

AN ECONOMIC ANALYSIS OF THE AT&T-T-MOBILE USA WIRELESS MERGER

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ABSTRACT

On March 20, 2011, wireless provider AT&T announced its intention to merge with T-Mobile USA, a competing wireless provider. This article reviews the economic analysis of this proposed acquisition that we carried out for Sprint and explains why the merger would have been anticompetitive. We analyze how the merger would have led to adverse unilateral, coordinated, and exclusionary effects. AT&T and T-Mobile contended that their proposed merger would not adversely affect competition in wireless services because T-Mobile USA was not an effective rival, because other wireless providers could easily replace any competition that was lost as a result of the merger, and because the efficiencies from the merger would be so substantial that they would outweigh any perceived anticompetitive effects. Our analysis concludes that AT&T failed to provide convincing evidence of the lack of anticompetitive effects and failed to document the claimed efficiencies in a manner consistent with the Horizontal Merger Guidelines of the U.S. Department of Justice and the Federal Trade Commission.

JEL: L40; L50

I. INTRODUCTION

On March 20, 2011, wireless provider AT&T announced its intention to merge with T-Mobile USA (T-Mobile), a competing wireless provider, in return for a payment of \$39 billion to T-Mobile's parent, Deutsche Telekom. AT&T also agreed to pay a substantial break-up fee in the event that regulators were to block the transaction. We were retained by Sprint Nextel to provide an economic

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analysis of the proposed merger. We filed two declarations in the Federal Communications Commission (FCC or “the Commission”) proceeding that was considering the merger application¹ and we continued to analyze the likely effects of the merger up until the time that it was abandoned by AT&T.

AT&T and T-Mobile contended that their proposed merger would not have adversely affected competition in wireless services because T-Mobile was not an effective rival, because other wireless providers could easily replace any competition that was lost as a result of the merger, and because the efficiencies from the merger would be so substantial that they would dwarf any perceived anticompetitive effects.

Instead, we found that T-Mobile was, and would likely continue to be, a significant competitor in the market for wireless telephone service. We also established that wireless carriers other than AT&T, Verizon, and Sprint were unlikely to be able to “take up the slack” that would result from the elimination of T-Mobile as a significant national competitor. In addition, we came to the conclusion that AT&T’s efficiency claims were overstated and, in any event, the efficiencies that would result from the merger were unlikely to be sufficient to overcome the anticompetitive effects that would result from the removal of T-Mobile from the market by AT&T.

We also found that the merger was likely to increase the competitive disadvantages faced by Sprint Nextel and other carriers by raising the costs, or reducing the quality, of the backhaul and roaming services that they employed and by further limiting their access to leading-edge handsets. By marginalizing Sprint’s competitive significance, this exclusionary conduct would have effectively led to re-creating the wireless duopoly that existed from the advent of modern cellular service in the early 1980s until the mid-1990s, when the FCC acted to increase competition by issuing additional licenses to wireless carriers. That action resulted in a substantial decline in the price of wireless service. Reversion to an effective duopoly would have the predictable effect of reversing the gains from wireless competition.

This article provides an in-depth description of the economic analysis that we conducted as well as the economic analysis provided by the experts

¹ *Economic Analysis of the Merger of AT&T and T-Mobile*, Joint Declaration of Steven C. Salop, Stanley M. Besen, Stephen D. Kletter, Serge X. Moresi & John R. Woodbury, In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, WT Dkt. No. 11-65 (filed with the FCC on behalf of Sprint Nextel Corp. May 31, 2011) [hereinafter CRA Declaration]; *Economic Analysis of the Merger of AT&T and T-Mobile*, Joint Reply Declaration of Steven C. Salop, Stanley M. Besen, Stephen D. Kletter, Serge X. Moresi & John R. Woodbury, In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, WT Dkt. No. 11-65 (filed with the FCC on behalf of Sprint Nextel Corp. June 20, 2011) [hereinafter CRA Reply Declaration]. While we use “CRA” to identify the submissions for ease of exposition, the views reflected in the Declarations were those of the five authors and not those of CRA or any of its individual consultants. Although we had access to confidential data during the course of our analysis, all of the data reported in this article were obtained from public sources.

of the merging parties. We draw both on our FCC filings and on our analysis of an engineering-economic simulation model that was submitted by the merging parties after the initial round of FCC comments.

II. INDUSTRY BACKGROUND

There are four large nationwide facilities-based wireless carriers: AT&T, Verizon, Sprint, and T-Mobile. There also is a fringe of other competitors that operate facilities in more limited geographic regions, and there are a number of “resellers,” generally referred to as mobile virtual network operators (MVNOs), which offer retail service using the networks of facilities-based carriers. Many consumers use their wireless phones when they travel and carriers negotiate roaming agreements with other wireless providers in order to offer service when their subscribers travel outside their respective service areas. Regional carriers generally place strict limits on the amount of roaming in order to control their payments to other carriers.

The regional carriers have spectrum licenses that cover a substantially smaller percentage of the U.S. population than do the four national carriers, and some have built facilities that cover far smaller percentages of the populations that they are licensed to serve. For example, T-Mobile has licenses that cover a population of 289 million, well over twice the licensed population of 124 million covered by MetroPCS, the regional carrier with the next largest coverage. Moreover, the actual network coverage of MetroPCS is only 105 million.²

Competition among the four national carriers is focused primarily on the national level. Each of these carriers has sought to present a nationwide image. Despite potential differences in local network quality, uniform national prices today appear to be the norm,³ although there are a few exceptions that result from limited local promotions or marketing trials. Carriers advertise the same messages throughout the country and appear to offer the same service plans everywhere that they offer service.⁴ Handset offerings do

² John C. Hodulik & Batya Levi, *US Wireless 411*, UBS INVESTMENT RESEARCH, Mar. 30, 2011, at 11-12.

³ In his Declaration in connection with AT&T's acquisition of Centennial Communications, AT&T executive David A. Christopher declared that: “*Very infrequently*, AT&T can lower plan prices in a local area or region to boost sales. . . . All such rate plan promotions must be approved at senior levels *and approval is rarely granted*.” Declaration of David A. Christopher, attached to Applications of AT&T Inc. and Centennial Communications Corporation for Consent to Assign or Transfer Control of Licenses and Authorizations, WT Dkt. No. 08-246, ¶ 6 (filed with the FCC on behalf of AT&T Nov. 21, 2008) (emphasis added).

⁴ Charles River Associates conducted a pricing survey in April and May 2011. The survey included 150 zip codes in an equal mix of rural and urban areas and across all 50 states. The survey looked at the various talk and data plan offerings and associated pricing for individual (that is, single-phone line) wireless plans offered on the respective Internet sites of the four national carriers. Although this sample was limited, the survey documented that none of the carriers varied their individual plan offerings or pricing based on geographic location of the customer, which means that the carriers set plan offerings and pricing at the national level.

not appear to differ regionally. Significant innovation decisions of the national carriers are carried out on a national basis, although new services may not be rolled out simultaneously in all local markets.

Retail wireless service is sold on a postpaid and a prepaid basis and there are significant differences between the two plan types.⁵ Postpaid plans generally involve long term contracts and heavily subsidized handsets. Postpaid plans generally involve credit checks and carriers offer these plans only to credit-worthy customers. Postpaid plans are more likely to offer customers the most current high-end smartphones with data features such as email and music and video downloading and the ability to hold multi-line accounts. In contrast, prepaid plans do not require long-term contracts and, as a result, handsets are less subsidized, if at all. Some prepaid plans do not include roaming, or may include high roaming fees. An increasing number of prepaid customers obtain service that is subsidized through the Universal Service Low-Income Fund. Prepaid sellers also may not offer their plans on a national basis.

Carriers differ in the proportion of their business that is postpaid. The four national carriers tend to specialize in postpaid plans—91 percent of AT&T's retail customers, 95 percent of Verizon's, 73 percent of Sprint's, and 84 percent of T-Mobile's are postpaid.⁶ The regional carriers are more varied. Neither MetroPCS nor Leap Wireless (Leap) has postpaid plans; all are prepaid.⁷ In contrast, 89 percent of U.S. Cellular's customers are postpaid.⁸ Resellers tend to specialize in prepaid plans. TracFone, which accounts for about 75 percent of reseller subscribers, offers exclusively prepaid service.⁹ TracFone acquires minutes on a wholesale basis from facilities-based carriers, including AT&T and Verizon.¹⁰ Although the number of prepaid subscribers is growing,¹¹ the prepaid share of total subscribers is only about 24 percent.¹²

⁵ We use the term "prepaid" to encompass all pay-in-advance offerings, whether from facilities-based carriers or resellers.

⁶ Based on data compiled from wireless carrier annual reports, Forms 10-K filed with the Securities and Exchange Commission, and press releases.

⁷ METROPCS COMM'NS, INC., ANNUAL REPORT FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010 (SEC FORM 10-K), at 6 (Mar. 1, 2011) [hereinafter METROPCS 2010 10-K]; LEAP WIRELESS INT'L, INC., ANNUAL REPORT FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010 (SEC FORM 10-K), at 2 (Feb. 25, 2011) [hereinafter LEAP WIRELESS 2010 10-K].

⁸ U.S. CELLULAR CORP., ANNUAL REPORT FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010 (SEC FORM 10-K), exh. 13 at 5 (Feb. 25, 2011).

⁹ Based on data compiled from wireless carrier annual reports, Forms 10-K, and press releases.

¹⁰ 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, Fourteenth Report, 25 FCC Rcd. 11407, ¶ 33 (2010) [hereinafter 14th CMRS Competition Report].

¹¹ *Id.* ¶ 163 ("prepaid subscribers as a percentage of total subscribers has been increasing over the past few years").

¹² Based on data compiled from wireless carrier annual reports, Forms 10-K, and press releases.

Although the regional fringe carriers offer prepaid calling plans, these carriers' prepaid plans generally have much lower average revenue per user (ARPU) than the postpaid plans of the national carriers. For example, the ARPUs for the prepaid plans of MetroPCS and Leap are \$39.79 and \$37.76, respectively. In contrast, the ARPUs of the postpaid plans of AT&T, Verizon, T-Mobile, and Sprint are \$62.57, \$52.92, \$52.00, and \$55.00, respectively.

Prepaid and postpaid services tend to appeal to different demographic segments. Prepaid users tend to be younger and have lower incomes. Because they do not require a credit check,¹³ prepaid plans may enable less credit-worthy consumers who do not qualify for postpaid plans to obtain wireless service. These plans tend to have fewer features, are less likely to offer expensive smartphones, and often have roaming features that are more limited than those of postpaid plans.

The combined share of the fringe carriers in an all-wireless national market is about 7 percent. Moreover, the combined share of MetroPCS and Leap increased from 3.9 percent in the first-quarter of 2009 to 4.7 percent in last quarter of 2010, while the share of U.S. Cellular actually declined from 2.4 percent to 2.1 percent. The combined shares of these three carriers increased only from 6.3 percent to 6.7 percent between 2009 and 2010.

Many corporations and government entities acquire wireless service for their employees to use.¹⁴ In this way, these firms are better able to control cost and maintain information and controls on usage. Carriers bid for these corporate contracts, often as the result of Requests for Proposals. For larger accounts the prices are individually negotiated and are generally lower than the prices of retail individual or family plans. Except for sales to small local businesses and local government agencies, virtually all sales to these customers are made by the four national carriers. These customers often require a national carrier because they have employees around the country and, because their employees travel frequently, they generally require free roaming. They also value the benefits of one-stop shopping.

III. TIME LINE OF AGENCY REVIEW

In its April 21, 2011 application to the FCC, AT&T formally sought permission to acquire all of the assets of T-Mobile.¹⁵ In its application, AT&T claimed that the proposed transaction "provides by far the surest, fastest, and most efficient

¹³ LEAP WIRELESS 2010 10-K, *supra* note 7, at 3.

¹⁴ These entities sometimes negotiate packages on behalf of employees who pay for the service themselves.

¹⁵ AT&T, Description of Transaction, Public Interest Showing and Related Demonstrations (filed with the FCC Apr. 21, 2011) [hereinafter AT&T Application]. Although the application technically was for the FCC approval of the transfer of wireless spectrum licenses from T-Mobile to AT&T, for all intents and purposes it initiated a complete antitrust review of the merger.

solution” to the spectrum and capacity “challenge” that it faced.¹⁶ It also contended that “T-Mobile’s absence from the marketplace will not have a significant competitive impact, particularly vis-à-vis AT&T” and that “other competitors [such as MetroPCS and Leap] can quickly replace the diminished market role T-Mobile USA plays today—and have already begun to do so.”¹⁷

On August 31, 2011, the U.S. Department of Justice (DOJ) issued a complaint seeking to block the proposed transaction (“the Complaint”).¹⁸ In its Complaint, the DOJ contended that “unless this acquisition is enjoined, customers of mobile wireless telecommunications services likely will face higher prices, less product variety and innovation, and poorer quality services due to reduced incentives to invest than would exist in the absence of the merger.”¹⁹ It also stated that “[t]he Defendants cannot demonstrate merger-specific, cognizable efficiencies sufficient to reverse the acquisition’s anticompetitive effects.”²⁰

On November 22, 2011, the Wireless Telecommunications Bureau of the FCC circulated a draft order for consideration by the Commission designating the transaction for a public hearing. The draft concluded, based on the staff’s analysis, that “the record overall does not support a finding that the proposed AT&T/T-Mobile merger would serve the public interest, convenience, and necessity and that the record presents a number of substantial questions of fact.”²¹

Just two days later, on November 24, 2011, AT&T withdrew its application to the FCC, but indicated that it would continue to fight the DOJ lawsuit.²² Shortly thereafter, the FCC released its Staff Analysis and Findings, in which it concluded 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.”²³

¹⁶ *Id.* at 1.

¹⁷ *Id.* at 13–14.

¹⁸ Complaint, U.S. v. AT&T, Inc., No. 1-11-cv-1560 (D.D.C. filed Aug. 31, 2011) [hereinafter DOJ Complaint]. Sprint Nextel and Cellular South filed similar complaints. *See also* Complaint, Sprint Nextel Corp. v. AT&T, Inc., No. 11-cv-1600 (D.D.C. filed Sept. 6, 2011); Complaint, Cellular South, Inc. v. AT&T, Inc., No. 11-cv-1690 (D.D.C. Sept. 19, 2011). The Attorneys General of seven states and Puerto Rico subsequently joined the DOJ lawsuit. *See also* Second Amended Complaint, U.S. v. AT&T, Inc., No. 11-cv-1560 (D.D.C. filed September 30, 2011).

¹⁹ DOJ Complaint, *supra* note 18, ¶ 3.

²⁰ *Id.* ¶ 46.

²¹ Order, In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, FCC Dkt. No. 11-65, at 2 (Nov. 29, 2011).

²² Press Release, AT&T, AT&T and Deutsche Telekom Continue to Pursue Sale of DT’s U.S. Wireless Assets (Nov. 24, 2011), <http://www.att.com/gen/press-room?pid=22077&cdvn=news&newsarticleid=33396&mapcode=>.

²³ Fed. Comm’n’s Comm’n, Staff Analysis and Findings, In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, ¶ 5 (undated) [hereinafter FCC Staff Analysis and Findings].

On December 19, 2011, AT&T announced that it was abandoning the transaction.²⁴

IV. COMPETITIVE ANALYSIS: THE FIRST ROUND

In our original Declaration to the FCC, which was filed shortly after AT&T applied to the Commission for permission to consummate the merger, we began by explaining that the proposed merger of AT&T and T-Mobile involved two carriers with important brand names that compete nationally, not simply in a few narrow geographic areas. They were not offering different products at separate local prices based on distinct local competitive conditions. Thus, a national market was relevant for evaluating the competitive effects of this merger in addition to (or even potentially instead of) separate competitive evaluations in each local market. Moreover, if *national* competitive concerns were found, *localized* remedies would unlikely be successful in resolving those concerns. Thus, in our view, to consider the potential nation-wide effects of the transaction, it should be analyzed at the national, as well as the local, level.

The DOJ and the FCC Staff took similar positions. In its Complaint, the DOJ argued that

whereas CMAs [Cellular Market Areas] are appropriate geographic markets from the perspective of individual choice, from the seller's perspective, the Big Four carriers compete against each other on a nationwide basis and AT&T's acquisition of T-Mobile will have nationwide competitive effects across local markets.²⁵

The FCC Staff noted that

[d]efining 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 . . . 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.²⁶

This approach to national market definition should not be controversial. Our analysis flows from the first principles of antitrust analysis for mergers and other conduct. At one time, the Horizontal Merger Guidelines

²⁴ Press Release, AT&T, AT&T Ends Bid To Add Network Capacity Through T-Mobile USA Purchase (Dec. 9, 2011), http://www.att.com/gen/press-room?pid=22146&cdvn=news&newsarticleid=33560&mapcode=corporate%7Cwireless-networks-general&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+AttCorporateRssFeeds+%28AT%26T+Corporate+RSS+Feeds%29&utm_content=FeedBurner.

²⁵ DOJ Complaint, *supra* note 18, ¶ 20. "Cellular market areas" are based on Metropolitan Statistical Areas as defined by the Office of Management and Budget and Rural Service Areas area defined by the FCC.

²⁶ FCC Staff Analysis and Findings, *supra* note 23, ¶ 34 (footnotes omitted).

(“Guidelines” or “Merger Guidelines”) seemed to say that only the smallest antitrust market would be analyzed, but this approach is no longer the policy of the antitrust agencies. Moreover, in previous mergers, AT&T contended that only national competition was relevant, indeed, that it was the *only* relevant consideration. For example, as it stated in its acquisition of Dobson Communications in 2007,

the evidence shows that the predominant forces driving competition among wireless carriers operate at the national level. Therefore, examining market structure in areas as small as CMAs or CEAs [Component Economic Areas] does not accurately account for the competitive forces that will constrain the behavior of the merged firm As the Commission has recognized, rate plans of national scope, offering nationwide service at a single price without roaming charges, have become the standard in the wireless industry AT&T establishes its rate plans and pricing on a national basis, which means that the terms of such plans are set without reference to market structure at the CMA level. Rather, AT&T develops its rate plans, features, and prices in response to competitive conditions and offerings at the regional and national level—primarily the plans offered by the other national carriers.²⁷

We also noted that virtually all sales to business and government customers are made by the four national carriers, except for small, local businesses and governmental agencies. These customers are unlikely to switch to regional carriers in response to a small price increase by the various national carriers.

In our analysis, we showed that the all-wireless market and the postpaid market would be highly concentrated at the national level using the thresholds in the Merger Guidelines. Concentration is in the range where the DOJ and the Federal Trade Commission conclude that a merger is “presumed to be likely to enhance market power.”²⁸ The Guidelines observe that this presumption may be “rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.”²⁹ However, as we discuss below, the arguments and the evidence in AT&T’s application were insufficient to rebut the presumption of increased market power.

The Merger Guidelines explain that market shares and concentration are generally measured on the basis of revenues. Revenues are particularly relevant when the products are differentiated, as they are in this market. In an all-wireless market, when revenues are fully attributed to the facilities-based carriers, the Herfindahl-Hirschman Index (HHI) for an all-wireless market would be 3,356 and the increase in the HHI would be 741. Where

²⁷ Public Interest Statement, attached to Applications of AT&T Inc. and Dobson Commc’ns Corp. for Consent to Transfer Control of Licenses and Authorizations, WT Dkt. No. 07-153, at 18-19 (filed with the FCC July 13, 2007) (footnotes omitted).

²⁸ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES, at 19 (Aug. 19, 2010), available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.html> [hereinafter MERGER GUIDELINES]. The FCC staff reached a similar conclusion. See FCC Staff Analysis and Findings, *supra* note 23, ¶ 18.

²⁹ MERGER GUIDELINES, *supra* note 28, at 3.

the resellers' subscribers instead are fully attributed to the resellers, the revenue-based HHI would be 3,279 and the increase in the HHI would be 727.³⁰ Using either approach, the merger would be presumed to enhance market power.

We also explained that postpaid service likely is a relevant market. In that market, we found that the subscriber-based post-merger HHI would be 3,595 and the increase in the HHI would be 724, which falls into the highly concentrated region where the transaction would be presumptively anticompetitive under the Guidelines.³¹

In addition, we also analyzed concentration in an all-wireless market on the basis of spectrum ownership. Concentration in spectrum ownership has significant implications for competition in the provision of wireless service for two related reasons. First, spectrum is an essential input for wireless carriers. Carriers with limited spectrum holdings have limited capacities and are, for that reason, handicapped in competing for wireless subscribers. Second, because there are significant scale economies in the provision of wireless services, a carrier with small spectrum holdings, and a commensurately small share of subscribers, can be expected to have higher costs *per subscriber* than a carrier with large spectrum holdings and a large subscriber share. This cost disadvantage reinforces the effect of the competitive disadvantage that results directly from the carrier's smaller capacity.

In order to account for differences in spectrum quality, we calculated spectrum holdings on the basis of the values carried on each carrier's balance sheet as submitted in its annual filings to the Securities and Exchange Commission.³² Using this measure, AT&T and Verizon together currently account for 66 percent of the value of all spectrum holdings by wireless carriers.³³ With the addition of T-Mobile, AT&T and Verizon would have accounted for 74 percent of the value of all spectrum held by wireless carriers. In contrast, the combined holdings of Clearwire and LightSquared account for just 4 percent.

We also conducted analyses of the (unilateral) incentives of AT&T to raise prices and of the increased incentives of AT&T and Verizon to raise prices in a coordinated fashion after the merger. As part of the evaluation of

³⁰ CRA Declaration, *supra* note 1, ¶ 75. There are a number of resellers, like TracFone, that purchase capacity from wireless carriers on a wholesale basis and use that capacity to provide wireless service to consumers. Whether resellers should be counted as independent firms depends on, among other things, the nature of the contractual relationship between the resellers and the underlying carriers.

³¹ *Id.* ¶ 76. Our calculated HHIs for the postpaid market were based on subscribers because no revenue-based share data were available.

³² Although book values are imperfect proxies for market values, they show clearly that the spectrum holdings of Clearwire and LightSquared are dramatically overstated by the MHz-Pop measure.

³³ CRA Declaration, *supra* note 1, ¶ 85. The AT&T spectrum holdings used in the calculation account for the AT&T's agreement to purchase nearly \$2 billion of spectrum from Qualcomm that was announced in December 2010 and was subsequently approved.

unilateral effect concerns, the 2010 Merger Guidelines call for analysis of upward pricing pressure (UPP). As stated there:

Adverse unilateral price effects can arise when the merger gives the merged entity an incentive to raise the price of a product previously sold by one merging firm and thereby divert sales to products previously sold by the other merging firm, boosting the profits on the latter products. Taking as given other prices and product offerings, that boost to profits is equal to the value to the merged firm of the sales diverted to those products. The value of sales diverted to a product is equal to the number of units diverted to that product multiplied by the margin between price and incremental cost on that product. In some cases, where sufficient information is available, the Agencies assess the value of diverted sales, which can serve as an indicator of the upward pricing pressure on the first product resulting from the merger.³⁴

Thus, this UPP calculation depends upon the margins and prices of the merging firms and on the extent to which the losses of one merger partner when it raises price are diverted to the other merger partner. This calculation should also account for the “recapture rate,” which is the fraction of consumers who would continue to purchase wireless service even after the price increase.

We estimated several UPP variants: single-price gross upward pricing pressure indices (GUPPIs),³⁵ simultaneous-price GUPPIs,³⁶ and the compensating marginal cost reductions (CMCRs).³⁷ For each measure, we calculated the individual values for AT&T and T-Mobile. In our calculations, we used alternative assumptions about the margins earned by these carriers and based our estimates of the diversion ratios between carriers on market shares.³⁸

It is important to note that the GUPPIs do not take into account the additional upward pricing pressure caused by the pricing responses of non-merging firms. Moreover, the GUPPIs and CMCRs do not account for the effects of the cost increases that would be experienced by Sprint and the regional carriers, which we discuss below, nor do they account for potential coordinated effects.

³⁴ MERGER GUIDELINES, *supra* note 28, at 21.

³⁵ The single price GUPPI evaluates the gross upward pressure on the prices of one of the merging firms holding constant the prices of all the other firms, including the merger partner. The post-merger intra-firm feedback effects between the prices of the two merging firms thus are not taken into account. It is a “gross” measure of the post-merger upward pricing pressure because it does not account for any price-reducing effects of marginal cost efficiencies.

³⁶ The simultaneous-price GUPPI assumes that the merged firm would set the prices of AT&T and T-Mobile products simultaneously. It thus takes into account the post-merger intra-firm price feedback effects between the prices of the merging firms. For example, a price increase of AT&T products would increase the incentive to raise the prices of T-Mobile products, and vice versa. However, the simultaneous-price GUPPI does not include any feedback effects from price responses by the non-merging firms.

³⁷ The CMCRs measure the marginal cost reductions for each of the two merging firms that would have to occur simultaneously for the net pricing pressure to be zero for each of the merging firms’ products post-merger.

³⁸ For a discussion of these results, see CRA Declaration, *supra* note 1, ¶¶ 160-65.

Using a margin of 40.7 percent and assuming an 80 percent recapture rate, the T-Mobile single-price GUPPI is 12.2 percent.³⁹ The comparable AT&T single-price GUPPI is 4.9 percent. The simultaneous-price GUPPIs both exceed 5 percent, a threshold used by the DOJ to identify mergers that would lead to unilateral effects concerns. The T-Mobile simultaneous-price GUPPI is 14.3 percent and the AT&T simultaneous-price GUPPIs is 6.5 percent. The CMCRs also are substantial. In order to prevent price increases, the T-Mobile and AT&T marginal costs would need to be reduced by the merger by 23.9 percent and 11.2 percent, respectively.

V. T-MOBILE'S COMPETITIVE SIGNIFICANCE

AT&T's Application attempted to portray T-Mobile as a carrier whose elimination from the market would have little or no competitive significance. For example, AT&T claimed that "[a]s a standalone company... T-Mobile USA would continue to face substantial commercial and spectrum-related challenges."⁴⁰

Although T-Mobile recently has faced a higher churn rate, it still serves more than four times the number of subscribers than the next largest carrier, MetroPCS. Moreover, it has a valuable brand name and other substantial assets and, shortly before its proposed merger with AT&T was announced, T-Mobile provided a highly optimistic picture of its prospects to investors.⁴¹ For example, it pointed to its large subscriber base, its substantial spectrum holdings, and its "strong and future proven technology platform."⁴² It also stated that it had "[e]nough spectrum for medium-term,"⁴³ that it was "ready to capture data market share,"⁴⁴ and that it had a plan to achieve \$1.8 billion in savings by 2013.⁴⁵ It stated that it had "America's largest 4G network and now fastest in the Top 100 markets,"⁴⁶ and that its "HSPA+ platform provides [a] cost effective and technically flexible path to LTE."⁴⁷ In T-Mobile's own words, it was on a "path for moving from

³⁹ A recapture rate of 80 percent is equivalent to an overall demand elasticity of wireless services of about (-0.5), given the assumed margin.

⁴⁰ AT&T Application, *supra* note 15, at 13.

⁴¹ See, e.g., Presentation by Deutsche Telekom and T-Mobile USA, Inc. to Analysts (Jan. 20, 2011), available at <http://www.telekom.com/presentations>.

⁴² *Id.* at 5.

⁴³ *Id.* at 7.

⁴⁴ *Id.* at 18.

⁴⁵ *Id.* at 20.

⁴⁶ *Id.* at 34.

⁴⁷ *Id.* at 39. HSPA+ is an advanced modification of third generation (3G) wireless technology. 3G is currently the predominant technology, allowing for advanced video and other data services as well as traditional voice and texting services and has been the domain of smartphones with web browsing features, full video, etc. such as the iPhone and the various Android-based systems. LTE is a fourth generation (4G) technology that wireless carriers have only recently begun to deploy.

challenged to challenger.”⁴⁸ T-Mobile’s heightened competitive influence resulting from these actions would be eliminated by the merger.

Moreover, T-Mobile’s current difficulties are a fairly recent development. As it noted in its investor presentation, for example, it had grown rapidly between 2001 and 2008.⁴⁹ Despite its performance in the last two years, it could hardly be said that T-Mobile was on an irreversible decline to competitive insignificance. This claim is all the more untenable in light of AT&T’s claims that MetroPCS and Cincinnati Bell are formidable competitors despite their very small market shares, a combined 4.7 percent. Moreover, Sprint fortunes also had declined but AT&T noted Sprint’s “resurgence” and pointed to the fact that it “has reversed recent trends.”⁵⁰

We also noted that there have been numerous instances where T-Mobile initiated or contributed to aggressive price movements or the introduction of innovative equipment. For example, in 2008, in response to an announcement by Verizon, T-Mobile announced flat rate plans for unlimited calls in the United States, which, according to a press report, “raised investor concerns that a price war could break out.”⁵¹ In 2008, T-Mobile was the first carrier to offer a mobile phone that used the Android operating system.⁵² In 2010, T-Mobile reduced the price of the Samsung Galaxy Tablet, which began a round of price cutting for the device.⁵³ Even more significantly, it announced the introduction of “the nation’s fastest 3G wireless network on its latest mobile broadband devices.”⁵⁴ Until the merger was announced, T-Mobile had been specifically targeting AT&T in its advertising.⁵⁵

⁴⁸ *Id.* at 28.

⁴⁹ *Id.* at 15 (“T-Mobile revenues stalled in 2008 after 7 years of rapid growth.”).

⁵⁰ AT&T Application, *supra* note 15, at 79–80.

⁵¹ Sinead Carew, *Unlimited Mobile Plans Spark Price War Concerns*, REUTERS, Feb. 19, 2008, available at <http://www.reuters.com/assets/print?aid=USN1930076320080219>.

⁵² Press Release, T-Mobile USA, Inc., T-Mobile Unveils the T-Mobile G1: The First Phone Powered by Android (Sept. 23, 2008), available at http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Prs_20080923&title=T-Mobile%20Unveils%20the%20T-Mobile%20G1%20%E2%80%93%20the%20First%20Phone%20Powered%20by%20Android.

⁵³ Donald Melanson, *T-Mobile Drops Samsung Galaxy Tab to \$350 On-contract*, ENGADGET, Dec. 15, 2010, available at <http://www.engadget.com/2010/12/15/t-mobile-drops-samsung-galaxy-tab-to-350-on-contract>. See also Chris Ziegler, *Sprint Drops Galaxy Tab Down to \$300, Undercuts Everyone but US Cellular*, ENGADGET, Jan. 12, 2011, available at <http://www.engadget.com/2011/01/12/sprint-drops-galaxy-tab-down-to-300-undercuts-everyone-but-us>; Ben Bowers, *T-Mobile Expected to Cut Galaxy Tab Pricing to \$249.99 (Update: Drop Is Official!)*, ENGADGET, Jan. 26, 2011, available at <http://www.engadget.com/2011/01/26/t-mobile-expected-to-cut-galaxy-tab-pricing-again-to-249-99>.

⁵⁴ Press Release, T-Mobile USA, Inc., T-Mobile to Rollout the Nation’s Fastest 3G Wireless Network with HSPA+ to More than 100 Metropolitan Areas in 2010 (Mar. 24, 2010), available at <http://newsroom.t-mobile.com/articles/t-mobile-HSPA-3G-network>.

⁵⁵ Video Release, T-Mobile USA, Inc., Step Up to Nationwide 4G with T-Mobile (19 Jan., 2011), <http://www.youtube.com/watch?v=W22JccSTDTk&feature=BFa&dist=SPE3D764A5A5A5A5A&index=>

The FCC itself had noted the impact of T-Mobile's past pricing moves. For example, it noted:

In an effort to reduce churn, T-Mobile introduced a lower-priced version of its unlimited national voice plan in the first quarter of 2009 With the subsequent launch of its new "Even More" plans in October 2009, T-Mobile reset prices on tiered offerings at significant discounts to its legacy plans, and brought its pricing structure more closely in line with that of Sprint Nextel, the least expensive nationwide service provider.⁵⁶

The Commission further noted that "T-Mobile's price changes appear to have prompted Verizon Wireless and AT&T to narrow the price premium on unlimited service offerings[,] although it also noted that the unlimited price plans of Verizon and AT&T "remained the most expensive in the industry, even following these price changes."⁵⁷ Based on this experience, it would hardly be reasonable for the Commission to conclude that other carriers, much less carriers from the fringe, "already fill—or could easily move to fill—the competitive role T-Mobile USA occupies today."⁵⁸

Finally, it is important to note that T-Mobile is a significant player in the enterprise market and the regional fringe firms are not.⁵⁹ According to Sprint, T-Mobile frequently bids on corporate opportunities but that is not the case for the regional fringe carriers.⁶⁰ The fringe firms would face significant impediments to expansion into the corporate market because they lack national coverage and have high roaming costs.

VI. EXCLUSIONARY EFFECTS ON SPRINT AND THE FRINGE CARRIERS

Sprint and the fringe carriers are dependent on AT&T and Verizon for essential inputs—backhaul, roaming, and switched exchange access service for terminating wireless calls on the two carriers' local exchange service.⁶¹ Resellers (such as TracFone) are dependent on the national carriers for wholesale service. Although rates for exchange access service for terminating wireless calls are subject to the FCC's dominant carrier regulations, rates for many special access services, in particular rates for backhaul services, have been substantially deregulated. When contracts come up for renewal, AT&T would have the post-merger incentive to raise roaming rates, special access rates, and the rates that it charges to resellers in order to limit the ability of

⁵⁶ 14th CMRS Competition Report, *supra* note 10, ¶ 91.

⁵⁷ *Id.* ¶¶ 91-92. See also FCC Staff Analysis and Findings, *supra* note 23, ¶¶ 21-27.

⁵⁸ AT&T Application, *supra* note 15, at 70.

⁵⁹ Declaration of John Dupree, Attachment C to Sprint Nextel Corporation Petition to Deny In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, FCC Dkt. No. 11-65, DA 799, ¶ 15 (filed with the FCC May 31, 2011).

⁶⁰ *Id.* ¶ 132.

⁶¹ For a detailed discussion of the impact of the proposed merger on the supply of these inputs to Sprint and the fringe carriers, see CRA Declaration, *supra* note 1, ¶¶ 94-103.

Sprint, the regional carriers, and resellers to undercut its higher prices. Verizon would have the incentive to follow in parallel. Moreover, by removing T-Mobile as a purchaser of special access from independent suppliers, any actual or potential competition provided by those suppliers would be weakened, contributing further to an increase in special access rates.

Although the FCC has adopted rules requiring wireless carriers to provide voice roaming services “on reasonable and not unreasonably discriminatory terms and conditions” and data roaming services “on commercially reasonable terms and conditions,”⁶² those obligations have not prevented carriers from denying roaming services to others.

We also found that the merger of AT&T and T-Mobile would further disadvantage Sprint in bidding for handsets.⁶³ The Commission has already noted the disadvantage that smaller carriers face in obtaining timely access to new and innovative handsets. By further increasing the size disparity between Sprint and AT&T, the merger would increase this disadvantage because AT&T would have the incentive to bid more for exclusives, partly in order to protect a higher retail price on its larger market share.

We concluded that, by removing T-Mobile from the market and reducing AT&T’s need to innovate in order to compete, the merger would raise the costs or delay the development of new technologies needed by Sprint and the regional fringe carriers. After the merger, Sprint and the fringe would need to finance more of the development themselves. The collective market share of carriers other than Verizon and AT&T would have fallen by almost one-third, from 36 percent to 24 percent, as a result of the merger. Sprint and the fringe would have had such a small market share when compared to post-merger AT&T and Verizon that mainstream developers and equipment manufacturers might have concluded that Sprint and the fringe carriers did not provide critical mass sufficient to justify developing handsets and equipment for them. Indeed, T-Mobile and Sprint had partnered with Google to develop the Android operating system, a strong and innovative handset rival to the iPhone. By eliminating the possibility that T-Mobile could bear some of the costs of technological development, the merger would have disadvantaged Sprint and the fringe by shifting more of the development costs to them.

We concluded that Sprint’s higher costs caused by the merger and resulting reduction in its market share would squeeze Sprint’s earnings and investible funds. This would magnify Sprint’s existing disadvantages, which would further handicap Sprint in the race to invest and innovate, further reducing innovation competition in the wireless market.

⁶² Order, In the Matter of Application of AT&T Inc. and Qualcomm Incorporated For Consent to Assign Licenses and Authorizations, WT Dkt. No. 11-18, ¶ 52 (Dec. 22, 2011).

⁶³ For a discussion of the impact of the proposed merger on the supply of handsets to Sprint and the fringe carriers, see CRA Declaration, *supra* note 1, ¶¶ 104-07.

These exclusionary effects would have increased AT&T's unilateral incentives to raise price and reinforce the upward pricing pressure that would result from AT&T gaining control over T-Mobile. These exclusionary effects similarly would have increased the ability and incentive of AT&T and Verizon to engage in parallel accommodating conduct and other coordinated conduct. They would thus lead to competitive effects analogous to AT&T gaining partial control over Sprint and the regional fringe carriers.

The ultimate competitive effects of this exclusionary conduct would have meant that the AT&T-T-Mobile merger would have not been a merger of 4 to 3 but much closer to a 4 to 2 merger. In this way, the merger would have recreated the duopoly that existed at the time that the FCC first authorized cellular service and reversed the gains that resulted from subsequent increases in competition. For example, Hausman reports that

the effect of...competition on wireless rates in the U.S. has been significant. Throughout the 1984-1995 period, real, inflation-adjusted cellular rates had fallen at a rate of 4-5% per year. Between 1995 and 1999, however, real cellular rates fell at a rate of 17% per year as [the newly-entered] PCS service providers offered service at prices per minute in bucket plans that were more than 50% lower than existing cellular rates.⁶⁴

This finding reinforces the concern that, post-merger, what would in effect have been an AT&T-Verizon wireless services duopoly, would have led to significant price increases.

Finally, we concluded that the merger likely would facilitate coordinated conduct between AT&T and Verizon, particularly in the postpaid and corporate and governmental account markets.⁶⁵ This coordination could involve parallel accommodating conduct; that is, Verizon would have the incentive to accommodate AT&T by raising its own prices in parallel, and vice versa.⁶⁶ In addition, if T-Mobile were eliminated as a competitor, coordination could involve Verizon and AT&T reaching a common understanding of their mutual interdependence and the gains from cooperative over non-cooperative conduct and then following that strategy. We address this issue more completely below.

⁶⁴ Jerry Hausman, *Mobile Telephone*, in 1 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS 580, 582 (Martin Cave, Ingo Vogelsang & Sumit Majumdar eds., North Holland 2002).

⁶⁵ For a detailed analysis of the effect of the proposed merger on the likelihood of coordination between AT&T and Verizon, see CRA Declaration, *supra* note 1, ¶¶ 170-82.

⁶⁶ The Guidelines describe this conduct as including "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." MERGER GUIDELINES, *supra* note 28, at 24-25.

VII. AT&T's EFFICIENCY CLAIMS

In its Application, AT&T made two main efficiency claims. First, it claimed that the merger would permit it to relieve alleged capacity constraints on its GSM and UMTS networks.⁶⁷ Second, it claimed that it would be able to deploy the next generation 4G LTE service to 97 percent of the U.S. population by some unspecified date, as compared to what it represented as only 80 percent in 2013 absent the merger. According to AT&T, this benefit would be realized by “transition[ing] T-Mobile’s USA’s HSPA services off of its AWS spectrum in many markets and devot[ing] that spectrum to the deployment of LTE services.”⁶⁸

We concluded that AT&T had failed to establish that these claimed efficiencies are cognizable under the standards set out by the Commission and the Merger Guidelines. The fact that the merger would have increased AT&T’s profits did not make the merger efficient or consumer welfare enhancing. First, AT&T did not show that the bulk of its claimed efficiency benefits were merger-specific.⁶⁹ If practical alternatives would achieve some of the benefits, only the incremental benefits are merger-specific. If the merger would merely accelerate the achievement of these benefits, only the value of the reduced delay would be a merger-specific efficiency.⁷⁰ Second, based on the information submitted by AT&T, the magnitude of the claimed efficiencies could not be verified.⁷¹ Third, a significant portion of

⁶⁷ GSM (Global System for Mobile Communications) is a second generation (2G) cellular service that permits only voice, texting and sometimes limited Internet access. UMTS (Universal Mobile Telecommunications System) is a 3G service.

⁶⁸ AT&T Application, *supra* note 15, at 8. The AWS portion of the spectrum band is among the most suitable for the next generation LTE service. AT&T also claimed that it could attain efficiencies associated with channel control and channel pooling. Conceptually, these appeared to be the most likely merger-specific efficiencies, but AT&T failed to quantify their magnitude.

⁶⁹ According to the Commission, “the claimed benefit ‘must be likely to be accomplished as a result of the merger but unlikely to be realized by other means that entail fewer anticompetitive effects.’” Applications of AT&T Inc. and Centennial Communications Corp. for Consent to Transfer Control of Licenses, Authorizations, and Spectrum Leasing Arrangements, Memorandum Opinion and Order, Dkt. No. 08-246, 24 F.C.C. Rcd. 13915, ¶ 90 (2009) [hereinafter AT&T-Centennial Merger Order]. The Merger Guidelines similarly credit “only those efficiencies likely to be accomplished with the proposed merger and unlikely to be accomplished in the absence of either the proposed merger or another means having comparable anticompetitive effects.” MERGER GUIDELINES, *supra* note 28, at 30.

⁷⁰ The Merger Guidelines state: “If a merger affects not whether but only when an efficiency would be achieved, only the timing advantage is a merger-specific efficiency.” MERGER GUIDELINES, *supra* note 28, at 30, n.13.

⁷¹ *Id.* at 30 (“[I]t is incumbent upon the merging firms to substantiate efficiency claims so that the Agencies can verify by reasonable means the likelihood and magnitude of each asserted efficiency, how and when each would be achieved (and any costs of doing so), how each would enhance the merged firm’s ability and incentive to compete, and why each would be merger-specific.”).

the claimed benefits appear to occur far in the future while the competitive harms are large and more immediate.⁷² Thus, it appeared that the efficiency benefits would have been unlikely to be sufficient to outweigh the competitive harms.⁷³

AT&T contended that it would face substantial spectrum constraints sometime in the near future and that the proposed merger would mitigate those constraints. However, it provided none of the underlying data to allow the Commission to determine whether its claim of “spectrum exhaust” was plausible. Moreover, AT&T did not provide information on the breadth and timing of the claimed spectrum exhaust and its impact on service quality. In addition, it seemed clear that there were many geographic areas in which there was sufficient capacity, even by AT&T’s own reckoning.

Moreover, AT&T’s assertions of “spectrum exhaust” seemed to assume that it could do nothing absent the merger to alleviate some or much of those alleged spectrum constraints. If there are practical alternatives for relieving some or all of these constraints, only the benefits not otherwise achievable should be treated as merger-specific and cognizable.⁷⁴

AT&T did not explain in detail its plans to expand capacity absent the merger and how those plans would have been altered by the merger. It did not explain (or provide sufficient data and analysis to show) why other practical alternatives could not have provided some or all of the capacity expansion it claimed for the merger. For example, AT&T claimed that, in order to increase capacity on its current network, it must wait until its GSM subscribers migrate to the more spectrally efficient UMTS band. It did not explain why it would not be practical to use incentives, promotions, or other means

⁷² AT&T-Centennial Merger Order, *supra* note 69, ¶ 90 (“[B]enefits 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.”). *See also* MERGER GUIDELINES, *supra* note 28, at 31, n.15 (“Delayed benefits from efficiencies (due to delay in the achievement of, or the realization of customer benefits from, the efficiencies) will be given less weight because they are less proximate and more difficult to predict.”).

⁷³ AT&T-Centennial Merger Order, *supra* note 69, ¶ 91 (“[W]here potential harms appear ‘both substantial and likely, a demonstration of claimed benefits also must reveal a higher degree of magnitude and likelihood than we would otherwise demand.’”). *See also* MERGER GUIDELINES, *supra* note 28, at 31 (“[T]he greater the potential adverse competitive effect of a merger, the greater must be the cognizable efficiencies, and the more they must be passed through to customers. . . . Efficiencies almost never justify a merger to monopoly or near-monopoly.”).

⁷⁴ Declaration of Steven Stravitz, In the Matter of Spectrum Management Consulting ¶69 (filed with the FCC on behalf of Sprint Nextel Corp. May 29, 2011) (noting that, instead of the proposed merger, “AT&T should pursue new technologies and strategies to use its vast spectrum holdings more efficiently, and thus manage the growing traffic on its network, just as its competitors do”). *See also id.* ¶¶ 41-67 (describing potential alternative strategies).

to achieve more rapid migration.⁷⁵ Ironically, AT&T had proposed to migrate *T-Mobile subscribers* from AWS to the UMTS spectrum.⁷⁶

Moreover, AT&T did not explain why it would be impractical to use its substantial AWS and 700 MHz holdings of spectrum to alleviate the claimed capacity shortage. That spectrum is not being utilized currently. Taking into account all its spectrum holdings, it is not clear that AT&T is spectrum constrained.⁷⁷ In fact, AT&T made public statements in 2010 about its substantial spectrum holdings.⁷⁸

AT&T also could relieve its capacity limitations by creating more efficient spectrum platforms and purchasing or leasing of new spectrum and more rapid development of that spectrum. This is a practical alternative. For example, Sprint is currently pursuing its “Network Vision” strategy that will expand the efficiency of Sprint’s spectrum use as well as exploring uses for Clearwire’s spectrum.⁷⁹ AT&T offered no reason why such alternatives are

⁷⁵ For example, T-Mobile’s CTO noted that it has been “aggressively” migrating its GSM customers to the more spectrally efficient AWS. See Transcript of Briefing by Deutsche Telekom and T-Mobile USA, Inc. to Analysts, at 6 (Jan. 20, 2011), available at <http://www.telecom.de/dtag/cms/contentblob/dt/en/979218/blobBinary/transcript+20012011.pdf> [hereinafter Deutsche Telekom Briefing].

⁷⁶ It also is not clear that this is efficient.

⁷⁷ As recently as January 2011, AT&T stated that “[w]e were having some serious capacity constraints in key markets, and we really saw the backlogs clear. And we spent the last 45 days literally just bringing capacity online in a rather dramatic fashion.” Question and Answer Session, AT&T’s CEO Discusses Q4 2010 Results–Earnings Call Transcript (Jan. 27, 2011), available at <http://seekingalpha.com/article/249133-at-t-s-ceo-discusses-q4-2010-results-earnings-call-transcript?part=qanda>.

⁷⁸ See, e.g., Kevin Fitchard, *AT&T, VZW Respond to Clearwire’s 4G Spectrum Taunts*, CONNECTED PLANET, Mar. 18, 2010, available at <http://connectedplanetonline.com/3g4g/news/att-vzw-respond-clearwire-spectrum-taunts-0318/> (quoting AT&T’s Senior Vice President of Architecture and Planning, Kris Rinne, as saying, “You need to make sure you count all of our spectrum when you make... comparisons.”). Further,

If AT&T fills up its 700 MHz band, it has plenty of unused Advanced Wireless Service (AWS) spectrum to fall back on. And if that band, too, were to become full, AT&T has one of the country’s largest portfolios of cellular and PCS spectrum. That spectrum is all being used right now for 2G and 3G services, but as LTE demand grows, it makes perfect sense to convert high-speed packet access (HSPA) channels and GSM channels to LTE, which can much more efficiently deliver data capacity, Rinne said. “We will have the opportunity to re-utilize this spectrum in the future.”

Id.

⁷⁹ SPRINT NEXTEL CORP., ANNUAL REPORT FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010 (SEC FORM 10-K), at 25 (Feb. 18, 2011):

Consolidating and optimizing the use of Sprint’s 800MHz, 1.9 GHz and potentially other spectrum (such as the 2.5 GHz owned by Clearwire) into multi-mode stations should allow Sprint to repurpose spectrum to enhance coverage, particularly around the in-building experience. The multi-mode technology also utilizes software-based solutions with interchangeable hardware to provide greater network flexibility, which allows for opportunities to evaluate new 4G technologies to better utilize Sprint’s available spectrum.

not practical for it, particularly compared to the \$39 billion purchase price for T-Mobile.

In short, we concluded that most of the claimed efficiency benefits could be achieved by AT&T without the merger. Those benefits would not be merger-specific and thus would not be cognizable under the Merger Guidelines or prior Commission decisions. We also concluded that AT&T's claims of a spectrum shortage were much overstated. In fact, AT&T made public statements in 2010 about the sufficiency of its substantial spectrum holdings. Moreover, its Application indicated that the spectrum shortages that it claimed would be overcome by the proposed merger would not be present in all CMAs and would not occur for several years even in those "affected" CMAs.

Finally, AT&T did not demonstrate that the merger would lead to a roll out of LTE services that is more rapid than would have been the case absent the merger. AT&T compared the post-merger deployment to its own planned deployment schedule over a planning period that ended in 2013. Moreover, AT&T initially claimed that it would use T-Mobile's AWS spectrum to extend the reach of its LTE network "eventually"⁸⁰ and later committed to its deployment to 97 percent of Americans "within six years of closing."⁸¹ However, efficiency benefits that are vague or occur far in the future should be given only limited weight in the balance against the immediate consumer harms that would result from eliminating an important competitor.

VIII. COMPETITIVE ANALYSIS: THE SECOND ROUND

AT&T's response to our initial analysis consisted primarily of an attempt to undermine our unilateral effects analysis by replacing our use of diversion ratios based on market shares with diversion ratios based on net subscriber additions. We responded in three ways. First, we showed that our results were largely unchanged when we replaced diversion ratios based on shares with those based on actual data on subscriber shifts between carriers, so-called porting data. Second, we augmented our initial analysis of coordinated effects with a quantitative analysis of the incentives of AT&T and Verizon to coordinate their behavior after the merger. Third, we undertook a somewhat more detailed analysis of the competitive significance of smaller regional wireless carriers.

At the time of our initial Declaration, we did not have access to the FCC's confidential subscriber porting and share data. By the time of our Reply Declaration, however, we had obtained access to the NRUF/LNP

⁸⁰ AT&T Application, *supra* note 15, at 40.

⁸¹ Joint Opposition of AT&T, Inc., Deutsche Telekom AG, and T-Mobile USA, Inc. to Petitions to Deny and Reply to Comments, In the Matter of Applications of AT&T Inc. and Deutsche Telekom AG For Consent to Assign or Transfer Control of Licenses and Authorizations, at 75 (filed with the FCC June 10, 2011).

wireless subscriber network porting data from the FCC and were able to implement the UPP analysis with estimated diversion ratios based on those data.⁸² Using these alternative estimates of the diversion ratios confirmed our conclusion that the merger would lead to increases in the single-price and simultaneous GUPPIs and in the CMCs, and thus reinforced our concern about the risk of adverse unilateral effects.

In our Reply Declaration, we also formulated a coordinated pricing pressure index (CPPI) to score the incremental impact of the merger on the likelihood of parallel accommodating conduct (PAC) by AT&T and Verizon.⁸³ The CPPI utilizes diversion ratios and margins, as does the GUPPI for unilateral effects. However, the CPPI is designed to focus on coordination, not unilateral effects.

The CPPI reflects the role of the increased share of the merged firm on the incentives to engage in coordinated pricing. The higher share of the merged firm shifts the tradeoffs between participating in PAC versus remaining at a lower priced equilibrium. If firms have stronger incentives to engage in PAC pricing, that will be reflected in a higher CPPI. Thus, the CPPI can be used to assess the extent to which higher market shares from a merger affect the likely success of PAC.

The CPPI scores only parallel accommodating conduct. It does not depend on the acquired firm being a maverick, nor does it rely on a “common understanding” of the likelihood of detection and punishment of deviations from a coordinated outcome. The analytical foundation of the CPPI for gauging PAC is straightforward to explain. Consider two firms, Firm *A* and Firm *B*, that are contemplating price increases. Suppose that Firm *A* contemplates raising its price in period 1 in the expectation that Firm *B* will follow its price increase in period 2. If Firm *A*'s expectation is correct, both firms will continue to price at the higher level and Firm *A* benefits from higher prices from period 2 onward. The cost of this strategy is the sacrificed profit incurred in period 1 before Firm *B* matches. Firm *A* will prefer to initiate this price increase if the discounted value of higher future profits exceeds the lost profits in period 1. Firm *B* faces a similar tradeoff starting in period 2. If it matches Firm *A*'s elevated price, it receives the discounted value of the profit stream as both firms continue to price at the higher level. Alternatively, if it does not match the price increase, Firm *B* receives higher profits in period 2, but prices then revert to the original level from period 3 onward. Firm *B* will prefer to match the price increase as long as the discounted stream of profits at the higher price is greater than

⁸² For a discussion of these results, see CRA Reply Declaration, *supra* note 1, ¶¶ 70-73.

⁸³ For a more detailed discussion of the CPPI, see *id.* ¶¶ 98-103. See also Serge X. Moresi, David Reitman, Steven C. Salop & Yianis Sarafidis, *Gauging Parallel Accommodating Conduct Concerns with the CPPI* (Working Paper, Sept. 8, 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1924516.

the one period gain from not matching prices in period 2. We define the CPPI as the maximum price increase that would benefit one firm by initiating the price increase and would benefit the other firm by matching.

The CPPI depends on the margins and shares of the two coordinating firms, the diversion ratios from one firm to the other when one firm raises its price, and the discount factor that is used to evaluate profit tradeoffs in future periods. If one of the firms acquires a competitor, the respective diversion ratios between the firms generally will change, and this change will affect the CPPI calculation. An increase in the CPPI following an acquisition indicates that the two firms have more incentive to implement PAC once the merger is consummated.

We found that the post-merger CPPI was substantially greater than the pre-merger CPPI for every combination of parameter values that we considered. This indicates that AT&T and Verizon would have had a significantly greater incentive to participate in PAC following the merger and that the maximum sustainable coordinated price level would rise.

We also conducted a somewhat more detailed analysis of the competitive significance of carriers other than AT&T, Verizon, Sprint, and T-Mobile. We found that there are a number of reasons that fringe carriers such as MetroPCS, Leap, and U.S. Cellular would be highly unlikely to be able to reposition their services to compete significantly against the postpaid products offered by AT&T, Verizon, and Sprint. These fringe carriers currently have small shares of national wireless service, lack their own national network footprint, and have higher costs and inferior roaming services as a result. They also have low brand awareness and recognition, and they face barriers in securing the higher-end, most desirable handsets. Moreover, two of the three largest fringe carriers (MetroPCS and Leap) offer only prepaid services and so currently have products, business models, and cost structures that would require significant changes in order to develop a competitive postpaid offering that could effectively compete with the large national carriers. Thus, we concluded that these carriers were unlikely to be able to “take up the slack” (that is, replace the lost competition) that would likely result from the merger of AT&T and T-Mobile.

IX. COMPETITIVE ANALYSIS: THE THIRD ROUND

Several months after its initial filings and subsequent to the end of the submission schedule in the FCC proceedings, AT&T surprised the Commission by announcing the results of two new interrelated models: an engineering model and a merger simulation model. We interpreted this after-the-fact surprise submission to be an admission by AT&T that its initial filings were inadequate. AT&T’s new analysis was conducted for only 15 CMAs.⁸⁴ As noted by the FCC staff,

⁸⁴ These are identified in FCC Staff Analysis and Findings, *supra* note 23, n.373.

[b]ased 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 public interest benefits in the form of lower mobile wireless industry prices, higher service quality, and increased industry output.⁸⁵

The staff concluded, to the contrary, that “the models provided are abstract, not robust to reasonable changes in their assumptions, not consistent with each other or, in many cases, the Applicants’ internal documents, and have no demonstrated predictive value.”⁸⁶

Because we had access to confidential information that was provided by the Applicants to the FCC, we were able to conduct detailed analyses of the models and we had numerous discussions with the FCC staff regarding many of the flaws that we had identified in AT&T’s submissions.⁸⁷ Because of confidentiality limitations, we cannot describe these results in detail here. We can, however, report that our results and conclusions are highly similar to those ultimately reached by the FCC staff.

Among the numerous shortcomings of AT&T’s submissions, we identified the following. First, the simulation model did not even purport to address certain of the competitive concerns raised by the merger, for example that the acquisition would be likely to lead to coordination between AT&T and Verizon in setting prices. It also failed to address the fact that it would lead to a reduction in innovative activity by eliminating T-Mobile as an independent competitor, and that it would lead to exclusionary effects in the provision of handsets and network infrastructure. The simulation model did not take into account the fact that the merger would lead to higher rates for roaming and backhaul services to AT&T’s rivals, and that it would lead to increased concentration in the enterprise market, where the number of competitors would be reduced from four to three.

Second, the simulation model was applied in only 15 geographic areas selected by AT&T. This raises the issue of whether its results regarding the efficiencies that AT&T attributes to the acquisition, and thus the competitive effects of combining AT&T and T-Mobile, are representative of those that would obtain in the large number of other markets that comprise the remainder of the country.

Third, the simulation model generated unrealistic predictions both of the market share of the stand-alone AT&T and of the number of subscribers that it would serve. Fourth, the simulation model was inconsistent with the practices and admissions of AT&T regarding the geographic scope of the market. Specifically, the model assumed that the wireless carriers set service

⁸⁵ *Id.* ¶ 129 (footnote omitted).

⁸⁶ *Id.* ¶ 131.

⁸⁷ In this connection, the FCC notes that “Sprint argued that the economic model uses ‘inconsistent inputs and assumptions, overstates the alleged efficiencies and understates the anticompetitive effects of the proposed transaction.’” *Id.* ¶ 137.

prices based on conditions in each local area when in fact, those prices are set on a national basis.

Fifth, AT&T stated that it intended to eliminate the T-Mobile brand and its service plans for new subscribers. As a result, the T-Mobile plans would have remained available only to T-Mobile legacy subscribers and, apparently, only until they upgrade (or downgrade) their devices or change service plans. However, the simulation model did not take this fact into account and, instead, made the contrary assumption that the T-Mobile brand and service plans would remain available to all consumers after the merger. Sixth, the marginal cost estimates used in the simulation model were inconsistent with the costs in the engineering model.

Seventh, although the engineering model computed the number of cells that would have to be split to meet demand for additional capacity, it then failed to target the splits to the cells that it has determined are overloaded. As a result, it often mistakenly calculated that more costly alternatives had to be employed to expand capacity before the merger even when the assumed limit to cell splitting had not been reached. The result was to dramatically overstate the costs of capacity expansion by AT&T in the absence of the merger and thus to overstate the efficiencies that would result of the merger. Finally, the engineering model made assumptions that were inconsistent with AT&T's own business documents.⁸⁸ Ultimately, the FCC staff concluded 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 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 . . . and is inconsistent with the engineering model on which it relies for critical inputs.⁸⁹

As for the engineering model, the FCC staff reached the conclusion that

the engineering model on which the Applicants base their claims of reduced network costs resulting from the proposed transaction is also flawed 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

⁸⁸ Many of these shortcomings were also identified in FCC Staff Analysis and Findings, *supra* note 23. See, e.g., *id.* ¶ 141 (only unilateral effects considered); *id.* ¶ 142 (analysis ignores proposed withdrawal of T-Mobile services); *id.* ¶ 143 (model predicts that standalone AT&T output would decline in every market between 2011 and 2014); *id.* ¶ 144 (inconsistency between assumed output in engineering model and output predicted by simulation model); *id.* ¶ 147 (flaw in cell-splitting algorithm); *id.* ¶ 152 (unreasonably large assumed market demand elasticity); *id.* ¶ 150 (employing T-Mobile's margin as AT&T's margin); and ¶ 169 (unrepresentativeness of markets analyzed).

⁸⁹ *Id.* ¶ 13.

magnitude. Its output of predicted network costs is therefore an unreliable input into the economic model, further undermining the economic forecasts from that model.⁹⁰

X. CONCLUSION

Given the shortcomings of AT&T's antitrust analysis—and its failure to justify the efficiencies that could be expected from the proposed merger in any cognizable way—it is not surprising that the DOJ filed suit to enjoin the merger and that the FCC Staff registered substantial concerns about its adverse effects. One lesson to be learned by the parties considering a merger is that if the merger's acceptability requires a showing of substantial efficiencies, the support for those efficiencies must be rigorous and consistent with past firm practices, well documented, able to survive at least simple and obvious robustness checks, and carefully integrated with the competitive effects analysis.

Our analysis indicated that, if the AT&T-T-Mobile merger had been approved, it would likely have been harmful to wireless consumers and competition, whether analyzed in terms of a national market or local markets. By removing T-Mobile as an independent competitor, the merger would have given AT&T the unilateral incentive to raise prices and also would have facilitated anticompetitive coordination between AT&T and Verizon. In addition, unlike most mergers, this transaction would have led to significant exclusionary effects by raising the costs of Sprint and the smaller regional competitors. These exclusionary effects would have made it less likely that these weakened competitors would be able to constrain the pricing of AT&T and Verizon and, as a result, would have increased the likelihood of adverse unilateral and coordinated effects on consumer welfare. Innovation also may have been slowed as a result of the merger. Approval of the merger would have moved the industry toward an entrenched duopoly in which Sprint was marginalized and additional strong national competitors were less likely to emerge.

Because the competitive harms that would have resulted from approval of the merger were neither minor nor localized, we concluded that they could not be cured either by localized divestitures or behavioral conditions and that the only remedy that could have addressed these harms was to prohibit the merger. If the merger had been approved, there would have been just three national competitors, including one (Sprint) that would have been substantially weakened, and a significant risk that the wireless market would revert to a duopoly.

These conclusions were echoed both in the complaint brought by the DOJ and in the Staff Analysis of the FCC. The complaint alleged that

⁹⁰ *Id.*

[i]f the proposed acquisition is consummated, AT&T will eliminate T-Mobile as an independent competitive constraint. As a result, concentration will increase in many local markets and competition likely will be substantially lessened across the nation, resulting in higher prices, diminished investment, and less product variety and innovation than would exist without the merger, both with respect to services provided over today's mobile wireless devices, as well as future innovative devices that have yet to be developed.⁹¹

The Staff Analysis concluded that “[a]t 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 benefited wireless customers throughout the United States. The potential loss of this competitive force in the market is a cause for concern.”⁹²

⁹¹ DOJ Complaint, *supra* note 18, ¶ 40.

⁹² FCC Staff Analysis and Findings, *supra* note 23, ¶ 1.