



THE FREE STATE FOUNDATION

A Free Market Think Tank for Maryland.....Because Ideas Matter

Perspectives from FSF Scholars
October 14, 2011
Vol. 6, No. 26

**The Department of Justice's Case Against the AT&T/T-Mobile Merger:
A Faulty Static Marketplace Vision**

by

Randolph J. May* and Seth L. Cooper**

On September 21, U.S. District Judge Ellen Segal Huvelle set a February 13, 2012, trial date for *U.S. v. AT&T* – the U.S. Department of Justice's (DOJ) antitrust lawsuit seeking to block AT&T's proposed acquisition of T-Mobile. Without offering a "bottom-line" judgment as to the ultimate merits of the case, we do suggest that a reading of DOJ's complaint reveals a number of significant shortcomings in its effort to show that the AT&T/T-Mobile combination would substantially harm innovation, investment, and competition in the wireless market.

Above all, DOJ's complaint suffers from what is primarily a static market approach to wireless services. In reality, however, wireless is one of our nation's most dynamic markets, characterized by innovation, a variety of service and product choices, and a multitude of competitive price options. DOJ's static outlook includes over-reliance on Herfindahl-Hirschman Index (HHI) figures supposedly indicating levels of market concentration. But HHI does not by itself say whether markets are ultimately competitive or not, and this is particularly true with respect to dynamic markets such as advanced telecommunications. What matters more in dynamic markets is whether overall market conditions are conducive to continued innovation and competition that can give rise to new and disruptive services that consumers value.

The Free State Foundation
P.O. Box 60680, Potomac, MD 20859
info@freestatefoundation.org
www.freestatefoundation.org

DOJ's static view is also embodied in its complete dismissal of potential substitutes in the broader advanced telecommunications market. That market is characterized by converging technologies that include various types of fixed mobile and wireline platforms for delivering voice, video and data services. Dismissing such potential substitutes that exist across technological platforms, based only on arguments about demonstrated price-constraining effects, entails reliance on what even the FCC admits are difficult marketplace determinations that ignore the realities of telecommunications economics.

A static view is also evidenced by DOJ's failure to take seriously 4G developments in its complaint. A forward-looking view of the market would put significant emphasis on the migration of wireless networks to 4G standards. Such a forward-looking perspective should take into account the pre-conditions for rapid 4G deployment – in this instance, an environment that incentivizes and is conducive to innovation and investment in next-generation facilities and services.

Since the primary arguments advanced in DOJ's complaint rest on a static view of the market that ignores its dynamism, and the availability of substitutes, DOJ's complaint falls short in showing that an AT&T/T-Mobile combination would likely result in substantially less competition. DOJ should prevail only if it can present convincing evidence demonstrating the merger's likely anticompetitive effects – and only if it does so in a way that factors in forward-looking considerations about wireless and the advanced telecommunications market.

Brief Background: From AT&T/T-Mobile to *U.S. v. AT&T*

On March 20, 2011, AT&T Inc. announced its plans to acquire T-Mobile USA, Inc., a subsidiary of Deutsche Telekom AG.¹ Under the terms of the deal, AT&T agreed to acquire from Deutsche Telekom all of T-Mobile's stock for \$39 billion.² It is estimated that the merged entity would serve approximately 132 million customer connections to mobile wireless devices by combining AT&T's approximately 98.6 million connections with T-Mobile's approximately 33.6 million connections.³ A month after public announcement of the proposed merger, AT&T and T-Mobile filed their public interest statement and applications seeking the FCC's consent to the transfer of control of T-Mobile's spectrum licenses to AT&T.⁴

At the same time, DOJ was conducting its own review of the merger pursuant to the Hart-Scott-Rodino Act.⁵ On August 31, however, DOJ filed a complaint with the U.S. District Court for the District of Columbia.⁶ DOJ's complaint alleges the effect of the proposed AT&T/T-Mobile merger "likely will be to lessen competition substantially in interstate trade and commerce in the relevant geographic markets for mobile wireless telecommunications services, and enterprise and government mobile wireless telecommunications services, in violation of Section 7 of the Clayton Act."⁷ And it asks the court to block the merger.⁸

U.S. District Judge Ellen Huvelle set a February 13, 2012 trial date for *U.S. v. AT&T*.⁹

DOJ's Complaint Against AT&T/T-Mobile Takes a Static Market View

In prior FSF writings we have criticized the FCC's regulatory policy as being too frequently guided by static market analysis and snapshot pictures of market share, to the detriment of potential competition considerations and the disruptive nature of change in high-technology markets.¹⁰ The FCC has typically used a static approach to the advanced telecommunications market to justify pro-regulatory action. And as other FSF writings have pointed out, in so doing the FCC has ignored the competitive effects of intermodal or cross-platform competition arising from technological convergence.¹¹ A dynamic approach would more likely regard legacy regulatory mandates or new rules as unwarranted in light of rapid innovation and intermodal competition in the market. Without taking a position on the ultimate merits of *U.S. v. AT&T*, in this paper we offer a similar critical assessment of DOJ's complaint in the case.

As will be discussed below, DOJ's complaint contains several indicators of a static approach with respect to the wireless market and to the advanced telecommunications market in general. Because the basic arguments set out in DOJ's complaint ignore the dynamic aspects of today's market, on its own terms the complaint fails to make a convincing showing that that result would likely occur. Should DOJ hope to prevail in its antitrust lawsuit against AT&T, it will have to proffer arguments and evidence that clearly and convincingly demonstrates the merger's alleged anticompetitive effects in a manner that takes account of forward-looking considerations regarding wireless and the advanced telecommunications market.

DOJ's Complaint Over-Emphasizes Market Concentration and Downplays Dynamism

DOJ's static perspective in challenging AT&T/T-Mobile is evidenced by its over-emphasis upon existing market share and concentration. In particular, DOJ's complaint draws significant attention to Herfindahl-Hirschman Index (HHI) estimates.¹²

HHI is a measure of industry concentration. It is derived by squaring the market share of each firm. As DOJ's complaint explains: "HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the HHI is 2,600 ($30^2 + 30^2 + 20^2 + 20^2 = 2,600$)."¹³ The range of the HHI is from 0 to 10,000. The HHI score grows larger where there are fewer competitors and larger disparities in their respective sizes. And the score becomes smaller when the market includes large numbers of competitors nearing equal size. The *Horizontal Merger Guidelines* issued by the DOJ and the Federal Trade Commission (FTC) regard markets in which the HHI is between 1,500 and 2,500 points as "moderately concentrated," and markets with an HHI exceeding 2,000 points as "highly concentrated."¹⁴

By DOJ's estimates, post-merger, 96 of the largest 100 Competitive Market Areas (CMA) will have HHI scores exceeding 2,500.¹⁵ And in 91 CMAs the merger "would increase the HHI by more than 200 points. Such an increase is presumed to be likely to enhance market power."¹⁶ Also, "[i]n at least 15 of the CMAs...the combined firm would have a greater than 50 percent share - i.e., more customers than all other firms combined."

DOJ's complaint also premises its antitrust claims on HHI estimates for the nationwide market. It claims: "Nationally, the proposed merger would result in an HHI of more than 3,100 for mobile wireless telecommunications services, an increase of nearly 700 points. These numbers substantially exceed the thresholds at which mergers are presumed to be likely to enhance market power."¹⁷ And DOJ likewise argues that in the national market for mobile wireless telecom services provided to enterprise and government customers, AT&T/T-Mobile "would result in an HHI of at least 3,400, an increase of at least 300 points,"¹⁸ which similarly "exceed[s] the thresholds at which mergers are presumed to be likely to enhance market power."¹⁹

At the outset, it is worth observing that DOJ's HHI estimates contain some notable limitations. First, as the FCC acknowledges in its *Fifteenth Wireless Competition Report*, "[c]alculating the HHI at the level of a CMA...would generally result in an average market HHI that is higher than for one based on EAs."²⁰ Economic Areas or "EAs" are "geographic units defined by the U.S. Department of Commerce that define geographic economic markets using data on commuting patterns."²¹

In addition, while nationwide HHI numbers may be interesting, they do not reflect the reality of competing alternatives available to real consumers. As the FCC pointed out in its *Fourteenth Wireless Competition Report*:

Because mobile wireless consumers are generally not willing to search for competitive alternatives that do not serve their local areas, the relevant geographic area is a local area. Accordingly, assessing competition in mobile wireless services at the national level could overstate the level of competition and industry concentration because the total number of providers in the entire United States exceeds the number of providers that compete with each other in any single region in which a consumer searches for a wireless provider.²²

Also, the DOJ's complaint nowhere indicates that its HHI estimates include consumer welfare-enhancing benefits brought about by the prepaid wireless resale market. The FCC admittedly skips over the prepaid wireless resale market in its own HHI estimates, but in so doing it acknowledges that "HHIs and other market concentration metrics that use subscriber connections or sales of facilities-based providers only may not fully reflect the effect of [prepaid wireless resellers] on competition and consumer welfare."²³

More importantly, a heavy emphasis on HHI constitutes a short-sighted look at a market's competitiveness and potential. HHI does *not* by itself say whether markets are

ultimately competitive or not, and this is particularly true with respect to dynamic markets. The FCC acknowledged this point in its *Fifteenth Wireless Competition Report*:

Shares of subscribers and measures of concentration are not synonymous with a non-competitive market or with market power – the ability to charge prices above the competitive level for a sustained period of time. High market concentration may indicate that a firm or firms potentially may be able to exercise market power, but market concentration measures alone are insufficient to draw such a conclusion...[O]ther factors that may influence the state of competition in the mobile wireless services market...include entry and exit conditions, the degree of price and non-price rivalry, innovation, and the influence of the upstream and downstream markets.²⁴

What matters in dynamic markets is not a given snapshot of market share but whether overall market conditions are conducive to continued innovation and competition that brings about new and disruptive services. Dynamic market considerations were the subject of a *Perspectives* essay by Professor and FSF Board of Academic Advisors member Dennis L. Weisman titled "On Market Power and the Power of Markets: A Schumpeterian View of Dynamic Industries." In that *FSF Perspectives* paper, Professor Weisman wrote:

It is widely recognized in the economics literature that dynamic efficiency (the introduction of innovative new services and production methods) is more important than static efficiency (the alignment of prices with economic costs) in terms of conferring benefits on consumers. This is particularly likely to be the case in technologically dynamic industries, such as telecommunications.²⁵

Professor Weisman went on to summarize the contributions of Joseph Schumpeter to our understanding of innovation and competition:

With his now famous reference to the "perennial gale of creative destruction," Schumpeter stressed the importance of the competitive process over the competitive outcome. He understood that new services are by definition competitive services because they reflect the interminable struggle on the part of the firm to innovate in order to differentiate its products and services from those of its rivals. This, in fact, is the hallmark of the competitive process and rivalrous behavior. In Schumpeter's view, to focus solely on the price of the product as a measure of competition was to ignore an essential feature of competition in a market economy. In certain cases, the product differentiation may amount to a difference of kind rather than degree and may lead to temporary monopolies for the innovator. In this case, even though there may be limited rivalry in the short run for this new product, the path to its development is very much the fruit of the competitive struggle on the part of all firms in their continual quest to secure a market

advantage, even if that market advantage should prove to be short-lived.²⁶

In sum, HHI is not the be-all and end-all in evaluating marketplace competition. Instead, a forward-looking analysis of markets should include examination of the presence of market conditions conducive to investment and innovation, including intermodal competition that gives rise to technological breakthroughs and disruptive new services. As will be discussed in some detail below, however, DOJ's complaint sidesteps some of the crucial points to be taken into account in any forward-looking analysis of wireless and the advanced telecommunications market.

DOJ Wrongly Dismisses Substitutability in a Technologically Converging Market

In its complaint, DOJ also adopts a static approach by dismissing intermodal or cross-platform competition. The complaint argues:

There are no cost-effective alternatives to mobile wireless telecommunications services. Because neither fixed wireless nor wireline services are mobile, they are not regarded by consumers of mobile wireless telecommunications services as reasonable substitutes. In the face of a small but significant price increase imposed by a hypothetical monopolist it is unlikely that a sufficient number of customers would switch some or all of their usage from mobile wireless telecommunications services to fixed wireless or wireline services such that the price increase or reduction in innovation would be profitable.²⁷

But there is good reason to conclude that DOJ's argument – premised on the existence of a "hypothetical monopolist" in mobile wireless services – goes too far in denying that a sufficient number of consumers would switch at least *some* of their voice or data usage in the face of significant mobile wireless price increases.

DOJ's formalistic rejection of wireless-wireline substitution is at odds with the convergence actually taking place in today's advanced telecommunications market. Wireless and wireline platforms both offer voice and data services. In the words of the FCC, "[t]he telecommunications marketplace has changed significantly over the last fifteen years with a wide array of wireline and wireless services that compete with traditional incumbent telephone companies."²⁸ The growing numbers of wireless-only households recognized by the FCC in its *Fifteenth Wireless Competition Report* – now exceeding 25% of all households – constitutes obvious and unmistakable evidence that consumers have in many cases substituted wireless for wireline.²⁹

It goes without saying that mobility offers unique benefits to consumers. But those benefits are also constrained by bandwidth and other technological limitations equally unique to mobile wireless services. As the FCC has acknowledged, "existing mobile networks present operational constraints that fixed broadband networks do not typically encounter" relating to network speeds, capacity, and latency characteristics.³⁰ "Mobile broadband speeds, capacity, and penetration are typically much lower than for fixed

broadband,"³¹ with the latter generally offering faster speeds, with greater capacity to carry high-definition and other data-rich traffic, and with lesser latency limits. Further, wireline capabilities are by no means limited to at-home desktop PCs, as laptop computers are routinely able to plug into wireline networks at hotels and other institutional locations, or at the now ubiquitous Wi-Fi hotspots. And emerging technologies such as femtocells offer consumers fixed wireless capabilities that rely principally on their wireline connections but offer many of the benefits of mobile wireless.

Thus, there are service and price trade-offs for consumers to take into account when considering wireline versus wireless usage. And in the face of such trade-offs and competing service choices, consumers have the ability to weigh price and service considerations in the balance in selecting the platform or combination of respective service options that best satisfies their demands.

Moreover, aspects of today's advanced telecommunications market provide reasons for skepticism as to whether any conclusive evidence could be proffered regarding wireless-wireline substitution in the face of "small but significant price increase[s]." In its *Fourteenth Wireless Competition Report*, the FCC described the difficulty of generating "summary estimate[s] of market power – *i.e.*, a numerical estimate of price mark-up over cost – due to the complexities of estimating market power in an industry with high fixed costs that are recovered gradually over time, difficulties with analyzing pricing plans for bundles of services, and the difficulties in obtaining accurate and suitable cost data."³²

In other words, the abundance of wireless voice and data service plans make intermodal comparison difficult, particularly since many substitutable wireline and fixed wireless services are offered as part of various bundled packages. Moreover, the wide variety of wireless price options, including all-you-can-eat plans, bucket plans, and prepaid plans, also renders precise analysis of price-constraining effects of wireless vis-a-vis wireline difficult, especially in today's rapidly-evolving advanced telecommunications market.

Furthermore, any reliance on demonstrable evidence of price-constraining effects of intermodal competition fails to take into account the basics of telecommunications economics. As George S. Ford and Lawrence J. Spiwack recently have explained:

The production of telecommunications services requires large (and often sunk) capital expenditures, and these fixed costs render declining average costs (*i.e.*, scale economies), or what is often called "increasing returns" ...With increasing returns, average cost, and possibly marginal cost, is falling as output expands. As a result, average cost exceeds marginal costs so that a price equal to short-run marginal cost fails to generate sufficient revenue to cover total cost, so the firm faces financial losses. This fact is well established in literature of telecommunications regulation.³³

As a result, Ford and Spiwack conclude that evidence of marginal cost pricing "will

never be present, since marginal cost pricing is not feasible in almost all telecommunications markets given the prevalence of fixed and sunk costs."³⁴

Thus, when it comes at *U.S. v. AT&T*, DOJ's refusal even to consider intermodal competition, based on a demand for evidence of price-constraining effects of wireless, suggests an unreasonable pro-regulatory standard given the dynamism of today's advanced telecommunications market. By contrast, "[t]he dynamic regulator," in the words of Professor Weisman, "emphasizes intermodal over intramodal competition, as the natural path to eliminating the need for economic regulation over the long-run."³⁵

DOJ Essentially Ignores 4G, the Driver of Tomorrow's Wireless Market

In its complaint, DOJ again adopts a static outlook by all but ignoring 4G wireless network technologies. Given their enhanced performance capabilities, 4G networks will undoubtedly provide the foundation for future wireless innovation and growth. As one recent analyst report points out, "[f]rom a technical standpoint, 4G promises three benefits over 3G: increased throughput, lower latency, and stronger security. One result is a reduced cost per megabit."³⁶ It is also estimated that "U.S. investment in 4G networks could fall in the range of \$25-\$53 billion during 2012-2016," and "could account for \$73-\$151 billion in GDP growth and 371,000-771,000 new jobs."³⁷

A forward-looking view of the wireless market would put significant emphasis on the ongoing migration of competing wireless networks to 4G standards. DOJ's complaint, however, taking a backward-looking view, scarcely mentions 4G. And even then DOJ only mentions it in passing.

For instance, the complaint's only mention of 4G as such comes in its description of T-Mobile as "the first company to roll out and market a nationwide network based on advanced HSPA+ technology and *marketed as 4G*."³⁸ Emphasis is added here on "marketed as 4G" since by the International Telecommunications Union (ITU) definition, only WiMAX 2 and LTE-advanced networks meet 4G standards.³⁹ And while none of the other wireless carriers have yet deployed 4G networks that operate at ITU-endorsed thresholds, the FCC's *Fifteenth Wireless Competition Report* recognizes that many carriers have put themselves on the path to 4G through existing and near-term LTE and WiMAX deployments.⁴⁰ Similarly, the only other arguably passing reference to 4G in DOJ's complaint is to "network standards, e.g., LTE or HSPA+" being generally deployed on a nationwide basis by the major wireless carriers.⁴¹

It is significant then that while the FCC's Report acknowledges T-Mobile's HSPA+ deployment, it nonetheless states that in regards to LTE and WiMAX deployment T-Mobile has "[n]o U.S.-specific plans."⁴² The importance of LTE is ably described in a declaration submitted to the FCC by Kim Larsen, Senior Vice President of Technology Service and International Network Economics for Deutsche Telekom:

T-Mobile USA requires a clear path to LTE because LTE offers long-term spectrum efficiencies over HSPA+. Given the burgeoning demand for

mobile broadband data, there is a need for greater spectrum bandwidths to meet the capacity and data speed requirements. LTE is up to 40% more spectrally efficient than HSPA+ in larger effective bandwidths, even with a dual carrier HSPA+ configuration.⁴³

As Larsen also concludes, "[d]ue to spectrum exhaustion, difficulty in aggressive re-farming of existing spectrum holdings and a lack of other viable spectrum options, T-Mobile USA has no clear path to an effective, economical deployment of LTE."⁴⁴ Indeed, Deutsche Telekom executives have stressed that T-Mobile presently has no viable pathway to LTE since it lacks the spectrum and the significant financial resources required for such a migration. For example, Deutsche Telekom Senior Vice President of Mergers & Acquisitions Thorsten Langheim has declared that "[w]hile other competitors are quickly moving to build out and develop their LTE networks, T-Mobile USA lacks a clear path to deployment of LTE that is necessary for it to compete robustly in the U.S."⁴⁵ He also states:

Because Deutsche Telekom's financial priorities must be focused on Europe, however, Deutsche Telekom's CEO Rene Obermann has stated publicly that T-Mobile USA "has to develop into a self-funding platform that is able to fund its future itself." This means that T-Mobile USA would need to fund spectrum acquisitions and other necessary capital investments through its own operations...rather than by drawing on the resources of its corporate parent. To this end, T-Mobile USA has been exploring a number of strategic options, including partnerships, joint ventures and network sharing arrangements, as well as the sale of non-core, non-strategic assets. These alternatives in general were found not to be economically viable...⁴⁶

So although DOJ does countenance the competitive potential of T-Mobile to overcome its "period of disappointing results" "via a 'challenger' strategy" focused on "new aggressive and innovating pricing plans, low-priced smartphones, and superior customer service,"⁴⁷ it ignores the crucial 4G context in which wireless competition soon will be taking place. Similarly, DOJ's claim that "[b]y eliminating T-Mobile as an independent competitor, the proposed transaction likely will reduce the competitive incentive to invest in wireless networks to attract and retain customers,"⁴⁸ misses the next-generation context in which innovative wireless investment will need to be directed to provide a platform for innovative new services.

Conclusion

It is clear that in significant respects DOJ's case is beholden to a static market approach to wireless and to the advanced telecommunications market. In particular, DOJ over-emphasizes HHI market concentration numbers that do not by themselves determine market competitiveness, certainly not in technologically dynamic markets. DOJ also dismisses potential wireline and fixed wireless substitutes for wireless in the broader advanced telecommunications market. And DOJ all but ignores the crucial 4G

marketplace context in which future wireless growth, investment, and innovation is set to take place.

The reality is that wireless services are characterized by rapid innovation, offering consumers a myriad of services and product choices, along with numerous pricing options. Where markets are dynamic, like today's advanced telecommunications market, what matters is not a given snapshot of market share but whether overall market conditions are conducive to continued investment and innovation that can give rise to new and disruptive services. Today's market is marked by convergence, with different technology platforms offering competing methods for delivering voice, video and data services from which consumers can pick and choose what best meets their price and service needs. And a forward-looking view of the market should emphasize the deployment of 4G wireless networks as the foundation for future wireless investment, innovation, and competition.

Unless DOJ can come to grips with the dynamic nature of rapidly changing technology-driven markets – such as today's advanced telecommunications market – and offer arguments and evidence that draw on those considerations to show there are likely anticompetitive effects resulting from an AT&T/T-Mobile combination, there is little reason to think its antitrust lawsuit will succeed, or that it should. Given the importance of wireless and 4G technologies to our present and future economic prosperity, as well as to the need for marketplace freedom for competitors to make business decisions in order to best meet rapidly changing demands, consumers will be ill-served by an ill-conceived antitrust complaint.

* Randolph J. May is President of the Free State Foundation, a non-partisan Section 501(c)(3) free market-oriented think tank located in Rockville, Maryland.

** Seth L. Cooper is Research Fellow of the Free State Foundation.

¹ See AT&T, Press Release: “AT&T to Acquire T-Mobile USA From Deutsche Telekom” (March 20, 2011), available at: <http://www.att.com/gen/press-room?pid=19358&cdvn=news&newsarticleid=31703&mapcode=corporate|financial>.

² See Description of Transaction, Public Interest Showing and Related Demonstrations (“Public Interest Statement”), 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 Docket No. 11-65, DA 11-799, at 16-17 (filed April 21, 2011), available at: <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021240421>.

³ See U.S. Department of Justice, Complaint, *U.S. v. AT&T Inc., T-Mobile USA, Inc., and Deutsche Telekom AG*, Case No. 1:11-cv-01560, U.S. Dist. Ct. D.C. (filed August 31, 2011), at 5, para. 10; *id.*, at 2, para. 2.

⁴ See Public Interest Statement, *infra*.

⁵ See 15 U.S.C. § 15a.

⁶ See Complaint, *infra*.

⁷ Complaint, at 20-21, para. 47.

⁸ Complaint, at 1, 3, para. 3, 20-21, paras. 47, 49-50.

⁹ See, e.g., Brent Kendall, "AT&T Merger Trial Set for February," *Wall Street Journal* (September 21, 2011), available at:

<http://online.wsj.com/article/SB10001424053111903703604576585051718946310.html>.

¹⁰ See, e.g., Randolph J. May, "Assessing the FCC's Competition Assessing Competence," *Perspectives from FSF Scholars*, Vol. 4 No. 14 (June 24, 2009), available at:

http://www.freestatefoundation.org/images/Competition_Assessing_Competence.pdf; Comments of the Free State Foundation, In the Matter of Remands of Verizon 6 MSA Forbearance Order and Qwest 4 MSA Forbearance Order, WC Docket Nos. 06-172 and 07-97 (September 21, 2009), available at:

http://www.freestatefoundation.org/images/FSF_Forbearance_Remand_Comments-Final.pdf.

¹¹ See, e.g., Seth L. Cooper, "FCC Should Stop Refusing to Acknowledge Wireless Competition," *Perspectives from FSF Scholars*, Vol. 6, No. 16 (July 19, 2011), at 3-4, available at:

http://www.freestatefoundation.org/images/FCC_Should_Stop_Refusing_to_Acknowledge_Wireless_Competition_071811.pdf; Seth L. Cooper, "Forbearance Follies: What the FCC's New Framework Portends for the 'Third Way'," *Perspectives from FSF Scholars*, Vol. 5, No. 18 (July 9, 2010), at 3-4, available at: http://www.freestatefoundation.org/images/Forbearance_Follies_070810.pdf.

¹² Complaint at i (APPENDIX A – Herfindahl-Hirschman Index).

¹³ Complaint, at i (APPENDIX A – Herfindahl-Hirschman Index).

¹⁴ See *Horizontal Merger Guidelines*, U.S. Department of Justice and the Federal Trade Commission (issued August 19, 2010) (Section III.C.2, Herfindahl-Hirschman Index), available at:

<http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf>. (See Guidelines at Sec 5.3?).

¹⁵ Complaint, at 11, at para. 22.

¹⁶ Complaint, at 12, para. 23.

¹⁷ Complaint, at 12, para. 25.

¹⁸ Complaint, at 12, para. 26.

¹⁹ Complaint, at 12, para. 26.

²⁰ Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, including Commercial Mobile Services ("Fifteenth Report"), WT Docket No. 09-66 (Released June 27, 2011), at 46, para. 50, available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-103A1.pdf.

²¹ Fifteenth Report, at 30, para. 25, fn. 44.

²² Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, including Commercial Mobile Services ("Fourteenth Report"), WT Docket No. 09-66 (May 20, 2010), at 24, para. 49, available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-81A1.pdf.

²³ Fifteenth Report, at 45, para. 49.

²⁴ Fifteenth Report, at 50, para. 54.

²⁵ Dennis O. Weisman, "On Market Power and the Power of Markets: A Schumpeterian View of Dynamic Industries," *Perspectives from FSF Scholars*, Vol. 3, No. 5 (February 26, 2008), at 2, available at:

http://www.freestatefoundation.org/images/Power_of_Markets.pdf.

²⁶ Weisman, "On Market Power and the Power of Markets," at 4.

²⁷ Complaint, at 6-7, para. 12. See also *id.*, at 7-8, para. 13.

²⁸ FCC, Report and Order, In the Matter of Lifeline and Link Up Reform and Modernization Federal-State Joint Board on Universal Service Lifeline and Link Up, WC Docket No. 11-42, CC Docket No. 96-45, WC Docket No. 03-109 (released June 21, 2011), at 3, para. 4, available at:

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-97A1.pdf.

²⁹ See Fifteenth Report, at 207, para. 365.

³⁰ Report and Order ("Open Internet Order"), In the Matter of Preserving the Open Internet, GN Docket No. 09-91, WC Docket No. 07-52 (December 23, 2010), at 53, para. 95, available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db/1223/FCC-10-201A1.pdf.

³¹ Open Internet Order, at 53, para. 95.

³² Fourteenth Report, at 44, para. 55.

³³ George S. Ford and Lawrence J. Spiwack, "The Impossible Dream: Forbearance After the Phoenix Order," *Perspectives* (The Phoenix Center), 10-8 (December 16, 2010), at 3, available at:

<http://www.phoenix-center.org/perspectives/Perspective10-08Final.pdf>.

-
- ³⁴ Ford and Spiwack, "The Impossible Dream," at 5.
- ³⁵ Weisman, "On Market Power and the Power of Markets," at 3.
- ³⁶ Deloitte, "The Impact of 4G Technology on Commercial Interactions, Economic Growth and U.S. Competitiveness" (August 2011), at 9, available at: http://www.deloitte.com/assets/Dcom-UnitedStates/LocalAssets/Documents/TMT_us_tmt/us_tmt_impactof4g_081911.pdf.
- ³⁷ Deloitte, "The Impact of 4G Technology," at 7.
- ³⁸ Complaint, at 13, para. 29.
- ³⁹ See International Telecommunications Union (ITU), Press Release: "ITU World Radiocommunication Seminar highlights future communication technologies" (December 6, 2010), available at: http://www.itu.int/net/pressoffice/press_releases/2010/48.aspx. See also Chris Ziegler, "ITU lays down law: WiMAX 2, LTE-Advanced are 4G, everyone else is a buster," Engadget blog (October 21, 2010), available at: <http://www.engadget.com/2010/10/21/itu-lays-down-law-wimax-2-lte-advanced-are-4g-everyone-else-i/>.
- ⁴⁰ See Fifteenth Report, at 8 (Table: 3G/4G Deployment by Selected Mobile Wireless Service Providers).
- ⁴¹ Complaint, at 9-10, para. 20. See also *id.* at 14, para. 30 (quoting AT&T internal document referencing HSPA+), *id.* at 15, para. 33 (referencing T-Mobile's HSPA+ network).
- ⁴² Fifteenth Report, at 8 (Table: 3G/4G Deployment by Selected Mobile Wireless Service Providers).
- ⁴³ Declaration of Dr. Kim Kylesbech Larsen ("Larsen Declaration"), WT Docket No. 11-65, DA 11-799 (April 19, 2011), at 10, para. 27, available at: <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021240427>.
- ⁴⁴ Larsen Declaration, at 9, para. 23.
- ⁴⁵ Declaration of Thorsten Langheim ("Langheim Declaration"), WT Docket No. 11-65, DA 11-799 (April 19, 2011), at 5, para. 11, available at: <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021240426>.
- ⁴⁶ Langheim Declaration, at 6, para. 14.
- ⁴⁷ Complaint, at 14, para. 31; *id.*, at 16-17, para. 36.
- ⁴⁸ Complaint, at 18, para. 39.