infrastructure or business models in place to compete for customers that desire postpaid service or for business customers. Nor did they offer the most functional higher-end devices and so could not offer as high a level of functionality as national providers. These facts suggested that the smaller providers would be unlikely to expand significantly in their current service areas or beyond their current scope of residential prepay customers in response to a post-merger price increase.

The FCC staff also determined that timely new entry that was not dependent on the four national networks was unlikely. Cox Communications recently had abandoned its attempt to enter as a facilities-based provider that was targeted at its existing cable base. While Clearwire offered retail and wholesale services, including those underlying Sprint's WiMAX offering, its network covered only 81 million people in the United States.

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[43] The traditional recapture theory would apply to legacy T-Mobile customers. AT&T could raise the effective price of service by, for example, not making newer handsets available to these customers. Also some carries have adopted the practice of unilaterally raising prices to customers on contracts, giving them a 30-day window to terminate their contracts or effectively accept the price increase. Sprint, for example, did this in September of 2011 and again in January of 2012. See, e.g., Sullivan (2011).

Because AT&T and T-Mobile provided substitute services, because Sprint and Verizon would face similar unilateral incentives to raise prices, and because the smaller players would not be able to expand sufficiently to defeat price increases, the FCC staff concluded that there was a substantial likelihood of increased prices that would result from the unilateral effects of the merger.

Coordinated effects

While AT&T relied on past behavior to assert that T-Mobile would not be a maverick and that Leap and Metro would, the agencies took a more forward-looking view. Both the DOJ Complaint and the FCC Staff Report noted that a maverick is a firm with an incentive to disrupt coordination because the benefits from coordination are low relative to the benefits from competing and expanding, often because it has a low cost of expansion. This view was consistent with the parties' definition. But both agencies' staffs concluded that T-Mobile was positioned to be a maverick going forward.

Both agencies pointed out that T-Mobile had already announced plans, shortly before the merger announcement, to expand significantly. In a January 2011 stockholder call, T-Mobile announced its Challenger Strategy, which it expected to increase T-Mobile's market share from around 11 percent to 17 percent.[44]

In a document outlining that strategy, T-Mobile stated in part that, "[T-Mobile USA] will champion the customer and break down industry barriers with innovation" and later stated that a key component of its strategy was to use "Disruptive Pricing."[45] Other documents indicated that T-Mobile and AT&T had different incentives with regard to the use of "all you can eat" pricing.[46]

T-Mobile's Challenger Strategy included plans to expand T-Mobile's facilities footprint to enable it to provide its HSPA+ service to 95% of the U.S. by 2014. Other documents indicated that T-Mobile had enough capacity to support an "all you can eat" business plan through 2015. Thus, contrary to AT&T's claims, T-Mobile was not constrained from increasing its HSPA+ offering due to a shortage of spectrum, and it planned to replace costly roaming with its own facilities, making expansion less costly.

In evaluating whether smaller companies like Leap and MetroPCS would likely play the role of maverick the agencies found that the same characteristics that made them unlikely to constrain unilateral price increases—including limited facilities coverage, limited spectrum, business plans, billing systems, and handsets targeted at a small segment of the

[44] DOJ Complaint, p. 15.

[45] DOJ Complaint, p. 14.

[46] FCC Staff Report, ¶¶ 79–80.

market—would make them unlikely or unable to behave in a manner that would disrupt coordination among the large providers.

To complete the coordinated effects analysis, the FCC Staff Report also explained why coordination was likely. Primarily, AT&T and Verizon were quite similar in that they each served about one-third of the market, they had about the same profit margin, and they were both positioned as premium services. Further, they had exhibited parallel behavior in the past by changing pricing plans at the same times and adopting similar strategies (which were not adopted by the other national providers) that made entry or expansion by smaller service providers difficult.[47] In addition, Sprint, which would likely gain some customers who left T-Mobile after the merger, would have a greater incentive to accommodate coordinated behavior.

Finally, the parties argued that because the providers offered differentiated products, coordination would be difficult. However, the FCC Staff found that even though the relevant market included differentiated products and competition was multifaceted, the vast majority of the facets of competition were transparent. Providers paid attention to each others' prices and product offerings and, when necessary, responded quickly to changes, which made it easy to detect and respond to deviations from coordinated behavior.

Buildout

AT&T claimed that it would expand its LTE to 97 percent of the population only if the merger occurred. The FCC Staff Report concluded that this claim was not credible and that in any case the benefits from the expanded buildout would likely be minimal.

AT&T had already developed a plan to bring LTE to 97 percent of the U.S. population, and its board had already approved a buildout that would cover 80 percent of the population. The Commission disputed AT&T's characterization of its decision to halt the buildout at 80 percent, claiming that high level documents left incremental buildout as "an open question," especially since the merger promise was that a buildout to 97 percent would only be accomplished six years after the consummation of the merger, far in the future.

Verizon had announced plans to deploy LTE to its entire network by 2013, covering more than 95 percent of the U.S. population. T-Mobile also had plans under its Challenger Strategy to build out its HSPA+ network to 290 million people by 2014. Because of these extensive planned buildouts,

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[47] FCC Staff Report, ¶ 82. For example AT&T and Verizon have been unwilling to sell wholesale services that the other two national providers have been willing to offer. Additionally, AT&T and Verizon have adopted proprietary chip set technologies for their portion of the 700 MHz band that do not apply to the portion of that band that is used by smaller providers, contrary to past practices in the industry in which a single chip set technology applied to an entire band.

the increase in speed from AT&T's LTE buildout would at best be an upgrade from T-Mobile's HSPA+ (and possibly AT&T's own HSPA+), and in most cases simply match Verizon's LTE speeds. These planned buildouts also implied that AT&T's promised incremental buildout would make LTE available to very few customers who did not have at least one other source of 4G service.

Finally, the FCC staff concluded that the Verizon and T-Mobile planned buildouts would likely put competitive pressure on AT&T to expand its LTE network beyond 80 percent without the merger. Thus, the FCC staff found that the merger would not likely lead to any substantial incremental build-out of LTE, and that the benefits of such a buildout would be significantly lower than AT&T claimed.

Jobs

The applicants claimed that the " . . . 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."[48] The FCC Staff Report stated that it must consider the net impact on U.S. jobs, weighing the "direct" loss of jobs at the merged company to any "indirect" jobs in other industries that would result from any merger-specific incremental LTE buildout. In most mergers, the direct effect of synergies is to reduce jobs, and AT&T's efficiency claims rested in part on the elimination of jobs in retail stores, customer service, administrative support, and network operations. As a result, to obtain a net increase in jobs, AT&T claimed that the increase in economic activity that would result from the increased buildout plus the promise to bring 5,000 overseas call-center jobs back to the United States would more than offset the direct effect of lost jobs.

AT&T based its jobs claims on an Economic Policy Institute (EPI) study about the job stimulation impact of bringing *new* broadband to a market.[49] There were at least two problems with this extrapolation: First, as discussed in the section above, the FCC staff did not believe that much new buildout would result from the merger. Second, since other providers (including Verizon) would already cover about 94 percent of the territory that AT&T planned to cover, AT&T's incremental LTE buildout would be at best the *second* LTE provider in most cases, and the EPI study would not be applicable. While there could be benefits from additional efficient competition, the job benefits from a second provider in an area were likely substantially lower than from being the first provider of broadband. The FCC staff also found that the commitment to bring 5,000 AT&T call-center jobs from

[48] AT&T (2011f, p. 1).

[49] Pollack (2011).

overseas to the United States would have little effect since it did not have a time duration associated with it, did not commit to rehiring these workers who leave due to normal attrition, and did not apply to domestic outsourced call-center jobs (which could be migrated overseas or eliminated altogether). Thus, the FCC Staff concluded that A&T's job claims were unsupportable.

OUTCOME AND SUBSEQUENT DEVELOPMENTS

The DOJ's lawsuit had a February 2012 trial date. The parties were proceeding on schedule toward their trial date until November 22, 2011, when FCC Chairman Julius Genachowski announced his intention to circulate a "Hearing Designation Order," which would have referred the merger to a hearing in front of an FCC administrative law judge.[50] Two days later (at 2 A.M. on Thanksgiving Day), AT&T filed a request to withdraw its applications at the FCC to "focus their continuing efforts on obtaining antitrust clearance for the transaction."[51] At the time observers speculated that the withdrawal was designed to keep the FCC staff analysis from becoming public.[52] The Commission granted AT&T's request to withdraw its applications and at the same time released the FCC Staff Report that analyzed the likely impact of the merger.

In light of AT&T's withdrawal of its petition at the FCC, DOJ attorneys asked the court to dismiss the case because without a pending petition at the FCC, there was no merger to consider. In the hearing Judge Huvelle stated, "We don't have any confidence that we are spending all this time and effort and taxpayers' money and that we're not being spun," and asked, "Don't you understand that this 'strategy' has a slight aura of using the court? You could change the deal in a month and everybody's time will be wasted."[53] On December 12, 2011, attorneys for both sides petitioned to stay the case until January 12, 2012, at which time they would report on how they wished to proceed at the FCC and on any changes in the proposed transaction.[54] With the parties unable to propose divestitures to overcome the agencies' opposition, AT&T withdrew its offer to purchase T-Mobile USA on December 19, 2011. While maintaining that the merger was in the public interest, AT&T admitted that the merger would be only " . . . an interim solution to this spectrum shortage."[55]

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[50] The Commission's only procedure for blocking a merger is to designate it for hearing in front of an administrative law judge.

[51] AT&T (2011h).

[52] See, e.g., Feld (2011) and Fitchard (2011b).

[53] See, e.g., Goldstein (2011).

[54] See *United States of America* et al. *v. AT&T Inc.* et al. Joint Motion to Stay (2011). http://www.justice.gov/atr/cases/f278100/278196.pdf.

[55] Kemer (2011).

One might wonder why AT&T attempted this merger, as each of its major arguments proved untenable. AT&T argued that T-Mobile did not compete with AT&T while T-Mobile was running ads about AT&T's service with the tag line "Sometimes you have to pay more to be slower," and AT&T was upgrading its network to avoid losing speed claims to T-Mobile. AT&T claimed that AT&T and T-Mobile were capacity constrained, and in the absence of the merger they would be unable to compete. However, T-Mobile had announced that it planned to expand unilaterally, and there were no AT&T business documents that addressed its claimed lack of competitiveness. In addition, there were no merger valuation documents that suggested that the merger would solve any such competitive problems. On top of these claims, AT&T was effectively arguing that the second most profitable company in the U.S. in 2010[56] could not be competitive while expanding internally, but much smaller and less profitable providers like Leap and Metro with substantially less spectrum and network resources could expand their service offerings internally to be a constraint on AT&T and Verizon.

On the other hand, if one believes the synergies that were found in AT&T's documents, then combining operations would have eliminated about $3 billion per year in duplicative resource costs over a ten-year period.[57] This represents about four percent of the combined revenue of the two companies.

As a public policy matter, forgoing these potential synergies can be interpreted as a cost to society of maintaining competition in the wireless industry and thereby largely eliminating the need for public-utility-style price regulation. In markets in which economies of scale are exhausted at low levels of production, the benefits of competition impose very little cost on society in terms of "duplicated costs" or nonexploited economies of scale. In wireless telecommunications, however, it appears that these costs are not negligible and require policy makers to be willing to sacrifice some static efficiencies to maintain the dynamic efficiencies of allowing the market to guide the evolution of the industry.

The agencies rejected the notion that a provider had to reach sufficiently large size before it would expand its service into new areas.[58] Instead they relied on competition among providers to produce such expansion. The months following the aborted merger suggest that the proposed merger imposed costs on T-Mobile USA. As a result of the attempt, T-Mobile apparently suspended a number of initiatives that likely would have been

[56] CNN (2011).

[57] Some expected savings, such as not having to purchase more spectrum, being able to obtain lower prices for handsets, and obtaining lower cost of capital, represent only transfer payments and not resource savings to the economy.

[58] The Commission actions were consistent with such a position when it accepted the [Au: SBC abbreviation not defined earlier] voluntary (ultimately unfulfilled) commitment by the Southwestern Bell Corp. (SBC) to enter eastern cities if the SBC-Ameritech merger were approved.

carried out under T-Mobile USA's Challenger strategy, including infrastructure capital expenditures. In addition negotiations regarding T-Mobile's partnering arrangements with cable companies were halted. Many of these opportunities were likely lost as during the investigation Verizon signed a number of joint venture agreements with these cable companies and purchased spectrum that many observers thought that T-Mobile might purchase for the rollout of its LTE network. It may also not be a coincidence that at the time of this writing, T-Mobile in the only national provider that does not offer the iPhone, or that T-Mobile dropped from first to fourth in JD Power's survey of wireless customer satisfaction.[59]

However, the breakup package including additional spectrum seems to have helped T-Mobile somewhat. In February of 2012, T-Mobile announced that it would deploy LTE technology in 2013 using (in part) the spectrum that it received as a result of the breakup.[60] The rollout will occur in the vast majority of the top 50 markets in the U.S.[61] AT&T, contrary to its arguments to the Commission, has apparently also put into place initiatives to accelerate the migration of customers from its 2G service to 3G and 4G service.[62] In fact, in November 2012, AT&T announced that it would expand its LTE network to cover 300 million people by the end of 2014, which was faster than it claimed it would even had the merger been approved.

Overall, each company will likely be actively searching for additional spectrum and cell sites as well as more advanced technology to increase capacity over the next several years as demand for mobile services increases. Additional mergers are likely to be proposed as firms try to ensure their ability to compete efficiently, but the proceedings at the FCC and DOJ show that such mergers and their efficiency claims will face careful scrutiny.

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[59] See Beren (2012).

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