



VIEWS AND NEWS

ECONOMICS AND TECHNOLOGY, INC.

May 2011

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Back in 1993, an amendment to the *Communications Act* was tacked onto federal budget legislation (the *Omnibus Budget Reconciliation Act of 1993*) that preempted state regulation of wireless service rates, while retaining state authority over other “terms and conditions” associated with these services. Although §332(c)(1) authorizes the FCC to regulate wireless rates, the Commission has never done so, concluding that forbearance from regulation of CMRS carriers will promote competition in the wireless market and, by implication, relying upon that competition to assure that rates will be just and reasonable. The same statute, however, leaves open the possibility that state-level regulation might be reinstated if certain specific conditions arise:

... a State may petition the Commission for authority to regulate the rates for any commercial mobile service and the Commission shall grant such petition if such State demonstrates that -

- (I) market conditions with respect to such services fail to protect subscribers adequately from unjust and unreasonable rates or rates that are unjustly or unreasonably discriminatory; or
- (ii) such market conditions exist and such service is a replacement for land line telephone exchange service for a substantial portion of the telephone land line exchange service within such State.

There is a growing body of evidence – much of its coming from AT&T and T-Mobile in support of their proposed merger – that both of these conditions are now fully satisfied at a national level.

- AT&T and T-Mobile have in their Application to merge demonstrated the presence of scale and scope economies so substantial as to require a firm of a size even greater than either of these two carriers standing alone, and compelling the conclusion that smaller rivals cannot be expected to achieve the level of efficiency that they would need to take on a post-merger AT&T or a Verizon over the long term.
- Wireless service is no longer a luxury, it has become an essential public service. The most recent study released by the Center for Disease Control and Prevention found that “[a]s of the first half of 2010, more than one in four American households (26.6%) had only wireless telephones.” As of December 2010, there were some 302.9-million wireless phones in use in the United States. One study estimated that as of the end of 2010 roughly one-third

of these were smartphones, a figure that is projected to increase to 44% by the end of 2012. Wireless telecom for voice, e-mail, web access and other applications is now a critical element of all small, medium and enterprise business operations.

State-level regulation of wireless rates may, at this point, be inefficient or even impractical in that most wireless carriers have adopted uniform *national* pricing regimes, but the need for regulation of wireless rates as envisioned by Sec. 332, coupled with the extreme cost advantages seemingly available only to the very largest wireless providers, indicates the need for a fundamental reexamination of the existing forbearance regime concurrently with the review of the current merger application.

AT&T and T-Mobile identify numerous network synergies and efficiency gains that only increased scale and scope can create.

AT&T and T-Mobile contend that their merger “will generate strong and diverse public interest benefits that would not occur but for this transaction.” The central theme of this “public interest” showing is that by combining their networks and other assets, the two carriers will realize a number of efficiencies and associated cost savings that would not arise were the two firms to continue their separate existence, and that these efficiency gains will result in lower prices overall:

[The merger] will create immense network and spectrum synergies that will alleviate the capacity constraints that the applicants would otherwise be left to address, far less efficiently and effectively, on their own. It will thereby increase capacity, enhance efficiency in the use of scarce spectrum resources, and significantly improve quality of service. This expanded capacity will benefit not only the applicants and their customers, but consumers in general.

These operational and efficiency benefits, the two carriers claim, will increase total industry output and thus produce lower prices than would prevail in the absence of the transaction.

AT&T and T-Mobile even as separate firms are the second and fourth largest providers of wireless services in the United States with 31.5% and 11.0% of the national market, respectively. Yet they have now put forward evidence that even entities of their enormous size, scale and scope are still not individually large enough to realize the “immense network and spectrum synergies” that would arise if permitted to join and thereby instantly grow to a 42.5% share of the US wireless market. It then follows that rivals of a size, scale and scope any smaller than this post-merger AT&T/T-Mobile entity will be utterly incapable of offering a

serious competitive challenge. In that event, these smaller and far less efficient competitors can no longer be relied upon to constrain the post-merger entity's rates or, of direct relevance to the question that the FCC must now address, to force the post-merger entity to flow its newly-acquired efficiency gains – gains that will be unique to its own operations – through to its customers.

That there are significant economies of scale and scope in the provision of wireless services is not without a strong technical basis. AT&T and T-Mobile have shown that by combining and pooling the two networks, they can eliminate a duplicative control channel and in so doing “free up an additional 4.8 to 10 MHz of spectrum in each market where AT&T and T-Mobile USA offer GSM service ..., greatly improving the combined company's flexibility to meet capacity and performance challenges,” enabling the combined company to reallocate the spectrum currently required for that then-redundant control channel to voice and/or data “payload” transport. Their evidence has shown that, by combining the smaller blocks of spectrum now held separately by each of the two carriers into a single larger pool of voice and/or data channels, the call-carrying capacity of the pooled spectrum would be significantly greater than if the frequency blocks continued to exist in isolation from one another. This “channel pooling” will “allow more customers to be served per MHz of spectrum deployed, providing a substantial capacity boost even in areas where both companies' networks are heavily loaded.” They have shown that by “optimiz[ing] the spectrum allocation in areas where one company's network and spectrum are underutilized relative to the other's, ... improvements in both performance and capacity in those areas” can be achieved. They have explained that these efficiencies will allow the merged entity “to accelerate the shift of spectrum from less spectrally efficient to more spectrally efficient network technologies (i.e., GSM to UMTS and UMTS to LTE).” Significantly, the very same economic analysis of spectrum, network and operational efficiencies being advanced by AT&T and T-Mobile in support of *their* merger could also be used to justify a future combination of a post-merger AT&T/T-Mobile and Verizon Wireless.

But will consumers actually benefit?

Assuming that the proposed combination of AT&T and T-Mobile is able to produce the various efficiency/operational gains and capacity enhancements as described, there is no assurance that any of these gains will be flowed through to the ultimate consumer in the form of price reductions that are greater than they would otherwise have been in the absence of the merger of these two carriers. Indeed, both economic theory and the factual evidence being proffered in this case indicate precisely the opposite outcome – i.e., that it is far more likely that any such efficiency gains or cost reductions arising from the increased economies of scale and scope that would result from the merger will be retained by the post-merger entity and not flowed through to consumers as AT&T and T-Mobile contend.

There is, in fact, no automatic process by which the claimed efficiency gains and reductions in average and marginal cost will be flowed through to end-user customers. On the contrary, the post-merger AT&T/T-Mobile will flow these cost savings through to customers only if compelled to do so by competitive marketplace forces. Thus, unless the merger operates to create corresponding efficiency gains across *all* wireless service providers large and small, competitive marketplace forces will be incapable of bringing about

the consumer benefits being claimed.

In non-price-regulated markets such as the existing market for wireless services in the United States, each carrier can be expected to set its price so as to maximize its profits over some reasonable time frame. Even if the market demand for a given product or service is relatively price-inelastic, the demand confronting any individual provider in a competitive market tends to be relatively price-*elastic* – the typical situation facing individual firms in multi-firm markets. In such a case, a price reduction can lead to increased revenues and profits – particularly where the firm faces economies of scale and successively lower marginal costs as its output increases – a condition that is also typical of firms in industries characterized by high fixed costs, such as telecommunications. If the overall market demand for a product or service is relatively price-elastic – a condition that is common in markets for “discretionary” goods such as existed for wireless services during their ramp-up period – price reductions will similarly drive up aggregate revenues and, if subject to economies of scale, will also drive up aggregate profits.

The merger partners argue that cost savings arising from their merger will be flowed through to consumers. They contend that this view is supported by the precipitous drop in wireless price levels over the 1996-2010 period that, they say, “was achieved in part through past mergers which led to the creation of more efficient carriers.” Over that same period, there was a major escalation in total wireless usage, climbing from an annual rate of just 24 billion minutes in June 1996 to 1.1 trillion by December 2010. And there was also a large price decrease. industry-wide, carriers' average revenue per voice minute (ARPM) fell from \$0.41 in June 1996 to less than \$0.05 in June 2010. Significantly, nowhere in their evidence do the two companies contend that these price reductions were driven specifically by competition in the wireless industry, or that lesser price reductions would have taken place were the wireless market not subject to the effective competition that they claim to exist.

Since the earliest days of analog cellular Advanced Mobile Phone Service (AMPS) operating in the 800 MHz band, the succession of technological innovations such as the conversion to digital, the release of large blocks of additional spectrum, and the licensing of additional Personal Communications Service (PCS) carriers have all helped to produce a quantum increase in the channel-carrying capacity of the wireless infrastructure in the US. These developments have resulted in a large drop in the average cost per minute, and have enabled carriers to reduce their per-minute prices while still operating profitably.

Growth in Total US Wireless Voice Revenues 1996 to 2010			
Year	Price (ARPM)	Voice minutes	Total revenue
1996	\$0.41	24-billion	\$9.84-billion
2010	\$0.05	1.2-trillion	\$60-billion

But that does not in and of itself demonstrate that the wireless market is subject to effective, price-constraining competition or that “competition” was the driver of these large price decreases. Indeed, competition or no, it is equally clear that those price

reductions were directly responsible for the enormous jump in wireless carrier revenues that the price-driven growth in demand engendered. As the table demonstrates, the 88% price decrease resulted in – or at least materially contributed to – a six-fold increase in aggregate voice revenue over that same period. It's easy to point to such large price reductions as demonstrating that the market is competitive, but this same outcome is also entirely consistent with a profit-maximizing price/output strategy being pursued by a small number of massively large producers in a highly-concentrated oligopolistic market.

The same network properties that create merger synergies also create barriers to organic expansion by smaller carriers.

A longstanding and well-established bedrock principle of economic theory is that the presence of effective competition in any market will force prices to levels that are at or very close to long run incremental cost. If, due to differences in their scale of operations or other factors, individual firms confront different long run incremental costs, the lower-cost firms may be able to convert their cost advantage into excess profits. In a market with many incumbents, an attempt by any one of them to unilaterally raise price materially in excess of cost will cause customers to shift their purchases to lower-priced rival providers, ultimately forcing the firm that had raised its price to bring it back down to the competitive level. If the market price level rises above cost and in so doing produces supracompetitive price levels for the incumbent firms, new providers will rapidly enter the market to take advantage of these profit opportunities, thereby increasing overall supply and driving market price levels back down to cost. Such additional entry is possible, however, only where there are no or minimal barriers to such entry. The presence of such barriers can slow or block entry, making it possible for the incumbents in the market to maintain above-cost prices and supracompetitive profits for an extended period of time or, in some cases, indefinitely where barriers are so formidable as to make entry or expansion all but impossible.

In recent years, economics literature addressing “contestable markets” has posited the notion that the mere threat of potential entry, rather than actual entry, may be sufficient to discipline incumbents to maintain prices at cost-based competitive levels. Proponents of “contestable markets” theory argue that incumbents will price at competitive levels precisely to discourage entry from occurring, thereby assuring a competitive price outcome even in the absence of actual competition. But where entry is so difficult, costly or involves lengthy and protracted start-up efforts, or where the incumbents possess cost, technological, brand identification, infrastructure, and/or an embedded base of customers that would be difficult or impossible for a rival to replicate, or where, as here, the supply of a critical input (spectrum in this case) is finite and strictly limited, the threat of potential entry would be seen as empty at best. Absent an actual, *bona fide* possibility of entry, there would be nothing to prevent incumbents in a market from setting prices at profit-maximizing levels.

The very same economies of scale and scope identified by AT&T and T-Mobile as creating substantial efficiency gains and cost savings for the merged entity *vis-à-vis* their continued separate operation work to increase the barriers to entry by potential competitors. Perhaps even more important, these very same conditions create additional and significant efficiency gains for the post-

merger entity that smaller rivals will be incapable of replicating. If the various firms being portrayed by AT&T and T-Mobile as their “competitors” are unable, due to the considerably smaller scale and scope of their operations, to achieve comparable levels of cost and production efficiencies – including in particular spectrum efficiencies – they cannot provide a meaningful competitive challenge and as such cannot be relied upon to force the post-merger AT&T/T-Mobile entity to pass on the efficiency gains arising from the merger to its customers.

AT&T Mobility is the second largest wireless carrier in the US, and currently serves approximately 96-million connected devices. T-Mobile is the fourth largest US wireless carrier, and currently serves roughly 34-million connected devices. Yet despite the extensive scale and scope of both carriers’ operations, they portray their individual ability for any organic expansion beyond their existing size as being extremely difficult:

- “AT&T faces severe capacity constraints and cannot simply wait for the next major auction to resolve them.”
- “AT&T’s capacity constraints also prevent it from dedicating enough spectrum to launch LTE, deploy it optimally, or meet expected demand.”
- “T-Mobile USA likewise faces capacity constraints in a number of key markets. It also has no clear path to deploy LTE services because it has already dedicated its spectrum resources to today’s less spectrally efficient technologies.”
- “T-Mobile USA also faces new questions about its long-term capital support, in part because its parent company, Deutsche Telekom, must dedicate significant capital resources to broadband deployment in Germany and the rest of Europe. Indeed, Deutsche Telekom recently announced that, in light of its capital constraints, T-Mobile USA can no longer rely on its parent for investment funding and must instead ‘fund its future itself.’”
- “... building new cell sites is difficult, expensive, and – most importantly – prone to multi-year delays.”
- “In a number of markets, AT&T is burning through its existing spectrum at an accelerating rate. Whereas in 2004 it took 24 months in major markets to exhaust 10 MHz of spectrum, from 2008-2010 growing UMTS demand caused AT&T to burn through 10 MHz in half that time or less in some major markets. As a result, in many urban, suburban, and rural markets, AT&T faces a growing capacity crunch.”
- “... spectrum constraints currently keep AT&T from launching and supporting more spectrally efficient UMTS services at all.”
- “AT&T’s average spectrum holding is insufficient to permit deployment of the most spectrally efficient LTE services, whereas the combination of AT&T’s and T-Mobile USA’s spectrum will address the situation.”
- “T-Mobile USA faces spectrum constraints of its own, despite its substantial investments in spectrum and network facilities.”
- “Because of this ‘explosive growth in demand,’ T-Mobile USA ‘faces spectrum exhaust in a number of markets.’”
- “T-Mobile USA has ‘no clear path’ to LTE.” “T-Mobile USA

has already dedicated its current spectrum to UMTS/HSPA+ and GSM technologies.” “As a result, T-Mobile USA ‘does not have access to the spectrum needed to deploy LTE in an economically and technically sustainable fashion.’” “Even in areas where T-Mobile USA could try to ‘reform’ its existing spectrum to make room for LTE, it would face serious competitive disadvantages.”

- “T-Mobile USA could not acquire new spectrum unless it obtains the necessary billions of dollars in investment capital, and it can no longer look to its corporate parent for that purpose.”
- “AT&T cannot ... add [cell] sites fast enough to meet the projected rate of demand for more capacity ...”
- “The tremendous cell density improvement that this transaction achieves where and when we need it simply could not be replicated by a new build program. T-Mobile USA’s cell sites are the product of many years of intense effort to identify and secure the best cell site locations that would provide the greatest propagation benefits. ... Some of T-Mobile USA’s well-placed cell sites appear to be in locations where we likely could not replicate them (e.g., because space is unavailable). But even where duplication would be possible (albeit at much greater cost), it could not be accomplished in time to meet customer demand.”

Yet, AT&T and T-Mobile persist in portraying the mixed bag of far smaller and significantly less financially endowed rivals as somehow presenting so formidable a competitive threat that, if required to maintain their present independent existence, neither would be capable of providing an effective competitive response. In addition to Verizon Wireless and Sprint, the Applicants include within their list of carriers purportedly presenting a serious challenge such “low cost carriers” as “MetroPCS and Leap/Cricket as well as multi-area and regional competitors such as U.S. Cellular, Cellular South, Cincinnati Bell, nTelos, Atlantic Tele-Networks and others.” Also included in their litany of competitive threats is the “[a]dditional competition at the wholesale and retail level [that] is enabled by recent entrants with substantial spectrum, LightSquared and Clearwire.” And most worrisome, they say, “future entrants will have the opportunity to obtain spectrum in future FCC auctions and will be able to deploy whatever ‘next generation’ technology is available at that time.” But why is it that neither AT&T nor T-Mobile will not themselves “have [exactly the same] opportunity to obtain spectrum in future FCC auctions and will be able to deploy whatever ‘next generation’ technology is available at that time”? They don’t say.

Clearly, there is a massive disconnect between AT&T/T-Mobile’s contention that they are incapable of organic growth and so cannot compete with far smaller firms absent their merger, and their assurance that the existence of these much smaller firms creates a sufficiently competitive market as to protect consumers from unilateral or coordinated price increases or other anticompetitive tactics on the part of a merged AT&T/T-Mobile. There is no *a priori* basis to believe or to expect that the laundry list of barriers to organic expansion that are enumerated by AT&T and T-Mobile do not also confront, in some manner, each and all of the “competitors” whose expansion they fear. Certainly all incumbents confront the same overall spectrum availability constraints. Indeed, as has been demonstrated in the past, the larger wireless carriers generally have the financial resources to outbid smaller rivals in spectrum auctions.

The various inefficiencies of relatively small blocks of spectrum and the various benefits of pooling have an even greater negative impact upon smaller service providers. All wireless carriers confront downward-sloping average and marginal cost curves, and due to the substantially smaller scale and scope of their operations, the smaller carriers find themselves operating at a much higher average cost than the behemoths with which they compete, among which are AT&T and T-Mobile.

The need to reintroduce price regulation of dominant wireless carriers

An economic activity calls for economic regulation where two conditions are satisfied: (1) Its production is characterized by substantial economies of scale and scope and the persistence of decreasing average costs to a level of output approaching total market demand, such that minimum average cost can only be achieved by one or at most two providers; and (2) the service being produced is a critical input to other economic activity or is itself an essential public service “vested with the public interest.”

Persistent excessive pricing of wireless service has the same detrimental impact upon the US economy as excessive pricing of any essential public utility service – water, energy, transportation, and traditional wireline telecom. Section 332(c)(3)(A) expressly provides for reinstatement of regulation of wireless rates when, as now, these specific conditions are satisfied.

And they are. Certainly a 26.6% level of wireless-for-wireline replacement qualifies as representing “a substantial portion of the telephone land line exchange service” as contemplated in the statute. AT&T and T-Mobile have shown that the presence of scale and scope economies so substantial as to require a firm of a size even greater than either AT&T or T-Mobile standing alone.

If the merger is to be approved, it is essential that the Commission concurrently put in place a regulatory mechanism capable of assuring that the various economic and operational efficiencies being ascribed to the merger will actually inure to individual residential and business consumers and to the economy overall. Approval of the transaction while the current forbearance regime remains in place would “fail to protect subscribers adequately from unjust and unreasonable rates or rates that are unjustly or unreasonably discriminatory,” and would thus be inconsistent with the public interest.

This article was adapted from a Declaration by ETI’s President Dr. Lee Selwyn prepared for the Ad Hoc Telecommunications Users Committee and filed on May 31, 2011 in the FCC docket examining the AT&T/T-Mobile merger, WTNo. 11-65. The complete declaration is available on ETI’s website, at:

<http://www.econtech.com/library/ETIAdHocATT-T-MobileDecl.pdf>

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