
**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)
)
Implementation of Section 6002(b) of the) WT Docket No. 10-133
Omnibus Budget Reconciliation Act of 1993)
)
Annual Report and Analysis of Competitive)
Market Conditions With Respect to Mobile)
Wireless, including Commercial Mobile)
Services)

To: The Commission

COMMENTS OF VERIZON WIRELESS

Bryan N. Tramont
Adam D. Krinsky
Russell P. Hanser

WILKINSON BARKER KNAUER, LLP
2300 N Street N.W., Suite 700
Washington, D.C. 20037
(202) 783-4141

Counsel to Verizon Wireless

Steven E. Zipperstein
Vice President, Legal & External Affairs &
General Counsel

John T. Scott, III
Vice President & Deputy General Counsel

VERIZON WIRELESS
1300 I Street N.W.
Suite 400 West
Washington, D.C. 20005
(202) 589-3760

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I. SUMMARY AND INTRODUCTION

The answer to the question facing the Commission—whether the mobile wireless marketplace is “effectively competitive”¹—is clear. It comprises literally hundreds of players large and small—facilities-based carriers and rapidly-growing Mobile Virtual Network Operators (“MVNOs”), as well as unaffiliated device manufacturers, software and application developers, and infrastructure providers. This expanding, interrelated mobile marketplace is delivering more choices to consumers, as well as more value—facts that are evident in studies showing increasing consumer satisfaction. The industry, despite adverse national economic conditions, continues to invest heavily in 3G and 4G networks for enhanced capacity, throughput, and coverage, as it intensely competes to win and retain customers – trends that directly benefit the public.

¹ *Public Notice, Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, DA 10-1234 (rel. June 30, 2010) (“*Public Notice*”).

One year ago, numerous companies serving the wireless market supplied the Commission with extensive data showing that, through the end of 2008, competition was increasing along every vector, and that accelerating innovation and competition were driving benefits to consumers. The Commission's *Fourteenth Report* included an enormous amount of data confirming these pro-competitive, pro-consumer trends.² Yet despite those data, the *Report* declined to find that competition was effective. The *Fifteenth Report* will cover a period that has occurred largely on this Commission's watch. During this time, the facts show that the entire wireless sector is more competitive and delivers more benefits for consumers than ever before. This is true both with regard to companies providing network services to end users and to companies competing in both input and downstream segments.

The Commission should focus in particular this year on the launch and expansion of wireless businesses that were only minor players a few years ago or did not even exist. These businesses are bringing even more vigorous competition at all levels of the wireless industry. And they are bringing more choices to consumers—not only among available network providers but also among wireless devices, the operating systems those devices run on, and the applications and other content consumers want to download and use. For example:

² See *Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Fourteenth Report*, WT Docket No. 09-66, FCC 10-81 (rel. May 20, 2010) ("*Fourteenth Report*" or "*Report*").

- On this Commission’s watch, Sprint/Clearwire launched their first-to-market 4G wireless broadband service across the country, backed by a highly visible national advertising campaign. In promoting this service the companies touted their self-described “spectrum advantage,” which results from the substantially larger amount of spectrum they control compared to any other company.
- The Commission approved the Harbinger/SkyTerra joint venture to deploy a nationwide, facilities-based, terrestrial 4G mobile network serving 90 percent of the U.S. population. The Commission approved this venture specifically “because of the competition it will bring in mobile wireless broadband services,” and separately declared that the agency’s action will “ignite new broadband competition.”
- On this Commission’s watch, Leap launched a nationwide, unlimited talk and text plan for as low as \$30 per month under its Cricket brand. Leap announced it had successfully negotiated roaming agreements to provide customers with expanded nationwide service, and Leap’s promotional materials advertise “coverage – now in all 50 states.”
- On this Commission’s watch, Atlantic Tele-Network expanded dramatically in the U.S. domestic market by acquiring former Alltel properties in six states and offering 3G service in 26 markets. Atlantic Tele-Network is also resurrecting the Alltel brand name based on its assessment that this will strengthen its ability to compete. The Commission approved ATN’s acquisition of these licenses, as well as AT&T’s acquisition of additional Alltel divestiture properties, based on its express finding that these transactions benefited wireless competition.
- On this Commission’s watch, TracFone and other resellers enjoyed huge success with their services, providing even more competition to the facilities-based carriers. TracFone now ranks fifth among all providers of mobile services, growing 31 percent in the year ended March 2010, and other resellers are also growing rapidly.
- On this Commission’s watch, prepaid service providers, both facilities-based and MVNOs, are offering still more competition and still more choices for consumers. Price reductions in the market have fueled a rapid rise in subscribers across a range of carriers, and approximately 47 percent of gross ads in 2009 came from prepaid plans.
- On this Commission’s watch, vigorous competition and consumer choice have continued to increase in the device market as well. Just one example is the tremendous success this year of the Android operating system as a competitor to the Apple and RIM operating systems, and three of the six most popular operating systems were introduced in the past three years.
- The Commission itself took several actions that it judged promoted competition beyond its approval of the transactions noted above, including reversing the prior Commission’s home roaming exemption, clearing unreasonable barriers to tower siting, and commencing proceedings to make more spectrum available for commercial mobile services.

The inescapable conclusion is that, under this Commission's oversight, the wireless industry, which never lacked effective competition, has seen competition intensify more than ever. More generally, the drivers of wireless competition have continued to gather strength in 2009 and into 2010. Innovative pricing and new service offerings abound. Rates for prepaid and postpaid voice plans continue to drop significantly. With consumers' demand for mobile data expanding exponentially, providers are competing by offering data plans with enhanced value and differing price points, as rates plummet to pennies-per-megabyte pricing. Clearwire's \$55 4G unlimited monthly plan for laptop broadband connectivity is in effect a less than one cent per megabyte rate; AT&T's new offering of \$25 for 2 GB of capacity per month equates to just over 1 cent per megabyte. And prices for messaging continue to decline.

Competitive rivalry is also driving billions of dollars into new and expanded 3G deployments and spurring new 4G service and investment. The cumulative capital investment by wireless services providers for year-end 2009 increased 7.7 percent over 2008—for a total of \$20.4 billion in 2009—resulting in expanded network capacity and extended service coverage. As of November 2009, more than 98 percent of Americans lived in census blocks covered by 3G and/or 4G service; more than 76 percent of Americans lived in areas covered by three or more mobile broadband providers, up from 51 percent in 2008. These investments, moreover, are not limited to a few market players – as existing providers expand their networks, new providers deploy service.

The device and application segments of the wireless ecosystem also reflect astounding competition for—and options for—consumers. In response to consumer demand, new device manufacturers and new devices are constantly entering the U.S. market, with smartphone owners nearly doubling from March 2009 to March 2010, sales of PC Cards climbing 50 percent, and

consumers flocking to netbooks, tablets and innovative devices such as e-readers that did not even exist a few years ago. Meanwhile, the sheer number of wireless applications, and companies creating those applications is staggering, with well over 300,000 apps available and growing. Consumers clearly are benefiting—estimates are that they will download over 1.5 billion apps this year alone. And service providers and operating system designers are working with the developer community to create new devices and applications that can take advantage of mobile broadband networks.

Other input and downstream segments of the wireless industry also show competition that is in turn fueling competition among CMRS providers. On spectrum, data show that the number of transfers and leases of spectrum has been growing, reflecting an effective and competitive secondary market that provides all carriers with access to spectrum. The marketplace for wireless backhaul shows strong growth, competition, and diverse suppliers. Wireless providers are changing from copper facilities to higher capacity fiber and microwave facilities to accommodate data traffic, and there are numerous companies competing for this demand. Similarly, there is vigorous competition in the infrastructure market, with no one company dominating the tower market.

As the Commission incorporates these facts and trends into its development of the *Fifteenth Report*, it should correct the analytical errors in the *Fourteenth Report* that contributed to an incorrect portrait of the wireless marketplace. The Executive Summary of that *Report*, for example, identified three problematic trends that were based on invalid assumptions, while failing to focus on the vigorous competition documented in the record for that *Report*, such as the growth of non-national providers and declining prices for many services.

For example, the Commission relied on HHI analysis to justify its finding of “continued industry consolidation,” but did not explain how or why consolidation impacted competition. The plain fact is that consolidation has gone hand in hand with lower prices for many services, growth of new players, more innovation, and more choices of products and services to meet consumers’ needs—in short, effective competition. And, the U.S. compares favorably on these metrics with many other nations. Further, the Commission wrongly excluded MVNOs from its concentration analysis, despite ample evidence that MVNOs have competitive impact and that this impact is growing. It also failed to acknowledge increasing consumer satisfaction as a basis for low churn, and similarly failed to acknowledge declining prices for many plans.

The Commission should also abandon the false spectrum divide created in the *Fourteenth Report*, which found that spectrum below 1 GHz possesses some inherent competitive advantage in the marketplace. Although lower frequency bands have propagation characteristics favorable for expanded coverage, higher frequency bands can achieve greater capacity. Sprint, the carrier with access to the most spectrum, touts what it calls its “spectrum advantage” despite holding primarily higher band spectrum, and has contradicted the FCC’s own assertion of a spectrum divide:

As WiMAX and LTE use very similar radio technologies, the bandwidth efficiency should be roughly equal and, in the end . . . , having more spectrum available is a far greater advantage than the frequency band it occupies. Initial LTE services are planned for the 700 MHz spectrum the FCC auctioned in 2008. In each major market, the 700 MHz A- and B-Blocks provide a total of 24 MHz and the C-Block (Open Device block) has a total of 22 MHz. *Sprint/Clearwire have an average of 120 MHz of 2.5 GHz BRS spectrum in most major markets.*³

³ Sprint, Presentation, “Mobile WiMAX: The 4G Revolution Has Begun,” Version 1.0, at 12, http://www4.sprint.com/servlet/whitepapers/dbdownload/Mobile_WiMAX_The_4G_Revolution_Has_Begun_Jan20 (continued on next page)

The Commission should reject the premise (which it had rightly rejected in numerous previous decisions) that the particular frequencies held by carriers affects competition analysis. The Commission should also correct the mistaken decision not to “count” MSS/ATC and WCS spectrum. In other decisions it has counted spectrum that is suitable and available for mobile service in a competition analyses, and these bands qualify under both tests. The *Fourteenth Report’s* treatment of MSS in particular cannot be squared with the Commission’s decision less than two months earlier to approve an MSS joint venture precisely because it would enhance terrestrial mobile competition.

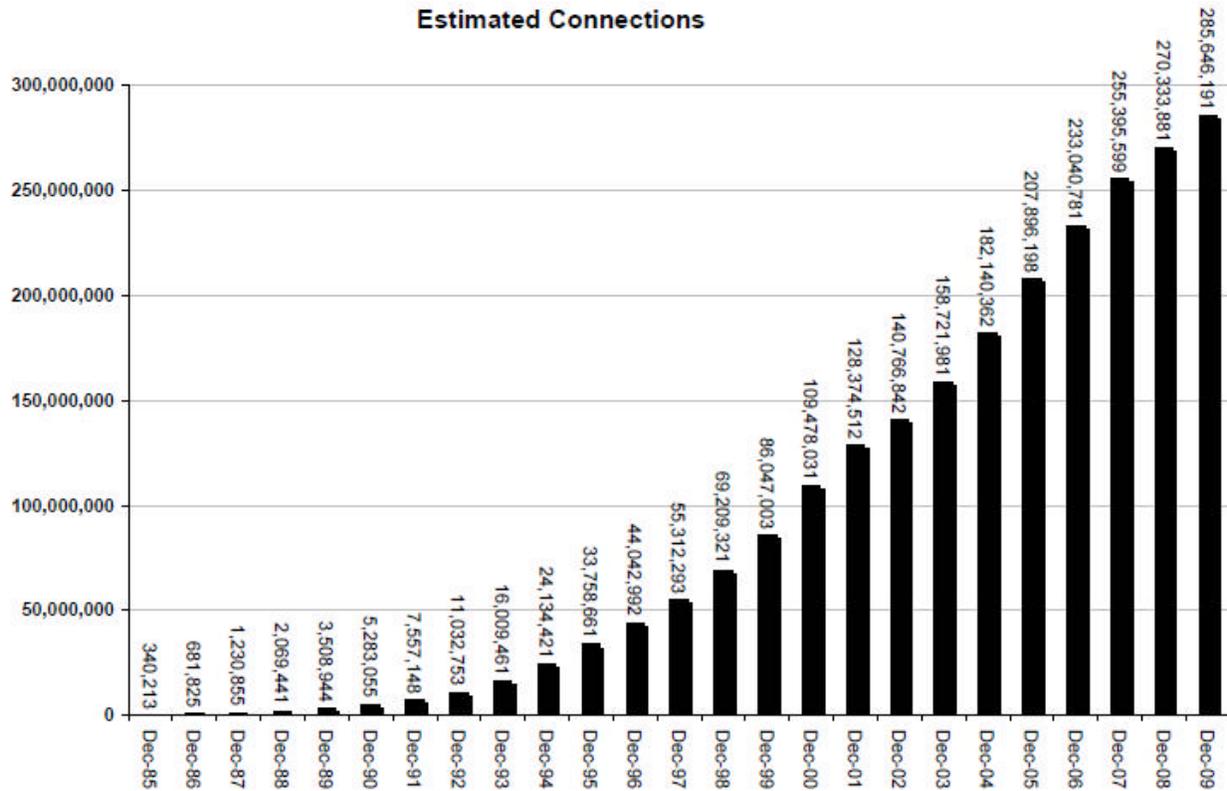
In the end, when the Commission focuses on the facts and data and discards the analytical shortcomings of the *Fourteenth Report*, a clear picture emerges. Mobile service providers—and the many companies that form the input and downstream segments of the wireless industry—continue to invest, innovate and serve American consumers in world-leading ways. Competition is causing this investment and innovation, and competition is in turn benefiting from them. This market—highly dynamic, constantly evolving, and consumer-focused—mandates a finding that the market is “effectively competitive.”

II. THE MARKET FOR MOBILE WIRELESS SERVICES IS ROBUSTLY COMPETITIVE

A review of the market for mobile wireless services reveals an extremely competitive market, shaped by many players occupying different market niches who are vying to win and retain customers by reducing prices, innovating, and improving quality of service. Moreover, the

[10.pdf?table=whp_item_file&blob=item_file&keyname=item_id&keyvalue=%274v994ya%27](#) (“Sprint WiMAX Presentation”).

wireless industry has grown dramatically each year, as the following chart depicting subscriber expansion demonstrates, driving competition and investment:



Source: CTIA⁴

The beneficiaries of these powerful market forces have been consumers, who now enjoy a broad menu of provider choices and a wide range of mobile services. In its latest report on the state of competition in the wireless industry, the Commission determined that nearly 96 percent of the U.S. population lives in census blocks with at least three mobile wireless service

⁴ CTIA, Top Line 2009 Semi-Annual Wireless Industry Survey Results at 5, http://files.ctia.org/pdf/CTIA_Survey_Year_End_2009_Graphics.pdf (last visited July 26, 2010). This chart includes the number of subscribers and connected devices such as e-Readers and machine-to-machine devices for companies that report such units as subscribers. Verizon Wireless reports connected devices separate from subscribers. In the second quarter of 2010, Verizon Wireless had 7.7 million “other connections.” Press Release, Verizon Communications Inc., Verizon Reports Strong Wireless, FiOS Customer Growth; Increased Enterprise Revenues; Strong Cash Flow in 2Q (July 23, 2010), <http://news.vzw.com/news/2010/07/pr2010-07-23.html>.

providers, and more than 73 percent of the population have at least five competing providers—up from approximately 65 percent the previous year.⁵

A. The Structure of the Mobile Wireless Market Demonstrates its Competitiveness

The market for wireless voice and data services is broad and diverse, revealing a wide range of participants working to attract and keep customers in the face of numerous alternative providers. These factors keep prices low and dropping, quality high and improving, and the set of options available to consumers large and growing.

1. Numerous Diverse Providers

The market for mobile wireless service is populated by a wide range of providers offering services under a variety of business models. According to the FCC’s most recent data, there are 170 facilities-based mobile providers.⁶ Below we detail the roles played by some of the key providers in this dynamic market.

⁵ *Fourteenth Report* at 37, tbl.4; compare Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Thirteenth Report*, 24 FCC Rcd 6185, 6210 ¶ 40 tbl.1 (2009) (“*Thirteenth Report*”). The Commission’s analysis is based on census blocks, the “smallest geographical unit for which the Census Bureau collects and tabulates decennial census data.” THE OMNIBUS BROADBAND INITIATIVE, CONNECTING AMERICA: NATIONAL BROADBAND PLAN 351 (2010), <http://www.broadband.gov/download-plan/> (“National Broadband Plan”).

⁶ See, e.g., Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Local Telephone Competition: Status as of December 31, 2008, Table 17 (rel. June 25, 2010). Table 17 of this semi-annual report contains data on mobile wireless telephone subscribers, and provides a sum of the total number of carriers in the U.S. Table 14 in each of the previous seven Local Telephone Competition reports provides similar data back to June 30, 2005. All of these reports are available at FCC, Local Telephone Competition and Broadband Deployment, <http://www.fcc.gov/wcb/iatd/comp.html/> (last visited July 29, 2010).

Nationwide Facilities-Based Providers Have Improved Service and Intensified

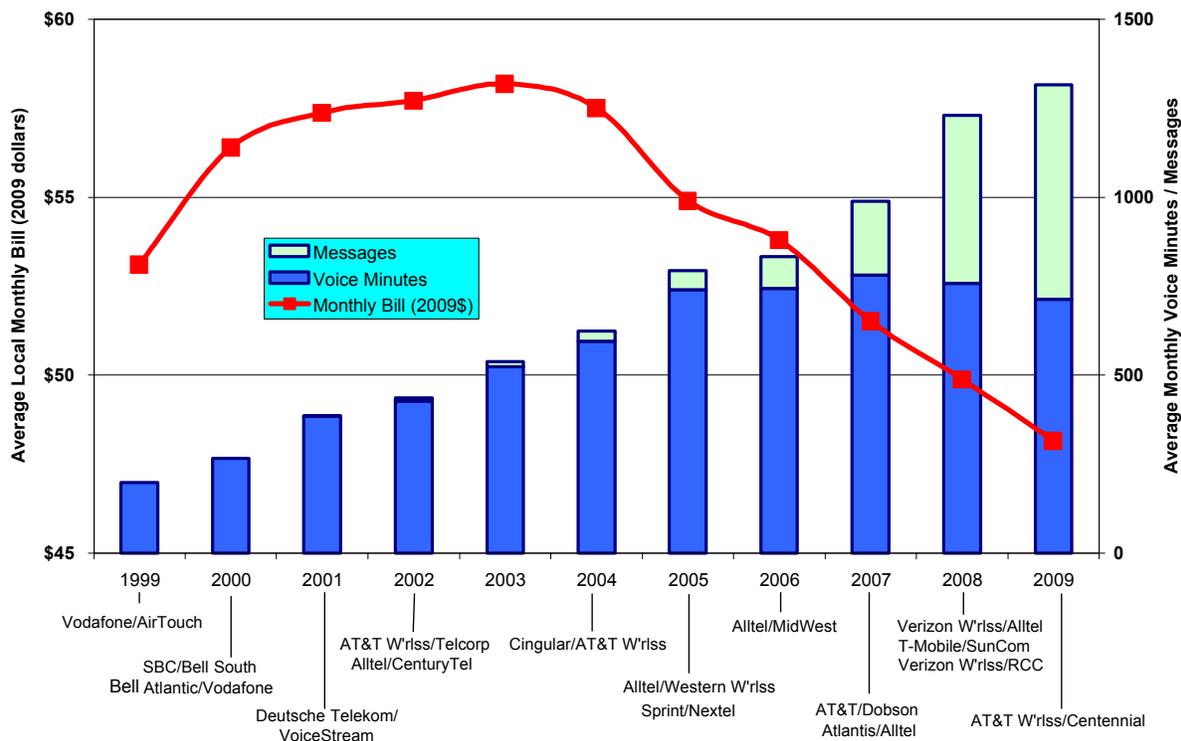
Competition. There are four “nationwide” providers—Verizon Wireless, AT&T, Sprint Nextel (“Sprint”), and T-Mobile—each offering facilities-based service to the vast majority of Americans. These providers compete aggressively with one another and with others in the market, reducing prices and working to provide customers with the most advanced networks, the most diverse plans, and the most sophisticated devices.

As Verizon Wireless has previously explained, the current “nationwide provider” market segment is the result of a long period of market expansion and consolidation driven by technological and economic factors governing the wireless industry, and this progression has redounded strongly to the benefit of the consumer.⁷ Early Commission cellular policy imposed redundant costs by forcing many small providers to bear individually burdens that could have been shared in the presence of greater integration. As it became more and more apparent that scale economies rendered the highly fragmented market inefficient, the Commission and carriers alike recognized the benefits associated with consolidation.⁸ The current market structure reflects this history and the technological features of the wireless telecommunications sector, and has promoted, not undermined, consumer welfare. As the following chart demonstrates, the development of a more consolidated market structure has coincided with massively increased wireless usage and precipitous declines in pricing:

⁷ See Comments of Verizon Wireless, WT Docket No. 09-66, at 20-22 (filed Sept. 30, 2009) (“Verizon Wireless 2009 *Competition NOI* Comments”).

⁸ The Commission has previously acknowledged that “operators with larger footprints can achieve certain economies of scale and increased efficiencies compared to operators with smaller footprints,” and that such efficiencies permitted carriers to introduce new service options, “reducing prices to consumers.” Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Sixth Report*, 16 FCC Rcd 13350, 13362-63 (2001) (“*Sixth Report*”) (internal citations omitted).

Wireless Services: Increasing Use, Decreasing Price



Source: Data from CTIA's Wireless Industry Indices Year-End 2009 Report. Monthly bill adjusted for inflation.

The combination of spectrum and network investment also has enabled the combined entities to achieve improvements in service quality, enhancements in functionality, and the deployment of more robust and ubiquitous wireless broadband services. Ultimately, the state of the facilities-based “nationwide” market reflects a response to technological change, shifting economic realities, and—fundamentally—consumer need.⁹

⁹ The Commission has consistently found that wireless carrier mergers serve the public interest. See, e.g., AT&T Inc. and Centennial Communications Corp., *Memorandum Opinion and Order*, 24 FCC Rcd 13915, 13960 ¶ 110 (2009); Cellco Partnership, d/b/a Verizon Wireless and Atlantis Holdings LLC, *Memorandum Opinion and Order and Declaratory Ruling*, 23 FCC Rcd 17444, 17446-47 ¶ 3 (2008) (“*Verizon Wireless-Alltel Order*”); Cellco Partnership d/b/a Verizon Wireless and Rural Cellular Corporation, *Memorandum Opinion and Order and Declaratory Ruling*, 23 FCC Rcd 12463, 12465 ¶ 3 (2008) (“*Verizon Wireless-Rural Order*”); T-Mobile USA, Inc. and SunCom Wireless Holdings, Inc., *Memorandum Opinion and Order*, 23 FCC Rcd 2515, 2519-20 ¶¶ 9-10 (2008); AT&T Inc. and Dobson Communications Corp., *Memorandum Opinion and Order*, 22 FCC Rcd 20295, 20296 ¶ 2 (2007); Nextel Communications, Inc. and Sprint Corp., *Memorandum Opinion and Order*, 20 FCC Rcd (continued on next page)

The nationwide facilities-based providers continue to substantially invest in and enhance their networks to provide the best service for consumers and compete in the marketplace. For example, Verizon Wireless plans to launch Long Term Evolution (“LTE”) networks in 25 to 30 markets by the end of 2010, and to cover its 3G network footprint with LTE by the end of 2013.¹⁰ Similarly, AT&T announced plans to transition its 3G network technology to LTE with deployment beginning in 2011.¹¹ Finally, T-Mobile announced the continued expansion and customer availability of its HSPA+ mobile broadband network to over 100 cities and 185 million POPs by year-end 2010.¹²

A New Nationwide Facilities-Based Provider Is Emerging. The nationwide-facilities-based market is not limited to the four “nationwide” providers. Indeed, Clearwire, which promised to “compete head-to-head against the soon-to-be-launched 4G offerings of Verizon Wireless and AT&T,”¹³ is actively deploying 4G services across the country over the past year.

13967, 13969 ¶ 3 (2005); AT&T Wireless Services, Inc. and Cingular Wireless Corporation, *Memorandum Opinion and Order*, 19 FCC Rcd 21522, 21525-26 ¶ 5 (2004) (“*AT&T-Cingular Order*”).

¹⁰ See Verizon Communications Inc., Annual Report (Form 10-K), at 5 (Feb. 26, 2010) (“Verizon 10-K”).

¹¹ See AT&T Annual Report (Form 10-K), Part II at 14 (Feb. 25, 2010).

¹² T-Mobile USA, Inc., Get 4G Speeds on T-Mobile’s new HSPA+ Network*, <http://t-mobile-coverage.t-mobile.com/#> (last visited July 26, 2010). POPs is an industry term that refers to population—typically the number of people covered by a given wireless license or footprint. One POP equals one person. See Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eleventh Report*, 21 FCC Rcd 10947, 10956 ¶ 14 n.29 (2006) (“*Eleventh Report*”).

¹³ Applications of Sprint Nextel Corp., Transferor, Clearwire Corp., Transferor, and New Clearwire Corp., Transferee, for Consent to Transfer of Control of Commission Licenses and Authorizations Pursuant to Sections 214 and 310(d) of the Communications Act, Lead File No. 0003368272, Description of the Transaction and Public Interest Statement, 17 (amended Jun. 24, 2008).

Significant strategic investors in Clearwire include Sprint, Intel Capital, Comcast, Time Warner Cable, Google and Bright House Networks.¹⁴

Clearwire remains focused on deploying the first 4G network and taking advantage of a device ecosystem that has been growing for the past year. As Clearwire's CEO Bill Morrow recently reported, "With record breaking subscriber growth, a robust wholesale 'network of networks' approach to 4G, and customer usage that far surpasses anything seen on 3G networks today, Clearwire is standing at the forefront of the next evolution in telecommunications and technology."¹⁵

Today, Clearwire offers CLEAR-branded 4G WiMAX high-speed Internet services to consumers and businesses in 44 markets covering over 51 million people—a five-fold increase in coverage over the past year alone.¹⁶ Clearwire intends to cover up to 120 million people by the end of 2010.¹⁷ In fact, since June, Clearwire has launched 4G markets in Baltimore, Kansas City, central Pennsylvania, Richmond, St. Louis, Salt Lake City, and in the central Washington, D.C. area.¹⁸ Later this year, CLEAR 4G is scheduled to be available in additional major

¹⁴ See Clearwire Corporation, Annual Report (Form 10-K), Part I at 3 (Feb. 24, 2010) ("Clearwire 10K"). While Sprint holds a majority interest in Clearwire, Clearwire operates as a stand-alone provider and wholesaler, offering new choices and competition in the market. See *Fourteenth Report*, ¶¶ 28, 69-71.

¹⁵ Press Release, Clearwire Corporation, Clearwire Reports Strong First Quarter 2010 Results, (May 5, 2010), <http://investors.clearwire.com/phoenix.zhtml?c=198722&p=irol-newsArticle&id=1422880> ("Clearwire 1Q 2010 Press Release").

¹⁶ Press Release, Clearwire Corporation, Clearwire Brings CLEAR 4G to Merced and Visalia, California (July 1, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1443337> ("Clearwire July 2010 Press Release"); Press Release, Clearwire Communications, LLC, Clearwire Introduces CLEAR(TM) 4G WiMAX Internet Service in 10 New Markets (Sep. 1, 2009), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1326282>.

¹⁷ See Clearwire 1Q 2010 Press Release.

¹⁸ Press Release, Clearwire Communications, LLC, Clearwire Ramps Up CLEAR 4G Service in Baltimore (June 1, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1432550>; Press Release, Clearwire Communications, LLC, Clearwire Extends 4G Reach to the Heart of America: Launches CLEAR Service and Retail Stores in Kansas City (June 1, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol->
(continued on next page)

metropolitan areas such as New York City, Los Angeles, the San Francisco Bay Area, Boston, and Denver.¹⁹

Clearwire has significant spectrum resources in the BRS/EBS bands, and has boasted that its spectrum holdings cover 44 billion MHz-POPs, including “approximately 150 MHz of spectrum on average in the largest 100 markets in the United States.”²⁰ “Unlike the country’s cellular giants, Clearwire actually possesses a wealth of spectrum riches. In many major population markets in the U.S., Clearwire has at least two to three times as much spectrum ‘depth’ as AT&T and Verizon, holdings that will allow Clearwire to provide high-speed data to millions and millions of new customers, without having to rely on the government or industry to re-allocate airwaves anytime soon.”²¹

Clearwire also sells wholesale services to its partners, including Sprint, Comcast, and Time Warner Cable, who resell the service to their customers.²² It also expects to add additional wholesale partners in the near future.²³ A Clearwire senior executive recently said, “[w]e have

[newsArticle&ID=1432546](#); Press Release, Clearwire Communications, LLC, Clearwire Expands 4G Footprint in Central Pennsylvania (May 3, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1420886>; Press Release, Clearwire Corporation, Clearwire Brings CLEAR4G to Richmond, Virginia (June 28, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1441986>; Press Release, Clearwire Communications, LLC, Clearwire Launches Initial CLEAR 4G Mobile Internet Service in Central Washington, D.C. Area (June 1, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1432548>.

¹⁹ *Id.*

²⁰ Clearwire 10K at Part I, 7.

²¹ New Report: Clearwire’s 4G Spectrum Advantage, SIDECUT REPORTS, Mar. 15, 2010, <http://www.sidecutreports.com/2010/03/15/new-report-clearwires-4g-spectrum-advantage/>.

²² Comcast recently announced the expansion of its High-Speed 2go service offering 4G wireless service to additional markets, including Baltimore, Richmond, Washington, DC, and certain Pennsylvania markets. Press Release, Comcast Corporation, Comcast Launches High-Speed 2go Wireless Data Service in 10 Additional Eastern Division Markets (July 13, 2010), <http://www.prnewswire.com/news-releases/comcast-launches-high-speed-2go-wireless-data-service-in-10-additional-eastern-division-markets-98325619.html>.

²³ Clearwire Corporation, Q1 2010 Earnings Call Transcript (May 5, 2010), <http://www.morningstar.com/earnings/earnings-call-transcript.aspx?t=CLWR>.

this network with this enviable spectrum position that allows us the capacity to bring on several partners and it is definitely a value to our partners' businesses to have this, and it's of value to us to fill up the network with quality partners."²⁴ Analysts estimate that Clearwire's wholesale model "will support as many as three more [mobile wireless providers] in *every* market, and maybe more, with each setting price independently."²⁵

Regional Facilities-Based Providers Create Additional Consumer Choice. In addition, multiple regional carriers play a significant role in shaping the competitive industry and the consumer experience. These regional providers include Leap Wireless ("Leap"), whose licenses cover at least 186 million people,²⁶ MetroPCS, whose licenses cover at least 146 million people,²⁷ and United States Cellular Corp. ("U.S. Cellular"), whose licenses cover at least 89 million people.²⁸ These regional players have experienced significant recent success in many local markets, often gaining market share greater than some of the national players. For example, according to an industry analyst, during the first quarter of 2010, several regional and other smaller providers garnered "effective market shares" ranging from 11.8 percent to nearly 25 percent.²⁹

²⁴ Sue Marek, *Clearwire's wholesale strategy depends on 'right mix' of partners*, FIERCE WIRELESS, May 25, 2010, <http://www.fiercewireless.com/story/clearwires-wholesale-strategy-depends-right-mix-partners/2010-05-25#ixzz0tToQF76J>.

²⁵ CRAIG MOFFETT, BERNSTEIN RESEARCH, WEEKEND MEDIA BLAST: TOO MANY COOKS IN THE KITCHEN 2 (Aug. 21, 2009) ("TOO MANY COOKS") (emphasis in original).

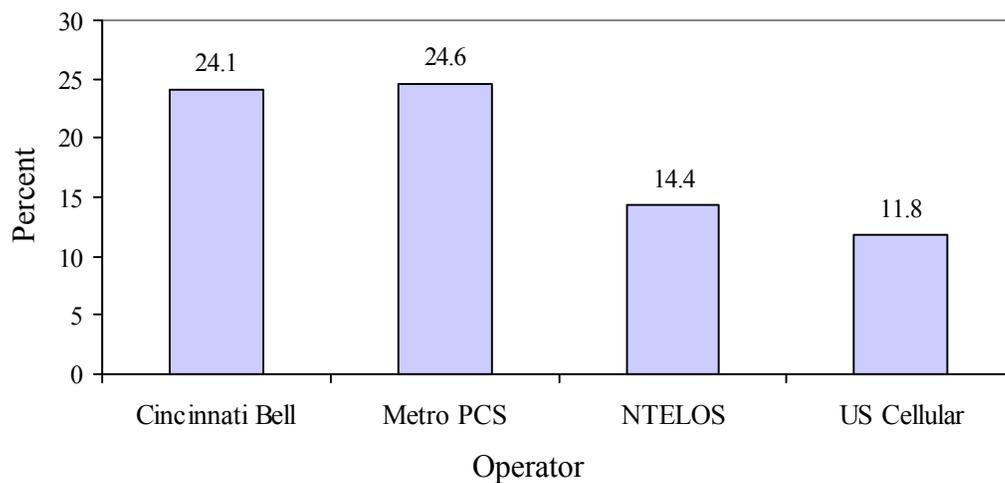
²⁶ See Leap Wireless International, Inc., Annual Report (Form 10-K), at 2 (Mar. 1, 2010) ("Leap Wireless 10-K").

²⁷ See MetroPCS, Investor Overview, <http://investor.metropcs.com/phoenix.zhtml?c=177745&p=irol-irhome> (last visited July 26, 2010).

²⁸ See United States Cellular Corp., Annual Report (Form 10-K), at 1 (Feb. 25, 2010) ("USCC 10K").

²⁹ See JOHN C. HODULIK, UBS INVESTMENT RESEARCH, US WIRELESS 411, 19 (June 3, 2010) ("UBS WIRELESS 411 REPORT"). According to UBS, "effective market share" is the percentage share of gross adds each carrier has relative to its coverage area in a given quarter. These figures are for 1Q10 gross adds.

Effective Market Share (1Q2010)



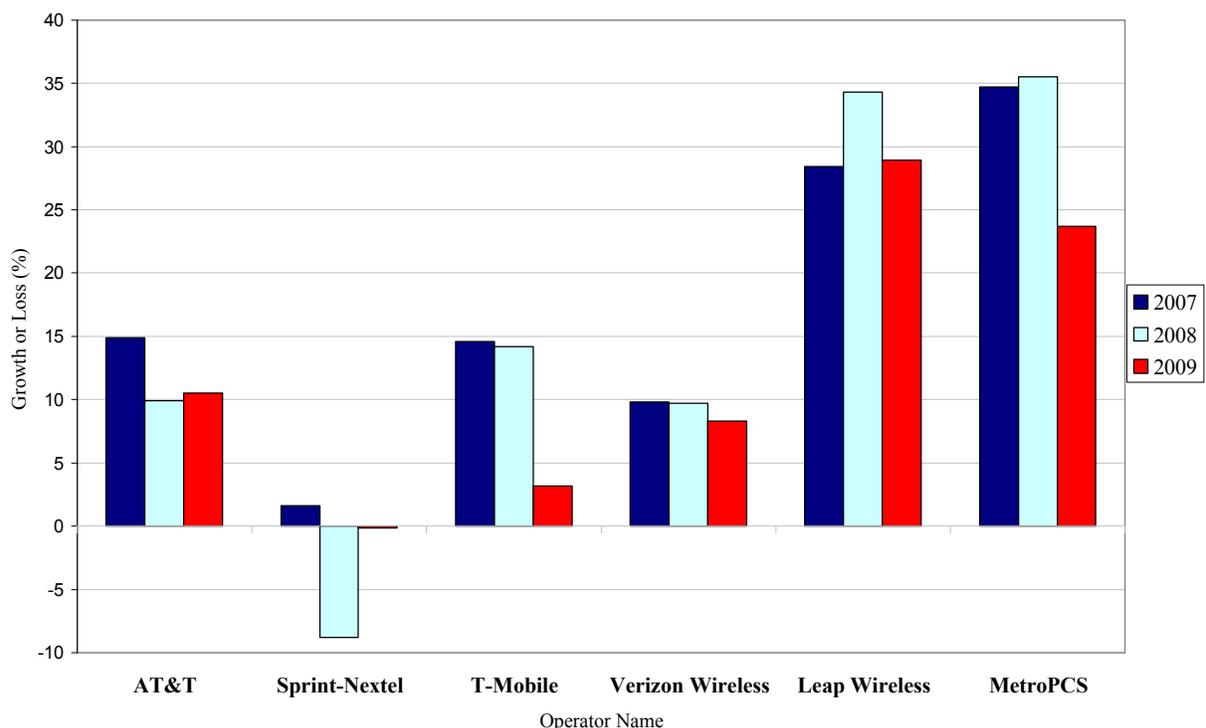
Source: UBS Securities LLC³⁰

Note: "Effective market share" is the percentage share of gross adds each carrier has relative to its coverage area in a given quarter.

These non-"nationwide" providers are strong competitors, and are gaining momentum, as the following graph shows:

³⁰ See *id.* According to UBS, Leap Wireless is not reflected in the chart because its numbers were not available.

Growth in Subscribers



Source: Company Reports for Year-End Numbers in 2007, 08, 09

Leap. Leap owns an expanding network and has recently launched a nationwide service plan that covers all 50 states, the District of Columbia and Puerto Rico.³¹ Leap also serves all of the top 125 markets—through its own CDMA network and through roaming agreements with several other carriers—and its coverage area now includes 277 million POPs.³² Leap combines its significant spectrum holdings with roaming agreements to provide its customers with this

³¹ Press Release, Leap Wireless International, Inc., Cricket Launches New Nationwide Coverage in all 50 States as part of Enhanced Value-Drive, Simplified Service Plans (Mar. 23, 2010), http://phx.corporate-ir.net/phoenix.zhtml?c=191722&p=irol-newsArticle_Print&ID=1405180.

³² See Phil Goldstein, *Leaps latest feature: nationwide coverage*, FIERCE WIRELESS, Mar. 23, 2010, <http://www.fiercewireless.com/ctialive/story/leaps-latest-feature-nationwide-coverage/2010-03-23>.

nationwide service.³³ In 2009, Leap added more net new subscribers than in any year of its history, and service revenues rose 25 percent.³⁴ In 2009, Leap also completed the buildout of several larger markets utilizing AWS spectrum it purchased at auction, which substantially increased the size of the Leap 3G footprint.³⁵

MetroPCS. MetroPCS serves many major markets, including Los Angeles, San Francisco, Dallas, Atlanta, Detroit, Miami, Las Vegas, New York, Boston, and Philadelphia. In the first quarter of 2010, MetroPCS's total revenues increased more than 22 percent over the prior year's first quarter results.³⁶ It reported a record number of net new subscribers in the quarter, resulting in more than 7 million total subscribers.³⁷ MetroPCS will be entering the 4G market with an LTE launch in the second half of 2010 in yet-to-be-named metropolitan areas.³⁸

U.S. Cellular. U.S. Cellular operates in 26 states and has approximately 6.1 million customers.³⁹ In 2010, U.S. Cellular is continuing to expand 3G availability and build on its success in the wireless data business, where revenue grew 28 percent in the first quarter.⁴⁰ U.S. Cellular is also a partner in King Street Wireless, L.P., the winning bidder of 152 licenses in the

³³ Letter from S. Douglas Hutchinson, President, CEO, and Director, Leap Wireless International, Inc. to stockholders, in 2009 Annual Review at iii, http://www.leapwireless.com/ar2009/pdf/Leap_09_10Kletter.pdf.

³⁴ *Id.* at ii.

³⁵ *Id.* at i.

³⁶ Press Release, MetroPCS Communications, Inc., MetroPCS Reports First Quarter 2010 Results, Record First Quarter Adjusted EBITDA and Net Subscriber Additions, 1 (May 6, 2010), <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NDQ4NDh8Q2hpbGRJRDR0tMXxUeXBIPtM=&t=1>.

³⁷ *Id.*

³⁸ *Id.* at 1-2.

³⁹ USCC 10K at 1.

⁴⁰ Press Release, U.S. Cellular, U.S. Cellular Reports First Quarter Results (May 10, 2010), <http://phx.corporate-ir.net/phoenix.zhtml?c=106793&p=irol-newsArticle&ID=1424497>.

FCC's recent 700 MHz auction, and its corporate parent Telephone & Data Systems is the majority partner in Barat Wireless, L.P., which won 17 AWS-1 licenses.⁴¹

Smaller Carriers Also Positively Shape the Market. Finally, the market is also shaped by the behavior of numerous smaller carriers, including Atlantic Tele-Network ("ATN"), Cellular South, Cincinnati Bell Wireless, NTELOS, Pocket Communications, and SouthernLINC. These smaller carriers provide service to millions of Americans, often with significant share of the markets they serve.

ATN, as a result of its transaction with Verizon Wireless, now offers wireless service and has nearly 900,000 subscribers.⁴² In six states, ATN is offering 3G service in 26 markets acquired from Verizon Wireless as part of the ALLTEL divestiture.⁴³ Recently, ATN subsidiary Commnet Wireless, LLC, in conjunction with the Navajo Tribal Utility Authority, was awarded a \$32.1 million grant from NTIA to develop and operate a 4G LTE wireless network covering areas of the Navajo Nation in Arizona, New Mexico and Utah.⁴⁴

Cellular South serves over 800,000 customers, primarily in rural areas in 10 states.⁴⁵ Cellular South has nearly 450 cell sites with 3G high-speed data capacity and has invested more than \$530 million in network infrastructure since 2006.⁴⁶ The company acquired licenses in the

⁴¹ See USCC 10K at 3.

⁴² See Press Release, Atlantic Tele-Network, Inc., Atlantic Tele-Network, Inc. Reports First Quarter 2010 Results (May 6, 2010), <http://www.atni.com/news.html>.

⁴³ See Applications of Atlantic Tele-Network, Inc. and Cellco Partnership d/b/a Verizon Wireless For Consent To Assign or Transfer Control of Licenses and Authorizations, *Memorandum Opinion and Order*, 25 FCC Rcd 3763, 3764 ¶ 1 (2010).

⁴⁴ Press Release, Atlantic Tele-Network, Inc., Stimulus Grant Will Allow Commnet Wireless to Advance Rural Broadband Wireless (Apr. 5, 2010), <http://ir.atni.com/releasedetail.cfm?ReleaseID=456820>.

⁴⁵ See Comments of Cellular South, Inc., WT Docket No. 05-265, at 1 (filed June 14, 2010).

⁴⁶ Cellular South Inc., About Us, <https://www.cellularsouth.com/aboutus/index.html> (last visited July 27, 2010).

700 MHz auction to cover virtually all of Mississippi, Tennessee and most of Alabama and plans to provide 4G LTE service.⁴⁷ In February, Cellular South completed its acquisition of Corr Wireless, obtaining service areas covering 1.3 million people in parts of Alabama and Georgia that will help enable the projected 4G buildout in those areas.⁴⁸

A number of other providers also compete robustly in local markets. Cincinnati Bell Wireless serves approximately 523,000 customers, and its licensed service area includes the Cincinnati and Dayton metropolitan areas, and areas of northern Kentucky and southeastern Indiana where the company operates in the AWS and PCS bands.⁴⁹ NTELOS has over 445,000 wireless subscribers, and in 2009 completed a \$46 million network upgrade to expand its 3G EV-DO coverage.⁵⁰ The company operates primarily in Virginia and West Virginia, with 5.6 million covered POPs utilizing PCS and AWS spectrum. Pocket Communications offers flat-rate wireless services to parts of the Rio Grande Valley in Texas, in Hartford, Connecticut and in Springfield, Massachusetts and serves over 250,000 customers utilizing PCS and AWS owned licenses.⁵¹ SouthernLINC Wireless covers a geographic footprint of over 128,000 square miles

⁴⁷ *Id.*

⁴⁸ Phil Goldstein, Cellular South completes deal for Corr Wireless, FIERCE WIRELESS, Feb. 4, 2010, http://www.fiercewireless.com/story/cellular-south-completes-deal-corr-wireless/2010-02-04?utm_medium=rss&utm_source=rss&cmp-id=OTC-RSS-FW0.

⁴⁹ See Kelly Hodgkins, U.S. Wireless carriers get graded, ranked for their Q1 2010 performance, BGR, May 14, 2010, <http://www.boygeniusreport.com/2010/05/14/u-s-wireless-carriers-get-graded-ranked-for-their-q1-2010-performance/>; Cincinnati Bell Annual Report (Form 10-K), at 3 (Feb. 11, 2010), <http://investor.cincinnati-bell.com/phoenix.zhtml?c=111332&p=irol-reportsAnnual>.

⁵⁰ See Press Release, nTelos Wireless, NTELOS Completes \$46 Million Upgrade to 3G Network (July 8, 2009), <http://ir.ntelos.com/file.aspx?FID=1500026274&IID=4110676>; Press Release, nTelos Wireless, NTELOS Holdings Corp. Reports First Quarter 2010 Operating Results (May 3, 2010), <http://ir.ntelos.com/file.aspx?FID=1001152434&IID=4110676>.

⁵¹ See Pocket Communications, About, <http://www.pocket.com/> (last visited July 27, 2010). In February 2009, Pocket Communications entered into an agreement to form a joint venture with Leap Wireless for wireless service in South Texas, while the transaction has received regulatory approval, it has not yet closed.

in the Southeastern United States and serves approximately 275,000 customers.⁵² Other carriers, of course, are significant providers in the markets they serve.

Resellers/MVNOs Provide Distinct Competitive Features. Mobile resellers/MVNOs also play an important role in wireless competition and innovation.⁵³ Because resale does not require the acquisition of spectrum or the build-out of extensive infrastructure, MVNOs enjoy considerable market freedom. New entrants constantly emerge. Some ventures succeed and others fail, competing freely in the marketplace and providing additional customer choice and benefits. Notably, facilities-based wireless providers sell carriage to MVNOs on an entirely voluntary basis, given the sunset of the Commission’s mandatory resale rules in 2002.⁵⁴

The success of MVNOs in competing directly with facilities-based providers (including, of course, the underlying providers on whose networks they rely) is beyond dispute. As pointed out in the *Fourteenth Report*, unaffiliated MVNO TracFone now ranks fifth among *all* providers of mobile service, facilities-based or otherwise, with over 14 million subscribers.⁵⁵ More recent statistics confirm that TracFone’s service continues to enjoy healthy growth: “TracFone added 1 million connections in Q1 2010 and 3.7 million in the last 12 months (an increase of 31 percent) despite fierce competition in the U.S. prepaid market from the likes of Sprint’s Boost Mobile and

⁵² See SouthernLINC Wireless, SouthernLINC Wireless Press Room - Overview, <http://www.southernlinc.com/pressroom/presskit.asp#overview> (last visited July 27, 2010).

⁵³ The *Fourteenth Report* improperly dismissed the competitive force exerted by resellers and MVNOs. This issue is addressed below. See *infra* Section IV.B.2.

⁵⁴ The Commission’s resale rule sunset on November 24, 2002 in accordance with the Commission’s 1996 decision that the rule would sunset “five years after we award the last group of initial licenses for currently allocated broadband PCS spectrum.” Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services, *First Report and Order*, 11 FCC Rcd 18455, 18468-69 ¶ 24 (1996).

⁵⁵ See *Fourteenth Report*, ¶¶ 33, 308 n.821.

Virgin Mobile (since its acquisition by Sprint in Q4 2009) brands and prepaid specialists MetroPCS and Leap Wireless.”⁵⁶

The success of the MVNO/resale segment is not, of course, limited to TracFone. The Commission’s most current data, for example, show the resale segment growing from 7 percent to 8 percent of the CMRS market in the last year evaluated.⁵⁷ As noted by one analyst:

MVNOs have transformed over the years from being just simple first generation resellers to second generation full MVNOs, capable of offering not just discount voice only services but also a comprehensive service mix to consumers. The mobile communications industry’s shift away from voice centric business to data centric business has set a perfect platform for MVNOs to prosper, given their focus on niche market segments and expertise in providing exciting content such as games and music.⁵⁸

There are, according to a recent report, 61 MVNOs operating in the U.S.,⁵⁹ many of which are providing a wireless service targeted to a specific demographic or submarket.⁶⁰ In addition to TracFone, these MVNOs include the following:

⁵⁶ *Global MVNO market Surpasses 600 in Q2 2010*, WIRELESS INTELLIGENCE, June 24, 2010, <https://www.wirelessintelligence.com/analysis/2010/06/global-mvno-market-surpasses-600-in-q2-2010> (“Wireless Intelligence MVNO Report”).

⁵⁷ *Compare Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Local Telephone Competition: Status of December 31, 2008, Table 17 (rel. June 2010) with Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Local Telephone Competition: Status of December 31, 2007, Table 14 (rel. Sept. 2008).*

⁵⁸ *Global Subscribers for MVNO Services to Reach 188.83 Million by 2015, According to New Report by Global Industry Analysts, Inc.*, PRWEB, July 19, 2010, http://www.prweb.com/releases/mobile_network_operators/MVNO/prweb4273004.htm (search using title of report); *see also* Interview with Sprint CFO of Sprint Pre-Paid John Feehan Suggests Optimism, TMT ANALYST, June 28, 2010, <http://www.mediatechanalyst.com/2010/06/interview-with-cfo-of-sprint-pre-paid.html> (“Virgin Mobile is focusing on customers who use text and data services to power constant connection with social networks. We are capitalizing on the mass evolution in wireless behavior and increased usage of mobile email, social networking and web services particularly by the 18-34 year olds.”).

⁵⁹ *See* Wireless Intelligence MVNO Report.

⁶⁰ *See* TelecomPaper, MVNOs, <http://www.telecompaper.com/research/mvnos/index.aspx?cc=227> (last visited July 29, 2010).

MVNO Operator Examples

MVNO	Specialization
Boost Mobile	Youth Market
Cbeyond	Small Business
CREDO Mobile	Socially Responsible Consumer
Firefly Mobile	Kids and Tweens
Jitterbug	Senior Citizens
Movida Communications	U.S. Hispanics
OnStar	Telematics, Automobile Safety
PlatinumTel Communications	Inner City and Urban
TuYo Mobile	U.S. Hispanics
Virgin Mobile	Young Consumers

Source: www.telecompaper.com

MVNO providers and their service offerings are becoming increasingly diverse, creating new types of competition to facilities-based providers. For instance, Best Buy recently announced its entry into the MVNO business, using Sprint’s EV-DO network to support Best Buy’s launch of its store-branded wireless Internet service, Best Buy Connect.⁶¹ The service is available on laptops and netbooks purchased at Best Buy stores, and “allows users to access 3G coverage in 18,900 cities and 1,855 airports throughout the U.S.”⁶²

Emerging and Non-Traditional Providers Bring New Competitive Pressures. In addition to the providers described above, the competitive analysis must also account for other existing and incipient competitors. In 2009, new competitors continued to enter markets across the country—yet another indicator of effective competition. As discussed below, these include “traditional” wireless service offered by non-traditional providers such as Cox Communications (“Cox”); mobile services offered by satellite providers; voice over Internet protocol (“VoIP”)

⁶¹ See David Twiddy, *Sprint Nextel, Best Buy Team up on Wireless Internet Service*, N.M. BUS. WEEKLY, July 1, 2010, <http://www.bizjournals.com/albuquerque/stories/2010/06/28/daily37.html>.

⁶² See Chloe Albanesius, *Best Buy Releases Pricing for Its Wireless Internet Service*, PC MAGAZINE, July 8, 2010, http://news.yahoo.com/s/zd/20100708/tc_zd/252606.

applications; and intermodal and unlicensed providers. These entities' current businesses and future plans confirm the presence and likely growth of substantial competitive opportunities in the sector.

Cable. Cox is positioning itself to become a significant player in the wireless marketplace. Privately owned, Cox is the third largest cable multiple system operator (“MSO”) in the nation, with more than five million basic video subscribers.⁶³ Cox, which obtained AWS licenses from SpectrumCo, launched 3G service to test customers in Hampton Roads, VA, Omaha, NE, and Orange County, CA in December 2009⁶⁴ and is scheduled to make the service available to all customers in these markets by the end of the summer.⁶⁵ The company has chosen LTE as its 4G technology platform, and announced the successful introduction of voice calling and high definition video streaming using LTE technology in Phoenix and San Diego.⁶⁶ Cox plans to offer consumers a “quadruple play”—bundled voice, data, video, and wireless plans.⁶⁷ Cox also is planning to create a handset portfolio, and the devices in that portfolio “could share

⁶³ See National Cable & Telecommunications Association, Top 25 Multichannel Video Programming Distributors as of Mar. 2010, <http://www.ncta.com/Stats/TopMSOs.aspx> (last visited July 27, 2010).

⁶⁴ Press Release, Cox Communications, Inc., Cox Communications Announces Hampton Roads, Omaha and Orange County as First Wireless Markets (Dec. 8, 2009), <http://cox.mediaroom.com/index.php?s=43&item=457>.

⁶⁵ Phil Goldstein, *Cox's wireless launch pushed to late summer*, FIERCEWIRELESS, May 13, 2010, <http://www.fiercewireless.com/story/coxs-wireless-launch-pushed-out-further/2010-05-13>. Cox initially will launch its wireless service over Sprint's network but will eventually transition those customers over to its AWS and 700 MHz networks. *Id.*

⁶⁶ Press Release, Cox Communications, Inc., Cox Successfully Demonstrates the Delivery of Voice Calling, High Definition Video Via 4G Wireless Technology (Jan. 25, 2010), <http://cox.mediaroom.com/index.php?s=43&item=469>.

⁶⁷ Doug Mohny, *Cox Cable Heats Up Wireless*, CABLE SPOTLIGHT, Jan. 29, 2010, <http://cable.tmcnet.com/topics/cable/articles/73944-cox-cable-heats-up-wireless.htm>.

some features of the company’s new Trio interactive program guide . . . created for Cox’s tru2way customers.”⁶⁸

Satellite. Mobile Satellite Service (“MSS”) providers’ activities continue to intensify, and will likely expand further in response to recent Commission action.

The Commission has authorized MSS satellite systems in the L-band, the Big-LEO Band, and the 2 GHz, or S-Band—covering over 140 MHz of prime spectrum below 3 GHz.⁶⁹ There are four systems presently providing commercial service: SkyTerra and Inmarsat in the L-Band, and Globalstar and Iridium in the Big-LEO Band.⁷⁰ Presently, Inmarsat provides voice, low-speed data, and high-speed data while SkyTerra, Globalstar, and Iridium provide voice and low-speed data services.⁷¹ Two additional systems, DBSD North America (“DBSD”) and TerreStar, have launched new satellites and are under development in the 2 GHz Band, but currently do not provide services to the public.⁷² TerreStar plans to offer 4G services to cell-phone sized handsets and DBSD plans to offer mobile video services.⁷³ To date, SkyTerra, Globalstar, DBSD, and TerreStar have been granted Ancillary Terrestrial Component (“ATC”) authority to provide combined satellite/terrestrial services over their MSS spectrum.

Harbinger Capital Partners (“Harbinger”) recently acquired a controlling interest in SkyTerra and committed to construct an integrated satellite/terrestrial 4G mobile broadband

⁶⁸ Linda Hardesty, *Wireless Strategies: The Partnership’s The Thing*, CABLE360.NET, June 1, 2010, http://www.cable360.net/features360/Wireless-Strategies-The-Partnerships-The-Thing_41515.html.

⁶⁹ See SkyTerra Communications, Inc., Transferor and Harbinger Capital Partners Funds, Transferee Applications for Consent to Transfer of Control of SkyTerra Subsidiary, LLC, *Memorandum Opinion and Order*, 25 FCC Rcd 3059, 3077-78 ¶ 32 (IB/OET/WTB 2010) (“*SkyTerra/Harbinger Order*”); see also *Fourteenth Report*, ¶¶ 36-38.

⁷⁰ *Id.* at 3078 ¶¶ 33-34.

⁷¹ *Id.*

⁷² *Id.* at 3078-79 ¶ 35.

⁷³ *Id.*

network that will cover 100 percent of the U.S. population via the satellite component and 90 percent of the population via the terrestrial component.⁷⁴ Harbinger plans to commence commercial service of this integrated network in the third quarter of 2011.⁷⁵ To meet this schedule, Harbinger plans to launch the first of two next-generation satellites this fall.⁷⁶

Harbinger further committed to deploying 4G terrestrial service to at least 100 million people by December 31, 2012; to at least 145 million by December 31, 2013; and to at least 260 million people by December 31, 2015.⁷⁷ Harbinger plans to offer its satellite/terrestrial network on a wholesale basis to retail distribution customers.⁷⁸

On July 20, 2010, Harbinger moved a step closer to making its plans a reality by announcing an eight-year, \$7 billion deal with Nokia Siemens Networks to build and operate its satellite and mobile broadband network.⁷⁹ The new business venture, called LightSquared, bills itself as the “[f]irst-ever wholesale nationwide 4G-LTE wireless broadband network integrated with satellite coverage” that will “allow[] partners to offer terrestrial-only, satellite-only, or integrated satellite-terrestrial services to their end users.”⁸⁰ Chairman Julius Genachowski

⁷⁴ *Id.* at 3085 ¶¶ 55-56.

⁷⁵ *Id.* at 3085 ¶ 56.

⁷⁶ *Id.* at 3085 ¶ 55.

⁷⁷ *Id.* at 3085 ¶ 56.

⁷⁸ *Id.* at 3085 ¶ 55.

⁷⁹ See Press Release, LightSquared, Introducing LightSquared: Revolutionizing the U.S. Wireless Industry (July 20, 2010), <http://www.lightsquared.com/press-room/press-releases/>; Cecilia Kang, *Harbinger-SkyTerra Ink \$7 Billion Deal with Nokia to Build 4G LTE Satellite Mobile Broadband Network*, WASHINGTON POST, July 20, 2010, http://voices.washingtonpost.com/posttech/2010/07/harbinger-skyterra_ink_7_bln_d.html.

⁸⁰ See Press Release, LightSquared, Introducing LightSquared: Revolutionizing the U.S. Wireless Industry (July 20, 2010), <http://www.lightsquared.com/press-room/press-releases/>.

lauded the agreement to create a “new nationwide 4G wireless broadband network,”⁸¹ which commentators have noted will be a new competitor in the provision of mobile broadband services.⁸²

Globalstar’s ATC capabilities have been enhanced by an arrangement with Open Range Communications that will provide “affordable high-speed broadband Internet and voice services to more than six million citizens in 546 underserved and rural communities, using WiMAX technology” by 2014.⁸³ Open Range began offering rural broadband WiMAX service to subscribers in Northern Colorado in November 2009 and has expanded its rollout to other states, including Alabama, Arkansas, Georgia, Illinois, and Wisconsin.⁸⁴ Open Range’s service,

⁸¹ See Tim Warren & Yu-Ting Wang, *Nokia Siemens to Operate 4G Network for Harbinger*, COMMUNICATIONS DAILY, July 21, 2010, at 8.

⁸² See, e.g., Varun Modi, *LightSquared Squares Competition*, HEADLINER WATCH, July 20, 2010, <http://www.headlinerwatch.com/8108/lightsquared-squares-competition.htm> (“The 4G market is facing a stiff competition with Verizon Wireless and Clearwire Corp facing another competitor in the Harbinger Capital Partners’ LightSquared, which announced a plan with Nokia-Siemens Networks of \$7bn.”); Peter Svensson, *LightSquared Will Make Broadband Wireless Access More Competitive*, CHRISTIAN SCIENCE MONITOR, July 21, 2010 (“LightSquared will launch a new wireless broadband network that aims to provide competition to the incumbent phone companies”), <http://www.csmonitor.com/From-the-news-wires/2010/0721/LightSquared-will-make-Broadband-wireless-access-more-competitive>.

⁸³ Press Release, Open Range Communications, Open Range Communications Secures \$374 Million to Deploy Wireless Broadband Services to 546 Rural Communities (Jan. 9, 2009), http://www.openrangecomm.com/pr/pr_022009.html.

⁸⁴ See Press Release, Globalstar, Inc., Satellite Spectrum Licensee Globalstar Applauds FCC National Broadband Strategy, GLOBENEWSWIRE (Mar. 17, 2010), <http://www.globenewswire.com/newsroom/news.html?d=186821>; Zac Kennedy, *Open Range Communications Comes to Walker County*, DAILY MTN. EAGLE, June 25, 2010, http://www.mountaineagle.com/view/full_story/8030678/article-Open-Range-Communications-comes-to-Walker-County; Martin Couch, *Ribbon-cutting: Open Range Communications*, BRYANT DAILY, June 24, 2010, <http://www.bryantdaily.com/post/Ribbon-cutting-Open-Range-Communications.aspx>; Daniel McDonald, *ISP Open Range to Make City a Wireless Hotspot*, UNION-RECORDER, May 7, 2010, <http://unionrecorder.com/business/x1008076202/ISP-Open-Range-to-make-city-a-wireless-hotspot>; Lee Provost, *Kankakee County: New WiFi Provider Enters Market*, KANKAKEE DAILY JOURNAL, July 17, 2010, <http://daily-journal.com/archives/dj/display.php?id=459298&query=open%20range>; Dan Baulch, *Beaver Dam, Waupun have new Internet Option*, BEAVER DAM DAILY CITIZEN, July 8, 2010, http://www.wiscnews.com/bdc/business/article_0c151fbc-8afe-11df-a996-001cc4c002e0.html.

branded Freedom 4G, combines digital phone service, an Internet modem, Wi-Fi, a router and an answering machine into a portable, laptop-sized box.⁸⁵

Recent events confirm that the Commission is committed to the future development of MSS spectrum for terrestrial mobile broadband services. On July 15, 2010, the Commission adopted a *Notice of Proposed Rulemaking* seeking comment on two proposals to remove regulatory barriers to terrestrial use of MSS spectrum and a *Notice of Inquiry* seeking comment on possible further steps “to increase the value, utilization, innovation, and investment in MSS spectrum generally.”⁸⁶

DBS. Direct Broadcast Satellite (“DBS”) provider DISH Network Corporation (“DISH”), through its subsidiary Manifest Wireless, L.L.C. (“Manifest”), acquired 168 licenses in the 700 MHz auction. Those licenses provide Manifest with a footprint on six MHz of unpaired spectrum covering 76 percent of the U.S. population.⁸⁷ The spectrum may be used to provide a range of fixed, mobile, and broadcast services.

VoIP. VoIP providers are also increasing their presence on mobile platforms. Juniper Research has estimated that the number of mobile VoIP minutes carried annually on 3G and 4G networks will rise from 15 billion in 2010 to 470.6 billion in 2015, with 135 billion minutes in

⁸⁵ See Zac Kennedy, *Open Range Communications Comes to Walker County*, DAILY MTN. EAGLE, June 25, 2010, http://www.mountaineagle.com/view/full_story/8030678/article-Open-Range-Communications-comes-to-Walker-County.

⁸⁶ See Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, ET Docket No. 10-142, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 10-126, ¶ 3 (rel. July 15, 2010).

⁸⁷ DISH Network Corp., Current Report (Form 8-K) at 2 (Mar. 21, 2008), <http://www.sec.gov/Archives/edgar/data/1001082/000141540408000005/0001415404-08-000005-index.htm>.

the United States alone.⁸⁸ As one analyst noted, “[t]he inevitability of Mobile VoIP is pretty apparent. Even the operators who are not offering such services today concede that Mobile VoIP will be widely available on their networks in the near future.”⁸⁹

Intermodal and Unlicensed Competitors. Finally, analysis of the wireless marketplace must account for *intermodal* competition from traditional wireline telephone and cable operators who offer voice, data, and video services functionally similar to those available via mobile devices. Notwithstanding the rapid growth of mobile broadband and mobile video services, the fact remains that consumers still rely on wireline and/or cable connections for access to broadband and video services, both at home and at work.⁹⁰

Licensed wireless providers also continue to face competition from Wi-Fi Internet access. According to one estimate, there were nearly 80,000 Wi-Fi hotspots (free or paid) in the United States as of July 27, 2010.⁹¹ Outlets offering free Wi-Fi today include Starbucks, Barnes & Noble, Panera Bread, Cusi, Borders Books, McDonald’s, and Burger King, as well as numerous hotels, motels, university campuses, train stations, airports, gas stations and other locations.⁹²

⁸⁸ John Levett, Press Release: *Annual Mobile VoIP Minutes to Double Each Year, Reaching 470.6bn by 2015*, JUNIPER RESEARCH, July 1, 2010, <http://www.juniperresearch.com/viewpressrelease.php?id=229&pr=192>.

⁸⁹ AJIT JAOKAR & CHETAN SHARMA, MOBILE VOIP – APPROACHING THE TIPPING POINT 21 (Feb. 2010).

⁹⁰ See, e.g., Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, High-Speed Services for Internet Access: Status as of December 31, 2008, 7 (rel. Feb. 2010) (“There were 86 million residential high-speed connections at year-end 2008, of which 70 million were fixed-technology connections and 16 million were mobile wireless subscribers with data plans for full Internet access. Of the 86 million residential high-speed connections at year-end 2008, cable modem represented 46%, aDSL represented 31% . . .”), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296239A1.pdf.

⁹¹ See JiWire, Wi-Fi Finder, <http://v4.jiwire.com/search-hotspot-locations.htm> (last visited July 29, 2010).

⁹² See Press Release, Starbucks Corp., Starbucks Turns on Free Wi-Fi for Customers July 1st (June 30, 2010), http://news.starbucks.com/article_display.cfm?article_id=411; OpenWiFiSpots, Hotels, Motels and Resorts with Free WiFi, http://www.openwifispots.com/guide_free_wifi_wireless_hotspot-hotels.aspx (listing hotels, motels and resorts with free Wi-Fi) (last viewed July 29, 2010); OpenWiFiSpots, Train Stations, http://www.openwifispots.com/category_free_wifi_wireless_hotspot_Train_Station_37.aspx (last visited July 29, 2010); OpenWiFiSpots, Find free wifi gas stations, http://www.openwifispots.com/category_free_wifi_wireless (continued on next page)

Consumers can easily locate free Wi-Fi hotspots through any number of websites that provide hotspot directories or hotspot location services.⁹³

Moreover, Wi-Fi access no longer requires the user to sit at a fixed location. For example, Amtrak has rolled out free Wi-Fi on all 20 of its Acela Express trains between Washington and Boston.⁹⁴ Aircell's in-flight Wi-Fi service, Gogo, is now available on many domestic airlines.⁹⁵ Consumers can now even enjoy Wi-Fi access without leaving their cars—Subaru, for instance, has announced that the 2011 Subaru Outback is now offering wireless connectivity with Autonet Mobile in-car Internet service.⁹⁶

Furthermore, some cable broadband providers are now giving their subscribers the ability to roam using Wi-Fi. Cablevision, for example, operates its Optimum Wi-Fi network across the New York tri-state area, giving the company's 2.5 million Optimum Online broadband subscribers free Wi-Fi service via thousands of access points at a variety of outdoor locations and select indoor facilities (e.g., Madison Square Garden, Radio City Music Hall).⁹⁷ This year,

[hotspot_Gas_Station_13.aspx](#) (last visited July 27, 2010); Wi-Fi Free Spot, Free Wi-Fi in Airports, <http://www.wififreespot.com/airport.html> (last visited July 29, 2010).

⁹³ See JiWire, Wi-Fi Finder, <http://www.jiwire.com/search-hotspot-locations.htm> (last visited July 29, 2010); gWiFi.net, <http://gwifi.net> (last visited July 29, 2010); Wi-Fi Free Spot, <http://www.wififreenet.com> (last visited July 29, 2010).

⁹⁴ See Associated Press, *Amtrak Offers Wi-Fi on Acela Trains*, MSNBC.COM, Mar. 1, 2010, http://www.msnbc.msn.com/id/35644948/ns/travel-business_travel.

⁹⁵ See Jonnelle Marte, *Airlines Offer More Wi-Fi*, WALL STREET JOURNAL, June 3, 2010, http://online.wsj.com/article/NA_WSJ_PUB:SB10001424052748703561604575282744293409022.html.

⁹⁶ Caroline McCarthy, *Subaru Outback to Double as Wi-Fi Hotspot*, CNET REVIEWS, July 16, 2010, http://reviews.cnet.com/8301-13746_7-20010774-48.html.

⁹⁷ See Press Release, Cablevision Systems Corp., Cablevision's Optimum WiFi Arrives in Bronx, Brooklyn and New Jersey's Union, Essex, Hudson Counties (Oct. 28, 2009), http://www.optimum.net/downloads/OptimumWiFi_NYCNJ.pdf.

Cablevision, Time Warner Cable and Comcast agreed to allow their broadband Internet subscribers to roam freely across each of their Wi-Fi networks in the New York metro area.⁹⁸

At the same time, wireless providers have recognized that Wi-Fi is a valuable tool for managing the unprecedented levels of traffic generated by customers using licensed wireless devices for broadband access. “[A]s more devices such as the Apple iPad come online and the forecast for wireless data shoots through the roof, wireless operators are looking at Wi-Fi as a way to offload some data traffic from their overburdened 3G networks.”⁹⁹

Market developments have reinforced the point. For example, according to a recent AT&T survey, 43 percent of smartphone users said they had connected to an AT&T hotspot at least once during January 2010.¹⁰⁰ Use of AT&T’s hotspots rose to 53.1 million connections in the first quarter of 2010, nearly five times higher than the 10.7 million connections made during the first quarter of 2009 and more than half of the 85.5 million total Wi-Fi connections made during all of 2009.¹⁰¹

In sum, these dozens of emerging and non-traditional offerings are real and meaningful sources of competition and new choices for consumers to meet their needs.

2. Ease of Entry for New Providers

A market’s competitiveness is also buttressed by the ability of new providers to enter. As demonstrated above and below with respect to facilities-based entry, the wireless market

⁹⁸ See Nat Worden, *Cable Companies Reach Wi-Fi Pact*, WALL STREET JOURNAL, Apr. 15, 2010, http://online.wsj.com/article/SB10001424052702304510004575186282875394718.html?mod=WSJ_article_MoreIn.

⁹⁹ Marguerite Reardon, *Wi-Fi Rides to Wireless Networks’ Rescue*, CNET NEWS, Feb. 12, 2010, http://news.cnet.com/8301-30686_3-10451819-266.html?tag=mncol:txt.

¹⁰⁰ *Id.*

¹⁰¹ See Press Release, AT&T Inc., *AT&T Wi-Fi Network Usage Soars to Nearly 53 Million Connections in the First Quarter* (Apr. 22, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30766>.

performs very well along this vector. These facilities-based carriers are joined by the diverse array of reseller/MVNOs that enter and exit the market with relative ease.¹⁰²

New Spectrum. Recent expansion in the availability of licensed spectrum is increasing competition. The AWS and 700 MHz auctions, combined with the Commission’s removal of restrictions from the BRS/EBS spectrum, have created a significant entry vehicle for many potential providers, large and small, local, regional and national. Indeed, out of the 1,087 licenses acquired in the AWS auction, 906 were won by non-nationwide wireless service providers.¹⁰³ To take just a sample: SpectrumCo won 137 AWS licenses covering 267 million POPs. Leap won AWS licenses covering 176 million POPs, and MetroPCS won AWS licenses covering 144.5 million POPs. And more than half of the licenses won were acquired by small businesses that claimed designated entity status.¹⁰⁴ The 700 MHz auction provided similar opportunities for new entrants and non-nationwide operators. Non-nationwide service providers won 754 (or 69 percent) of the 1090 licenses sold; a non-nationwide wireless service provider won a license in every market.¹⁰⁵ And, 55 percent of the winning bidders claimed designated entity bidding credits as a small business.¹⁰⁶ There also was substantial interest in rural areas among new players—75 new entities won 428 licenses in 305 rural service areas.¹⁰⁷ Together,

¹⁰² For further discussion, *see supra* Section II.A.1 (discussing the MVNO/reseller role in the wireless market).

¹⁰³ Data compiled from FCC databases containing results of FCC Auction 66. *See* FCC, Auction 66, Advanced Wireless Services (AWS-1), http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=66 (follow “Closing Charts, Bidder Data” hyperlink).

¹⁰⁴ News Release, FCC, Statement of Chairman Kevin J. Martin on the Conclusion of Advanced Wireless Services Auction (Sept. 18, 2006), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-267473A1.pdf.

¹⁰⁵ News Release, FCC, Statement of Chairman Kevin J. Martin (Mar. 20, 2008), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280968A1.pdf.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

then, these auctions put substantial new spectrum holdings in the hands of new entrants and small providers.

Many providers have begun offering wireless service on their new spectrum. Stelera Wireless launched AWS service in early 2008¹⁰⁸ and now serves 21 cities in Texas and Colorado.¹⁰⁹ Leap also launched AWS service in 2008.¹¹⁰ MetroPCS launched service in Las Vegas, Philadelphia, and Shreveport, Louisiana in 2008 and expanded into New York and Boston in 2009.¹¹¹ As noted above, Cox, which obtained AWS licenses from SpectrumCo and holds 700 MHz licenses, launched 3G service to test customers in Hampton Roads, Omaha, and Orange County, California in December 2009 and is scheduled to make the service available to all customers in these markets by the end of the summer.¹¹²

On March 15, 2010, the Commission released its National Broadband Plan which found that the 50 MHz of spectrum in the pipeline would be “just a fraction of the amount that will be necessary to match growing demand.”¹¹³ In order to meet this demand, the Commission determined that 300 MHz of additional spectrum should be made available for wireless use by

¹⁰⁸ Press Release, Stelera Wireless, Stelera Wireless Launches Inaugural Wireless Network Providing High Speed Internet in Rural America (Feb. 8, 2008), <http://dev.stelerawireless.com/Portals/0/docs/2.08.08%20Stelera%20Wireless%20Launches%20Inaugural%20Wireless%20Network,%20Providing%20High%20Speed%20INternet%20in%20Rural%20America.pdf>.

¹⁰⁹ Stelera Broadband, Coverage and Pricing, <http://dev.stelerawireless.com/CoverageandPricing/tabid/101/Default.aspx> (last visited July 29, 2010).

¹¹⁰ Press Release, Leap Wireless Int'l, Inc., Leap Launches First Advanced Wireless Services (AWS) Market with Full Capacity Retail and Network Introduction of Cricket Unlimited Wireless Service to Oklahoma City (Mar. 31, 2008), <http://phx.corporate-ir.net/phoenix.zhtml?c=191722&p=irol-newsArticle&ID=1123363>.

¹¹¹ Kevin Fitchard, *MetroPCS Northeast expansion begins*, CONNECTED PLANET, July 2, 2008, <http://connectedplanetonline.com/wireless/news/metropcs-aws-network-expansion-0702/>; Kevin Fitchard, *MetroPCS goes live in NYC, Boston*, CONNECTED PLANET, Feb. 4, 2009, <http://connectedplanetonline.com/wireless/news/metropcs-in-boston-nyc-0204>.

¹¹² See *supra* notes 64–65.

¹¹³ National Broadband Plan at 10.

2015, with an additional 200 MHz (for a total of 500 MHz) of spectrum made available for mobile, fixed and unlicensed broadband use by 2020.¹¹⁴ Shortly thereafter, President Obama issued a Memorandum entitled “Unleashing the Wireless Broadband Evolution” in which he recognized that the demand for wireless broadband will require the allocation of additional spectrum for such uses.¹¹⁵ Consistent with the goal set forth in the National Broadband Plan, the President directed that an additional 500 MHz of spectrum be made available over the next 10 years for wireless broadband use. Verizon Wireless applauds these efforts. This influx of spectrum will provide additional competitive opportunities for new entrants and existing providers to expand their competitive offerings.

Secondary Markets. A dynamic secondary market is an important spectrum management tool that allows spectrum to flow to its best and most efficient use as demand and supply conditions change.¹¹⁶ The National Broadband Plan has recognized that secondary markets may provide “the most expedient path to repurposing spectrum to broadband,”¹¹⁷ and the Commission has taken several steps to facilitate wireless service providers’ access to spectrum in the secondary market, including permitting partitioning and disaggregation of spectrum licenses and spectrum leasing. These policies have helped achieve the Commission’s goal of “permit[ting] spectrum to flow more freely among users and uses in response to economic demand.”¹¹⁸

¹¹⁴ *Id.* at xii, 75-76, 84-85.

¹¹⁵ Memorandum from President Barack Obama to the Heads of Executive Departments and Agencies, Unleashing the Wireless Broadband Revolution (June 28, 2010), <http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution>.

¹¹⁶ See JOHN W. MAYO AND SCOTT WALLSTEN, ENABLING EFFICIENT WIRELESS COMMUNICATIONS: THE ROLE OF SECONDARY SPECTRUM MARKETS 2 (June 2009), <http://cbpp.georgetown.edu/75849.html> (“MAYO-WALLSTEN”).

¹¹⁷ National Broadband Plan at 85.

¹¹⁸ Fostering Innovation and Investment in the Wireless Communications Market; A National Broadband Plan for Our Future, *Notice of Inquiry*, 24 FCC Rcd 11322, 11331 n.27 (2009); see also Promoting Efficient Use of (continued on next page)

The Commission’s existing secondary market policies are enabling access to spectrum. Verizon Wireless, for example, is leading the way in making its 700 MHz spectrum available to rural carriers through the secondary market. Specifically, Verizon Wireless plans to lease its 700 MHz spectrum to rural operators who can then use it to offer service.¹¹⁹ Both Chairman Genachowski and Commissioner Baker applauded the initiative as an example of “industry-led innovation.”¹²⁰

The National Broadband Plan recommended action on additional steps to ensure the effectiveness of secondary markets.¹²¹ The Commission determined that a spectrum dashboard—an “Internet-based software [that] enables user-friendly access to information regarding spectrum bands and licenses”—would promote a “robust secondary market in spectrum.”¹²² The spectrum dashboard was launched in March 2010¹²³ as the first step in

Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Second Report and Order, Order on Reconsideration, and Second Further Notice of Proposed Rulemaking*, 19 FCC Rcd 17503, 17505 ¶ 1 (2004).

¹¹⁹ Verizon Wireless, LTE in Rural America, <http://aboutus.vzw.com/rural/Overview.html> (last visited July 29, 2010).

¹²⁰ See News Release, FCC, Joint Statement of Chairman Julius Genachowski and Commissioner Meredith A. Baker on Verizon Wireless’s Rural 4G Initiative (May 12, 2010), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-298131A1.pdf (“The news of Verizon Wireless’ plan to partner with rural providers to accelerate investment in 4G networks is very encouraging.... We look forward to learning more about Verizon Wireless’ initiative, its successful implementation, and other examples of industry-led innovation.”).

¹²¹ National Broadband Plan at 75.

¹²² *Id.* at 80.

¹²³ Spectrum Dashboard Launched in “Beta,” *Public Notice*, 25 FCC Rcd 2734 (WTB 2010).

creating a comprehensive spectrum inventory¹²⁴ and has had more than 125,000 user hits since its launch.¹²⁵

These Commission reforms have significantly expanded secondary market opportunities, granting licensees considerable flexibility and promoting competition—as well as a powerful financial incentive—to make unused spectrum available to other carriers. According to data compiled from the Commission’s Universal Licensing System (“ULS”), the number of approved transfer/assignment applications jumped from an average of roughly 620 per year for the years 1997-1999 to an average of approximately 2,500 for the years 2000-2009.¹²⁶ A similar increase is seen in the leasing of spectrum. In 2003, the FCC adopted spectrum leasing rules for the Wireless Radio Services.¹²⁷ Since then, the number of spectrum lease applications/notifications filed has grown from 120 in 2004¹²⁸ to an average of 555 over the past three calendar years.¹²⁹ Indeed, as of July 28, 2010, there were 2,378 active spectrum leases listed in ULS.¹³⁰ Of those,

¹²⁴ Spectrum Dashboard July Meeting Presentation (July 15, 2010), http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0715/DOC-299830A1.pdf.

¹²⁵ See Letter from Julius Genachowski, Chairman, FCC, to Sen. John D. Rockefeller, IV, Chairman, U.S. Senate Committee on Commerce, Science and Transportation, 1 (July 14, 2010), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-299780A1.pdf.

¹²⁶ MAYO-WALLSTEN at 21, Table 3 (for years 1997-2008). For year 2009, see ULS Advanced Application Search, <http://wireless2.fcc.gov/UlsApp/ApplicationSearch/searchAdvanced.jsp> (last visited July 8, 2010). These figures are for approved applications, and thus do not reflect the total number of separate licenses or service areas in which spectrum was transferred. The primary radio services reflected in this calculation are Cellular, PCS, Paging, BRS, EBS, Microwave, Public Safety, Land Mobile, Industrial/Business, and Coast Guard.

¹²⁷ Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 20604 (2003).

¹²⁸ MAYO-WALLSTEN at 22-23, Tables 4 and 5.

¹²⁹ See ULS Advanced Application Search, <http://wireless2.fcc.gov/UlsApp/ApplicationSearch/searchAdvanced.jsp> (last visited July 8, 2010). Verizon Wireless limited its search to new lease applications/notifications (Application Purpose “LN”), excluding amendment applications, filed in each of the last three years.

¹³⁰ See ULS Lease Search, <http://wireless2.fcc.gov/UlsApp/UlsSearch/results.jsp> (last visited July 28, 2010).

2,154 were “long term,” 1,843 of which involve arrangements where the lessee has *de facto* control over use of the spectrum.¹³¹

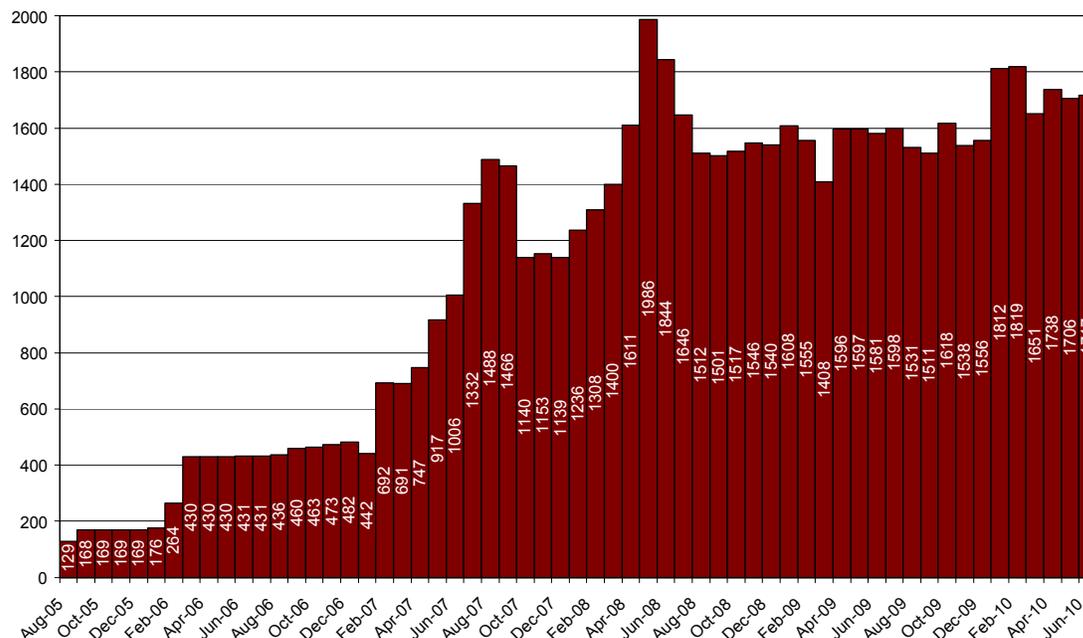
To analyze the efficacy of the leasing option, Verizon Wireless undertook an examination of ULS data related to active leases of broadband PCS spectrum.¹³² Verizon Wireless selected broadband PCS as being representative of a market-area licensed service appropriate for leasing (unlike cellular, which is largely site-licensed, and the BRS/EBS band, where a large number of leases pre-date the lease filing system and are therefore unavailable for analysis).¹³³ The results in the chart below demonstrate that, in fact, secondary markets are thriving:

¹³¹ *Id.*

¹³² While the Mayo & Wallsten study cited above performs some analysis of the FCC’s secondary markets, its analysis concentrates on the number of completed leases. Verizon Wireless’s evaluation of the number of MHz-POPs actually under lease at any given point in time provides another metric for assessing the impact of secondary markets.

¹³³ ULS lease data for PCS authorizations, database extract for Market Based Services as of September 20, 2009 for the period August 2005 - September 2009. For the period October 2009 - June 2010, Verizon Wireless utilized an extract from the Market Based Services database dated July 4, 2010. Data limited to “CW” (PCS) leases in HD table, and net additions/subtractions to total amounts under lease derived by multiplying POPs, as defined in MP table, by frequency bands under lease as shown in MF table, and summing by lease. Leased MHz-POPs increased upon Grant Date for lease in HD table and subtracted upon Cancellation Date shown in HD table. Does not include a small number of leases for undefined areas where POPs in MP table was zero or null value. More information regarding the data contained in ULS records can be found in the ULS data dictionary, ULS Data File Formats (Feb. 12, 2009), http://wireless.fcc.gov/uls/data/documentation/pa_ddef38.pdf.

**PCS MHz-POPs Leased
(MHz-POPs x 1,000,000)**

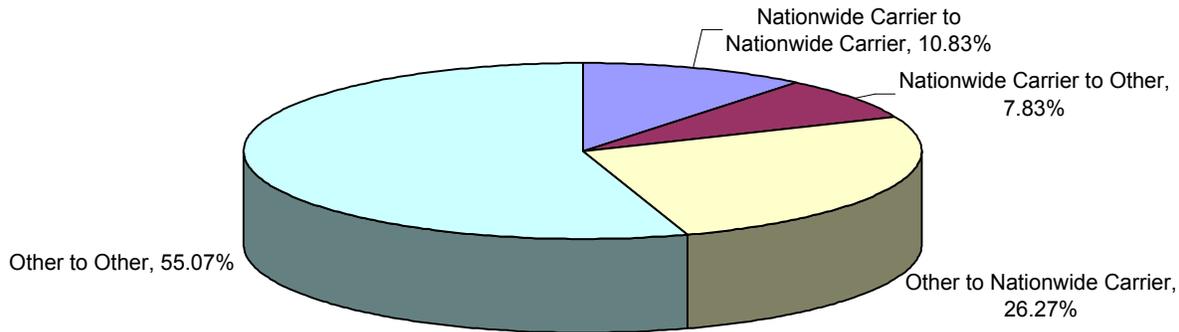


Total Broadband PCS MHz-POPs Subject to Lease

Further, there is no merit to the claim that small carriers cannot obtain spectrum through market-based mechanisms. To evaluate this assertion, Verizon Wireless analyzed assignments and transfers of market-area and cellular authorizations from January 2009 through June 2010.¹³⁴ Verizon Wireless identified, for each transaction, whether the assignee/transferee or assignor/transferor was affiliated with Verizon Wireless, AT&T, Sprint, or T-Mobile (“Nationwide Carriers”). Based upon those classifications, the data show that the overwhelming majority of such transactions take place between non-Nationwide “Other” Carriers:

¹³⁴ Verizon Wireless obtained data from the FCC’s ULS databases. Verizon Wireless limited the dataset to those applications with a consummated status, where the consummation occurred between January 1, 2009 and June 2010. Verizon Wireless also eliminated those applications that did not involve at least one market-based license or cellular license, defined as those authorizations that are currently “active” in either the L_Market or L_Cell database files.

Market Area/Cellular License Assignments/Transfers, January 2009 - June 2010



The robust state of the secondary market for the purchase and lease of spectrum, and the ways in which that market serves small and large carriers alike, is illustrated by the emergence of marketplace actors such as Spectrum Bridge Inc., which serves as a clearinghouse for secondary market transactions. Spectrum Bridge provides a “Universal Spectrum Access (USA) solution us[ing] cognitive networking technology to more effectively access, acquire and manage wireless spectrum and network assets” for entities including wireless carriers, ILECs and CLECs, municipalities, enterprise and private wireless networks, and others.¹³⁵ Using Spectrum Bridge’s SpecEx, a marketplace for spectrum, wireless companies can facilitate buying, selling and leasing rights to their spectrum.¹³⁶ Indeed, the president of the Rural Telecom Group (“RTG”) stated that “Spectrum Bridge simplified the process of finding the right spectrum to expand my clients’ and RTG members’ wireless networks. I was able to quickly search through hundreds of

¹³⁵ Spectrum Bridge, Our Vision, <http://spectrumbridge.com/Technology/our-vision.aspx> (last visited July 28, 2010); *see also* Spectrum Bridge, Markets We Serve, <http://spectrumbridge.com/AboutUs/markets.aspx> (last visited July 28, 2010).

¹³⁶ *See* Spectrum Bridge, Overview, <http://spectrumbridge.com/AboutUs/Overview.aspx> (last visited July 28, 2010); *see also* Spectrum Bridge, About SpecEx, <http://specex.com/about/default.aspx> (last visited July 28, 2010).

millions of dollars worth of available spectrum and find exactly what my clients needed.”¹³⁷ As of July 2010, SpecEx listed licenses in spectrum bands including 700 MHz, AWS, EBS, and PCS Broadband as available for purchase or lease across an assortment of states.¹³⁸

Accordingly, Verizon Wireless continues to urge the Commission to “fashion policies that better enable the growth and development of [secondary] markets.”¹³⁹ Through continued efforts to expand secondary market opportunities and facilitate secondary market transactions, the Commission will most effectively ensure continued access to spectrum, access which will promote innovation and investment.

Roaming. The Commission observed in the *Fourteenth Report* that roaming “may be important to new entrants who wish to begin offering service before they have fully built out their networks.”¹⁴⁰ The record developed over the course of numerous Commission proceedings demonstrates that the market has worked effectively to make voice and data roaming, including 3G roaming, broadly available among carriers of all sizes.

The Commission acknowledged some years ago that voice roaming agreements had become commonplace.¹⁴¹ Moreover, the rates for roaming services have declined dramatically over the years and remain at an all-time low, from just over 30 cents per minute in 1999 to

¹³⁷ Press Release, Spectrum Bridge, Wireless Carriers, Utilities, Railways and Others Have Made Specex.Com the Number One Source for Secondary Market Spectrum (Aug. 10, 2009), http://www.spectrumbridge.com/Libraries/Press_Releases/Spectrum_Bridge_surpassess_8_Million_in_Spectrum_Transactions_Forecasts_Robust_Growth_August_10_2009.sflb.ashx.

¹³⁸ See SpecEx, Spectrum Listing Search Options, <http://www.specex.com/marketplace/search.aspx> (last visited July 8, 2010).

¹³⁹ MAYO-WALLSTEN at 27.

¹⁴⁰ *Fourteenth Report*, ¶ 125.

¹⁴¹ In 2004, the Commission noted that “over the last several years automatic roaming has become widespread.” See *AT&T-Cingular Order*, 19 FCC Rcd at 21586 ¶ 166; see also *id.* at 21588-89 ¶ 174 (“Since the first broadband PCS auction in 1995, the provision of automatic roaming services has become increasingly competitive, and roaming services have become increasingly available and progressively less expensive . . .”).

between three and four cents a minute in recent years.¹⁴² Consumers everywhere have reaped the benefits of these market trends. As the Commission finds in the *Fourteenth Report*, “many service plans now include nationwide roaming at no additional cost to subscribers.”¹⁴³

More recently, the Commission’s data roaming proceeding provides strong evidence that carriers of all sizes interested in entering into data roaming agreements are able to do so today. Verizon Wireless noted, for example, that more than a third of its 60 active roaming partners had data roaming agreements, and about half of those had 3G (EV-DO) agreements.¹⁴⁴ Among the carriers that did not have data roaming agreements, more than half either had not requested such roaming or had only made initial inquiries without taking the steps necessary to move forward. The remaining carriers were currently engaged in negotiations with Verizon Wireless for data roaming.¹⁴⁵ And, earlier this summer, Verizon Wireless entered into two additional roaming agreements for both 2G and 3G services, and several more data roaming agreements are currently being negotiated.¹⁴⁶

Other carriers such as Sprint and AT&T make data roaming agreements available.¹⁴⁷ Further, numerous regional and small carriers, including Leap, U.S. Cellular, MetroPCS, Cellular

¹⁴² *Fourteenth Report*, ¶ 199, tbl.21.

¹⁴³ *Id.* ¶ 124.

¹⁴⁴ See Comments of Verizon Wireless, WT Docket 05-265, at 7-8 (filed June 14, 2010) (“Verizon June Roaming Comments”).

¹⁴⁵ *Id.* at 7-8.

¹⁴⁶ See Reply Comments of Verizon Wireless, WT Docket No. 05-265, at 11 (filed July 12, 2010).

¹⁴⁷ See Comments of Sprint Nextel, WT Docket No. 05-265, at 11 (filed June 14, 2010); Comments of AT&T, WT Docket No. 05-265, at 54 (filed June 14, 2010).

South, ACS Wireless, NTELOS, Bluegrass Cellular, and Cellcom, all have underscored the market availability of data roaming agreements for carriers that request them.¹⁴⁸

3. The U.S. Market Compares Favorably Internationally

A comparison of the U.S. market to other countries demonstrates that the U.S. wireless industry is highly competitive by any measure. First, there continue to be more wireless operators in the U.S. than in any other country. As noted previously, Commission data reflect that 170 facilities-based mobile providers offer wireless services, including national, regional and small carriers, and MVNOs and other competitors offer additional competitive options.¹⁴⁹ In the U.S., more than 73 percent of subscribers have a choice of five or more facilities-based competitors, while nearly 96 percent of subscribers can choose from at least three providers.¹⁵⁰ By contrast, of the 26 Organization for Economic Co-Operation and Development (“OECD”) countries studied by Bank of America Merrill Lynch,¹⁵¹ 12 countries have three or fewer competitors, while another 12 countries have four market providers; only the U.S. and Canada have five or more competitive providers.¹⁵²

¹⁴⁸ See Verizon June Roaming Comments at 8-9.

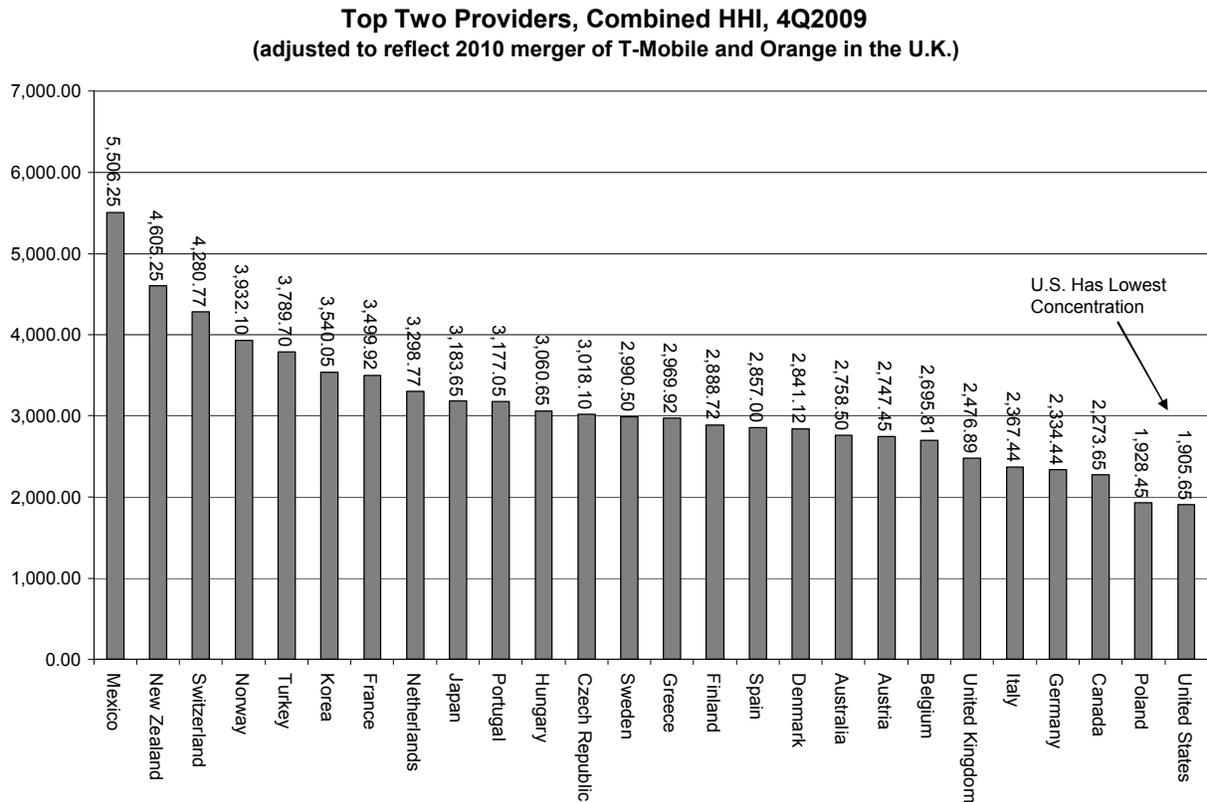
¹⁴⁹ See *supra* note 6; see also *Fourteenth Report*, ¶ 33 (reporting that “[a]t least 60 MVNOs” were operating in the U.S. in the first quarter of 2010, including TracFone, the fifth largest mobile service provider in the U.S. at year-end 2009).

¹⁵⁰ See *Fourteenth Report* at 37 tbl.4.

¹⁵¹ Bank of America Merrill Lynch does not monitor wireless markets in 4 of the 31 OECD countries: Iceland, Ireland, Luxembourg and Slovakia. Also note that the international charts in this section reporting year-end 2009 data on OECD countries exclude Chile, which recently became an OECD member country on May 7, 2010.

¹⁵² See *Ex parte* Letter from Christopher Guttman-McCabe, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 09-157 *et al.*, at 5-6 (Apr. 29, 2010) (“CTIA April 29, 2010 *Ex parte*”); see also GLEN CAMPBELL, BANK OF AMERICA MERRILL LYNCH, GLOBAL WIRELESS MATRIX 2Q10: DATA REMAINS STRONG, VOICE DECLINE EASES 2 tbl.1 (July 9, 2010) (“GLOBAL WIRELESS MATRIX 2Q10”). Note that since UK providers Orange UK and T-Mobile merged in April 2010, the UK has only 4 providers. See Associated Press, *France Telecom, Deutsche Telekom Merge in U.K.*, WIRELESS WEEK, April 1, 2010, <http://www.wirelessweek.com/News/2010/04/Carriers-Merger-UK-France-Telecom-Deutsche-Telekom/>.

Further, while the HHI continues to be only one factor in evaluating market concentration, and is not determinative in any assessment of marketplace competition,¹⁵³ the combined HHI score of the top two U.S. carriers, Verizon Wireless and AT&T, is lower than the combined score for the top two providers in all of the other OECD countries studied, as depicted in the following chart:



Source: CTIA (relying on material from Bank of America Merrill Lynch “Global Wireless Matrix 2Q10”)¹⁵⁴

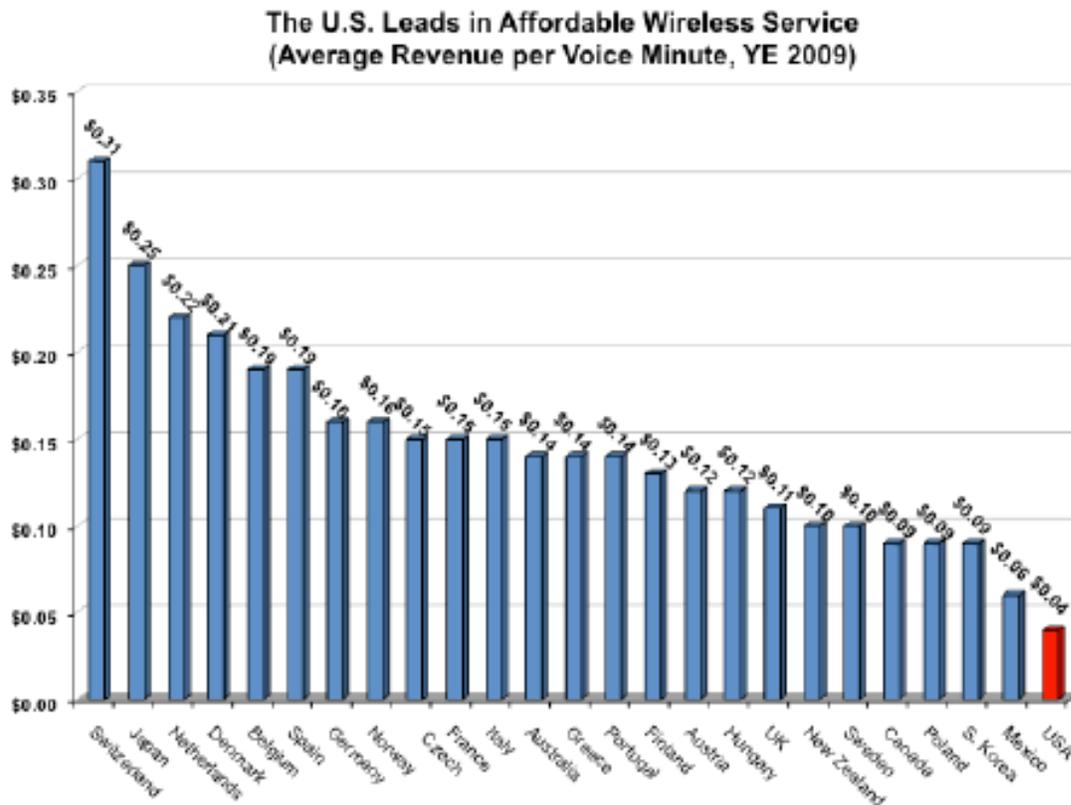
More broadly, the HHI score for the U.S. wireless market is the lowest of the 26 OECD countries studied. Germany, the country with the next lowest HHI, had an HHI concentration

¹⁵³ See discussion *infra* Section IV.B.1.

¹⁵⁴ Comments of CTIA, WT Docket No. 10-133 (filed July 30, 2010) (“CTIA July 30, 2010 Comments”) (updating figures to reflect more recent Bank of America Merrill Lynch data) (citing GLOBAL WIRELESS MATRIX 2Q10).

level more than 475 points greater than the U.S.; and the U.K. number is over 700 points higher following the recent T-Mobile–Orange merger.

U.S. mobile wireless subscribers benefit from this competitive landscape in tangible ways, as the following value metrics demonstrate. First, as of year-end 2009, the average revenue per minute for wireless carriers in the U.S. was four cents, the lowest revenue per minute of the 26 OECD countries studied:

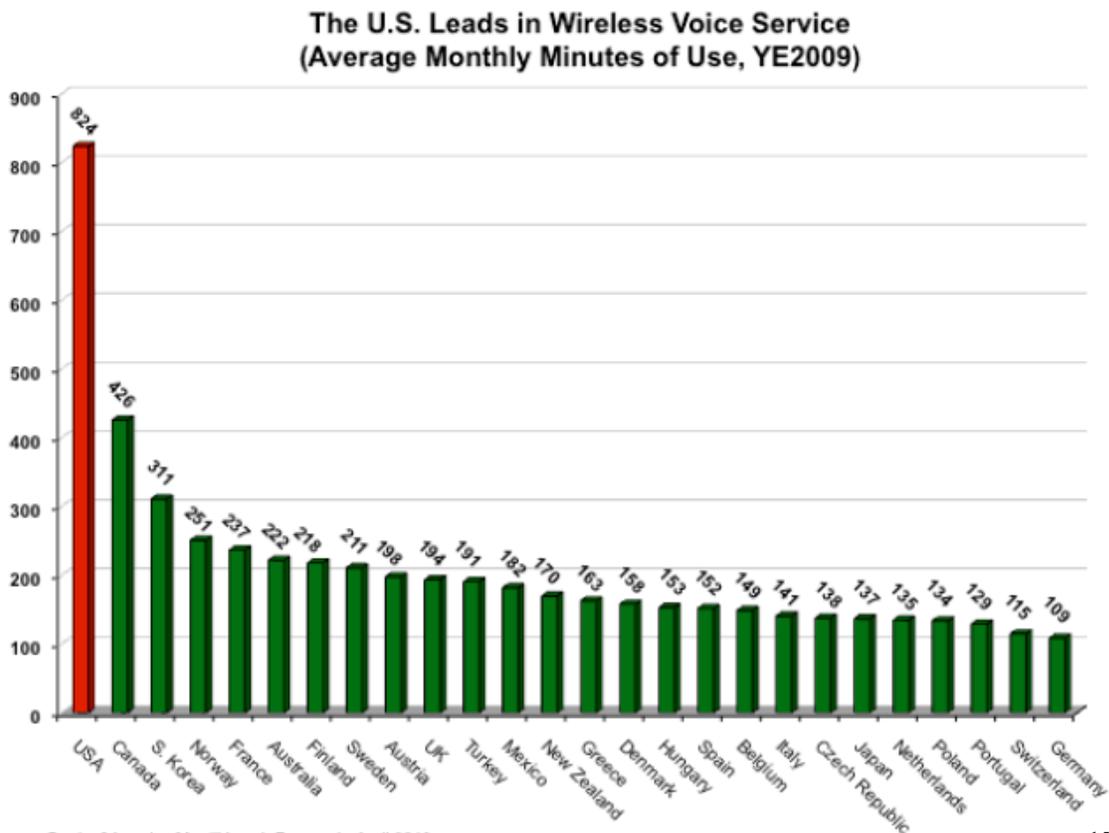


Source: CTIA (relying on material from Bank of America Merrill Lynch “Global Wireless Matrix 1Q10”)¹⁵⁵

By contrast, the comparable per-minute revenue amount for Europe was far higher, at 16 cents, while the figure in Japan was 25 cents, over six times larger than the U.S. amount.¹⁵⁶

¹⁵⁵ See chart included in the CTIA April 29, 2010 *Ex parte* at 11; see also GLEN CAMPBELL, BANK OF AMERICA MERRILL LYNCH, GLOBAL WIRELESS MATRIX 1Q10: A MODEST RECOVERY, ASIA IN THE LEAD 2 tbl.1 (“GLOBAL WIRELESS MATRIX 1Q10”).

Competitive value in the U.S. wireless marketplace is also shown by the fact that U.S. subscribers use almost twice as many Minutes of Use (“MOUs”) as users in any other country.¹⁵⁷ According to the study, Americans average 824 MOUs per month—and continue to use services at a rate nearly *five times* greater than the OECD European countries (160 monthly MOUs).¹⁵⁸ Indeed, the average monthly usage figure among all other OECD countries studied is 185 MOUs, less than a quarter of the U.S. figure and again reflective of the greater value of services in the U.S. competitive marketplace:



Source: CTIA (relying on material from Bank of America Merrill Lynch “Global Wireless Matrix 1Q10”)¹⁵⁹

¹⁵⁶ See GLOBAL WIRELESS MATRIX 1Q10 at 2 tbl.1.

¹⁵⁷ See CTIA April 29, 2010 *Ex parte* at 12; GLOBAL WIRELESS MATRIX 1Q10 at 2 tbl.1.

¹⁵⁸ See GLOBAL WIRELESS MATRIX 1Q10 at 2 tbl.1.

¹⁵⁹ See CTIA April 29, 2010 *Ex parte* at 12 (citing GLOBAL WIRELESS MATRIX 1Q10).

In addition, as discussed below, the competitiveness of the U.S. marketplace is reflected in the numbers and types of network devices and applications available. For example, there are more handset models and more varied wireless devices available in the U.S. than in any other country in the world.¹⁶⁰ And the U.S. mobile applications market is the largest and most competitive in the world, with seven competing application stores and over 300,000 applications available, with new applications being added constantly at an exponential rate.¹⁶¹

Lastly, and critically important for the future, U.S. wireless providers continue to be world leaders with respect to capital investment in networks and services. In 2009, U.S. providers invested over \$20 billion in their networks; the figure for the five largest European countries combined—France, Germany, Italy, Spain and the U.K. (“EU5”)—was less than \$18 billion.¹⁶² Again, international comparative data confirm that the U.S. marketplace is the most competitive in the world—to the significant benefit of consumers.

B. Mobile Wireless Providers Compete Fiercely on Price and Numerous Other Factors

1. Intensifying Price Competition

Price competition is playing a significant role in this shifting market landscape. For example, IDC’s 2009 Mobile Consumer Survey revealed that 28 percent of customers who changed carriers last year identified the availability of a cheaper plan as their reason for

¹⁶⁰ See CTIA, Handset Innovation, attached to *Ex parte* Letter from Christopher Guttman-McCabe, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 09-51 et al. (filed Aug. 14, 2009).

¹⁶¹ See discussion *infra* Section III.C.2.

¹⁶² See CTIA April 29, 2010 *Ex parte* at 16.

switching.¹⁶³ IDC also predicts that in 2010 “[c]arriers will closely watch the competition and stay reactive to new offerings. The prepaid arena will be the most volatile. With prepaid carriers competing for a smaller pool of customers and less revenue, no one can afford to lose market share. On the postpaid side, look for carriers to use price changes on voice and messaging plans to attract new customers.”¹⁶⁴

Overall Subscriber Trend: Continued Growth and Impact of the Prepaid Model.

Prompted in part by the economic downturn, the prepaid market has grown steadily as consumers turn to wireless options offering low-cost, often unlimited service without long-term contracts or credit checks. The prepaid segment’s “customer base is growing about five-times faster than the traditional postpaid customer base,”¹⁶⁵ while revenues from prepaid service are growing seven times faster than those from postpaid service.¹⁶⁶

This boom in prepaid service has influenced pricing behavior across the wireless marketplace. Morningstar observes that it believes “the move toward the unlimited prepaid model has served to increase price competition in the battle for mid-tier customers that would have previously opted for a contract.”¹⁶⁷ The diversity and variability in the U.S. pricing models further underscores the competitive nature of the market.

¹⁶³ RICHARD MURPHY, IDC, U.S. WIRELESS CARRIERS LEVERAGE PRICING TO REMAIN COMPETITIVE 1 (Apr. 2010) (“IDC REPORT”).

¹⁶⁴ *Id.* at 7.

¹⁶⁵ David Goldman, *How Low Can Low-Cost Wireless Carriers Go?*, CNNMONEY.COM, Mar. 23, 2010, http://money.cnn.com/2010/03/23/technology/leap_wireless/index.htm.

¹⁶⁶ CRAIG MOFFETT ET AL., BERNSTEIN RESEARCH, LEAP WIRELESS AND METROPCS: THE LOW END IS WHERE THE ACTION IS 1 (Apr. 12, 2010) (“BERNSTEIN LOW END ACTION REPORT”).

¹⁶⁷ MICHAEL HODEL, MORNINGSTAR, SPRINT NEXTEL CORPORATION ANALYST REPORT 1 (May 20, 2010).

Overall Subscriber Trend: A Surge in Data Usage and Diversity of Data Offerings, While Prices Fall. As consumers increasingly use their wireless service for data services—and as more and more of these applications are throughput intensive—service providers are responding by investing in more robust networks and diversifying their data service offerings at a variety of price points to meet varying consumer needs.¹⁶⁸ This menu of options has fostered consumer adoption and intense price competition in every segment.

ARPU Reflects the Shifting Market. These industry-wide trends—the prepaid model driving price competition and data usage experiencing substantial growth—are playing out in Average Revenue Per User (“ARPU”) as well. Voice ARPU has declined dramatically, falling 9.0 percent from 2008 to 2009, as compared to data ARPU, which rose 19.4 percent during that same period as consumers took increased advantage of data offerings.¹⁶⁹ While data ARPU has gone up, data traffic has increased even more rapidly. As one analyst notes, “[u]sage is growing far faster than revenue,” referring to wireless data as “deflationary.”¹⁷⁰ Indeed, the analyst reports that the data traffic of the largest four U.S. carriers in 2009 increased nearly five times as much as data revenues.¹⁷¹ These figures also underscore the trend towards consumers substituting SMS or other data service for voice calls.¹⁷²

¹⁶⁸ See, e.g., IDC REPORT at 7-9 (noting that that “pricing will continue to play a major role in the U.S. wireless market in the coming year” and that service providers “will closely watch the competition and stay reactive to new offerings”).

¹⁶⁹ *Id.* at 3 tbl.1.

¹⁷⁰ CRAIG MOFFETT ET AL., BERNSTEIN RESEARCH, U.S. TELECOMMUNICATIONS AND GLOBAL TELECOM EQUIPMENT: THE WIRELESS DATA EXAFLOOD 2 (June 14, 2010) (“BERNSTEIN WIRELESS DATA EXAFLOOD REPORT”).

¹⁷¹ *Id.* at 12 ex.14, 18-19.

¹⁷² See *Fourteenth Report*, ¶ 176.

These revenue and usage trends translate directly to consumer value. Wireless CPI, the wireless telephone service component of the Consumer Price Index, fell 1.137 percent from December 2008 to December 2009,¹⁷³ at the same time the CPI for all items increased by 2.7 percent.¹⁷⁴ Indeed, from December 2000 to December 2009, the wireless CPI has *fallen* 15.45 percent¹⁷⁵ while the overall CPI for all items has *increased* 24.59 percent.¹⁷⁶

a. Prepaid Market and Price Trends

Credit Suisse notes that “[t]he prepaid wireless space is highly competitive and pricing has been under pressure for the last 12-18 months.”¹⁷⁷ IDC observes that “the prepaid user is largely driven by price,”¹⁷⁸ and the aggressive price cutting in the prepaid market has fueled a rapid rise in subscribers across a variety of carriers. Prepaid and pay-as-you-go subscriptions comprised 20.3 percent of all estimated wireless connections at year-end 2009, up from 15.16 percent in January 2007.¹⁷⁹ Overall approximately 47.5 percent of the gross adds in the wireless industry in 2009 came from a variety of prepaid plans.¹⁸⁰ The following chart shows prepaid

¹⁷³ See Bureau of Labor and Statistics, Consumer Price Index, All Urban Consumers, U.S. City Average, Wireless Telephone Services, Not Seasonally Adjusted (“CPI – Wireless”), <http://www.bls.gov>, cited in CTIA 2009 WIRELESS INDICES at 253 tbl.110.

¹⁷⁴ See Bureau of Labor and Statistics databases, Consumer Price Index, All Urban Consumers, U.S. City Averages, All Items, Not Seasonally Adjusted (“CPI – All Items”), <http://www.bls.gov>.

¹⁷⁵ See CPI – Wireless, *supra* note 173.

¹⁷⁶ See CPI – All Items, *supra* note 174.

¹⁷⁷ JONATHAN CHAPLIN, CREDIT SUISSE, LEAP WIRELESS TRADING ALERT 1 (May 7, 2010).

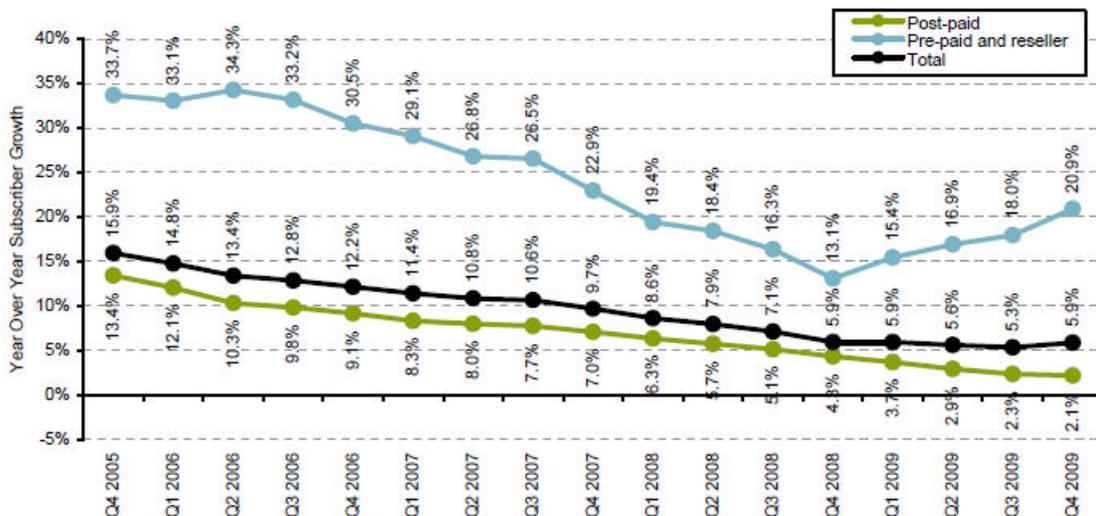
¹⁷⁸ IDC REPORT at 5.

¹⁷⁹ ROBERT ROCHE, LESLEY O’NEILL, CTIA PUBLIC AFFAIRS, PREPAID WIRELESS SERVICE IN THE UNITED STATES: A SNAPSHOT FROM CTIA BASED ON CTIA’S SEMI-ANNUAL WIRELESS INDUSTRY SURVEY RESULTS 5 tbl.2 (Mar. 2010) (App. C of CTIA 2009 WIRELESS INDICES).

¹⁸⁰ *Id.* at 6 tbl.4, 7.

growth exceeding 20 percent at the end of 2009, versus postpaid growth, which had dropped to 2.1 percent annually of the wireless base in the fourth quarter of 2009.¹⁸¹

U.S. Wireless Industry Subscriber Growth Rates



Source: Company reports, Bernstein estimates and analysis

Overall, by the end of 2009, the prepaid revenue growth had surged to 11.6 percent, while postpaid revenue’s growth was roughly 1.6 percent year-over-year—even taking into account growth in data revenues.¹⁸²

The strong growth in the prepaid market is expected to continue. UBS Investment Research indicates that “[p]repaid represented 56% of industry net adds in 1Q, up from 49% in 4Q09... Prepaid subscribers grew 16% annually in 1Q.”¹⁸³ Strategy Analytics predicts that “[p]repaid plans will account for two-thirds of net adds in 2010.”¹⁸⁴

¹⁸¹ BERNSTEIN LOW END ACTION REPORT at 10.

¹⁸² *Id.* at 2 (internal exhibit references omitted).

¹⁸³ UBS WIRELESS 411 REPORT at 1; *see also id.* at 7 (describing prepaid market sector).

¹⁸⁴ SUSAN WELSH DE GRIMALDO & PHIL KENDALL, STRATEGY ANALYTICS, US WIRELESS MARKET OUTLOOK 2010-2015 at 2, 5-6 (May 2010) (“US WIRELESS MARKET OUTLOOK REPORT”).

These new subscribers are being courted by a wide array of carriers—facilities-based and MVNO, national and regional, niche-targeted and mass market. The following chart summarizes the U.S. prepaid market by provider:¹⁸⁵

U.S. Wireless Prepaid Subscriber Share by Carrier, 3Q09

Carrier	Share (%)
TracFone	24.0
T-Mobile	11.9
MetroPCS	11.5
Boost Mobile	10.4
Verizon Wireless	9.9
AT&T	9.9
Virgin Mobile	8.7
Leap Wireless	8.5
Other	5.3

Note: Total U.S. prepaid subscribers are 55 million.

Source: IDC, 2010

All-you-can-eat and flat-rate offerings have been central to the growth of the prepaid market.¹⁸⁶ Morningstar observed that carriers “have taken notice of the growing popularity of unlimited prepaid plans, increasing competition in the market.”¹⁸⁷ TracFone Wireless’s Straight Talk service, “which offers a monthly plan for as low as \$30 and an unlimited-access plan—including text messages and mobile Web access—for \$45 a month” is now available nationally at Wal-Mart, making it a “potent competitor in the hot prepaid segment. With a national stage,

¹⁸⁵ IDC REPORT at 5 tbl.3.

¹⁸⁶ *Id.* at 6.

¹⁸⁷ IMARI LOVE, MORNINGSTAR, METROPCS COMMUNICATIONS, INC. ANALYST REPORT at 1 (Jan. 19, 2010).

Straight Talk is able to apply pressure on all of the prepaid wireless providers.”¹⁸⁸ Leap, through Cricket, announced in March 2010 that it would offer the first \$30 per month unlimited nationwide talk and text plan, available in 125 cities in all 50 states.¹⁸⁹ The plan was \$10 cheaper than other similar plans offered.¹⁹⁰

Accelerating competition for customers who want prepaid wireless services is also apparent from the response of nationwide providers. Sprint CEO Dan Hesse recently stated that “prepaid in terms of its percentage of the overall wireless industry is going to grow, so our turnaround is really focused on prepaid becoming a more and more important part of the company and doing better in that market.”¹⁹¹ Under its prepaid brand Virgin Mobile, Sprint offers pay-as-you-go plans ranging from \$25 (for 300 anytime minutes and unlimited text and picture messages) to \$60 (for unlimited anytime minutes, messages, video and access to mobile Internet).¹⁹² Just this month, Sprint announced a new sub-brand offering from Virgin Mobile—“payLo”—touted as “one of the lowest pay-as-you-go offers.”¹⁹³ It will offer a 400 minute plan for just \$20 per month—“providing budget-conscious consumers one of the best prepaid wireless values with minutes as low as 5 cents.”¹⁹⁴ Sprint also introduced the sub-brand Common Cents

¹⁸⁸ Roger Cheng, *Wal-Mart Wireless Expands: Retailer Will Offer Tracfone’s Cell Phone Plan Nationally*, WALL STREET JOURNAL, Oct. 15, 2009.

¹⁸⁹ Goldman, *How Low Can Low-Cost Wireless Carriers Go?*.

¹⁹⁰ *Id.*

¹⁹¹ Associated Press, *On the Call: Sprint CEO Dan Hesse on Prepaid*, ABC NEWS/MONEY, Apr. 28, 2010, <http://abcnews.go.com/Business/wireStory?id=10500702>.

¹⁹² See Virgin Mobile USA, Terms of Service – Virgin Mobile Service Plans – Current Monthly Plans, http://www.virginmobileusa.com/legal/terms-of-service-virgin-mobile#virgin_mobile_current_monthly_plans (last visited July 26, 2010).

¹⁹³ Press Release, Sprint Nextel, payLo™ by Virgin Mobile Launches with Minutes as Low as 5 Cents (July 15, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1447950.

¹⁹⁴ *Id.*

Mobile prepaid portfolio with 7-cent minutes that “round down” and 7-cent text messages— offering an additional option of standard as opposed to flat-rate prepaid service.¹⁹⁵ Sprint has a variety of other prepaid wireless service brands designed to appeal to specific customers including Beyond Talk (unlimited messaging, email, data and web and a set number of voice minutes), Broadband 2Go (for the high-data using customer), and Assurance Wireless (which provides a free phone and 200 minutes of wireless service free each month to qualified¹⁹⁶ individuals).¹⁹⁷

Other national carriers are also innovating in the prepaid space. T-Mobile recently became the first U.S. carrier to offer a prepaid BlackBerry as part of its T-Mobile Complete offering, which includes unlimited plans starting at \$50 a month.¹⁹⁸ Verizon Wireless began offering prepaid monthly plans in January 2010, including unlimited talk for \$74.99 and unlimited talk and text for \$94.99.¹⁹⁹ It also offers three prepaid plans for its Mobile Broadband

¹⁹⁵ Press Release, Sprint Nextel, New Common Cents Mobile Answers the Call for PAY-AS-YOU-GO Innovation With Unique Round Down™ Minutes (May 13, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1426538. The “round down” concept is exclusive to Common Cents Mobile. Instead of rounding up to the nearest whole minute, Common Cents will “round down” a customer’s call to the next lowest minute (e.g., a 1:46 minutes call would be rounded down to 1 minute). *Id*; see also US WIRELESS MARKET OUTLOOK REPORT at 7 (discussing Sprint Nextel prepaid offerings).

¹⁹⁶ “Customers eligible for Assurance Wireless include those who participate in Medicaid, Food Stamps/SNAP, Temporary Cash Assistance (TCA/TANF), Supplemental Security Income (SSI), Bureau of Indian Affairs Programs (BIA), Federal Public Housing Assistance (Section 8), Low Income Home Energy Assistance Program (LIHEAP), or National School Lunch Program’s Free Lunch Program. Customers may also qualify based on low household income.” Press Release, Sprint Nextel, Assurance Wireless to Aid Louisiana Residents Facing Economic Hardship with Free Cell Phone and Wireless Service (July 15, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1448132.

¹⁹⁷ Press Release, Sprint Nextel, Sprint’s Prepaid Multi-Brand Strategy Focuses on Distinct Customer Segments (May 6, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1423292.

¹⁹⁸ Ross Miller, *T-Mobile Complete: a \$300 contract-free BlackBerry Curve 8520 with one month service*, ENGADGET, Nov. 18, 2009, <http://www.engadget.com/2009/11/18/t-mobile-complete-a-300-contract-free-blackberry-curve-8520-wi/>.

¹⁹⁹ US WIRELESS MARKET OUTLOOK REPORT at 7-8.

services on select devices such as USB modems and netbooks—including a daily option (\$15 for 100 MB), a weekly option (\$30 for 300 MB), and a monthly option (\$50 for 1 GB). And AT&T, through its prepaid brand “GoPhone,” offers a \$60 unlimited talk and text package.²⁰⁰

b. Postpaid Pricing

Price-cutting is not limited to the prepaid sector; carriers are cutting rates for their postpaid service packages as well. As one analyst notes, since the “introduction of unlimited voice plans at \$100 in early 2008, high-end postpaid pricing slowly evolved over the next two years as the big four carriers have jockeyed for position and also evolved their unlimited offerings to react (where necessary) to the threat of \$50 flat-rate prepaid plans.”²⁰¹

Carriers recently have announced several new innovative postpaid offerings, many with lower prices or higher usage allowances for the same price:

- During the first month of 2010, AT&T, Verizon Wireless, and U.S. Cellular reduced the price of their unlimited nationwide voice plans by \$30 per month.²⁰²
- AT&T announced a new plan for all of its devices that allows customers to choose unlimited talk for \$69.99 per month.²⁰³ AT&T also announced that smartphone customers may subscribe to a 200 MB data plan for \$15.00 per

²⁰⁰ *Id.* at 7.

²⁰¹ *Id.* at 8.

²⁰² Press Release, AT&T Inc., AT&T Announces New Unlimited Plans (Jan. 15, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30401>; Press Release, Verizon Wireless, Verizon Wireless Offers Simple, Affordable Convenience With New Unlimited Voice Plans (Jan. 15, 2010), <http://news.vzw.com/news/2010/01/pr2010-01-14c.html>; Press Release, U.S. Cellular, U.S. Cellular Offers New Unlimited National Calling Plans (Jan. 18, 2010), <http://www.uscellular.com/uscellular/common/common.jsp?path=/about/press-room/2010/us-cellular-offers-new-unlimited-national-calling-plans.html>; US WIRELESS MARKET OUTLOOK REPORT at 8 (“Verizon and AT&T (and US Cellular) cut[] the prices on their unlimited postpaid offers in January 2010 by \$30/month”).

²⁰³ Press Release, AT&T Inc., AT&T Announces New Unlimited Plans (Jan. 15, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30401&mapcode=consumer/financial>. AT&T also offers plans for 450 minutes for \$39.99 and 900 minutes for \$59.99. IDC REPORT at 3.

month; or a 2 GB data plan for \$25.00 per month; or a 2 GB data plan with tethering for \$45.00 per month.²⁰⁴

- Cricket launched new, nationwide unlimited long distance talk plans beginning at \$30 per month. For \$40 a month, customers can also get unlimited text, picture, and video messaging and mobile web services.²⁰⁵
- MetroPCS launched “Wireless for All,” a series of new plans, ranging from \$40-60 per month for unlimited nationwide talk, text, and web-services.²⁰⁶
- NTELOS announced the introduction of several unlimited plans, including unlimited voice services for \$49.99 per month, unlimited voice and text services for \$59.99 per month, and a 3G unlimited smartphone plan (with voice, text and web-surfing services included) for \$79.99 per month.²⁰⁷
- SouthernLINC initiated its new Unlimited Cellular Advantage plan which bundles unlimited private and group Push to Talk (PTT) minutes, unlimited cellular minutes, unlimited text messaging and unlimited data service (including access to BlackBerry e-mail) for \$99.99 per month across its regional calling area.²⁰⁸
- Sprint offered unlimited talk, text, and data plans for \$99.99 per month.²⁰⁹ It also offers three monthly anytime voice options: 200 minutes for \$29.99 per month, 450 minutes for \$39.99 per month and 900 minutes for \$59.99 per month.²¹⁰
- T-Mobile provides similar unlimited voice plans starting at \$49.99 for individuals and \$79.99 per month for families,²¹¹ and separately offers two other monthly

²⁰⁴ Press Release, AT&T Inc., AT&T Announces New Lower-Priced Wireless Data Plans to Make Mobile Internet More Affordable to More People (June 2, 2010), <http://www.att.com/gen/press-room?pid=17991&cdvn=news&newsarticleid=30854&mapcode=financial|Wireless> (“AT&T Tiered Pricing Release”).

²⁰⁵ Press Release, Cricket Communications, Inc., Cricket Launches New Nationwide Coverage in all 50 States as part of Enhanced Value-Driven, Simplified Service Plans (Mar. 23, 2010), <http://investor.leapwireless.com/phoenix.zhtml?c=191722&p=irol-newsArticle&ID=1405180>; *see also* Cricket Communications, Inc., Cell Phone Plans, <http://www.mycricket.com/cell-phone-plans> (last visited Jul. 27, 2010).

²⁰⁶ Press Release, MetroPCS Communications, Inc., MetroPCS Introduces Wireless for All Nationwide Service Plans with No Hidden Taxes or Regulatory Fees (Jan. 12, 2010), <http://investor.metropcs.com/phoenix.zhtml?c=177745&p=irol-newsArticle&ID=1373920>.

²⁰⁷ Press Release, NTELOS Wireless, NTELOS Announces New Nationwide 3G Unlimited Calling Plans (Mar. 2, 2010), <http://ir.ntelos.com/Cache/1500026269.PDF>.

²⁰⁸ *See* Press Release, SouthernLINC Wireless, SouthernLINC Wireless Introduces New Service Plans and Motorola Phones (Mar. 4, 2010), http://www.southernlinc.com/pressroom/service_plans.asp.

²⁰⁹ Sprint Nextel, Plans, http://nextelonline.nextel.com/NASApp/onlinestore/en/Action/DisplayPlans?filterString=Individual_Plans_Filter&id12=UHP_PlansTab_Link_IndividualPlans (last visited July 27, 2010).

²¹⁰ IDC REPORT at 3 tbl.1.

voice options for individuals: 500 whenever minutes for \$29.99 and 1,000 whenever minutes for \$39.99.²¹²

- T-Mobile launched a family share plan allowing customers to add lines of service for as little as \$5 per month.²¹³
- U.S. Cellular announced new unlimited national calling plans starting at \$69.99 per month.²¹⁴
- Verizon Wireless announced new monthly service plans, including a nationwide unlimited talk plan for \$69.99 per month and nationwide unlimited talk and text plans for \$89.99 a month.²¹⁵ Other plans include 450 anytime minutes for \$39.99 and 900 anytime minutes for \$59.99 per month.²¹⁶

c. Data Pricing

Consistent with the downward trend in voice prices, wireless data rates per megabyte have also declined over time. Indeed, as consumers demand more and more data, the price per megabyte continues to plummet. Under certain service plans available today, consumers benefit from a price per megabyte of data that is just a fraction of the pricing that was available in 2004. National, regional and smaller providers and MVNOs are all competing on data packages, including separate data plans for smartphones, either on a stand-alone basis or as part of a bundle

²¹¹ See T-Mobile USA, Inc., Even More Plus Unlimited Talk, <http://www.t-mobile.com/shop/plans/cell-phone-plans-detail.aspx?tp=tb1&rateplan=Even-More-Plus-Unlimited-Talk> (last visited July 27, 2010); T-Mobile USA, Inc., Even More Plus for Families Unlimited Talk, <http://www.t-mobile.com/shop/plans/cell-phone-plans-detail.aspx?tp=tb1&rateplan=Even-More-Plus-for-Families-Unlimited-Talk> (last visited July 27, 2010).

²¹² T-Mobile USA, Inc., Individual Plans, <http://www.t-mobile.com/shop/plans/Cell-Phone-Plans.aspx?catgroup=Individual> (last visited July 27, 2010).

²¹³ T-Mobile USA, Inc., Family Plans Starting At \$49.99/mo For 2 Lines, http://www.tmobile.com/promotions/springcampaign/evermore.aspx?PAsset=Pro_Pro_EvenMoreFortyNineDollarFTPln (last visited July 27, 2010).

²¹⁴ Press Release, U.S. Cellular, U.S. Cellular Offers New Unlimited National Calling Plans (Jan. 18, 2010), <http://www.uscellular.com/uscellular/common/common.jsp?path=/about/press-room/2010/us-cellular-offers-new-unlimited-national-calling-plans.html>.

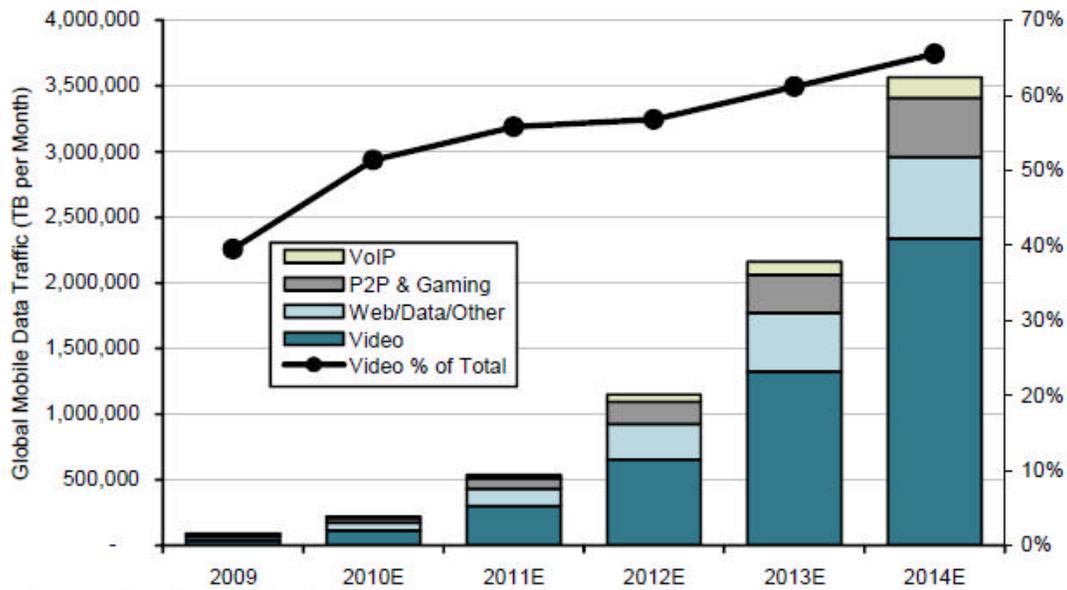
²¹⁵ Press Release, Verizon Wireless, Verizon Wireless Offers Simple, Affordable Convenience With New Unlimited Voice Plans (Jan. 15, 2010), <http://news.vzw.com/news/2010/01/pr2010-01-14c.html>.

²¹⁶ Verizon Wireless, Individual Plans, <http://www.verizonwireless.com/b2c/splash/plansingleline.jsp> (last visited July 27, 2010); IDC REPORT at 3 tbl.1.

of services including voice. And, while wireless broadband modems for laptops were originally targeted for business users, faster speeds and lower prices have moved these services increasingly into the consumer mass market.²¹⁷

The chart below summarizes some of the recent and anticipated key consumer wireless data usage trends.²¹⁸

Cisco Forecasted Global Mobile Data Traffic, by Application



Source: Cisco; Bernstein Analysis

Cisco estimates that global mobile data traffic will grow by 108 percent between 2009 and 2014, and that 66 percent of such traffic will be video by the end of that period.²¹⁹

²¹⁷ See SIMON FLANNERY & SEAN ITTEL, MORGAN STANLEY RESEARCH NORTH AMERICA, TELECOM SERVICES: WIRELESS DATA: THE TORCH PASSES FROM VOICE TO DATA 15 (June 1, 2010) (“MORGAN STANLEY REPORT”).

²¹⁸ BERNSTEIN WIRELESS DATA EXAFLOOD REPORT at 11 ex.13 (as of June 14, 2010). The Pew Research Center also estimates that among all cell phone owners: 54% have used their device to send a photo or video, 38% to access the Internet, 34% to send or receive email, 23% to access a social networking site, 20% to watch a video, 15% to post a photo or video online, 11% to purchase a product, 11% to make a charitable donation by text message, and 10% to access a status update service such as Twitter. See AARON SMITH, PEW RESEARCH CENTER, MOBILE ACCESS 2010, at 12-13 (July 7, 2010) (“PEW MOBILE ACCESS 2010 REPORT”), http://pewinternet.org/~media/Files/Reports/2010/PIP_Mobile_Access_2010.pdf.

The growth and innovation in data plans, and the parallel decline in data prices, has been astounding. For comparison, the first chart below sets forth the data plans and prices from 2004 for lower speed 2G or 2.5G services, and the additional charts detail some common 3G or 4G broadband modem, feature phone and smartphone plans offered as of July 2010:

DATA PLANS AND PRICES (2004)		
Carrier	Pay-Per-use Charge	Unlimited Use Monthly Fee
AT&T Wireless	\$19.99 monthly for first 8 MB; \$6.144 per MB thereafter	\$49.99
Cingular	\$9.99 monthly for first 2 MB; \$10.24 per MB thereafter	\$54.99
Nextel	\$19.99 monthly for first 5 MB; \$9.22 per MB thereafter	\$59.99
Sprint PCS	\$40.00 monthly for first 20 MB; \$2.05 per MB thereafter	\$80.00 (limited to 300 MB)
T-Mobile USA	N/A	\$29.99
Verizon Wireless	N/A	\$79.99

Source: Gerard A. Brosnan, *Trends in the Mobile Data Services Market*, The Telecommunications Review 2005, at 4 tbl.2 (2005), <http://www.noblis.org/NewsPublications/Publications/TechnicalPublications/TelecommunicationsReview/Documents/04-Brosnan-TR2005.pdf>.

²¹⁹ See MORGAN STANLEY REPORT at 11; see also PEW MOBILE ACCESS 2010 REPORT at 2 (noting that 59% of adults now access the Internet wirelessly using a laptop or cell phone).

DATA PLANS AND PRICES – BROADBAND CARDS/MODEMS (July 2010)			
Carrier	Plan	Max Monthly Traffic	Price
AT&T	DataConnect 200 MB Laptop, PC Card, netbook	200 MB	\$35.00
AT&T	DataConnect 5 GB Laptop, PC Card, netbook	5 GB	\$60.00
Clearwire	Fixed Modem (for home)	Unlimited	\$40.00
Clearwire	USB Modem (for laptops)	Unlimited	\$55.00
Cricket	Cricket broadband data card	Unlimited	\$40.00
Sprint	Mobile Broadband Connection Plan—3G	5 GB	\$59.99
Sprint	Mobile Broadband Connection Plan—4G/3G	4G: Unlimited; 3G: 5GB	\$59.99
T-Mobile	WebConnect 5 GB	5 GB	\$39.99
T-Mobile	WebConnect 200 MB	200 MB	\$24.99
U.S. Cellular	Wireless Modem Plan	5GB	\$49.95
Verizon Wireless	Prepaid Mobile Broadband ²²⁰ (Day)	100 MB	\$15.00
Verizon Wireless	Prepaid Mobile Broadband (Week)	300 MB	\$30.00
Verizon Wireless	Prepaid Mobile Broadband (Month)	1GB	\$50.00
Verizon Wireless	Mobile Broadband 250 MB	250 MB	\$39.99
Verizon Wireless	Mobile Broadband 5 GB	5 GB	\$59.99
Virgin Mobile	Broadband2Go Plans (Prepaid)	100 MB/ 10 days	\$10.00
Virgin Mobile	Broadband2Go Plans (Prepaid)	300 MB	\$20.00
Virgin Mobile	Broadband2Go Plans (Prepaid)	1 GB	\$40.00
Virgin Mobile	Broadband2Go Plans (Prepaid)	5 GB	\$60.00

Source: Company websites, July 2010

²²⁰ Verizon Wireless Prepaid Mobile Broadband services are available on Express-Cards, USB modems, Intelligent Mobile Hotspots and select notebooks/netbooks.

PLANS AND PRICES – FEATURE PHONES AND SMARTPHONES (July 2010)				
Carrier	Plan	Max Monthly Traffic	Price	Notes
AT&T	Prepaid	1 KB	\$0.01	
AT&T	Prepaid	1 MB	\$4.99	
AT&T	Prepaid	100 MB	\$19.99	
AT&T	Pay-per-use	1MB	\$2.00	
AT&T	DataConnect 200 MB	200 MB	\$15.00	With a qualifying voice plan
AT&T	DataConnect 2 GB	2 GB	\$25.00	With a qualifying voice plan
AT&T	Smartphone/BlackBerry and tethering	2GB	\$45.00	With a qualifying voice plan
Boost Mobile	Unlimited (Prepaid)	Unlimited	\$50	Unlimited voice, web access, texting, email
Boost Mobile	Smartphone (Prepaid)	Unlimited	\$60	Unlimited voice, web access, texting, email
Cricket	Unlimited (Prepaid)	Unlimited	\$50-\$60	Unlimited voice, email, texting, web browsing
MetroPCS	Unlimited Plans (Prepaid)	Unlimited	\$40-\$60	Unlimited voice, web access, texting, email (\$50 plans and above)
MetroPCS	Smartphone	Unlimited	\$50	Unlimited voice, web access, texting, email
Sprint	Simply Everything	Unlimited	\$99.99	unlimited voice, data, messaging
Sprint	Everything Data - with Any Mobile, Anytime (450 voice minutes)	Unlimited	\$69.99	unlimited data and messaging
Sprint	Everything Data - with Any Mobile, Anytime (900 voice minutes)	Unlimited	\$89.99	unlimited data and messaging
T-Mobile	BlackBerry and Smartphone Unlimited	Unlimited	\$39.99	Voice calls .45/ minute
T-Mobile	Individual talk + text + web (500 minutes)	Unlimited	\$59.99	unlimited data and messaging
T-Mobile	Individual talk + text + web (1000 minutes)	Unlimited	\$69.99	unlimited data and messaging
T-Mobile	Individual talk + text + web (unlimited minutes)	Unlimited	\$79.99	unlimited data and messaging
T-Mobile	Sidekick Prepaid	Unlimited	\$1/day	Unlimited e-mail, texting, IM, and web; 15¢/minute for all domestic calls
TracFone	Straight Talk (Prepaid)	30 MB	\$30	1000 minutes, 1000 text messages
TracFone	Straight Talk (Prepaid)	Unlimited	\$45	Unlimited voice, web access, text, minutes
U.S. Cellular	BlackBerry / Windows Mobile Email & Web Personal Service	Unlimited	\$30.00	With a voice plan

U.S. Cellular	BlackBerry Email & Web Service (Corporate enterprise)	Unlimited	\$40.00	With a voice plan
U.S. Cellular	Android Email & Web Service	Unlimited	\$30.00	With a voice plan
U.S. Cellular	Android Email & Web & Modem Service	Unlimited (modem: 5 GB)	\$55.00	With a voice plan
Verizon Wireless	Feature phone (Prepaid)	N/A	\$0.99/day	Mobile web; music and ringback tones for additional fee
Verizon Wireless	Data plan: feature phone	N/A	\$1.99	
Verizon Wireless	Data plan: feature phone or 3G multimedia phone	25 MB	\$9.99	
Verizon Wireless	Data plan: feature phone, 3G multimedia phone, or 3G smartphone	Unlimited	\$29.99	
Verizon Wireless	Tethering: Mobile broadband Connect and 3G Mobile Hotspot-capable smartphones	2 GB	\$20.00	With a qualifying data package
Verizon Wireless	Tethering: Mobile broadband Connect and 3G Mobile Hotspot-capable smartphones	5 GB	\$30.00	With a qualifying data package of \$29.99 or higher
Verizon Wireless	Tethering: Mobile broadband Connect and 3G Mobile Hotspot-capable smartphones	5 GB	\$49.99	With a qualifying voice plan (but no data package)
Virgin Mobile	Unlimited (300 voice minutes)	Unlimited	\$25 (\$35 with BlackBerry)	Unlimited web access, texting, email
Virgin Mobile	Unlimited (1200 voice minutes)	Unlimited	\$40 (\$50 with BlackBerry)	Unlimited web access, texting, email
Virgin Mobile	Unlimited (unlimited voice minutes)	Unlimited	\$60 (\$70 with BlackBerry)	Unlimited voice, web access, texting, email

Source: Company websites, July 2010

As with voice services, prices for broadband data plans have generally dropped even as underlying offerings have improved. For example, AT&T recently introduced a tiered, or usage based, pricing structure for its data services.²²¹ Customers who generally use less than 200 MB of capacity per month—which includes approximately 65 percent of AT&T’s data users—will

²²¹ See AT&T Tiered Pricing Press Release.

now pay less under the tiered structure.²²² Service providers are responding to the growing and increasingly varied consumer demand by offering an even wider range of price and service packages.

The price per megabyte, in particular, has dropped dramatically. For example, Sprint's monthly data plan from 2004, at \$80, was capped at 300 MB of throughput per month.²²³ Thus, a heavy data user (by 2004 standards) would pay approximately 27 cents per megabyte. In contrast, AT&T's new offering of \$15 for 200 MB of capacity per month equates to just 7.5 cents per megabyte; its offering of \$25 for 2 GB of capacity per month equates to just over 1 cent per megabyte.²²⁴ Further, with Clearwire's \$55 unlimited monthly plan for 4G laptop broadband connectivity, the company estimates an average customer usage of 7 GB per month suggesting a rate less than \$0.008 per megabyte.²²⁵ In any event, with today's market, the ultimate price per megabyte depends in large part on the customer—in particular, how much capacity she uses and her service plan. And, the options that the customer has to meet her unique needs and interests are multiplying.

²²² See *id.*; see also George Ou, *Tiered Mobile Services Could Mean Half Price For Most Users*, DIGITAL SOCIETY, July 7, 2010, <http://www.digitalsociety.org/2010/07/tiered-mobile-services-could-mean-half-price-for-most-users/>. Service providers work with subscribers to estimate the amount of capacity they might need so they can purchase the most appropriate service package. For example, many service providers allow subscribers to track usage on-line, by using short codes (*i.e.*, dialing * or # and a series of numbers from a device to access certain features), or otherwise from their wireless devices. Some service providers also send updates to customers as they approach their monthly usage limits. See, *e.g.*, AT&T Tiered Pricing Press Release; see also Comments of Verizon Wireless, CG Docket No. 09-158 *et al.*, at 28 (filed July 6, 2010) (noting the various usage monitoring tools available to customers).

²²³ Gerard A. Brosnan, *Trends in the Mobile Data Services Market*, The Telecommunications Review 2005, at 4 tbl.2 (2005), <http://www.noblis.org/NewsPublications/Publications/TechnicalPublications/TelecommunicationsReview/Documents/04-Brosnan-TR2005.pdf>.

²²⁴ See *id.* at 3, 17.

²²⁵ See BERNSTEIN WIRELESS DATA EXAFLOOD REPORT at 17-18.

d. Mobile Messaging Pricing

Pricing for messaging services has declined dramatically over time as texting itself has become increasingly popular, particularly as subscribers replace voice calls with text messaging (“SMS”) and multimedia messaging service (“MMS”).²²⁶ As of May 2010, approximately 72 percent of subscribers use their cell phones to send and receive text messages.²²⁷ According to CTIA, in the last half of 2009 alone, consumers sent approximately 822.8 billion text messages and 24.2 billion MMS messages.²²⁸ More than 1.56 trillion text messages were sent in 2009—a 55.5 percent increase from 2008 and more than four times the number of messages sent in 2007.²²⁹ The average subscriber sends more than 500 text messages per month.²³⁰

The vast majority of SMS users subscribe to plans or features that include “buckets” of messages, which better meet their needs than a per-message pricing structure. Indeed, only a small percentage of subscribers who send text messages do so under pay-per-text pricing.²³¹ Verizon Wireless and AT&T have previously estimated that less than 1 percent of the text messages sent on their networks are subject to pay-per-text charges.²³² Although pricing may

²²⁶ See Roger Entner, *A Paradigm Shift for Mobile Phone Price Bundles*, NIELSEN WIRE, May 24, 2010, <http://blog.nielsen.com/nielsenwire/consumer/a-paradigm-shift-for-mobile-phone-price-bundles/>; MORGAN STANLEY REPORT at 5 (“Increased adoption of [bundled text] plans coupled with rising volumes has resulted in declining price per text” In addition, “MOUs . . . are beginning to decline as text messaging begins to cannibalize voice minutes.”).

²²⁷ PEW RESEARCH CENTER, *MOBILE ACCESS 2010*, at 12 (July 7, 2010).

²²⁸ DR. ROBERT F. ROCHE & LESLEY O’NEILL, CTIA, *CTIA’S WIRELESS INDUSTRY INDICES 2* (May 2010) (providing year-end 2009 results) (“CTIA’S 2009 WIRELESS INDUSTRY INDICES”).

²²⁹ *Id.*

²³⁰ See MORGAN STANLEY REPORT at 20, 26 (noting that texting has increased in popularity because of the availability of more QWERTY handsets, bundled text packages, and simply the “viral nature of texting”).

²³¹ See MORGAN STANLEY REPORT at 14; Roger Entner, *Under-aged Texting: Usage and Actual Cost*, NIELSEN WIRE, Jan. 27, 2010, http://blog.nielsen.com/nielsenwire/online_mobile/under-aged-texting-usage-and-actual-cost/.

²³² See *Cell Phone Text Messaging Rates Increases and the State of the Competition in the Wireless Market: Hearing Before the Subcomm. on Antitrust, Competition Policy and Consumer Rights of the Senate Comm. on the* (continued on next page)

vary depending on the service provider and the plan, in addition to unlimited plans, buckets of between 200-5000 messages are available for between \$5.00 and \$20.00 per month.²³³ One analyst shows that the average price per text message has decreased for the fifth consecutive year to less than one cent per message and estimates that prices will continue to decrease.²³⁴

e. Bundled Service Pricing

Service providers further differentiate themselves by offering packages of “bundled” services—providing consumers the option of mixing and matching a selection of wireless, fixed voice, fixed Internet and multi-channel video services for a single price. Bundled service plans are popular because they frequently offer consumers the dual advantages of lower prices and convenient, straightforward billing. Indeed, the tremendous competition in the wireless voice and data markets has sent many providers looking for new ways to differentiate themselves and “embrace a greater level of service bundling, both in terms of better price points and more flexible offers.”²³⁵ Such diverse offerings stand only to benefit consumers through lower overall rates and improved service quality.

Verizon Communications, for example, offers a “Quad Play” bundle for consumers who want to order its FiOS TV, FiOS Internet and unlimited home phone service, as well as Verizon

Judiciary, 111th Cong., 1st Sess. 5 (June 16, 2009) (statement of Randal S. Milch, Executive Vice President and General Counsel, Verizon Communications Inc.), <http://judiciary.senate.gov/pdf/06-16-09MilchTestimony.pdf>; *Cell Phone Text Messaging Rates Increases and the State of the Competition in the Wireless Market: Hearing Before the Subcomm. on Antitrust, Competition Policy and Consumer Rights of the Senate Comm. on the Judiciary*, 111th Cong., 1st Sess. 4 (June 16, 2009) (statement of Wayne Watts, Executive Vice President and General Counsel, AT&T Inc.), <http://judiciary.senate.gov/pdf/06-16-09WattsTestimony.pdf>.

²³³ See, e.g., IDC REPORT at 3 (summarizing service plans of the four national wireless carriers) (“IDC Insight Pricing Report”); Comparison Shopping: Text Messaging Plans (last updated Mar. 9, 2010), <http://www.textrateplans.com/> (summarizing the text messaging plans and rates of various service providers) (last visited July 29, 2010).

²³⁴ MORGAN STANLEY REPORT at 21.

²³⁵ US WIRELESS MARKET OUTLOOK at 17.

Wireless's mobile service.²³⁶ Similarly, AT&T recently rolled out a new "Choice" quad play bundle that combines AT&T's U-verse TV, U-verse high speed Internet, U-verse voice, and wireless service.²³⁷ Cincinnati Bell allows subscribers to bundle up to five services, including wireless, high speed Internet, digital television, home phone, and home security services.²³⁸ Companies also are partnering to provide consumers with additional bundled options, including Qwest (which bundles its wireline phone and Internet services with Verizon Wireless's mobile service),²³⁹ Comcast (which bundles its wired phone, Internet and TV products with the wireless data services of Clearwire and Sprint),²⁴⁰ and Home Telephone Company (which bundles home telephone, Internet, cable television and security services with AT&T's wireless service).²⁴¹

* * *

As the foregoing discussion demonstrates, wireless pricing competition is intense. Pricing will continue to be a key competitive factor in the wireless marketplace as service providers vie with each other for customers.

²³⁶ Verizon, Great Bundle Options, <http://www22.verizon.com/residential/bundles/overview#fios> (last visited July 26, 2010).

²³⁷ Press Release, AT&T Inc., AT&T Introduced New U-verse (R) Quad-Play Bundle Offer (May 18, 2010), <http://www.att.com/gen/press-room?pid=17928&cdvn=news&newsarticleid=30810&mapcode=mapping%20code>.

²³⁸ Cincinnati Bell, Build Your Bundle, <https://www.cincinnati-bell.com/shop/#> (last visited July 26, 2010).

²³⁹ Qwest, Verizon Wireless Service through Qwest - Bundle and Save!, <http://www.qwest.com/residential/products/wireless/index.html> (last visited July 26, 2010).

²⁴⁰ Comcast, High-Speed 2go, <http://www.comcast.com/highspeed2go/#/highspeed2go> (last visited July 26, 2010); Press Release, Comcast Corporation, Comcast Begins National Rollout of High-Speed Wireless Data Service (June 29, 2009), <http://www.comcast.com/About/PressRelease/PressReleaseDetail.ashx?PRID=887> ("Comcast's 4G service will be provided via the Clearwire network, and its 3G service will be provided by Sprint's nationwide 3G network.").

²⁴¹ Home Telephone Company, Velocity Bundles, http://www.hometelco.com/velocity_bundles.php (last visited July 26, 2010).

2. Intensifying Non-Price Competition

While price certainly is a major factor in consumers' choice of service provider, the *Fourteenth Report* properly recognizes that mobile wireless service providers “compete on many other dimensions” and that mobile broadband networks and “the products, services, and applications that rely on them” play a “key role” in mobile wireless competition.²⁴² Indeed, customers select carriers based on network performance and coverage, device portfolio, available applications, unique content, customer service, service plans, and even advertising—and carriers compete vigorously on these grounds. Competition has driven substantial efforts to improve the customer experience along all of these vectors.²⁴³

a. Network Performance and Coverage

Customers have long judged carriers on the capabilities and reliability of their service offerings and the geographic scope of their coverage. Study after study indicates that network performance and coverage are critical factors in the consumers' choice of service providers.²⁴⁴ One need only review the advertising campaigns of any of the major carriers for confirmation that speed, coverage, and reliability are fertile ground for competition. Competition on this

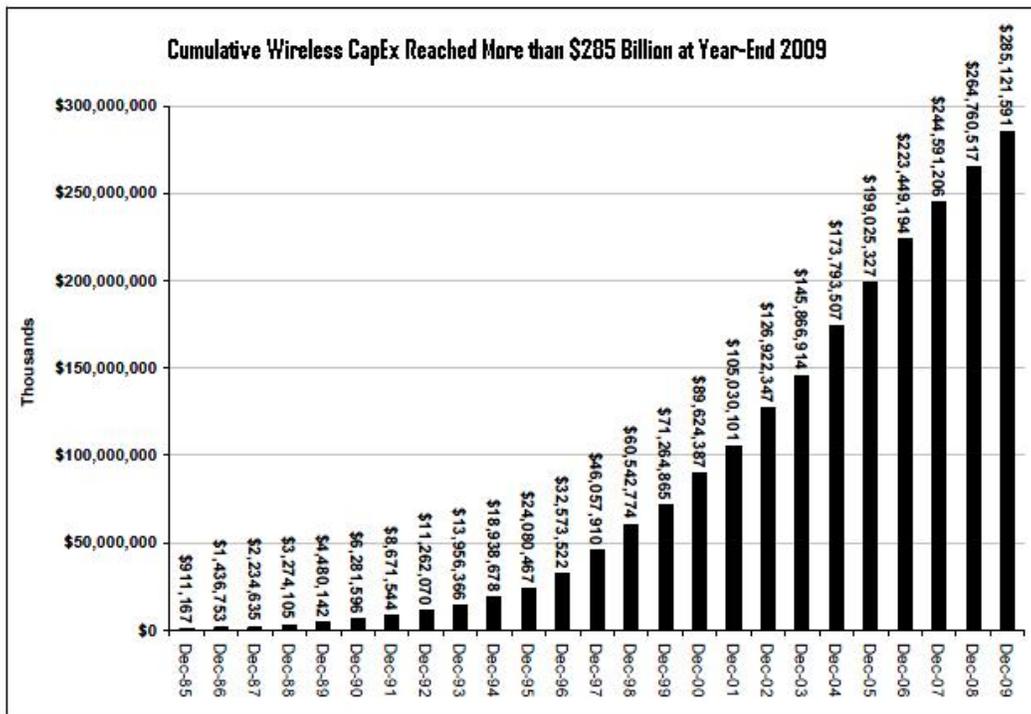
²⁴² *Fourteenth Report*, ¶¶ 104, 106.

²⁴³ As the Commission has aptly observed, “[s]ervice providers in the mobile telecommunications market also compete on many more dimensions other than price, including non-price characteristics such as coverage, call quality, data speeds, and mobile data content.” Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Twelfth Report*, 23 FCC Rcd 2241, 2297 ¶ 124 (2008) (“*Twelfth Report*”).

²⁴⁴ See, e.g., J.D. Power and Associates, 2010 Wireless Call Quality Performance Study Volume 1 (Feb. 18, 2010), <http://www.jdpower.com/telecom/articles/2010-Wireless-Call-Quality-Performance-Study-Volume-1> (“Frustration with call quality is often a leading reason why consumers choose to switch mobile carriers.”); Consumer Reports, Overall Cell Phone Service Ratings (Jan. 2010), <http://www.consumerreports.org/cro/electronics-computers/phones-mobile-devices/cell-phones-services/cell-phone-service-buying-advice/guide-to-cell-phone-carriers/cell-phone-service-ratings/cell-phone-service-ratings.htm>; Press Release, American Customer Satisfaction Index, ACSI: Customer Satisfaction Rises Again, Now Joined by Other Economic Indicators (May 19, 2009), www.theacsi.org/images/stories/images/news/0901q_Press_Release.pdf.

vector incents carriers to invest in the networks that will attract and retain customers. Again, the data confirm vigorous competition is driving enormous investments in the networks that benefit customers.

As the following chart highlights, mobile wireless providers have spent hundreds of billions of dollars in the aggregate to improve and expand their networks to better compete—\$285.1 billion since 1985.²⁴⁵



Source: CTIA Semi-Annual Survey

Importantly, despite adverse national economic conditions, competition continues to drive additional investment as the cumulative capital investment by carriers for year-end 2009 increased 7.7 percent over 2008.²⁴⁶ According to CTIA’s most recent semi-annual survey,

²⁴⁵ CTIA’s 2009 WIRELESS INDUSTRY INDICES at 131.

²⁴⁶ *Id.* at 139.

mobile wireless providers invested \$20.4 billion in 2009.²⁴⁷ Since 2001, America's wireless carriers have made an average combined investment of more than \$20.2 billion *per year* to upgrade their networks.²⁴⁸

Due to this continued investment, the coverage and availability of 3G is increasing rapidly, and many wireless providers also have started to transition to 4G technologies. The table below depicts the 3G/4G deployment status of selected wireless service providers.

Overview of 3G/4G Deployment by Selected Mobile Wireless Service Providers

Service Provider	3G Deployment	4G Deployment
AT&T Wireless	As of December 2009, HSPA 7.2 network covers 233 million POPs. Plans to launch HSPA+ to more than 250 million POPs in 2010.	Preparing LTE field trials in 2010 with plans to deploy in 2011.
Clearwire	N/A	WiMAX network covered 51 million POPs as of July 2010; and expects to cover 120 million POPs by year-end 2010.
Leap	As of July 2010, EV-DO Rev. A network covers 94 million POPs.	Conducted LTE technical trials in 2009.
MetroPCS	N/A	Planning to launch LTE network in 2010.
Sprint	As of December 2009, EV-DO Rev. A network covers 269 million POPs.	Ownership interest in Clearwire and reselling Clearwire WiMAX service.
T-Mobile	As of March 2010, HSPA 7.2 network covers 208 million POPs. Plans to upgrade to HSPA+ by end of 2010 to cover 185 million POPs.	No U.S.-specific plans announced.
U.S. Cellular	As of December 2009, EV-DO network covers 75% of its customers; expects to cover 98% of its customers by the end of 2010.	Conducted LTE technical trials in 2009.
Verizon Wireless	As of July 2010, EV-DO Rev. A network covered 289 million POPs.	Expects to launch LTE in 25-30 markets in 2010 and to cover entire 3G footprint nationwide by 2013.

Source: Company websites, press releases, analyst reports, and SEC filings.

²⁴⁷ *Id.* at 131, 133.

²⁴⁸ *Id.* at 133.

Verizon Wireless invested approximately \$7.2 billion in capital expenditures in 2009 to add network capacity and facilitate the introduction of new products and services—a 10 percent increase in spending from 2008.²⁴⁹ During the first quarter of 2010, Verizon Wireless’s capital expenditures were \$1.8 billion—a 12.5 percent increase from the first quarter of 2009, primarily to fund continued investment in its 3G network as well as the build-out of its 4G LTE network.²⁵⁰

Verizon Wireless has expanded its 3G (EV-DO Rev. A) network coverage from 241.7 million people in 2008 to 289 million as of July 2010, 93 percent of the U.S. population.²⁵¹ In 2009, Verizon Wireless constructed more than 1,000 new cell sites and upgraded over 2,000 existing sites to increase capacity, speed, and performance.²⁵² The company also completed a 3G EV-DO Rev. A overlay throughout the entire ALLTEL network acquired in January 2009. Permanent backup generators were installed at hundreds of other sites to ensure network functionality during times of crisis,²⁵³ and Verizon Wireless’s team of engineers drove almost one million miles to test network performance.²⁵⁴

The company continues to enhance 3G capacity and coverage in 2010 to stay ahead of consumer demand. Already, Verizon Wireless has constructed more than 180 new cell sites in

²⁴⁹ Cellco Partnership, Annual Report (Form 10-K), at 32 (Mar. 12, 2010); Verizon Wireless, Best Network, Your Signal Is Strong, <http://aboutus.vzw.com/bestnetwork/overview.html> (last visited July 26, 2010) (“Verizon Wireless has invested more than \$60 billion since it was formed – \$5.7 billion on average every year . . .”).

²⁵⁰ Cellco Partnership, Quarterly Report (Form 10-Q), at 19 (Apr. 28, 2010).

²⁵¹ See Verizon Wireless, Best Network, Network Facts, http://aboutus.vzw.com/bestnetwork/network_facts.html (last visited July 26, 2010); *Fourteenth Report*, ¶ 30 tbl.2.

²⁵² See generally Verizon Wireless, News Center, News Archive, <http://news.vzw.com/news/index.html> (last visited July 27, 2010) (providing January and February 2010 press releases announcing the completion of billions of dollars in enhancements to geographic areas throughout the United States in 2009).

²⁵³ *Id.*

²⁵⁴ *Id.*

30 states across the country and upgraded hundreds of additional sites to enhance capacity and coverage.²⁵⁵ At the same time, it is leading yet another advancement in wireless networks—4G LTE technology.

Verizon Wireless is the first carrier—in the U.S. or abroad—to test and deploy LTE. The company began testing its 4G LTE network in Boston and Seattle in August 2009.²⁵⁶ Tests show that the network is capable of peak download speeds of 40-50 Mbps and peak upload speeds of 20-25 Mbps with real-world average data rates of 5-12 Mbps on the downlink and 2-5 Mbps on the uplink expected.²⁵⁷ The company plans to dedicate the majority of its 700 MHz and AWS spectrum to LTE service and is on track to deliver coverage to approximately 100 million people in 25 to 30 markets by year-end 2010.²⁵⁸ The company projects the LTE network will cover its current 3G footprint nationwide by the end of 2013.²⁵⁹

AT&T offers 3G services utilizing a different technology—High Speed Packet Access (“HSPA”). AT&T completed the upgrade of all its 3G cell sites in 2009 with HSPA 7.2.²⁶⁰ As of December 2009, AT&T’s 3G service covers about 233 million people in 360 U.S. markets.²⁶¹

²⁵⁵ *See id.*

²⁵⁶ Press Release, Verizon Wireless, Verizon Wireless’s 4G LTE Network Testing Promises Significantly Faster Speeds Than Current 3G Networks (Mar. 8, 2010), <http://news.vzw.com/news/2010/03/pr2010-03-02b.html> (“Verizon Wireless 4G LTE Network Testing Press Release”).

²⁵⁷ *Id.*

²⁵⁸ BERNSTEIN WIRELESS DATA EXAFLOOD REPORT at 15; Verizon Wireless 4G LTE Network Testing Press Release.

²⁵⁹ *Id.*

²⁶⁰ Press Release, AT&T Inc., AT&T Upgrades 3G Technology at Cell Sites Across Nation (Jan. 5, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30358>.

²⁶¹ *See* AT&T, Media Kit: Wireless Networks, <http://www.att.com/gen/press-room?pid=1941> (last visited July 27, 2010); CHETAN SHARMA AND SARLA SHARMA, STATE OF THE (MOBILE) BROADBAND NATION – A BENCHMARKING STUDY, CHETAN SHARMA CONSULTING 8 (Dec. 2009) (“STATE OF THE (MOBILE) BROADBAND NATION”).

Investment plans for 2010 call for the construction of about 2,000 new cell sites.²⁶² In addition, AT&T plans to undergo an extensive fiber backhaul upgrade and to launch HSPA+ to more than 250 million people in 2010.²⁶³ AT&T also plans to migrate to a 4G LTE wireless network. LTE field trials are expected to occur later this year with commercial deployment planned for 2011.²⁶⁴

Sprint's 3G EV-DO Rev. A network covers approximately 269 million people as of December 2009.²⁶⁵ Sprint has added about 11,000 cell sites to its 3G network since 2006 and continues to invest to accommodate increased demand for mobile broadband. Sprint also offers 4G WiMAX service under its own brand through its relationship with Clearwire. Sprint's WiMAX service covered 43 markets as of July 2010 with many more markets expected to come online by the end of 2010.²⁶⁶ Sprint has stated it is also considering whether to deploy LTE technology alongside its current WiMAX 4G offering.²⁶⁷

²⁶² See generally AT&T, News Room, <http://www.att.com/gen/press-room?pid=9880> (Feb.-Mar. 2010 releases announcing investment plans for the year) (last visited July 27, 2010); see also Press Release, AT&T Inc., AT&T Selects LTE Equipment Suppliers (Feb. 10, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30493&mapcode=financial|Wireless> ("AT&T LTE Equipment Press Release").

²⁶³ See AT&T, Media Kit: Wireless Networks, <http://www.att.com/gen/press-room?pid=1941> (last visited July 29, 2010); STATE OF THE (MOBILE) BROADBAND NATION at 8; BERNSTEIN WIRELESS DATA EXAFLOOD REPORT at 15; see, e.g., Press Release, AT&T Inc., AT&T Investment in Alabama Network Aimed at Enhancing Mobile Broadband Service across the State (Mar. 4, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30610&mapcode=financial|Wireless>; Press Release, AT&T Inc., AT&T Investment in California Network Aimed at Enhancing Mobile Broadband Service Across the State (Feb. 16, 2010), <http://www.att.com/gen/pressroom?pid=4800&cdvn=news&newsarticleid=30518&mapcode=Wireless>; see generally AT&T News Release Archives, Jan. 1, 2010-Apr. 30, 2010, <http://www.att.com/gen/press-room?pid=9880> (last visited July 27, 2010).

²⁶⁴ AT&T LTE Equipment Press Release.

²⁶⁵ See Mark Sullivan, *AT&T Roars Back in PCWorld's Second 3G Wireless Performance Test*, PC WORLD, Feb. 22, 2010, at 4, http://www.pcworld.com/article/189592/atandt_roars_back_in_pcworlds_second_3g_wireless_performance_test.html; STATE OF THE (MOBILE) BROADBAND NATION at 8.

²⁶⁶ See Press Release, Sprint Nextel, Sprint Launches More 4G Markets in New York, California, Oregon and Washington (July 12, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1446249.

²⁶⁷ See Michelle Maisto, *Sprint Considering LTE, Merger with T-Mobile*, EWEK.COM, July 13, 2010, <http://www.eweek.com/c/a/Mobile-and-Wireless/Sprint-Considering-LTE-Merger-with-T-Mobile-768696/>.

T-Mobile upgraded its entire network to HSPA and nearly doubled its 3G footprint in 2009. As of March 2010, T-Mobile's 3G HSPA network covered 208 million people, up from 88.4 million in 2008.²⁶⁸ T-Mobile plans to continue to upgrade to HSPA+ during 2010, covering more than 100 metropolitan areas and 185 million people.²⁶⁹ It has already launched HSPA+ in 44 cities.²⁷⁰

As noted above, today Clearwire's 4G mobile broadband network is available in 44 markets covering 51 million people with plans to add 8 more markets by the end of the summer.²⁷¹ Clearwire expects to expand 4G service to 120 million people nationwide in 2010.²⁷²

Regional carriers continue to deploy 3G technologies and also evaluate 4G deployments to improve coverage and compete. U.S. Cellular expanded its 3G EV-DO network coverage to 75 percent of its customers and conducted LTE trials in 2009.²⁷³ U.S. Cellular plans to further expand 3G coverage to approximately 98 percent of its customers by the end of 2010.²⁷⁴ Leap conducted LTE trials in 2009 and expanded its 3G EV-DO Rev. A network coverage to

²⁶⁸ Press Release, T-Mobile USA, T-Mobile USA Reports First Quarter 2010 Results 1, 6 (May 12, 2010), http://www.t-mobile.com/Company/InvestorRelations.aspx?tp=Abt_Tab_InvestorRelations ("T-Mobile 1Q 2010 Results Press Release"); Matthew Miller, *T-Mobile HSPA 7.2 Upgrade Complete, HSPA+ coming to Nexus One*, ZDNet, Jan. 5, 2010, <http://www.zdnet.com/blog/cell-phones/t-mobile-hspa-72-upgrade-complete-hspa-coming-to-nexus-one/2814>; *Fourteenth Report*, ¶ 8. T-Mobile's network covered 205 million people as of December 31, 2009. See Press Release, T-Mobile USA, T-Mobile USA Reports 4th Quarter and Full Year 2009 Results 1 (Feb. 26, 2010), <http://www.t-mobile.com/Cms/Files/Published/0000BDF20016F5DD010312E2BDE4AE9B/5657114502E70FF301270BB668BE399A/file/TMUS%20Q4%20Press%20Release%20FINAL.pdf>.

²⁶⁹ T-Mobile 1Q 2010 Results Press Release.

²⁷⁰ T-Mobile To Launch HSPA+ In 19 More Cities On July 21st, TmoNews.com (July 13, 2010), <http://www.tmonews.com/2010/07/t-mobile-to-launch-hspa-in-19-more-cities-on-july-21st/>.

²⁷¹ Clearwire July 2010 Press Release, *supra* note 16.

²⁷² Press Release, Clearwire Communications LLC, Clearwire Extends 4G Leadership in the United States (Mar. 23, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1404906>. ("Clearwire 4G Leadership Press Release").

²⁷³ USCC 10K at 7.

²⁷⁴ *Id.*

approximately 94 million people as of July 2010.²⁷⁵ MetroPCS has decided to forgo a 3G network deployment and proceed directly to an LTE network launch later this year.²⁷⁶

Smaller companies, such as BlueGrass Cellular,²⁷⁷ Cellular South,²⁷⁸ Golden State Cellular,²⁷⁹ NTELOS,²⁸⁰ and Alaska Communications Systems,²⁸¹ have also rolled out high-speed wireless broadband networks in their various markets around the country and continue to upgrade their networks in 2010.

b. Wireless Mobile Devices

For many consumers, the mobile device is the most important factor that drives their choice of provider. In January 2010, Consumer Reports found that 38 percent of consumers who switched providers did so “to get the phone they wanted,” and that “27 percent of all respondents

²⁷⁵ Leap Wireless, About Leap, http://www.leapwireless.com/11_about_leap.htm (last visited July 27, 2010); Leap Wireless 10-K at 6.

²⁷⁶ BERNSTEIN WIRELESS DATA EXAFLOOD REPORT at 16.

²⁷⁷ See, e.g., Press Release, Bluegrass Cellular, Bluegrass Cellular Adds 3G Coverage in Russell County (Sept. 15, 2009), http://www.bluegrasscellular.com/about/news/bluegrass_cellular_adds_3g_coverage_in_russell_county; Press Release, Bluegrass Cellular, Bluegrass Cellular Adds 3G Coverage in Barren County (Jan. 12, 2010), http://bluegrasscellular.com/about/news/bluegrass_cellular_adds_3g_coverage_in_barren_county1.

²⁷⁸ See, e.g., Press Release, Cellular South, Cellular South Expands 3G High-Speed Mobile Broadband Data Services Throughout Much of Mississippi Delta Region (Aug. 4, 2009), <https://www.cellularsouth.com/news/2009/20090804.html>; Press Release, Cellular South, Cellular South Expands Advanced 3G Mobile Broadband Network To Lumberton and Lamar County (Feb. 5, 2010), <https://www.cellularsouth.com/news/2010/20100205.html>.

²⁷⁹ Golden State Cellular, Facebook Post, Feb. 25, 2010, http://www.facebook.com/permalink.php?story_fbid=339146599768&id=135419084768.

²⁸⁰ See Press Release, NTELOS, NTELOS Completes \$46 Million Upgrade to 3G Network (July 8, 2009), <http://www.ir-site.com/images/library/ntelos/07-08-09.html>; NTELOS, Quarterly Report (Form 10-Q), at 19 (May 4, 2010) (“During 2010, we plan to expand our wireless service into one additional new local market and plan to increase and improve our points of distribution in our existing markets”).

²⁸¹ See, e.g., ACS, ACS Mobile Internet, <http://www.acsalaska.com/business/enterprise/mobile-solutions/mobile-internet.asp> (last visited July 29, 2010) (noting that ACS has offered 3G service since 2004, and has recently upgraded to EV-DO Rev A); Press Release, Alaska Communications Systems, Alaska Communications Systems Brings 3G Mobile Broadband Network to Kodiak (May 21, 2010), http://acsalaska.com/assets/releases/5_21_2010_Kodiak%203G%20Expansionx.pdf.

went shopping with a specific phone in mind.”²⁸² More recently, in a survey completed June 24, 2010, 86 percent of the respondents who plan to buy a smartphone in the next 90 days have already chosen a particular brand (Apple, HTC, Motorola, or RIM/BlackBerry).²⁸³ As discussed further below in Section III.C., numerous manufacturers—none owned by wireless carriers—design, build, and promote a wide and evolving choice of mobile devices, ranging from basic phones that provide simple mobile voice connectivity, to state-of-the-art smartphones offering a full menu of feature-rich voice and data options, to PC cards and other modem devices and netbooks that provide broadband Internet access. In addition, carriers support a variety of operating systems on their mobile devices, including Android, BlackBerry®, Apple, Windows Mobile, and Palm® WebOS. Mobile service providers compete on devices and the innovative design, functionality, services and applications they deliver.

c. Applications, Content, and Openness

The last two years have witnessed an explosion in the number of applications and the amount of content designed to run on mobile devices. Many consumers have been drawn to certain applications or content and the networks that allow them to access these offerings; carriers and manufacturers have responded to meet this demand. The robust competition in the application and content markets provides another competitive differentiator and is discussed in greater detail below in Section III.C.

²⁸² *Best Cell-Phone Service*, CONSUMER REPORTS Jan. 2010 at 25 (“CONSUMER REPORTS Survey Results”); *see also* MARK LOWENSTEIN, THE EVOLVING ROLE OF HANDSETS IN THE U.S. WIRELESS INDUSTRY, 5-6 (Jan. 2009) (“[T]he wireless device has moved more to the center stage as an important part of the operator’s retail marketing and the consumer’s purchasing decision.”), attached to Comments of Verizon Wireless Requesting Dismissal or Denial of Petition, RM-11497 (filed Feb. 2, 2009) (“Verizon Wireless Handset Exclusivity Comments”).

²⁸³ Jean Crumrine and Paul Carton, ChangeWave Research, Explosive Changes in Consumer Demand Shake Up Smart Phone Industry (July 14, 2010), http://www.changewaveresearch.com/articles/2010/07/smart_phones_20100714.html.

d. Customer Information and Customer Care

Competition benefits consumers when they have information about the products and services they buy. To that end, 31 wireless carriers, including the largest providers, have voluntarily adopted CTIA's "Consumer Code for Wireless Service."²⁸⁴ Under the Code, participating carriers are required to give consumers information they need to help them to make informed choices, and to ensure they have information regarding their wireless service plans and coverage maps.²⁸⁵ In particular, the Code was recently updated to cover messaging and data services for both prepaid and postpaid wireless customers.²⁸⁶ Verizon Wireless distinguishes itself by adopting policies that extend beyond the requirements of the CTIA Consumer Code. For example, although the Code specifies that signatories must provide consumers with a trial period for new service of "not less than 14 days,"²⁸⁷ Verizon Wireless offers customers a 30 day trial period as part of its Worry Free Guarantee®.²⁸⁸

Consumers enjoy a wide range of easily accessed information regarding mobile wireless plans, service provider options, and service quality experience because carriers have every incentive to inform customers of the benefits of their service plans. Mobile wireless carriers

²⁸⁴ See CTIA, Consumer Code Participants, <http://www.ctia.org/content/index.cfm/AID/10623> (last visited July 27, 2010).

²⁸⁵ CTIA, CTIA Consumer Code for Wireless Service 1-2, <http://files.ctia.org/pdf/ConsumerCode.pdf> (last visited July 27, 2010) ("CTIA Consumer Code"). In 2004, the largest national carriers, including Verizon Wireless, also agreed to follow certain uniform nationwide consumer protection practices in conducting their businesses. This agreement, known as the Assurance of Voluntary Compliance ("AVC"), also helps to ensure that consumers are provided with information covering advertising, point of sale rate and term disclosures, coverage map information, cancellation and trial periods for phone usage, and customer billing formats.

²⁸⁶ Press Release, CTIA, CTIA – The Wireless Association® Announces Updates to Its "Consumer Code for Wireless Service" (July 28, 2010), <http://www.ctia.org/media/press/body.cfm/prid/1992>.

²⁸⁷ See CTIA Consumer Code at 2.

²⁸⁸ See Why Verizon Wireless? Worry Free Guarantee®, http://www.verizonwireless.com/b2c/globalText?textName=WORRY_FREE_GUARANTEE&jspName=support/worryFree.jsp (last visited July 27, 2010).

offer customers extensive plan-related information in their stores and on their websites, ranging from pricing and usage figures to detailed coverage maps. As CTIA has explained in detail, mobile providers already provide wireless consumers with a variety of tools to monitor their accounts and their service use through their mobile devices, on the Internet, and through text alerts.²⁸⁹ Verizon Wireless and numerous other carriers, moreover, offer interactive mapping information with street-level coverage.²⁹⁰ Verizon Wireless makes available searchable coverage maps for voice/text services, mobile web, mobile broadband/V CAST features, V CAST Mobile TV, push-to-talk, and prepaid service as well.

In addition, third party sources provide overviews and comparisons of wireless carriers. *Consumer Reports* provides information comparing the major nationwide providers in 26 metropolitan areas, as well as extensive details regarding the features of commonly used

²⁸⁹ See Comments of CTIA, CG Docket No. 09-158, at 3-9 (filed July 6, 2010); see also Christopher Guttman-McCabe, *Consumer Tip: How to Manage Your Wireless Account*, CTIA Blog (May 12, 2010), <http://www.ctia.org/blog/index.cfm/2010/5/12/Consumer-Tip-How-to-Manage-Your-Wireless-Account>. See also Verizon Wireless, MyVerizon, <http://www.verizonwireless.com/b2c/index.html?tab=myaccount&lid=//global//my+verizon> (click on “MyVerizon” in task bar and usage can be viewed upon login) (last visited July 9, 2010); Cellcom-Clearly the Best, Support, http://www.cellcom.com/faq_qa.html?categoryid=2 (MyCellcom allows users to view recent invoices, make payments and check minutes, data and messaging use) (last visited July 27, 2010); SouthernLINC, MyLINC, <http://www.southernlinc.com/managemyaccount.asp> (“MyLINC Office allows you to log into your account and make changes with the click of a button. Once you add the MyLINC Office feature, come back to this page to change or configure email accounts.” Go to webpage and click on “Customer Support” in the horizontal toolbar and then “manage my account”) (last visited July 27, 2010); U.S. Cellular, My Account, <https://loginmad.uscc.com/nidp/idff/sso?id=8&sid=0&option=credential&sid=0> (“Login” in the top of the screen and there one can view minutes used) (last visited July 27, 2010).

²⁹⁰ See Verizon Wireless, Coverage Locator, <http://www.verizonwireless.com/b2c/CoverageLocatorController> (last visited July 27, 2009); AT&T, Coverage Viewer, <http://www.wireless.att.com/coverageviewer/> (last visited July 27, 2010); Sprint, Coverage Tool, <http://coverage.sprint.com/IMPACT.jsp?language=EN> (last visited July 27, 2010); T-Mobile, Personal Coverage Check, <http://www.t-mobile.com/coverage/pcc.aspx> (last visited July 27, 2010); Cricket Wireless, Coverage Maps, <http://www.mycricket.com/cricketcoveragemaps/> (last visited July 27, 2010); MetroPCS, Coverage Map, <http://www.metropcs.com/coverage/> (last visited July 27, 2010); Cellular, Cellular South Coverage and Store Locator, <http://www.cellularsouth.com/coverage/> (last visited July 27, 2010); Cincinnati Bell, Wireless Coverage, <http://www.cincinnati-bell.com/consumer/wireless/coverage/> (last visited July 27, 2010).

devices.²⁹¹ PC World and PC Magazine also have published detailed studies comparing the major wireless carriers' networks and mobile broadband services.²⁹² J.D. Power and Associates conducts a semiannual wireless user survey that rates providers by region.²⁹³ American Customer Satisfaction Index ("ACSI") measures wireless customer satisfaction for the major providers.²⁹⁴ These third-party sources provide consumers with substantial information about wireless services and products to help them make an informed choice among the variety of competitors and service options in the market.

Mobile wireless carriers also compete to provide the very best customer care. In a 2010 customer care study, J.D. Power and Associates found that overall customer care performance for wireless in 2010 improved over 2009, noting that more than 77 percent of calls to customer service representatives were resolved in one contact, a 15 percent increase over the previous year.²⁹⁵ Hold times for customer service calls decreased as well, dropping more than 20 percent on average compared with February 2009.²⁹⁶ Indeed, if carriers do not respond to customer concerns in a timely manner, the blogosphere will quickly disseminate the information world-wide, leaving carriers with little time (24-48 hours, at most) to resolve problems.

²⁹¹ CONSUMER REPORTS Survey Results at 24-29; *Cell Phones*, CONSUMER REPORTS, Jan. 2010 at 30-36 (offering advice, ratings, and recommendations on types of phones, brands, features, and more).

²⁹² PCWorld, Smartphone Tests: Performance Results for 13 U.S. Cities, <http://www.peworld.com/zoom?id=189592&page=1&zoomIdx=2>; Sascha Segan, Battle of the 3G Networks, PC MAGAZINE, June 5, 2009, <http://www.pcmag.com/article2/0,2817,2348207,00.asp>.

²⁹³ See J.D. Power and Associates, 2010 Wireless Call Quality Ratings (Volume 1), [http://www.jdpower.com/telecom/ratings/wireless-call-quality-ratings-\(volume-1\)](http://www.jdpower.com/telecom/ratings/wireless-call-quality-ratings-(volume-1)) (last visited July 27, 2010).

²⁹⁴ See American Customer Satisfaction Index, Scores By Industry, Wireless Telephone Service, http://www.theacsi.org/index.php?option=com_content&task=view&id=147&Itemid=155&i=Wireless+Telephone+Service (last visited July 27, 2010) ("ACSI Wireless Industry Scores").

²⁹⁵ J.D. Power and Associates, 2010 Wireless Customer Care Performance Study (Volume 1), <http://www.jdpower.com/telecom/articles/2010-Wireless-Customer-Care-Volume-1> (last visited July 27, 2010).

²⁹⁶ *Id.*

Verizon Wireless, in particular, has invested heavily in customer service operations.²⁹⁷ On a daily basis, the company engages in about 4.2 million transactions with new, existing and potential customers; its call centers also process over 493,000 calls and e-mail transactions daily. Customers may also utilize self-serve options, including on-line, handset-accessible, or interactive voice response call-in systems, to address their needs.²⁹⁸

Other wireless companies have implemented diverse strategies to distinguish their customer care from their competitors. For example, for consumers with limited knowledge about how to work new Android technology, Alaska Communications Systems offer programs like *Android Expert Night* in which customers attend in-store classes where they can learn how to operate their new equipment.²⁹⁹ Jitterbug, the mobile phone service targeting an older demographic, offers weekly *Wellness Calls*, which provide “personal tips and solutions for relaxation, motivation and overall well-being” for those who “struggle with things like sleeplessness, stress, weight issues, loneliness or pain.”³⁰⁰ Cellular South offers an *Insider Program*, which allows members to “test new services and products before they are available to

²⁹⁷ See Verizon Wireless, Customer Satisfaction Overview, <http://aboutus.vzw.com/customersatisfaction/index.html> (last visited July 27, 2010).

²⁹⁸ See Comments of Verizon Wireless, CG Docket No. 09-158, at 2-13 (filed July 6, 2010); Comments of Verizon and Verizon Wireless, CG Docket No. 09-158, CC Docket No. 98-170, WC Docket No. 04-36, at 14-48 (filed Oct. 13, 2009); Verizon Wireless, Wireless Support, Questions & Answers, What is My Verizon?, http://support.vzw.com/faqs/Wireless%20Service/faq_commitment_to_customer_satisfaction.html (last visited July 27, 2010).

²⁹⁹ Alaska Communications Systems, Android Expert Night, <http://www.acsalaska.com/personal/wireless/expert-night/android-expert.asp> (last visited July 27, 2010).

³⁰⁰ Jitterbug, Jitterbug Wellness Call, <http://www.jitterbug.com/ServicesStore/WellnessCall.aspx> (last visited July 12, 2010). Jitterbug customers may also sign up for Daily Health Tips through which they receive “guidance and helpful information on exercising, eating right and living a heart-healthy lifestyle.” Jitterbug, Daily Health Tips, <http://www.jitterbug.com/ServicesStore/DailyHealthTips.aspx> (last visited July 27, 2010).

the public.”³⁰¹ Indigo Wireless provides bonuses for consumers who cancel their contracts with another wireless provider, stating that it “may be able to credit your new Indigo account with the cost of your termination fee.”³⁰² Companies such as TuYo, “a wireless communications provider designed specifically for the rapidly growing U.S. Hispanic community,” offer a call-in feature that allows customers’ families and friends in their home countries to call them using the customer’s account balance.³⁰³ That way, friends and family abroad do not incur any costs.³⁰⁴

e. Service Plans to Meet Customer Needs

The wireless industry offers consumers many choices for service and plans, including prepaid service options, month-to-month postpaid contracts, and postpaid contracts with an early termination fee (“ETF”). Information about service plan options is readily available on the websites and in the retail stores of Verizon Wireless and its competitors to drive competition and facilitate customers choosing the plan that best meets their needs. Term contracts with ETFs provide customers with a major benefit: the ability to obtain wireless devices at substantial discounts from their full retail price. By reducing up-front costs to consumers, this pricing structure enables many more customers to access a range of state-of-the-art broadband services and capabilities. However, for customers who wish to avoid ETFs, multiple alternatives are available.

³⁰¹ Cellular South, Insiders, <http://survey.confirmit.com/communities/default.aspx?p=1015558614> (last visited July 27, 2010).

³⁰² Indigo Wireless, Special Offers, http://www.indigowireless.com/Indigo_Wireless/Special_Promotions.html (last visited July 27, 2010).

³⁰³ TuYo Mobile, About Us, Corporate Overview, <http://www.tuyo.com/about/default.aspx> (last visited July 12, 2010); *see* TuYo Mobile, Call-In Feature, <http://www.tuyo.com/rates/conecta2.aspx> (last visited July 27, 2010) (“TuYo Mobile Call-In Feature Website”).

³⁰⁴ TuYo Mobile Call-In Feature Website.

For example, since 2008, Verizon Wireless customers can purchase its nationwide offerings without signing a contract.³⁰⁵ This option permits customers to either purchase new devices at the full retail price or use their own compatible devices. These customers can terminate their agreements for these postpaid plans at the end of any month without paying an ETF. Other carriers offer variations on this plan. For example, carriers such as MetroPCS, Jitterbug, and Pocket Communications offer service plans with no contracts. AT&T offers what it calls no-commitment pricing by which a customer not on a prepaid plan can purchase a new device at an undiscounted price without a long-term service commitment. T-Mobile offers FlexPay Monthly, under which a customer purchases a phone at the suggested retail price, pays in advance for the service plan, and there is no need for an annual contract. Consumers also can avoid an ETF completely by subscribing to one of the many increasingly available, competitive prepaid service options offered by wireless providers, including Verizon Wireless.³⁰⁶

f. Advertising

As further evidence of the robustly competitive wireless market, providers engage in aggressive marketing efforts to inform consumers about their service offerings. Wireless companies spend enormous amounts on print and broadcast advertising, as is evident from looking at any newspaper or watching television programming. Nielsen found that in 2009,

³⁰⁵ *Thirteenth Report*, 24 FCC Rcd at 6245 ¶ 115 (citing Press Release, Verizon Wireless, No Contract Required – New Month-To-Month Agreement Gives Verizon Wireless Customers Even More Freedom (Sept. 22, 2008)).

³⁰⁶ See *Ex parte* Letter from Kathleen Grillo, Verizon, to Joel Gurin, Chief, Consumer and Governmental Affairs Bureau, and Ruth Milkman, Chief, Wireless Telecommunications Bureau, FCC, CG Docket No. 09-158, at 2 (filed Feb. 23, 2010).

“wireless service telephone” was the fifth highest-spending product category for advertising in the U.S. economy, spending \$3.386 billion.³⁰⁷

National wireless providers as well as many mid-sized carriers and MVNOs are major advertisers. These significant efforts in using advertising to reach potential as well as existing customers underscore the intensity of wireless companies’ competitive efforts. Such advertising also demonstrates the diversity of factors that drive consumers’ wireless choice and the importance carriers place on informing customers about their offerings.

C. The Competitive Marketplace Has Led to Rising Consumer Satisfaction

As carriers fight to win and retain their customers in a vigorously competitive market, overall consumer satisfaction levels with wireless service have reached new heights. In fact, the U.S. wireless industry leads the world in overall customer satisfaction.³⁰⁸ Wireless carriers recognize that their ability to attract and retain customers is inexorably tied to their ability to keep customers content. Even with the low barriers to customer switching described below, customer switching among carriers, as measured by “churn,” has decreased.³⁰⁹ Moreover, regular surveys of Americans’ opinions and low instances of customer complaints show that wireless competitors are succeeding in their efforts to meet customers’ needs and expectations.

³⁰⁷ For 2009, advertising spending by wireless providers trailed only the automotive, pharmaceutical, quick service restaurant, and department store categories. Nielsen Company, U.S. Ad Spend Falls Nine Percent in 2009, Nielsen Says (Feb. 24, 2010), <http://blog.nielsen.com/nielsenwire/consumer/u-s-ad-spend-falls-nine-percent-in-2009-nielsen-says/> (last visited July 18, 2010) (“Nielsen Ad Spend 2009”); see also *Fourteenth Report*, ¶ 129.

³⁰⁸ See CTIA, *The Facts About the Wireless Industry: An Independent Review* (May 17, 2010), <http://files.ctia.org/pdf/051710 - Independent Assessment of Wireless Industry.pdf>.

³⁰⁹ The *Fourteenth Report* describes churn as the percentage of current customers an operator loses over a given period of time. Wireless carriers express churn as a percent of their customers per month. *Id.* ¶ 244.

1. Satisfied Customers

As further indication that vigorous competition exists and is incenting carriers to work hard to win and retain customers, the Government Accountability Office (“GAO”), the Commission, ACSI, and *Consumer Reports* have each reported that the wireless industry has increasingly high consumer satisfaction. Just last year, the GAO reported to Congress that 84 percent of adult users are “very” or “somewhat” satisfied with their wireless phone service.³¹⁰ The Commission’s own survey, released on June 1, 2010, found that 92 percent of surveyed cell phone users are either very satisfied or somewhat satisfied with their overall cell phone service.³¹¹ Similarly, ACSI recently found that wireless consumer satisfaction continues to grow and is at an all-time high for the second year in a row.³¹² Verizon Wireless topped the ACSI survey for the seventh consecutive year, scoring above the industry average and placing higher than all other wireless carriers in both quality and loyalty.³¹³

2. Minimal Complaints

Based on a review of the Commission’s quarterly reports on informal complaints,³¹⁴ wireless complaints registered are extremely low in relation to the total number of wireless subscribers. For example, in the first three quarters of 2009, fewer than 51,000 complaints were

³¹⁰ See *The Consumer Wireless Experience: Hearing Before the S. Comm. on Commerce Science and Transp.*, 111th Cong., 1st Sess. 4 (June 17, 2009) (testimony of Mark Goldstein, Director, GAO) at Highlights, 4.

³¹¹ See John Horrigan and Ellen Satterwhite, *Americans’ Perspectives On Online Collection Speeds For Home and Mobile Devices*, at 4, Exhibit 2 (June 1, 2010), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-298516A1.pdf. Verizon Wireless has raised significant concerns regarding many other aspects of this survey. See Reply Comments of Verizon Wireless, WT Docket No. 09-158, at 6-8 & Attachment (July 19, 2010).

³¹² See ACSI Wireless Industry Scores.

³¹³ See CONSUMER REPORTS Survey Results at 25; Verizon Wireless, Awards & Accolades, <http://aboutus.vzw.com/awards.html> (last visited July 29, 2010).

³¹⁴ See generally Quarterly Inquiries and Complaints Reports, <http://www.fcc.gov/cgb/quarter/welcome.html> (providing FCC Quarterly Inquiries and Complaints Reports for 2002 through third quarter 2009).

filed with the Commission, as compared to about 280 million wireless subscribers at the end of the third quarter of 2009, amounting to a complaint rate for the first three quarters of 2009 of *18 per one million customers*.³¹⁵ While the number of complaints rose slightly in 2009 in comparison to previous years, the growth appears to be driven by Telecommunications Consumer Protection Act (“TCPA”) complaints relating to telemarketers or spam, not by actions of the carriers themselves.³¹⁶ When TCPA-related complaints are excluded, the industry’s complaint rate is less than half of the total counted for the first three quarters of 2009. Seen another way, if TCPA-related complaints are excluded, the industry complaint rate has declined from 2004 to 2009 while the number of subscribers has risen dramatically from 182 million to over 285 million.³¹⁷

3. Low Churn Despite Low Barriers to Switching

Because customer satisfaction affects customer churn, and surveys are showing strong customer satisfaction, it is no surprise that churn has trended downward over the past several

³¹⁵ See FCC, Quarterly Reports on Informal Consumer Inquiries and Complaints for 2009, <http://www.fcc.gov/cgb/quarter/welcome.html> (reporting the total number of complaints related to wireless telecommunications for the first three quarters of 2009 as 50,686). The number of subscribers at the end of the third quarter of 2009 was estimated based on CTIA, Top Line 2009 Semi-Annual Wireless Industry Survey Results at 2, <http://www.ctia.org/advocacy/research/index.cfm/aid/10316> (estimating the number of wireless connections to be about 270.3 million as of year-end 2008 and 285.6 million wireless connections as of year-end 2009).

³¹⁶ See FCC, Quarterly Reports on Informal Consumer Inquiries and Complaints for Year 2009, <http://www.fcc.gov/cgb/quarter/welcome.html> (reporting more than 36,000 complaints related to TCPA in the first three quarters of 2009).

³¹⁷ Compare FCC, Quarterly Reports on Informal Consumer Inquiries and Complaints for Years 2004 and 2009, <http://www.fcc.gov/cgb/quarter/welcome.html> (reporting 18,349 complaints for the first three quarters of 2004 and 14,286 complaints for the first three quarters of 2009, excluding TCPA-related complaints) with CTIA WIRELESS INDUSTRY INDICES at 26-27 (estimating about 182 million wireless connections for 2004 and 285 million for 2009).

years—even though subscribers who wish to switch providers can do so easily in today’s market.³¹⁸

Based on the Commission’s own figures, the nationwide carriers averaged a monthly churn rate of just over 2 percent in the second quarter of 2009 in comparison to 2.8 percent seven years earlier.³¹⁹ According to the *Fourteenth Report*, most mobile telephone providers report postpaid churn rates to be between 1.5 percent and 3.3 percent per month.³²⁰ The following chart further demonstrates low churn rates:

Wireless Churn Rates	2009				2010
	1Q	2Q	3Q	4Q	1Q
Postpaid					
AT&T	1.2%	1.1%	1.2%	1.2%	1.1%
NTELOS Holdings Corp.	2.2%	2.1%	2.4%	2.2%	2.3%
Sprint Nextel	2.3%	2.1%	2.2%	2.1%	2.2%
T-Mobile	2.3%	2.2%	2.4%	2.5%	2.2%
Verizon	1.1%	1.0%	1.1%	1.1%	1.1%
Prepaid					
MetroPCS	5.0%	5.8%	5.8%	5.3%	3.7%
Sprint Nextel	6.9%	6.4%	6.7%	5.6%	5.7%
TracFone	4.0%	3.9%	4.1%	4.0%	3.6%

Source: Mike Jude, *U.S. Cellular Prepaid: The New Cord Cutting?* Stratecast Perspectives & Insight for Executives, SPIE 2010 #25, Figure 3 (July 2, 2010) (based on Frost & Sullivan data).

The *Fourteenth Report* seems to view churn as a reasonable proxy for measuring whether consumer switching costs are detrimental to wireless competition, suggesting that low churn is caused by high barriers to switching.³²¹ The evidence indicates otherwise.

First, the local number portability experience demonstrates customers’ ability to easily migrate from one carrier to another. The wireless-to-wireless porting process is very user-friendly, as the wireless industry has implemented streamlined procedures to complete the vast

³¹⁸ GREGORY L. ROSSTON AND MICHAEL D. TOPPER, AN ANTITRUST ANALYSIS OF THE CASE FOR WIRELESS NETWORK NEUTRALITY 24 (Stanford Inst. for Econ. Policy Research Discussion Paper 08-040, Aug. 2009) (“ROSSTON-TOPPER”).

³¹⁹ Compare *Fourteenth Report*, ¶ 245 with *Thirteenth Report*, 24 FCC Rcd at 6271 ¶¶ 180-81.

³²⁰ See *Fourteenth Report*, ¶ 245 and Chart 38.

³²¹ See *id.* ¶ 248. This issue is examined further below. See Section IV.D.1 *infra*.

majority of ports within a matter of hours.³²² Wireless-to-wireless number porting has taken hold in the marketplace, as utilization has increased each year since it was first introduced in late 2003.³²³ This growth trend appears to be continuing, as 1.3 million wireless customers ported their numbers to a new wireless carrier during September 2009,³²⁴ ahead of the approximate 1.2 million wireless-to-wireless ports registered during the same month a year earlier.

Second, the churn information reflects that contract terms such as ETFs are not a barrier to switching. The Commission uses churn figures to calculate “subscriber lifetime” for the wireless industry, defined as the number of months an average subscriber is expected to remain a customer of a particular provider.³²⁵ According to the *Fourteenth Report*, the national weighted average subscriber lifetime for the four national carriers has ranged recently between 48 and 56 months, with Verizon Wireless having the longest subscriber lifetimes.³²⁶ Thus, customers have multiple opportunities to switch carriers and yet choose not to do so even if they are not subject to an ETF.

In short, low churn is the result of carriers’ commitment to consumers, as demonstrated by customer satisfaction and minimal complaints, rather than perceived barriers to switching.

³²² For purposes of comparison, last year the Commission adopted rules requiring completion of simple wireline-to-wireline and simple intermodal port requests within one business day, reducing the four-business day porting interval that had earlier been imposed. See *Local Number Portability Porting Interval and Validation Requirements, Report and Order and Further Notice of Proposed Rulemaking*, 24 FCC Rcd 6084 (2009). However, disputes among wireline and other providers as to how porting would work led the Commission to act a year later to standardize the data to be exchanged. *Local Number Portability Porting Interval and Validation Requirements, WC Docket No. 07-244 et al., Report and Order*, FCC 10-85 (May 20, 2010) (standardizing the data to be exchanged when transferring a customer’s telephone number between a wireline and wireless provider, two wireline providers, or an interconnected Voice over Internet Protocol (VoIP) provider and any other service provider).

³²³ See 47 C.F.R. § 52.31 (2009) (setting forth the rules governing wireless number portability).

³²⁴ See FCC, *NUMBERING RESOURCE UTILIZATION IN THE UNITED STATES*, at 35 (2010).

³²⁵ See *Fourteenth Report*, ¶ 247.

³²⁶ See *id.* at 141 tbl.23.

III. THE INPUT AND DOWNSTREAM MARKET SEGMENTS ILLUSTRATE A COMPETITIVE LANDSCAPE

The Commission seeks input on competition across the entire mobile wireless ecosystem, including the role of “input and downstream segments.”³²⁷ As an initial matter, Verizon Wireless emphasizes that vibrant competition in the mobile wireless *retail* market refutes any suggestion that carriers have either the ability or the inclination to distort the workings of these related markets. Competition in both the input segments (such as spectrum, backhaul, and infrastructure) and downstream market segments (such as devices, applications, operating systems, content and mobile commerce) is fueling competition in the wireless services sector.

A. While More Spectrum Will Be Needed, Spectrum Is Not a Competitive Constraint

Sufficient spectrum resources are, of course, an essential wireless input, necessary to continue the robust growth occurring throughout the mobile wireless ecosystem. Today’s wireless providers have made remarkable use of the available spectrum to meet the ever-growing demand for more mobile traffic. More spectrum to address this exponentially expanding demand is coming to market—and, as the National Broadband Plan recognized, even more spectrum will be needed.

For years, Verizon Wireless and other providers have invested billions of dollars in deploying more advanced radio technologies and optimizing network design for more efficient spectrum use. The results have been significant—greater capacity and increasingly sophisticated data products and services. This growth has been achieved even though, as the *Fourteenth Report* noted, “mobile wireless operators primarily use licenses associated with [the] three

³²⁷ *Public Notice* at 2.

different frequency bands” that have been available since the mid-1990s: cellular, broadband PCS, and SMR.³²⁸

Additional spectrum resources are fast coming into use. The AWS-1 and 700 MHz auctions, as well as the BRS/EBS modernization and other Commission initiatives including MSS and WCS reform, are bringing hundreds of megahertz of spectrum into the mobile wireless market, enabling the wireless ecosystem to continue to flourish. These spectrum resources are critical to meeting consumer demand and creating new opportunities for providers.

Further, as referenced above, secondary markets are an effective means of providing access to spectrum.³²⁹ Carriers of all sizes purchase and lease spectrum in the secondary market on a regular basis. Indeed, the FCC approves hundreds of transfer/assignment applications and spectrum leasing applications each year, and those transactions have been increasing. In addition, marketplace actors such as Spectrum Bridge, Inc. have emerged to serve as a clearinghouse for secondary market transactions. All carriers, including new entrants and smaller providers, have access to spectrum through the secondary market.

Despite these spectrum opportunities, it is clear that still more spectrum will be needed. The National Broadband Plan found that “[t]he growth of wireless broadband will be constrained if government does not make spectrum available to enable network expansion and technology

³²⁸ *Fourteenth Report*, ¶ 252. These technological developments include frequency reuse, antenna sectorization, cell splitting, and the migration from analog to digital technologies and next generation services, which have enabled the wireless industry to drive significant efficiencies in spectrum use.

³²⁹ *See supra* Section II.A.2.

upgrades.”³³⁰ Verizon Wireless thus fully supports the National Broadband Plan’s call for 500 additional MHz of spectrum for mobile broadband in the next ten years.

In response to further questions in the *Public Notice*, however, Verizon Wireless strongly disagrees with the notion that spectrum below 1 GHz provides an inherent competitive advantage in today’s wireless marketplace.³³¹ As discussed further in Section IV.C. below, reliance on this proposition in the *Fifteenth Report* would badly distort the Commission’s analysis and could lead to faulty conclusions.

B. Competition in the Backhaul and Infrastructure Segments Provides Wireless Carriers with Ample Choices to Meet Their Needs, Fueling Wireless Competition

1. Backhaul

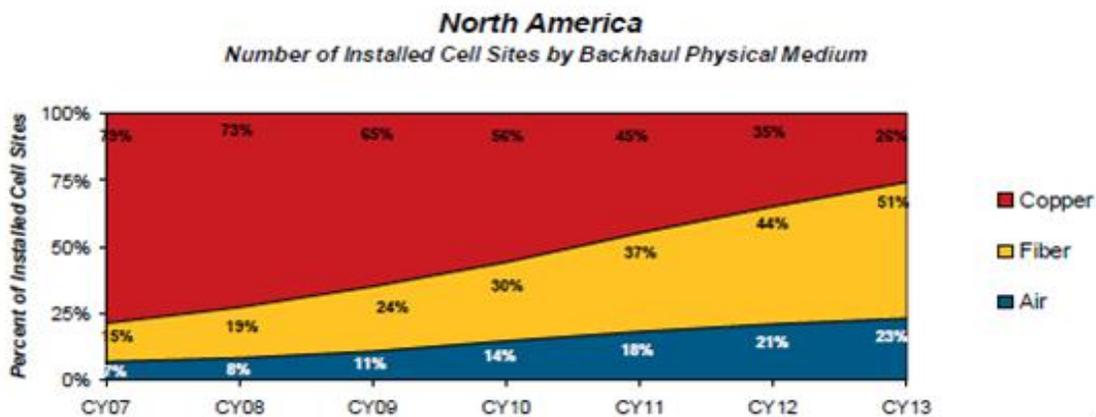
The marketplace for backhaul used to support mobile communications is marked with strong growth, healthy competition, diverse suppliers and service offerings, declining prices and innovation. As demonstrated above, wireless traffic volumes have increased and will continue to increase exponentially, further boosting demand for backhaul services and making it necessary to upgrade to higher-capacity facilities in all areas. As an analyst for Insight Research succinctly stated, “operators are going to keep backhaul companies happy for some time as they strive to meet their customers’ data demands.”³³²

³³⁰ National Broadband Plan at 77; *see also* The White House, Presidential Memorandum: Unleashing the Wireless Broadband Revolution (June 28, 2010), <http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution> (“America’s future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum.”).

³³¹ *Public Notice* at 16.

³³² Maisie Ramsay, *Booming Business for Backhaul*, WIRELESS WEEK, May 3, 2010 (quoting Insight Research analyst Bob Rosenberg).

The DS-1 capacity copper facilities that have long been used to service cell sites are giving way to higher-capacity facilities capable of accommodating 3G and 4G wireless traffic. As an executive at FiberNet noted, “T1s are out,” and, going forward, “it’s either going to be fiber or it’s going to be microwave.”³³³ As the chart below summarizes, all three medium are serving cell sites across the country.



Source: US Telecom, ADTRAN Webinar: Mobile Backhaul Convergence: Path to All-IP Backhaul (Feb. 25, 2010), <http://www.ustelecom.org/Events/Detail/default.aspx?id=2400&LangType=1033>.

According to Infonetics Research reports, mobile backhaul equipment spending rose 21 percent last year alone, to \$7.2 billion worldwide.³³⁴ Infonetics predicts that wireless backhaul spending will rise 44 percent by 2014, to \$10.4 billion.³³⁵ The Commission has long recognized that enhanced capacity needs render deployment of competitive facilities more and more feasible, because higher-capacity facilities open opportunities for higher revenues that outpace increased

³³³ David Armentrout, FCC National Broadband Plan Workshop: Deployment – Wired, Tr. 45:17-45:18, 45:20-45:21 (Aug. 12, 2009), http://www.broadband.gov/docs/ws_02_deploy_wired_transcript.pdf.

³³⁴ Ramsay, *Booming Business for Backhaul*.

³³⁵ *Id.*

deployment costs.³³⁶ Unsurprisingly, then, many competitive providers, including several new entrants, are focused on wireless backhaul service. Mobile broadband providers thus can obtain backhaul, including fiber or microwave, from a variety of providers, including not only incumbent local exchange carriers but also competitive fiber providers, utilities, cable companies, and fixed wireless providers, among others.

Where higher-capacity facilities must be constructed in the first instance—for example, when they are built to service new wireless towers or to expand capacity at existing towers—no backhaul provider has any inherent advantage. Thus, although Verizon Wireless is constructing new connections to meet the growing demand for high-capacity backhaul services, it also can go to a wide variety of alternative providers.

In recent years, the cable industry has been particularly aggressive in providing backhaul services. Given their ubiquitous networks, cable companies can readily serve cell sites. Recently, the chief operating officer of Comcast indicated that his company views cellular backhaul as a \$1 billion opportunity;³³⁷ “the cable industry is very uniquely positioned because we have fiber close to a lot of these towers.”³³⁸ Similarly, Time Warner Cable has seen fast-growing wireless backhaul opportunities result in a tripling of its backhaul revenue in 2009 alone,³³⁹ and Cox signed \$100 million worth of backhaul contracts in 2009.³⁴⁰

³³⁶ See, e.g., Unbundled Access to Network Elements; Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, *Order on Remand*, 20 FCC Rcd 2533, 2578 ¶ 71 (2005) (“[R]evenues generated increase with the amount of traffic that is carried on a particular transport route.”).

³³⁷ See Jeff Baumgartner, *Comcast Plans Job Cuts & Upgrades*, LIGHT READING CABLE, Nov. 4, 2009, http://www.lightreading.com/document.asp?doc_id=184146&site=lr_cable.

³³⁸ See *Comcast Corporation at Bank of America Securities Media, Communications & Entertainment Conference-Final*, FAIR DISCLOSURE WIRE, Tr. 090909a2385577.777 (Sept. 9, 2009).

³³⁹ Karl Bode, *Time Warner Cable Offers Bandwidth For Backhaul*, BROADBAND DSL REPORTS.COM, Mar. 8, 2010, <http://www.dslreports.com/shownews/Time-Warner-Cable-Offers-Bandwidth-For-Backhaul-10724>.

Fixed wireless backhaul providers, including FiberTower and XO Communications, are also rapidly expanding to new areas. These providers have promoted their ability to serve cell sites rapidly at relatively low cost compared to other providers. FiberTower “grew business with all of its major wireless customers in 2009,”³⁴¹ and ended the first quarter of 2010 with 3,119 deployed sites and 6,207 building customer locations.³⁴² Similarly, XO Communications (“XO”) is leveraging wireless hubs deployed on its fiber network to extend the reach of its 19,000-mile nationwide fiber network.³⁴³

Clearwire has deployed extensive fixed wireless facilities nationwide, and intends to rely primarily upon self-provisioned microwave backhaul.³⁴⁴ In March 2010, Clearwire made plain its intention to increase dramatically its role in the wireless backhaul sector:

³⁴⁰ See Kelly Riddell and Amy Thomson, *iPhone Network Jams Open Market for Time Warner Cable* (Update 2) BLOOMBERG BUSINESSWEEK, Mar. 8, 2010.

³⁴¹ FiberTower Corporation, CTIA Investor Day Presentation, 20 (Mar. 24, 2010), <http://www.fibertower.com/corp/investors-presentations-and-events.shtml>. FiberTower has entered into agreements with Verizon and MetroPCS to provide backhaul for 4G services. Press Release, FiberTower Corporation, FiberTower’s Backhaul Solution Helps Verizon Wireless Bring the Nation’s First 4G LTE Network to Ohio and Michigan, (Mar. 24, 2010), <http://www.fibertower.com/corp/news-press-releases.shtml>; Press Release, FiberTower Corporation, FiberTower Supports MetroPCS Backhaul Network Evolution to Ethernet, (Apr. 21, 2010), <http://www.fibertower.com/corp/news-press-releases.shtml>.

³⁴² FiberTower 1Q2010 Earnings Call Transcript (May 8, 2010), <http://seekingalpha.com/article/203897-fibertower-corporation-q1-2010-earnings-call-transcript>.

³⁴³ XO Communications Network Overview, <http://www.xo.com/about/network/Pages/overview.aspx> (follow “Network Overview” hyperlink) (last visited July 26, 2010); See XO Communications, Press Release, XO Communications Expands Broadband Wireless Coverage Across Northern Virginia (Apr. 15, 2010), <http://www.xo.com/about/news/Pages/476.aspx>.

³⁴⁴ See Clearwire 10-K at 14.

Ongoing enhancements to Clearwire's cost-efficient microwave backhaul network are expected to increase total backhaul capacity by 250 percent or more, with long-term capability to support gigabit per second speeds in high-density, high-traffic areas. This added capacity will give Clearwire's robust, cost effective network the ability to leverage its unrivaled spectrum portfolio and support the growth in mobile data traffic....³⁴⁵

This commitment recently led Clearwire CTO to boast that the company has "the largest wireless backhaul network in the U.S."³⁴⁶

To be sure, wireless backhaul options in high-cost rural areas are less robust than in urban and suburban areas. Importantly, however, in such locations it is less likely that either competitors *or* incumbents have already deployed facilities capable of providing higher-capacity services, meaning that no provider has any inherent advantage over another. In order to deliver the higher capacity required by rural wireless broadband networks, any backhaul provider will have to deploy fiber, microwave, and other non-copper facilities in the first instance. In addition, "middle mile" support under the American Recovery and Reinvestment Act's Broadband Initiatives Program ("BIP") and Broadband Technology Opportunities Program ("BTOP") programs have created new options for deployment of higher-capacity facilities in rural areas.³⁴⁷

For example, the Rural Utilities Service has already awarded \$167 million in BIP grants to fund

³⁴⁵ See Clearwire 4G Leadership Press Release. Clearwire also estimates that its 4G networks will reach 120 million consumers by the end of 2010, and that its existing 4G customers on average are already consuming over 7 GB of data per month. *Id.*

³⁴⁶ Dan Jones, *Clearwire's Backhaul Bet*, LIGHT READING MOBILE, May 16, 2008, http://www.lightreading.com/document.asp?doc_id=154063.

³⁴⁷ For example, Bristol Virginia Utilities Board was awarded a \$22.7 million grant with an additional \$13.5 million applicant-provided match to build an almost 400-mile fiber network that intends to bring high-speed broadband middle mile service to rural, economically distressed areas in southwestern Virginia; Vermont Telecommunications Authority was awarded a \$33.4 million grant with an additional \$14.8 million applicant-provided match to build a 790-mile fiber network across this small, rural state with rugged terrain. See Press Release, National Telecommunications and Information Administration, Secretary Locke Announces Recovery Act Investments to Expand Broadband Internet Access and Spur Economic Growth (July 7, 2010), http://www.ntia.doc.gov/press/2010/07022010BTOP_Round2.html.

“necessary ‘backbone services’ such as interoffice transport, backhaul, Internet connectivity, or special access to rural areas.”³⁴⁸ Additional funds, such as the Universal Service Fund, should also be provided to support next-generation backhaul services to rural Americans.

The facts on wireless backhaul competition show that this is a well functioning marketplace, poised to grow even more competitive as capacity needs increase. Far from constraining competition among wireless carriers, the backhaul market facilitates competition by enabling carriers to meet their backhaul needs in a variety of ways through a growing number of backhaul providers. Moreover, as competition continues to grow, there is no basis for imposing additional price regulation on wireless backhaul services or other high-capacity services.

2. Infrastructure

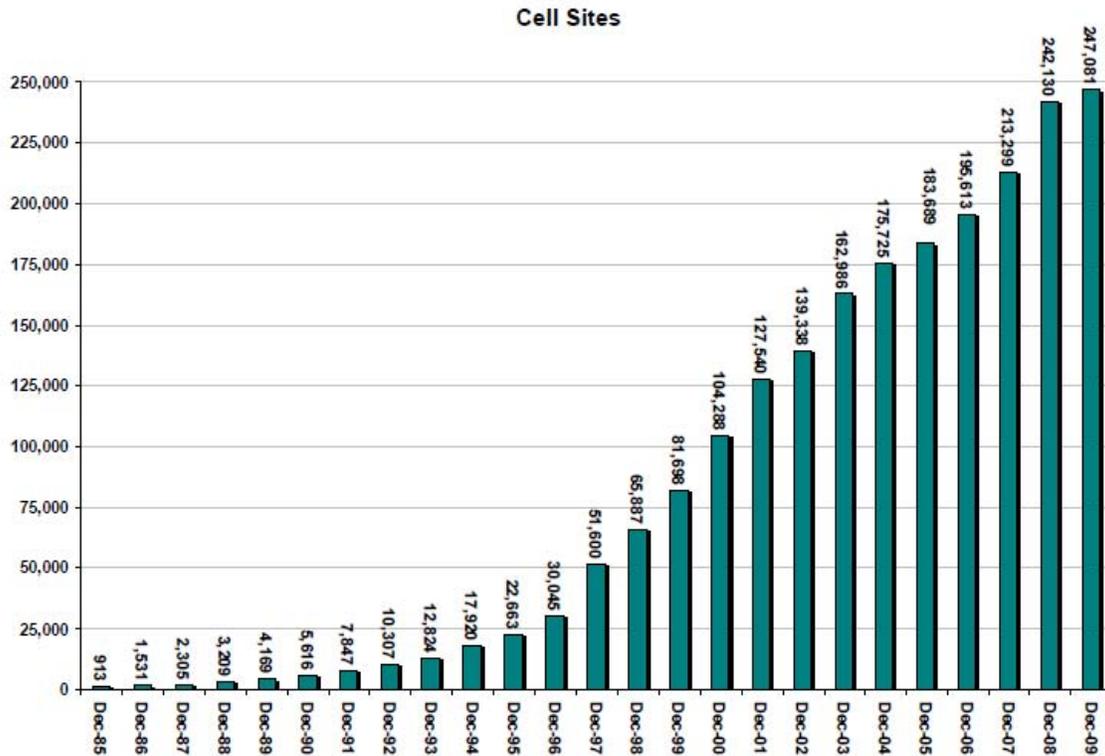
Infrastructure continues to play an important role in the economics of wireless networks, especially given the expansion of wireless broadband. The market for mobile wireless infrastructure facilities—including not only towers but also the placement of facilities on existing towers, buildings, water towers, or other structures—continues to show healthy competition and growth and, like backhaul, promotes retail wireless competition.

One measure of infrastructure growth is the expansion over time in the total number of cell sites, which includes aggregated carrier facilities on towers, buildings, and other structures. According to CTIA, wireless carriers reported 4,951 more U.S. cell sites in December 2009 than in December 2008, now totaling over 247,000 sites.³⁴⁹ This represents a 2.04 percent increase in

³⁴⁸ See Broadband Grants from RUS: Round 1, DAILY WIRELESS, July 18, 2010, <http://www.dailywireless.org/2010/06/18/broadband-grants-from-rus-round-1/>.

³⁴⁹ See CTIA, Top Line 2009 Semi-Annual Wireless Industry Survey Results, at 10 (2010), http://files.ctia.org/pdf/CTIA_Survey_Year_End_2009_Graphics.pdf.

reported cell sites over a one-year period, and a nearly 35 percent increase over a five-year period.³⁵⁰



Source: CTIA, Top Line 2009 Semi-Annual Wireless Industry Survey Results, at 10 (2010), http://files.ctia.org/pdf/CTIA_Survey_Year_End_2009_Graphics.pdf.

According to the trade publication Above Ground Level, by April 2010, the U.S. had a total of 266,623 cell sites holding an average of 2.7 tenants per tower.³⁵¹

More importantly, this growth has created a diversity of siting options, preventing any one tower company or carrier from controlling the infrastructure market segment. As noted, while the total number of cell sites reported to CTIA includes aggregated carrier facilities on towers, rooftops and other structures, an examination of the tower segment alone shows a healthy

³⁵⁰ *Id.*

³⁵¹ Clayton Funk and Jason Nicol, *Trends and Forecasts for the Wireless Industry*, ABOVE GROUND LEVEL (July/Aug. 2010) at 40.

competitive environment. For example, each of the top five independent tower companies owns between 3,200 and 22,000 towers.³⁵² These five companies—Crown Castle, American Tower, SBA Communications, Global Tower Partners and TowerCo—are not affiliated with any of the major wireless companies, and are joined by at least 13 other tower companies to round out the major players in the sector.³⁵³ As tower company executives confirmed in comments at PCIA’s 2009 Wireless Infrastructure Show, tower providers “compete fiercely” with each other and bring “competition to this segment of the wireless industry.”³⁵⁴

Carriers routinely co-locate their facilities on the towers of competing infrastructure providers both as a matter of necessity and, in some cases, due to local zoning conditions. In Verizon Wireless’s case, slightly more than half of its cell sites are on company-owned towers, with the remainder located on other companies’ towers, buildings, and other structures.

³⁵² See *By the Numbers: Top 10 Tower Companies*, RCR WIRELESS NEWS, Sept. 23, 2009, <http://www.rcrwireless.com/article/20090923/FRONTPAGE/909239996/by-the-numbers-top-10-tower-companies>. Crown Castle is the largest tower company in the country, with 22,000 towers nationwide. American Tower is a close second, with 20,000 towers nationwide, followed by SBA Communications with slightly more than 8,000 towers in the U.S., and Global Tower Partners owns, manages or master leases more than 10,200 cell sites, including 3,300 communication towers. *Id.* For information on Global Towers, see Press Release, Global Tower Partners, Global Tower Partners secures Master Lease for tallest building in Indiana Chase Tower (April 1, 2010), <http://en.gtbsites.com/about-gtp/newsroom/2010/global-tower-partners-secures-master-lease-for-tallest-building-in-indiana---chase-tower.aspx>.

³⁵³ These companies are: Message Center Management, <http://www.mcmgmt.com>; Clear Channel Communications, <http://www.clearchannel.com>; Subcarrier Communications, <http://www.subcarrier.com>; Tower Ventures, <http://www.towerventures.com>; Diamond Communications, <http://www.diamondcomm.com/#/profile>; Vanguard Wireless, <http://www.vanguardwireless.com/home.html>; DukeNet Communications, <http://www.dukenet.com>; Performance Development Group, <http://www.performancedevgroup.com>; Industrial Communications, <http://www.industrialcommunications.com/about>; New Horizon Towers, <http://www.nhgrp.com>; Horvath Communications, <http://www.horvathcommunications.com>; Bay Communications, <http://www.baycommunications.net/>; Foresite, <http://www.foresitetowers.com/>, and Collier Enterprises II L.L.C., <http://collierii.com/index.php>.

³⁵⁴ Tracy Ford, *@PCIA: Tower Execs Optimistic on Broadband Buildout*, RCR WIRELESS NEWS, Sept. 23, 2009 (citing Richard Byrne, CEO, TowerCo), <http://www.rcrwireless.com/article/20090923/FRONTPAGE/909239991/-pcia-tower-execs-optimistic-on-broadband-buildout>.

Two regulatory developments during the past year have created cause for additional optimism regarding the future of the wireless infrastructure market. First, in November 2009, the Commission adopted the *Shot Clock Order*, establishing presumptive timeframes within which local zoning authorities may act on tower siting and collocation applications before the applicant may seek judicial review.³⁵⁵ Second, the National Broadband Plan recognized the critical importance of infrastructure to the provision of wireless broadband service, and issued recommendations designed to facilitate infrastructure deployment along highways, roads, and bridges and to promote tower placement on governmental buildings.³⁵⁶ Developments such as these promise to ameliorate what has been one of the chief limitations on growth and new entry in the wireless ecosystem—regulatory barriers to the placement of new facilities.

C. The Mobile Wireless Ecosystem Offers Diversity in the Device, Application, and Content Segments

The downstream and “edge” markets for products that rely on mobile wireless services—including devices, applications, and content—continue to enjoy healthy competition, growing diversity, and increasing product differentiation. By any measure, the market for devices is competitive, whether measured by the diversity of devices, the number of manufacturers, innovative design or capabilities, price, or otherwise. Moreover, the variety of available applications and content continue to proliferate exponentially, as the market responds to consumer demand for more options. In short, downstream markets are fueling mobile wireless competition.

³⁵⁵ Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, *Declaratory Ruling*, 24 FCC Rcd 13994 (2009).

³⁵⁶ See National Broadband Plan at 132-33.

1. Devices

a. Growth in Devices and Manufacturers

The abundance of wireless devices (*e.g.*, handsets, smartphones, netbooks, modem/PC cards, and connected devices such as e-readers) available demonstrates the vibrant competition in this sector, and carriers compete by offering innovative devices. Literally hundreds of devices are available in the U.S., ranging from basic phones, through “feature phones” offering additional capabilities such as email and social networking options, to smartphones with increasingly sophisticated operating systems and the ability to download a seemingly endless array of applications. In fact, CTIA has noted that U.S. consumers have access to approximately 630 different wireless devices, more devices than are available in any other country in the world.³⁵⁷

The U.S. market for wireless handsets is also characterized by significant competition among numerous manufacturers, including Apple, HTC, Kyocera, LG, Motorola, Nokia, Palm, Research in Motion (or “RIM”), Samsung, Sanyo, and Sony Ericsson³⁵⁸—and just in the past year, new companies have joined the fray with the offering or announcement of their first handsets.³⁵⁹ In this competitive marketplace, established and new manufacturers face few, if any, impediments to entering the market or growing market share by offering devices that satisfy consumer demand. No single manufacturer or service provider has sufficient market power to

³⁵⁷ See *Ex parte* Letter from Christopher Guttman-McCabe, CTIA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 09-66 *et al.*, Attachment, at 3 (May 12, 2010).

³⁵⁸ Other manufacturers include Alcatel, ASUS, Axxesstel, BandRich, BenQ, Cal-Comp, Casio, Firefly, HP, Huawei, Jitterbug, Novatel Wireless, Option, Pantech & Curitel, PCD, Sharp, Siemens, Sierra Wireless, Uniden, Waxess USA and ZTE. *Id.*, Attachment, at 3; see also *Ex parte* Letter from Christopher Guttman-McCabe, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 09-51 *et al.*, Attachment (Handset Innovation), at 1 (Aug. 14, 2009).

³⁵⁹ See *infra* notes 368 to 370 and accompanying text.

control the wholesale or retail distribution chain or prevent another manufacturer from working with particular service providers. Also, no wireless service provider in the U.S. manufactures wireless devices itself or owns equity in any of the major handset manufacturers.³⁶⁰

Market trends further illustrate vigorous competition in the handset industry. In the past year alone, significant shifts in market share have occurred among manufacturers. Specifically, as the table below demonstrates, from September 2009 through May 2010, Motorola began the period as the top mobile original equipment manufacturer (“OEM”) but has fallen to number 3, while Samsung began the period as the third largest mobile OEM, but is now the largest.³⁶¹ Similarly, Nokia and RIM have swapped market positions during the same time period.³⁶²

Top Mobile OEMs					
3-Month Periods Ending Sep. 2009, Dec. 2009, Feb. 2010 & May 2010					
	Share (%) of Mobile Devices				
	Sep-09	Dec-09	Feb-10	May-10	Percentage Change
Motorola	24.9%	23.5%	22.3%	21.2%	-3.7%
LG	21.7%	21.9%	21.7%	21.5%	-0.2%
Samsung	20.4%	21.2%	21.4%	22.4%	+2.0%
Nokia	9.6%	9.2%	8.7%	8.1%	-1.5%
RIM	6.4%	7.0%	8.2%	8.7%	+2.3%

Source: comScore MobiLens

Further, device manufacturers typically distribute their equipment broadly.³⁶³ For example, a review of handset availability for various manufacturers shows that Nokia distributes

³⁶⁰ See Verizon Wireless Handset Exclusivity Comments at 12.

³⁶¹ See Press Release, comScore, Inc., comScore Reports December 2009 U.S. Mobile Subscriber Market Share, (Feb. 8, 2010), http://www.comscore.com/Press_Events/Press_Releases/2010/2/comScore_Reports_December_2009_U.S._Mobile_Subscriber_Market_Share; Press Release, comScore, Inc., comScore Reports May 2010 U.S. Mobile Subscriber Market Share, (July 8, 2010), http://www.comscore.com/Press_Events/Press_Releases/2010/7/comScore_Reports_May_2010_U.S._Mobile_Subscriber_Market_Share.

³⁶² *Id.*

³⁶³ Verizon Wireless Handset Exclusivity Comments at 13.

its products through at least 54 U.S. carriers or vendors,³⁶⁴ RIM 47,³⁶⁵ Kyocera 18,³⁶⁶ and Samsung 12.³⁶⁷ On its website, Verizon Wireless offers consumers more than 50 device choices. These include phones, feature phones, smartphones and PDAs, push-to-talk phones, and modems/PC cards from a wide range of manufacturers, such as RIM, Motorola, Nokia, Samsung, LG, Casio, and HTC.

Amidst such competition, there are few, if any, impediments to prospective entrants. In the past year, for example, Dell created a communications division to develop smartphones and other mobile devices,³⁶⁸ and announced the 2010 release of its Android-based Dell Aero (formerly, Mini 3) smartphone.³⁶⁹ Additionally, Garmin, a GPS-based navigation device maker, partnered with ASUS, a computer manufacturer, to sell their first smartphone in the U.S. through AT&T in October 2009 and their second smartphone through T-Mobile in June 2010.³⁷⁰ These competitive moves reflect manufacturers' confidence that they can produce new devices

³⁶⁴ See Nokia Corp., http://www.nokiausa.com/find-products/phones?intc=dev-fw-ile-phones_wf-con-na-nokiacom-us-na-bn001 (last visited July 28, 2010).

³⁶⁵ See Research In Motion Limited, Where to Buy, <http://na.blackberry.com/eng/purchase/?regionId=2> (last visited July 28, 2010).

³⁶⁶ See Kyocera, Phones, <http://tools.kyocera-wireless.com/phoneshowcase.do> (last visited July 28, 2010).

³⁶⁷ See Samsung, More Carriers, <http://www.samsung.com/us/consumer/type/productselector.do?group=mobile&type=mobile-phones> (last visited July 28, 2010).

³⁶⁸ See Justin Scheck, *Dell Reorganizes, Creating New Mobile Device Division*, WALL STREET JOURNAL, Dec. 5, 2009, http://online.wsj.com/article/SB10001424052748704342404574576201600691622.html?mod=dist_smartbrief.

³⁶⁹ See AT&T, *Introducing the Dell Aero Smartphone*, <http://www.wireless.att.com/cell-phone-service/cell-phone-sales/promotion/ero.jsp?status=success&requestid=130954&ref=dynamitedata.com> (last visited July 28, 2010); Press Release, Dell Inc., Dell Announces U.S. Smart Phone Deal with AT&T (Jan. 6, 2010), <http://content.dell.com/us/en/corp/d/press-releases/2010-01-06-dell-att-smart-phone-deal.aspx>.

³⁷⁰ See Brian James Kirk, *AT&T to Offer Garmin-ASUS Nuvifone G60 Touchscreen Navigation Phone This Weekend*, MOBILEBURN.COM, Sept. 29, 2009, <http://www.mobileburn.com/news.jsp?Id=7914>; Todd Haselton, *T-Mobile Garminfone Set to Launch in June for \$199.99*, MOBILEBURN.COM, May 11, 2010, <http://www.mobileburn.com/news.jsp?Id=9417>.

responsive to consumer demand and technological advances and that the marketplace is sufficiently fluid and competitive to allow new entrants to thrive.

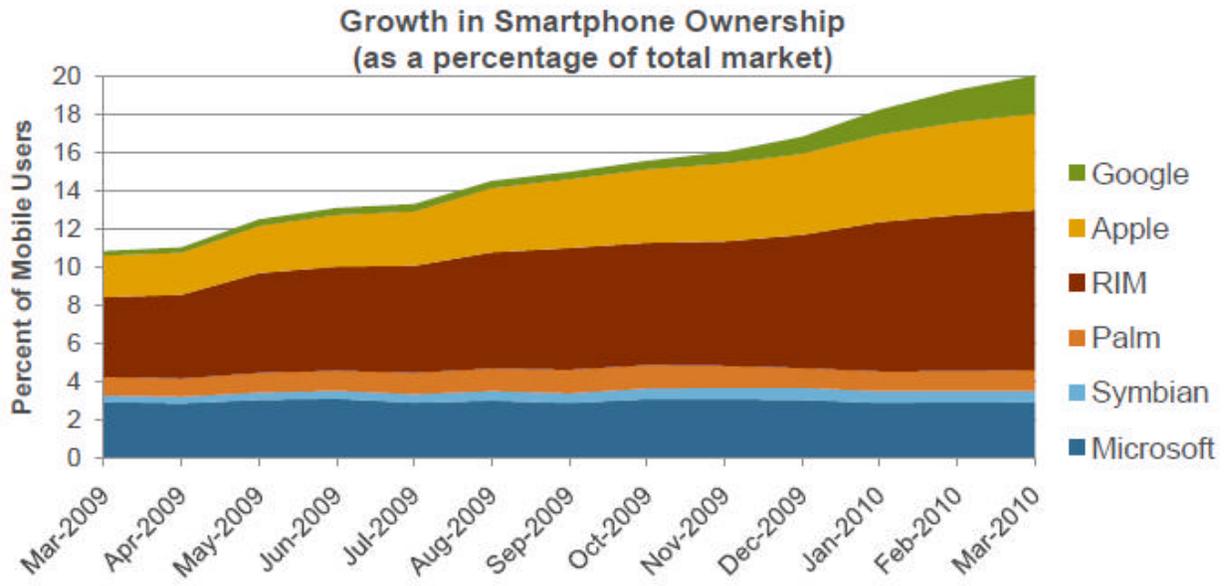
b. Variety of Devices Available

The sheer variety of wireless devices also demonstrates the competitive nature of the device market. Service providers continue to use wireless devices and features as a means to differentiate themselves in the extremely competitive wireless market. These devices are incredibly diverse, ranging from simple, voice-only devices to complex smartphones.

Smartphones. Smartphones, or devices that offer advanced computing capabilities and connectivity, continue to be the fastest-growing segment of the competitive worldwide device market.³⁷¹ Analysts estimate that within just a year from March 2009 to March 2010, the percentage of U.S. mobile phone owners who have a smartphone nearly doubled from approximately 11 percent to 20 percent:³⁷²

³⁷¹ *Smartphone, Fastest Growing Segment in Mobile Devices*, THE FINANCIAL EXPRESS, Nov.13, 2009, <http://www.financialexpress.com/news/smartphone-fastest-growing-segment-in-mobile-devices/540758>.

³⁷² MARK DONOVAN, COMSCORE, THE STATE OF MOBILE: US MOBILE MEDIA LANDSCAPE AND TRENDS, 26 (June 8, 2010).



Source: comScore Report³⁷³

Fueling this growing adoption is an array of competing smartphones from multiple manufacturers that use a variety of operating systems. The following smartphones are just a few examples that were available (or announced for sale) in 2010:³⁷⁴

- ALLTEL (as owned by Atlantic Tele-Network): BlackBerry® Curve™ 8530, Tour™ 9630, and 8830 World Edition; HTC Snap™; Palm® Treo™ Pro; HTC Hero™
- Appalachian Wireless: HTC Hero™; BlackBerry® Pearl™ Flip 8230, Pearl™ 8130, Tour™ 9600, and 8530 Curve 2
- AT&T: Apple iPhone 4; HTC Aria™; Motorola Backflip™; Samsung Propel™ Pro and Captivate™; BlackBerry® Curve™ 8900
- Boost Mobile: Motorola i1; BlackBerry® Curve™ 8330
- Carolina West Wireless: HTC Hero™ 3G and S511 Snap; BlackBerry® Curve™ 8530, Tour™ 9630, 8130 Pearl™, and 8230 Pearl™ Flip

³⁷³ *Id.*

³⁷⁴ See, e.g., *Ex parte* Letter from Kathleen Grillo, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, WT Docket 09-66, Attachment (New Wireless Ecosystem Developments in 2010 (through April 30, 2010)), 7-11 (filed May 11, 2010).

- Cellular South: HTC Hero™ 6250, Snap 6175, and Touch Pro 6850; BlackBerry® Curve™ 8530, Pearl™ Flip 8230, and Tour™ 9630
- Cincinnati Bell Wireless: HTC Maple; Samsung Behold II 3G; Cincinnati Bell Blaze; BlackBerry® Bold™ 9700 and 8900
- DOCOMO Pacific: Motorola Milestone; Nexus One™; Sony Ericsson XPERIA™ X10a; Palm® Treo™ 750; BlackBerry® Bold™ 9700, Curve™ 8520, and Storm™ 9500
- GCI Communications: BlackBerry® Storm™ 2, Pearl™ 8130, 8330, Pearl™ Flip 8230, and Storm 2; HTC Hero
- Golden State Cellular: HTC 6175 Snap™, 6900 Touch™, 6850 Touch Pro™, and 6250 Hero
- Illinois Valley Cellular: HTC 6175 Snap™ and 6250 Hero™
- Inland Cellular: HTC 6175 Snap™ and 6250 Hero™, BlackBerry® Curve™ 8530, Pearl™ Flip 8230, and Tour™ 9630
- MetroPCS: Samsung Caliber™ and Code™; BlackBerry® Curve™ 8530
- NTELOS: BlackBerry® Pearl™ Flip, 8530 Curve™, and Tour™; HTC Hero™ and Snap™
- SouthernLINC Wireless: MOTOROLA i1; BlackBerry® Curve™ 8530i
- Sprint: HTC EVO™ 4G; Samsung Moment™ with Google™; MOTOROLA i1; Palm® Pixi; BlackBerry® Bold™ 9650 and Curve™ 8330
- T-Mobile: Nokia E73 Mode and 5230 Nuron; Garmin-ASUS Garminfone™; myTouch™ 3G Slide; Motorola CLIQ XT; Samsung Vibrant
- U.S. Cellular: Samsung Exec™ and Acclaim™; HTC Snap™, Touch Pro™, and Touch Pro™ 2; BlackBerry® Tour™, Curve™ 8530, and Pearl™ Flip 8230
- Verizon Wireless: DROID X by MOTOROLA; DROID INCREDIBLE by HTC; BlackBerry® Bold™ 9650; Palm® Pre™ Plus; LG Ally™; Samsung Fascinate™

Moreover, smartphone prices continue to fall as consumer demand grows and shipment volumes increase.³⁷⁵ According to a study from ABI Research, from 2007 to 2009, the percentage of smartphones offered for less than \$200 retail price grew from 18 percent to 27 percent.³⁷⁶ It is further estimated that, by 2014, 45 percent of all smartphones shipped will be priced below \$200 retail.³⁷⁷

PC Cards. Many carriers offer equipment and wireless broadband service plans to connect the customer's computer or other digital devices to the Internet.³⁷⁸ These products, from a wide variety of manufacturers, consist of USB devices and similar technologies (collectively, "PC cards") and the services often have no limits on what applications can be downloaded or used.³⁷⁹ In 2009, sales of PC cards grew more than 55 percent.³⁸⁰ The popularity of these devices has been attributed to factors such as their low cost, flexibility, and portability.³⁸¹

³⁷⁵ See Mark Peters, *Smartphone Price Drop Continues*, LETSGODIGITAL, Nov. 4, 2009, <http://www.letsgodigital.org/en/23646/smartphone-price/>.

³⁷⁶ *Id.*

³⁷⁷ *Id.*

³⁷⁸ See Verizon Wireless, Mobile Broadband Plans for Wireless Internet Access, <http://www.verizonwireless.com/b2c/mobilebroadband/?page=plans> (last visited July 27, 2010); AT&T, DataConnect Plans, <http://www.wireless.att.com/cell-phone-service/cell-phone-plans/data-connect-plans.jsp> (last visited July 14, 2010); Sprint Nextel, <http://shop.sprint.com/NASApp/onlinestore/en/Action/DisplayPlans?INTNAV=ATG:HE:Plans> (last visited July 27, 2010); T-Mobile USA, Inc., T-Mobile webConnect Data Plan Details, <http://www.t-mobile.com/shop/plans/cell-phone-plans-detail.aspx?tp=tb1&rateplan=T-Mobile-webConnect-Data> (last visited July 27, 2010); Cricket Communications, Inc., Plans, http://www.mycricket.com/broadband/plans/40bb_rpr (last visited July 27, 2010); U.S. Cellular, Wireless Modems, <http://www.uscellular.com/uscellular/common/common.jsp?path=/wireless-modems/index.html> (last visited July 27, 2010).

³⁷⁹ Verizon Wireless does not restrict use of broadband access for VoIP, streaming video or streaming audio, although there are a limited number of "prohibited uses" that relate to protection of Verizon Wireless's network. See Verizon Wireless, Mobile Broadband Terms & Conditions, http://b2b.vzw.com/broadband/bba_terms.html (last visited July 15, 2010). Prohibited uses include illegal acts, infringing upon others' intellectual property rights, interfering with other users' service or the network's ability to fairly allocate capacity among users, or degrading service quality for other users. For example, generating spam or generating or disseminating viruses, malware, or "denial of service" attacks are prohibited.

³⁸⁰ Dussen Belic, *ABI Research: Mobile Broadband PC Modem Market Grew More Than 55 Percent in 2009*, INTOMOBILE, Apr. 23, 2010, <http://www.intomobile.com/2010/04/23/abi-research-mobile-broadband-pc-modem-> (continued on next page)

Netbooks and Tablets. Carriers in the past few years have introduced small, ultraportable netbook and tablet devices.³⁸² These devices combine the power of a computer with the portability of a wireless phone. Like high-end smartphones, the costs of these netbooks and tablets may be partly or wholly subsidized by carriers with the purchase of a 1- or 2-year service plan. Verizon Wireless, for example, offers various netbooks, including the Gateway LT2016u, HP Mini 210–1076NR and 311–1037NR, and Samsung N150, all of which offer a combination of lightweight portability, affordability, and seamless connection to the carrier’s 3G network.³⁸³ In the last few months, Clearwire introduced the Dell Inspiron Mini 10 netbook featuring access to the carrier’s 4G network, and announced the nationwide availability of embedded 4G laptops at all Best Buy locations and website.³⁸⁴

Notably, in April 2010, Apple launched the iPad, a multimedia tablet that can connect to the Internet through Wi-Fi or a 3G connection. Apple sold one million units within the first month, half the time it took to sell the same number of original iPhones.³⁸⁵ Some analysts predict that iPad shipments within the first year will far surpass market expectations (*i.e.*, approximately 10 million units estimated to be shipped in 2010 versus a consensus forecast of 5

market-grew-more-than-55-in-2009; Richard Webb, Mobile Broadband Card Sales Grew 55% in 2009, Driven by HSPA Adoption, Apr. 6, 2010, <http://www.infonetics.com/pr/2010/4Q09-2G-3G-LTE-Mobile-Broadband-Device-Market-Highlights.asp>.

³⁸¹ Belic, *Mobile Broadband PC Market Grew in 2009*.

³⁸² See, e.g., Verizon Wireless, Featured Netbooks from Verizon Wireless, <http://www.verizonwireless.com:80/b2c/netbook/?page=products> (last visited July 27, 2010); AT&T, Netbook Center, <http://www.wireless.att.com/cell-phone-service/specials/netbooks.jsp> (last visited July 27, 2010).

³⁸³ See Verizon Wireless, Select a Phone or Device, <http://www.verizonwireless.com/b2c/store/controller?item=phoneFirst&action=viewPhonesByFeatures&capId=96&deviceType=Phones> (last visited July 27, 2010).

³⁸⁴ See Clearwire 4G Leadership Press Release; Press Release, Clearwire Corporation, CLEAR(R) 4G Mobile Broadband Service Now Available with Specially Discounted Embedded 4G Devices Nationwide via Best Buy (June 21, 2010), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1440074>.

³⁸⁵ Ben Patterson, *iPad sales cross million mark twice as fast as original iPhone*, YAHOO! NEWS, May 3, 2010, http://news.yahoo.com/s/ytech_gadg/20100503/tc_ytech_gadg/ytech_gadg_tc1901.

to 6 million units).³⁸⁶ In May, Verizon Wireless announced that it was working with Google on a tablet that is expected to compete with the iPad.³⁸⁷

Other Devices. A wide variety of other innovative devices are entering the wireless ecosystem to expand wireless networks and network connectivity. One innovative device creates a personal Wi-Fi hotspot, allowing multiple devices to connect to the Internet over the carrier's network. Last year, Verizon Wireless and Sprint introduced the MiFi, a device that is slightly larger than a credit card and serves as a hotspot for up to five other devices.³⁸⁸ Earlier this month, Verizon Wireless began offering the Motorola Droid X, an Android-based handset incorporating a 3G Mobile Hotspot feature that also allows customers to connect up to five Wi-Fi-enabled devices to Verizon Wireless's 3G network.³⁸⁹ In January 2010, Sprint launched sale of Sierra Wireless's Overdrive 3G/4G Mobile Hotspot, allowing consumers to connect up to five Wi-Fi-enabled devices to Sprint's 3G and 4G networks.³⁹⁰

Mobile broadband-connected e-readers, portable media players and consumer navigation devices are also becoming widely available. In 2009 and 2010, the number of connected e-

³⁸⁶ See, e.g., KATY L. HUBERTY ET AL., MORGAN STANLEY RESEARCH, GLOBAL TECHNOLOGY: IPAD CONTINUES TO SURPRISE + CANNIBALIZE, 1 (June 8, 2010); KATY L. HUBERTY AND MATTHEW SCHNEIDER, MORGAN STANLEY RESEARCH, APPLE, INC.: ADDING TO BEST IDEAS: IPHONE KEY DRIVER OF \$400 BULL CASE, 7 (May 24, 2010).

³⁸⁷ Niraj Sheth, Verizon, *Google Developing iPad Rival*, WALL STREET JOURNAL, May 12, 2010, <http://online.wsj.com/article/SB10001424052748704250104575238680540806288.html/>.

³⁸⁸ See Verizon Wireless, MiFi 2200, <http://search.vzw.com/?market=24246&q=HOTSPOT&p=null&ss=null&b2eFlag=N> (last visited July 27, 2010); Sprint, MiFi 2200 by Novatel Wireless ratings & reviews, <http://reviews.sprint.com/5611v2/115/mifi-2200-by-novatel-wireless-reviews/reviews.htm> (last visited July 27, 2010).

³⁸⁹ Press Release, Verizon Wireless, DROID X By Motorola Lands On The Verizon Wireless Network Tomorrow (July 14, 2010), <http://news.vzw.com/news/2010/07/pr2010-07-14.html>; Verizon Wireless's Palm® Pre™ Plus and Palm Pixi™ also offer the 3G Mobile Hotspot feature.

³⁹⁰ See Press Release, Sprint Nextel, Overdrive™ 3G/4G Mobile Hotspot by Sierra Wireless Can Bring Sprint's 4G Speeds to More Than 400 Million Wi-Fi-Enabled Devices (Jan. 6, 2010), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1372203&highlight.

readers, portable media players, and portable navigation devices that were shipped doubled.³⁹¹ This growth will only continue into the future, providing a new means for consumers to obtain various information and entertainment.³⁹²

c. Number of Distribution Outlets

The number and diversity of competing distribution outlets for devices is extraordinary. The service provider-as-retailer model remains a significant part of the market, but manufacturers also offer their products to consumers through a range of retail channels, such as their own websites, big box stores including Best Buy and Wal-Mart and online retail providers, such as Amazon.com and J&R. These outlets often offer an extensive catalog of hundreds of mobile handsets and other devices that can be easily purchased online.³⁹³ This array of retail options further enhances competition and provides consumers access to state-of-the-art device technology and many of the most popular new models available.³⁹⁴

d. Diverse Access Models for Connected Devices

The competitive nature of the device market is increasingly reflected in the diverse business models service providers are embracing with respect to wireless devices. Verizon Wireless and other network operators have opened their networks to connected devices such as machine-to-machine (“M2M”) devices (*e.g.*, telemetry devices, smart grid devices, industrial

³⁹¹ IDC ANALYZE THE FUTURE, MARKET ANALYSIS: WORLDWIDE CONNECTED EREADER, CONNECTED PORTABLE MEDIA PLAYER, AND CONNECTED PORTABLE NAVIGATION DEVICE 2010-2014 FORECAST, tbl.2 (June 2010).

³⁹² *Id.* at 1 (estimating that the number of total worldwide shipments will grow by 13.0% between 2010 and 2014).

³⁹³ *See, e.g.*, Best Buy, Inc., Phones, <http://www.bestbuy.com/site/olspage.jsp?id=abcat0801000&type=category> (last visited July 27, 2010); J&R, Office, Cellular Phones, <http://www.jr.com/category/office/cellular-phones/> (last visited July 27, 2010); Amazon.com, Cell Phones & Accessories, http://www.amazon.com/cell-phones-service-plans-accessories/b/ref=sa_menu_wi5?ie=UTF8&node=301185 (last visited July 27, 2010); Walmart, Electronics, Cell Phones, <http://www.walmart.com/cp/Cell-Phones-Accessories-Service-Plans/542371> (last visited July 29, 2010).

³⁹⁴ Comments of CTIA, WT Docket No. 09-66, at 33-34 (filed June 15, 2009).

monitors) and consumer electronics (*e.g.*, e-readers, traffic-enabled GPS devices, digital picture frames, netbooks, healthcare monitoring devices) with embedded wireless functionality.³⁹⁵

Verizon Wireless's Open Development ("OD") program encourages the development community to create new and non-traditional products, applications, and services—beyond what Verizon Wireless offers in its portfolio—and bring these quickly to the marketplace. To date, more than 150 devices have been certified for use on the Verizon Wireless network. These devices include general consumer devices, routers, handsets, modems/PC cards, modules for network hook-up, PDA/rugged handheld devices, utility/meter devices, fleet/telematics devices, law enforcement devices, PC/tablets/health care devices, and point-of-sale/retail devices. Two newly certified devices illustrate the power of the OD program: (1) a small portable healthcare device used to collect and transmit biometric readings from compatible over-the-counter medical monitors; and (2) a smart grid device providing communications capabilities and support for monitor and control devices within the electrical distribution grid.

Additionally, in October 2009, Verizon Wireless opened a lab at its LTE Innovation Center where participants receive assistance to design and develop LTE-enabled products. Verizon Wireless also introduced a virtual LTE Innovation Center where device developers can access an online portal to obtain support services and directly communicate with Center engineers.³⁹⁶ The Center will leverage Verizon Wireless's experience to help developers assess what types of new products and services may best succeed in the marketplace. Verizon Wireless

³⁹⁵ See Maisie Ramsay, *AT&T, Verizon Bet on Embedded Devices*, WIRELESS WEEK, June 14, 2010, <http://www.wirelessweek.com/Articles/2010/06/Carriers-Embedded-Devices-ATT-Verizon>.

³⁹⁶ Press Release, Verizon Wireless, *Developers: The Verizon Wireless LTE Innovation Center Lab Opens* (Oct. 5, 2009), <http://news.vzw.com/news/2009/10/pr2009-10-05.html>.

and Ambient Corporation also announced the launch of their jointly developed Open Smart Grid Communications Architecture, an integrated smart grid solution and open communications network for utilities deploying smart grid programs.³⁹⁷

Other wireless carriers have made similar efforts to open their networks to greater device diversity. For example, AT&T announced it is certifying specialty connected devices, including netbooks, eReaders, personal navigation devices, digital picture frames, and smart grid devices.³⁹⁸ Both models of Barnes and Noble's Nook e-reader provide users with free access to AT&T's 3G network.³⁹⁹

e. Exclusivity

As discussed in the *Fourteenth Report*,⁴⁰⁰ equipment manufacturers and carriers continue to invest in some exclusive device arrangements. These arrangements spur investment and innovation, generate significant consumer choice, drive additional subscribers to the carrier, and offer other substantial benefits for both manufacturers and consumers.⁴⁰¹ Notwithstanding these substantial benefits, Verizon Wireless has voluntarily committed to steps to ease small carriers' access to new devices. Specifically, any new exclusivity arrangement into which the company enters with a handset manufacturer will limit exclusivity to no longer than six months for carriers

³⁹⁷ See Press Release, Verizon Wireless, Verizon Wireless and Ambient Corporation Launch Open Smart Grid Communications Architecture (Jan. 13, 2010), <http://news.vzw.com/news/2010/01/pr2010-01-12e.html>.

³⁹⁸ See Press Release, AT&T Inc., AT&T Supports More Than 370 Wireless Specialty Devices (Jan. 26, 2010), <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30437>.

³⁹⁹ Press Release, Barnes & Noble Inc., Barnes & Noble Introduces NOOK™ Wi-Fi® and Lowers NOOK 3G Price, Giving Book Lovers Greater Choice and Even Greater Value (June 21, 2010), http://www.barnesandnobleinc.com/press_releases/2010_june_21_nook_wifi.html.

⁴⁰⁰ *Fourteenth Report*, ¶¶ 316-317.

⁴⁰¹ Verizon Wireless Handset Exclusivity Comments at 20-28; Comments of Verizon Wireless, WT Docket No. 09-66, at 14-18 (filed June 15, 2009); Comments of Verizon Wireless, GN Docket No. 09-51, at 36-37 (filed June 8, 2009).

with 500,000 customers or less.⁴⁰² The company further made clear that it has “no objection to small carriers having full access to any manufacturer’s portfolio of prototypes and products in development, without being informed which may have been selected by Verizon Wireless.”⁴⁰³

2. Applications

The wireless application market is characterized by intense competition and greater choices for consumers than ever before. Today there are staggering numbers of applications available to wireless consumers, and the number of applications, developers, and distribution channels increases every day.⁴⁰⁴ The Yankee Group has dramatically increased its estimates for the domestic mobile application market segment since last September,⁴⁰⁵ and now expects there to be almost 1.6 billion downloads worth nearly \$1.6 billion in 2010.⁴⁰⁶ Worldwide, the Gartner Group expects consumers to download 4.5 billion applications worth \$6.2 billion in 2010, and over 21 billion downloads worth nearly \$30 billion by 2013.⁴⁰⁷

⁴⁰² See *Ex parte* Letter from John T. Scott, Verizon Wireless, to Marlene H. Dortch, FCC, RM-11497, WT Docket No. 09-66 (filed July 17, 2009).

⁴⁰³ *Id.*

⁴⁰⁴ See, e.g., *Ex parte* Letter from Christopher Guttman-McCabe, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 09-66 et al. at 9-10 (filed Apr. 29, 2010); CTIA, WIRELESS INDUSTRY COMPETITION UPDATE: RECENT WIRELESS INDUSTRY DEVELOPMENTS REGARDING INNOVATION AND INVESTMENT, at 7-8 (Feb. 2010) (“WIRELESS UPDATE”), attached to *Ex parte* Letter from Christopher Guttman-McCabe, CTIA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 09-66 et al. (filed Feb. 12, 2010); see also VisionMobile Research, Mobile Megatrends 2010 (May 4, 2010), <http://www.visionmobile.com/rsc/researchreports/mobile-megatrends-2010-%28visionmobile%29.pdf>; VisionMobile Developer Economics Report sponsored by Telefonica Developer Communities (July 2010), <http://www.visionmobile.com/rsc/researchreports/Mobile%20Developer%20Economics%202010%20Report%20FINAL.pdf>.

⁴⁰⁵ See CARL HOWE AND ANDY CASTONGUAY, YANKEE GROUP, FORECASTING THE U.S. MOBILE APP GOLD RUSH (Sept. 10, 2009), summary available at <http://www.yankeegroup.com/ResearchDocument.do?id=52164>.

⁴⁰⁶ See CARL HOWE, YANKEE GROUP, THE MOBILE APP GOLD RUSH SPEEDS UP (Mar. 10, 2010), <http://www.yankeegroup.com/ResearchDocument.do?id=53219>.

⁴⁰⁷ Press Release, Gartner Inc., Gartner Says Consumers Will Spend \$6.2 Billion In Mobile Application Stores In 2010, (Jan. 18, 2010), <http://www.gartner.com/it/page.jsp?id=1282413>.

There is also strong competition among developers of operating systems, which in turn fuels competition among devices and carriers, as evidenced by the fact that three of the six most popular operating systems—the Apple iOS, Android, and WebOS—were introduced within only the last three years. There are now application stores for each of the major wireless device operating systems—Apple App Store for iPad, the Apple App Store for iPhone, BlackBerry App World, Google Android Market, Nokia Ovi Store, Palm App Catalog, and Windows Marketplace for Mobile.⁴⁰⁸ There are also major application stores for some of these platforms that are unaffiliated with the hardware or operating system vendor—Handango/PocketGear and GetJar are the largest.⁴⁰⁹ And many network operators also maintain application stores for their customers. For example, Verizon Wireless, which has long offered V CAST video, games, music, and ringtones through its V CAST service,⁴¹⁰ initiated in March of this year the V CAST App Store, initially for BlackBerry devices and eventually for other smartphones.⁴¹¹ Sprint has

⁴⁰⁸ See *id.* at 3-6. The operating system of a wireless device determines how the user interacts with that device, and what applications the user can install on the device. As such, the operating system is one of the major distinguishing features of wireless devices. Six of the most popular smartphone operating systems in the United States are BlackBerry OS, Windows Mobile, Apple iOS (formerly OS X for iPhone), Android, webOS from Palm, and Nokia’s Symbian OS. There is strong evidence of vibrant competition for handset operating systems. See Press Release, Apple, iPhone Premieres This Friday Night at Apple Retail Stores, (June 28, 2007), <http://www.apple.com/pr/library/2007/06/28iphone.html>; Press Release, T-Mobile USA, Inc., T-Mobile Launches the Highly Anticipated T-Mobile G1 (Oct. 22, 2008), http://www.t-mobile.com/company/PressReleases/Article.aspx?assetName=Prs_Prs_20081022; Press Release, Sprint Nextel, Sprint to Offer Palm Pre Nationwide on June 6 (May 19, 2009), http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1289761. And as these newcomers excel, the more established operating systems continue to compete and innovate.

⁴⁰⁹ See Press Release, PocketGear Inc., Handango PocketGear Acquires Handango, Creating the World’s Largest Cross Platform, Open App Store (Feb. 23, 2010), <http://corp.pocketgear.com/press/20100223.pdf> (“Handango-PocketGear Press Release”); Press Release, GetJar, Thanks a Billion! – From GetJar (June 8, 2010), <http://www.getjar.com/aboutus/pressrelease/thanks-a-billion-%E2%80%93-from-getjar>.

⁴¹⁰ See Verizon Wireless, About Us, Network Facts, http://aboutus.vzw.com/bestnetwork/network_facts.html (last visited July 27, 2010).

⁴¹¹ Andrew Berg, *V CAST Apps Store Opens*, WIRELESS WEEK, March 30, 2010, <http://www.wirelessweek.com/articles/2010/03/v-cast-apps-store-opens/>; Tricia Duryee, *Verizon’s App Store Spreads, But Only To More* (continued on next page)

partnered with GetJar to provide a wide variety of applications to its smartphone customers.⁴¹²

AT&T is relying on the platform application stores for its customers using smartphones such as iPhone, Android, BlackBerry, and WebOS, but has established an application store of its own, in partnership with Snaptu, for “non-smartphones.”⁴¹³

A comparison of the various application stores’ inventory last year and now shows the huge growth in applications:

BlackBerrys, MOCONEWS.NET, July 19, 2010 (“Duryee App Store Article”), <http://moconews.net/article/419-verizons-app-store-spreads-but-only-to-more-blackberrys/>.

⁴¹² See Duryee App Store Article.

⁴¹³ See Jason Kinkaid, *Snaptu’s “App Store for Any Phone” Adds Support for AT&T*, TECHCRUNCH, Apr. 26, 2010, <http://techcrunch.com/2010/04/26/snaptus-app-store-for-any-phone-adds-support-for-att>; Christian Zebreg, *AT&T goes Android and WebOS, announces the App Store for the rest of us*, GEEK.COM, Jan. 7, 2010, <http://www.geek.com/articles/mobile/att-goes-android-and-webos-announces-the-app-store-for-the-rest-of-us-2010017/>.

Application Store	Number of Applications Available	
	Mid-2009 ⁴¹⁴	Mid-2010
iTunes App Store	>85,000	>231,000 (iPhone) ⁴¹⁵ >11,000 (iPad) ⁴¹⁶
Handango	>140,000	>140,000 ⁴¹⁷ (merged)
PocketGear	>70,000	
Android Market	>10,000	>70,000 ⁴¹⁸
GetJar	>54,000	>75,000 ⁴¹⁹
BlackBerry App World	>2,500	~7,000 ⁴²⁰
Nokia Ovi Store	NA ⁴²¹	>6,800 ⁴²²
Palm App Catalog (webOS)	45	>3,200 ⁴²³
Windows Mobile Marketplace	~600	>1,000 ⁴²⁴

Consumers are rapidly taking advantage of these applications. The Palm App Catalog experienced over one million downloads in just its first 18 days of operation,⁴²⁵ and after a year

⁴¹⁴ See Verizon Wireless 2009 *Competition NOI* Comments at 129.

⁴¹⁵ 148Apps.biz, App Store Metrics, <http://148apps.biz/app-store-metrics/?mpage=catcount> (last visited July 28, 2010) (“App Store Metrics”).

⁴¹⁶ Apple App Store for iPad, Distimo, http://www.distimo.com/appstores/app-store/54-Apple_App_Store_for_iPad (last visited July 27, 2010).

⁴¹⁷ Handango-PocketGear Press Release.

⁴¹⁸ Phil Nickinson, *Android Market Now Officially Has More than 70,000 Applications*, ANDROID CENTRAL (July 15, 2010), <http://www.androidcentral.com/android-market-now-officially-has-more-70000-applications>; see also AndroLib, Statistics, <http://www.androlib.com/appstats.aspx> (last visited July 27, 2010) (unofficial estimate of 98,544 applications).

⁴¹⁹ About Getjar, <http://www.getjar.com/about/> (last visited July 27, 2010).

⁴²⁰ BlackBerry App World 2.0 Almost Here, WirelessGround.com (June 16, 2010), <http://blog.wirelessground.com/blackberry-app-world-2/>.

⁴²¹ The Ovi Store was projected to open with 20,000 items, but these included video clips, photos, and audio files, in addition to applications, and it is unclear whether any were available in the U.S. in particular by mid-2009. See Jennifer Johnson, *Nokia Ovi Store to Open with 20,000 Apps*, HOT HARDWARE, May 10, 2009, <http://hothardware.com/News/Nokia-Ovi-Store-to-Open-with-20000-Apps/>.

⁴²² Nokia Ovi Store, Distimo, http://www.distimo.com/appstores/app-store/21-Nokia_Ovi_Store (last visited July 27, 2010).

⁴²³ Official App Catalog App Gallery, precentral.net, <http://www.precentral.net/app-gallery/app-catalog/> (last visited July 27, 2010). There are over 500 “homebrew” applications available through the Palm App Catalog. See Homebrew Apps, <http://www.precentral.net/homebrew-apps> (last visited July 27, 2010). The Palm Software Store, which last year carried over 5000 applications for PalmOS and Windows Mobile applications for older models of Palm devices, has closed, given the shift to the WebOS Palm App Catalog for newer devices. Palm, Looking for Apps? <http://www.palm.com/us/products/software/eol.html> (last visited July 27, 2010).

⁴²⁴ Distimo, Windows Marketplace for Mobile, http://www.distimo.com/appstores/app-store/27-Windows_Marketplace_for_Mobile (last visited July 27, 2010).

of operation has had over 65 million downloads.⁴²⁶ Android Market users have downloaded over one billion applications, while iPhone and iPod Touch users have downloaded over 5 billion.⁴²⁷ The ease and popularity of downloading such applications has resulted in heavy use—the typical iPhone or Android user spends 79 minutes each day using applications, and downloads approximately nine applications per month.⁴²⁸

The most popular applications include games, mobile shopping, books, entertainment, productivity tools, social networking and utilities, travel, and news and weather applications.⁴²⁹ For example the following chart illustrates the types of applications that are most often downloaded.⁴³⁰

⁴²⁵ See Bryan Barletta, Medialets, Palm Pre App Catalog Reaches 1 Million Downloads, <http://www.medialets.com/blog/2009/06/24/palm-pre-app-catalog-reaches-1-million-downloads> (last visited July 27, 2010).

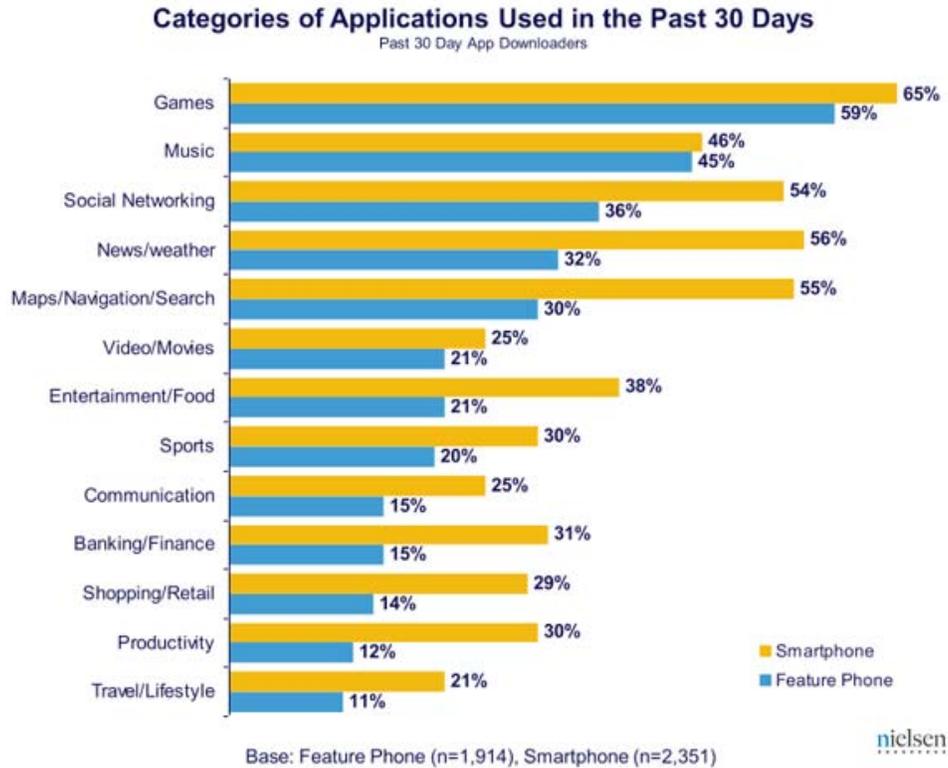
⁴²⁶ See PreCentral.net, Official App Catalog App Gallery, <http://www.precentral.net/app-gallery/app-catalog/> (last visited July 27, 2010).

⁴²⁷ See Jason Ankeny, Android Market application downloads surpass 1 billion, FIERCEMOBILECONTENT, July 15, 2010, <http://www.fiercemobilecontent.com/story/android-market-application-downloads-surpass-1-billion/2010-07-15>.

⁴²⁸ See AdMob, AdMob Mobile Metrics: Metrics Highlights May 2010, <http://metrics.admob.com/wp-content/uploads/2010/06/May-2010-AdMob-Mobile-Metrics-Highlights.pdf> (last visited July 27, 2010).

⁴²⁹ In Apple's iPhone App store, the largest single category of applications is books, followed by games, entertainment, education, travel, and lifestyle applications. See App Store Metrics.

⁴³⁰ See NielsenWire, The State of Mobile Apps (June 1, 2010), http://blog.nielsen.com/nielsenwire/online_mobile/the-state-of-mobile-apps/.



Moreover, there is considerable diversity among application stores in the popularity of the various categories of applications, reflecting a variety of differences among the various platforms, including their orientation toward personal or enterprise use and user demographics, as well as other factors.

Notably, the inclusion of GPS capability in most wireless devices has permitted application developers to offer location-based applications, which facilitate content as diverse as social networking, shopping, mapping, direction-finding, photography, and identification of buildings and landmarks. In addition, there are numerous highly specialized applications available, as well. A recent Forbes article reported on ten “socially responsible” applications, including SpillMap (an Android application for reporting observations regarding oil spills), Catalista (an iPhone and Android application for identifying volunteer opportunities), and

SeeClickFix (an application for Android, BlackBerry, and iPhone to facilitate reporting and documenting public infrastructure needing repairs, such as potholes or graffiti).⁴³¹

In addition, mobile VoIP applications are playing an increasingly significant role in the mobile market as well. Large operators have been taking the lead in promoting mobile VoIP applications. For instance, Verizon Wireless and Skype recently announced that a version of Skype mobile™ would be pre-installed on nine different Verizon Wireless 3G smartphones.⁴³² As previously reported to the Commission, Verizon Wireless's customers can now make unlimited Skype-to-Skype calls anywhere in the world, without incurring any charges or using up voice "minutes."⁴³³ In addition, AT&T iPhone customers can also place VoIP calls.⁴³⁴ And, Vonage recently announced that Vonage Mobile is now available on a host of Android, iPhone, BlackBerry and iPod Touch devices.⁴³⁵ Clearwire is also aggressively pursuing the provision of

⁴³¹ See Elizabeth Woyke, *Apps that Change the World*, FORBES, July 12, 2010, <http://www.forbes.com/2010/07/12/iphone-android-blackberry-technology-mobile-apps.html?boxes=Homepagechannels>; see also Forbes, Ten Socially Responsible Mobile Apps – SpillMap, http://www.forbes.com/2010/07/12/iphone-android-blackberry-technology-mobile-apps_slide_2.html (last visited July 26, 2010); Forbes, Ten Socially Responsible Mobile Apps - Catalista, http://www.forbes.com/2010/07/12/iphone-android-blackberry-technology-mobile-apps_slide_3.html (last visited July 26, 2010); Forbes, Ten Socially Responsible Mobile Apps - SeeClickFix, http://www.forbes.com/2010/07/12/iphone-android-blackberry-technology-mobile-apps_slide_4.html (last visited July 26, 2010).

⁴³² See Press Release, Verizon Wireless, Skype Mobile For Verizon Wireless Available Thursday (Mar. 23, 2010), <http://news.vzw.com/news//2010/03/pr2010-03-23a.html>; AJIT JAOKAR & CHETAN SHARMA, MOBILE VOIP – APPROACHING THE TIPPING POINT 20 (Feb. 2010) (“[T]he embrace of VoIP by Verizon Wireless at Mobile World Congress 2010 in Barcelona sheds any doubts about the role of VoIP and converged communication in the operator ecosystem once and for all”) (internal citation omitted).

⁴³³ See *Ex parte* Letter from Kathleen Grillo, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 09-66, Attachment 1, 14 (May 11, 2010).

⁴³⁴ See *AT&T Extends VoIP to 3G Network for iPhone*, FIERCEWIRELESS, Oct. 6, 2009, <http://www.fiercewireless.com/press-releases/t-extends-voip-3g-network-iphone>.

⁴³⁵ See Rosa Golijan, *Vonage VoIP Apps Now Available for T-Mobile and AT&T Android Phones*, GIZMODO, Apr. 9, 2010, <http://gizmodo.com/5513904/vonage-voip-apps-now-available-for-t+mobile-and-att-android-phones>.

VoIP over its data network; and “as Clearwire’s footprint grows [VoIP] could become the dominant voice service on its network.”⁴³⁶

As shown in the chart below, a number of third party mobile VoIP applications providers are actively in the marketplace:

Mobile VoIP Providers			
Provider	Mobile operating systems	Free mobile VoIP calls	Calling normal phones
Fring	Android, iPhone, J2ME, Linux, Nokia, Symbian 8, Symbian 9, Windows Mobile, UIQ	Skype or any SIP network	Standard SkypeOut fee plus <u>call-forwarding charges</u>
Gizmo5, formerly SIPphone (owned by Google)	Nokia, Palm, Windows	Gizmo5 or any SIP network	1¢/minute
iSkoot	Android, BlackBerry, Motorola, PalmOS, S60, UIQ, Windows Mobile, Windows Mobile PocketPC	Skype	Standard SkypeOut fee plus <u>call-forwarding charges</u>
Jajah (now owned by the Spanish mobile operator Telefonica)	BlackBerry, Java, Motorola, Nokia, Palm Treo, PocketPC, Symbian, Windows CE, Windows Mobile	Jajah	3¢/minute for U.S.-to-U.S. calls; international prices vary
MobileTalk (8×8)	Android, BlackBerry, iPhone, Motorola, Nokia, Palm, Symbian, Windows Mobile	N/A	Rates vary (designed for international calling)
Mobivox	All (you call a local Mobivox number and get rerouted internationally)	N/A	2.1¢/minute to 38 countries
Nimbuzz	Android, BlackBerry, iPhone, J2ME, Symbian, Windows Mobile	Nimbuzz, Skype	2¢/minute within U.S.; international rates vary
RebTel	All (Can be used from any mobile phone or PDA) + iPhone app, Android app	“Free Call” trick	1.5¢/minute in U.S.; international rates vary
Skype	Android, BlackBerry, iPhone, Symbian	Skype Mobile for Verizon 3G smart phones	From 2.1¢/per minute; international rates vary
Talkonaut	Android, J2ME, Symbian S60, Windows Mobile	AIM, iChat, Google Talk, MSN, SIP, Yahoo	Varies by route (provider names)
TruPhone	Android, BlackBerry, iPhone,	Google Talk, Skype,	2.1¢/minute to U.S. landlines;

⁴³⁶ Kevin Fitchard, *Clearwire’s New 4G Handsets may have a VoIP Twist*, CONNECTED PLANET, May 12, 2010, <http://connectedplanetonline.com/3g4g/news/clearwire-4g-handset-voip-0512/index.html>.

	Nokia	TruPhone	international rates vary
Vyke	BlackBerry, Nokia, most phones except iPhone, Windows Mobile, Nokia N900	Vyke	4¢/hour
Yeigo	Java, Symbian, Windows Mobile	Yeigo	3¢/minute in U.S.; international rates vary

Source: Howard Buskirk, *5 Reasons Cellphone and Mobile VoIP Are Forging an Unlikely Truce*, WIRED, Apr. 23, 2010, <http://www.wired.com/epicenter/2010/04/mobile-voip-truce/4/>.

Other providers are innovating with call management in other ways. Google Voice is now available free of charge to all consumers in the U.S.⁴³⁷ Google Voice permits a user to maintain a single, device-neutral permanent phone number that will access any or all of the user’s landline and/or mobile phones—in effect, the Google Voice phone number allows the user to make or receive calls regardless of the user’s location, over any landline and/or mobile phones of the user’s choosing.⁴³⁸ Google Voice also permits users to, among other things, send free Short Message Service (“SMS”) text messages from their Google number. Google Voice can be downloaded onto mobile devices, and operates in conjunction with the user’s underlying voice and data plan.

There are few, if any, barriers to entry for third-party application developers. Developers need only comply with certification standards and secure license agreements for distribution of content. These processes ensure that applications do not interfere with wireless networks and are compliant with copyright law. The benefits to application developers—and consumers—are sizable. Developers get distribution channels, billing arrangements, and access to millions of browsing consumers. Because barriers to entry are low and the potential for returns is high,

⁴³⁷ See Google, Google Voice for Everyone (June 22, 2010), <http://googlevoiceblog.blogspot.com/2010/06/google-voice-for-everyone.html>.

⁴³⁸ See, e.g., JR Raphael, *Google Voice: Your Guide to Getting Started*, PC WORLD, June 22, 2010, http://www.pcworld.com/article/199580/google_voice_your_guide_to_getting_started.html.

smaller developers generally stand on equal footing with larger ones. Notably, this open environment for application development was accomplished without regulatory intervention.

The growth of the OS-based application stores and independent application stores catering to advanced smartphones shows there is a powerful market trend away from reliance on the so-called “on deck” applications available from the network operator’s proprietary menu.⁴³⁹ Verizon Wireless has taken a number of significant steps to foster the development of and access to applications, not only for smartphones, but also for feature phones. First, as noted above, Verizon Wireless created its Open Development program to provide developers with streamlined access to its wireless network using not only the developer’s provided devices, but also their embedded applications to support their unique solutions or offers.⁴⁴⁰ Second, Verizon Wireless created an open developer portal that gives developers a centralized repository of information on writing applications for Verizon Wireless smartphones with a variety of operating systems.⁴⁴¹

And, Verizon Wireless has also offered subscribers a variety of smartphones and PC cards or embedded wireless modems in netbooks with associated data plans, which enable users to download compatible applications of their choice from the Internet, subject to certain terms of their contracts that are reasonably related to protecting the network and maintaining the quality

⁴³⁹ For non-3G or -4G devices with limited Internet capabilities, known as “feature phones,” where a proprietary offering of services and only limited Web interfaces have generally been available, carriers are increasing the variety of offerings available and providing access to outside providers of services and software.

⁴⁴⁰ *See supra* Section III.C.1.

⁴⁴¹ Verizon Wireless, Development Center, <http://developer.verizon.com/jsps/devCenters/wireless/index.jsp> (last visited July 15, 2010). The developer portal is open for developers who want to write applications for handsets and smartphones that use the BlackBerry®, Android, and BREW operating systems, as well as messaging, music, and other applications offered over V CAST. *See id.*

of service to all users.⁴⁴² Verizon Wireless is also encouraging development of applications and devices for its upcoming 4G LTE network through its LTE Innovation Center.⁴⁴³

3. Content

Consistent with the trend toward “off-deck” applications, off-deck content proliferation is another sign of healthy competition in the wireless ecosystem. Consumers are increasingly using more and more advanced wireless devices to access rich multimedia content and sophisticated information services in addition to simple voice and data.⁴⁴⁴ In addition to real-time streaming, music or video content is also often “side-loaded” from the consumer’s computer, portable player, or digital video recorder (“DVR”) into a smartphone for convenient viewing or listening. Providers of all shapes and sizes use unique content as a product differentiator that will attract new wireless customers and keep them.

Verizon Wireless customers with devices capable of reaching the Internet have access to unlimited off-deck content that can be downloaded onto a customer’s wireless device. For example, Verizon Wireless has incorporated technology from Novarra into its Mobile Web that allows customers to access the majority of websites in full HTML view, regardless of whether their mobile device supports a full HTML web browser.⁴⁴⁵ As a result, economical feature phones are close behind smartphones in their web capabilities. Similarly, Verizon Wireless has

⁴⁴² See *supra* note 382.

⁴⁴³ See Verizon Wireless, LTE Innovation Center, <https://www.lte.vzw.com/Default.aspx> (last visited July 15, 2010).

⁴⁴⁴ See, e.g., IDC, WORLDWIDE MOBILE TRENDS: STEADY SUBSCRIBER GROWTH, THE PROLIFERATION OF APPLICATIONS, AND THE MOBILE INTERNET 17 (“[T]he rise of smartphones means that more handsets will come equipped with evolved operating systems, which allow richer, more powerful applications to be installed and used.”).

⁴⁴⁵ See Press Release, Verizon Wireless, Mobile Web from Verizon Wireless Now Optimized to Give Customers Access to More Full-HTML Web Sites on their Wireless Phones (Feb. 16, 2009), <http://news.vzw.com/news/2009/02/pr2009-02-16.html>.

incorporated Microsoft's Live Search capabilities into its wireless data services.⁴⁴⁶ As a result, Verizon Wireless customers now have easier access to context-relevant search results.

Other wireless providers also make a wide variety of content available as a way to attract new customers. For example, AT&T offers access to programming that includes newscasts and episodes from all the major networks and a wide array of cable channels, including Fox News, ESPN, Spike, Comedy Channel, Bravo, and FX.⁴⁴⁷ Sprint's offerings include the Disney Channel, NBC News, USA, The Weather Channel, VH1 Mobile, Animal Planet, and Oxygen.⁴⁴⁸

Regional carriers and resellers/MVNOs also offer innovative on-deck and off-deck content. For example, U.S. Cellular offers Music Sync, which allows a sync between the mobile phone and a computer to turn the phone into a music player.⁴⁴⁹ U.S. Cellular also offers mSpot Radio, which includes access to music, news, entertainment, and talk radio stations, as well as podcasts.⁴⁵⁰ MetroPCS offers Pocket Express, which optimizes news, sports, weather, and maps

⁴⁴⁶ See Press Release, Verizon Wireless, Verizon Wireless Selects Microsoft for Mobile Search and Advertising (Jan. 7, 2009), <http://news.vzw.com/news/2009/01/pr2009-01-07a.html>.

⁴⁴⁷ See AT&T, Mobile Video - Video on Your Cell Phone, <http://www.wireless.att.com/learn/messaging-internet/media-entertainment/video.jsp> (last visited July 20, 2010).

⁴⁴⁸ See Sprint, Sprint TV, http://www.nextel.com/en/services/power_vision/sprint_tv.shtml (last visited July 26, 2010).

⁴⁴⁹ See U.S. Cellular, mSpot Music Sync, <http://www.uscellular.com/uscellular/data/apps/gameDetail.jsp?prodId=prod610862&parentCatId=cat10018&catId=cat10076> (last visited July 26, 2010).

⁴⁵⁰ See U.S. Cellular, mSpot Radio, <http://www.uscellular.com/uscellular/data/apps/gameDetail.jsp?prodId=prod610894&parentCatId=cat10018&catId=cat10078> (last visited July 26, 2010).

for mobile handsets.⁴⁵¹ MVNOs like TracFone offer a variety of graphics and ringtones,⁴⁵² and Virgin Mobile has a diverse selection of music videos.⁴⁵³

4. Mobile Commerce

Competition-driven innovation is also evident in mobile commerce. Wireless devices are increasingly used for shopping for all sorts of goods, either through websites or specialized applications. For example, eBay has created 14 mobile applications for its users to employ on a variety of platforms.⁴⁵⁴ BusinessWeek recently reported that eBay “expects to move \$1.5 billion worth of goods through its mobile apps—more than double last year’s \$600 million.”⁴⁵⁵ By 2015, it reports, mobile commerce is expected to “grow into a \$119 billion global industry.”⁴⁵⁶ Other retailers are making a huge m-commerce business through their websites, applications for smartphones such as the iPhone and Android devices, and applications embedded in devices such as e-readers. For example, Amazon.com and Barnes & Noble offer competing Kindle and Nook e-reader devices, which include embedded applications and download bandwidth. At the same time, both companies provide free versions of their applications for various advanced wireless

⁴⁵¹ See Metro PCS, Pocket Express, <http://www.metropcs.com/products/pocketexpress/> (last visited July 26, 2010).

⁴⁵² See TracFone, Download Ringtones, <http://tracfoneblog.blogspot.com/2007/09/download-ringtones.html> (last visited July 29, 2010).

⁴⁵³ See Virgin Mobile USA, Downloads, <http://www.virginmobileusa.com/downloads/media> (last visited July 26, 2010).

⁴⁵⁴ See Douglas MacMillan and Joseph Galante, *As Mobile Shopping Takes Off, eBay is an Early Winner*, BLOOMBERG BUSINESSWEEK, June 23, 2010, at 28.

⁴⁵⁵ *Id.* at 27.

⁴⁵⁶ *Id.* at 28.

devices, which use the customers' own web connections or data airtime to view books on multiple devices and platforms.⁴⁵⁷

IV. THE *FOURTEENTH REPORT* CONTAINS NUMEROUS ERRORS THAT SHOULD BE CORRECTED IN THE *FIFTEENTH REPORT*

The Commission chose to use the *Fourteenth Report* to paint a decidedly mixed picture regarding the state of the mobile wireless ecosystem. The *Report* declined to make a finding of “effective competition,” and its equivocal Executive Summary identified six “key trends”⁴⁵⁸—at least three of which seemed to suggest a troubled market, but were based on invalid assumptions. As discussed below, the *Report* also reflects a variety of problematic analytical decisions and conclusions that are not in accord with the facts and data presented. Verizon Wireless urges the Commission to correct these errors in the upcoming *Fifteenth Report*.

A. The *Report* Erred in Failing to Make an Effective Competition Finding

Although Congress directed the Commission to report annually on the state of the CMRS market, and to include in each report “an analysis of *whether or not* there is effective competition,”⁴⁵⁹ the Commission failed to fulfill this obligation in the *Fourteenth Report*. The Commission observed that an analysis of the mobile wireless ecosystem involves “a multitude of

⁴⁵⁷ See, e.g., Amazon.com, Kindle for iPhone, http://www.amazon.com/gp/feature.html/ref=kcp_iphone_mkt_lnd?docId=1000301301 (last visited July 20, 2010); Amazon.com, Kindle for PC, http://www.amazon.com/gp/feature.html/ref=kcp_pc_mkt_lnd?docId=1000426311 (last visited July 20, 2010); Jessica Dolcourt, Free Kindle App Comes to Android at Last, CNET (June 28, 2010) http://www.cnet.com/8301-19736_1-20009081-251.html; Anthony Domanico, Barnes and Noble to release an Android eReader application “very soon,” AndroidAndMe.com, <http://androidandme.com/2010/07/news/barnes-and-noble-to-release-an-android-ereader-application-very-soon/> (last visited July 20, 2010).

⁴⁵⁸ The six “key trends” are: maturation of the mobile voice segment; transition to a data-centric market; proliferation of devices and applications; continued industry concentration; robust capital investment but declining relative to industry size; and spectrum as an increasingly pivotal input for mobile broadband. *Fourteenth Report*, ¶ 4.

⁴⁵⁹ 47 U.S.C. § 332(c)(1)(C) (emphasis added).

factors,” and as a result it did not “reach[] an overarching, industry-wide determination with respect to whether there is ‘effective competition.’”⁴⁶⁰ It thus declined to characterize the market even though each of the first thirteen Competition Reports provided *some* assessment of the CMRS market⁴⁶¹—and each of the reports issued during the last six years concluded that “the CMRS marketplace is effectively competitive.”⁴⁶² The failure to make such a finding is contrary to the statute and fails to reflect the reality of the marketplace, as two Commissioners recognized.⁴⁶³

What follows are facts and data taken *directly from the Fourteenth Report* that tell a very clear story for the 2008-2009 time period—one that reflects the competition, dynamism, and differentiation that is the wireless ecosystem:

⁴⁶⁰ *Fourteenth Report*, ¶ 3.

⁴⁶¹ For example, while the *First Report* (1995) found that the market was “not fully competitive,” the *Second Report* through the *Seventh Report* (1997-2002) found that competition was “emerging” with a trend toward “increased competition.” See Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *First Report*, 10 FCC Rcd 8844, 8872 ¶ 84 (1995) (“*First Report*”) (“[T]he mobile telephone segment of the CMRS business is not fully competitive”); *Second Report*, 12 FCC Rcd 11266, 11269 (1997) (“[C]ompetition in the mobile marketplace is emerging.”); *Third Report*, 13 FCC Rcd 19746, 19749 (1998) (“[S]ubstantial progress has been made towards a truly competitive mobile telephone marketplace.”); *Fourth Report*, 14 FCC Rcd 10145, 10206 (1999) (“[T]he mobile telephone market has made steady competitive progress.”); *Fifth Report*, 15 FCC Rcd 17660, 17663 (2000) (“[T]he CMRS industry continues to benefit from the effects of increased competition”); *Sixth Report*, 16 FCC Rcd at 13431 (“The past year has continued the positive trends of increased competition in the CMRS industry described in the Fifth Report.”); *Seventh Report*, 17 FCC Rcd 12985, 13066 (2002) (“The past year has continued the positive trends of increased competition in the CMRS industry described in previous reports.”).

⁴⁶² Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eighth Report*, 18 FCC Rcd 14783, 14876 ¶ 217 (2003); *Ninth Report*, 19 FCC Rcd 20597, 20689 ¶ 225 (2004); *Tenth Report*, 20 FCC Rcd 15908, 15985 ¶ 207 (2005); *Eleventh Report*, 21 FCC Rcd 10947, 11031 ¶ 216 (2006) (“*Eleventh Report*”); *Twelfth Report*, 23 FCC Rcd at 2354 ¶ 293; *Thirteenth Report*, 24 FCC Rcd at 6311 ¶ 277.

⁴⁶³ See *Fourteenth Report*, Concurring Statement of Commissioner Robert M. McDowell (“I vote to concur, however, because, even under the ‘new forms of analysis,’ set forth in today’s report, we have not identified new or particularly revealing information that would prevent us from opining as to ‘whether or not there is effective competition,’ as the statute requires.”); *id.*, Concurring Statement of Commissioner Meredith A. Baker (“I can only concur with this Report because I believe we should have made an affirmative finding of a competitive market based on the year-over-year trends set forth in the Report and the significant consumer opportunities and investment provided by the wireless industry. Prior Annual Reports have drawn such conclusions, and I see no reason to depart from that approach here.”).

Deployment and Investment

- Almost 91 percent of the U.S. population lives in census blocks covered by four or more wireless carriers. Almost 74 percent are served by five or more providers—compared to fewer than 65 percent last year. (¶ 42 Table 4⁴⁶⁴)
- 98.1 percent of Americans live in census blocks covered by 3G and/or 4G service. 76.1 percent of Americans live in areas covered by three or more mobile broadband providers, up from just 50.7 percent one year ago. (¶ 120 Table 13, ¶ 45 Table 7⁴⁶⁵)
- Regional providers are growing and investing in their networks. For example, from October 2008 to October 2009, both Leap and MetroPCS expanded their POPs coverage by approximately 50 percent. The Leap and MetroPCS networks involve little overlap, and collectively these two providers cover approximately 160 million Americans, or nearly half the nation. (¶ 72)
- From 1998-2008, wireless industry capex exceeded \$240 billion. (¶ 209)

Pricing and Service Plans

- Prepaid providers offered “aggressive” price-cutting, including an unlimited voice and data plan at “roughly half the price of the cheapest postpaid” analogue. (¶ 102)
- Postpaid providers focused price competition on unlimited service offerings. T-Mobile “reset prices on tiered offerings at significant discounts” to compete on price with Sprint. “Verizon Wireless and AT&T’s unlimited plan price cuts were significant,” in turn. (¶¶ 91-92)
- The average price of text messaging declined from \$0.036 per message in 2006 to \$0.011 per message in 2008. (¶ 192)
- The average post-discount smartphone price has fallen from \$220 in 4Q2006 to \$120 in 4Q2009, notwithstanding a substantial increase in capabilities. (¶ 310, Chart 45)

Value

- American consumers enjoy lower prices (using revenue per minute as a proxy for mobile pricing) than consumers in nearly all other nations. (¶¶ 359-61 & Table 40)

⁴⁶⁴ Cf. *Thirteenth Report*, 24 FCC Rcd at 6190 ¶ 2 & tbl.

⁴⁶⁵ Cf. *id.* at 6258 ¶¶ 146-47 & tbl.10.

- American consumers use far more minutes than consumers in every other nation evaluated—and more than double the volumes used by consumers in any country other than Canada and Hong Kong. (¶ 359, Table 40)
- The cellular telephone service component of the CPI decreased 0.2 percent from 2007 to 2008, whereas the overall CPI increased by 3.8 percent. (¶ 186)

Consumer Satisfaction

- For the past two years, the J.D. Power study showed that the number of problems per 100 calls (15 per 100) was at the lowest level in the history of the study. (¶ 222)

Together, these facts continue the year-over-year trends reflected in prior reports, and amply demonstrate that the CMRS market is effectively competitive. While the *Fourteenth Report* identifies three problematic “key” trends—continued industry concentration, maturation of the mobile voice segment, and robust but declining capital investment⁴⁶⁶—none of these trends undermines an effective competition finding, as discussed below.⁴⁶⁷

B. The *Report* Placed Undue Emphasis on “Continued Industry Concentration,” Relying on a Flawed Analysis While Declining to Consider Any Pro-Competitive Effects of Consolidation

The *Report*’s finding of continued industry concentration relied on incorrect analysis and failed to even consider the pro-competitive effects of consolidation. In particular, the *Report* focused too heavily on HHI measures as an indicator of competitive trends; reached a skewed evaluation of concentration by excluding MVNOs as market participants; misused subscriber growth statistics to bolster its concentration finding; and ignored significant consumer welfare benefits that consolidation can bring.

⁴⁶⁶ *Fourteenth Report*, ¶¶ 3-4.

⁴⁶⁷ See discussion *infra* Sections IV.B, IV.D.2., IV.E.1.

1. The *Report* Focused Too Heavily on HHI Measures to Assess Competitive Trends in the Market for Mobile Wireless Service

The *Fourteenth Report* errs in relying on a detailed HHI analysis to conclude that “continued industry concentration” is one of six “key trends” in the mobile wireless services market—without acknowledging the pro-competitive trends that are occurring.⁴⁶⁸ As the *Report* elsewhere acknowledges, however, HHI analysis—and concentration data more generally—is only a first step in any rigorous competition analysis. Here, the Commission seemed content to highlight concentration as a “key trend” without including in its main findings any assessment of the conduct and behavior of market participants.⁴⁶⁹ As demonstrated above, the *Report* was filled with information regarding such conduct and behavior—all of which depicts a dynamic and competitive market—despite increased market shares of some companies.

To begin with, it is well established within academia and antitrust enforcement literature that market shares alone simply do not paint a comprehensive portrait of competition within an industry. As Areeda and Hovenkamp observe in the leading antitrust treatise, even a high market share will not necessarily denote market power.⁴⁷⁰ The Federal Trade Commission (“FTC”) and the Department of Justice (“DOJ”), the two agencies charged with implementing and enforcing the nation’s antitrust laws, likewise have reiterated the need to look beyond concentration. The

⁴⁶⁸ *Fourteenth Report*, ¶¶ 4, 50 (internal citations omitted).

⁴⁶⁹ The only other wireless-specific “key trends” identified by the Commission were: (1) “reduced (though still substantial) voice usage,” with voice revenues “stay[ing] relatively steady”; and (2) a “[t]ransition to a [d]ata-[c]entric [m]arket,” with “revenue from newer data services replacing revenue from traditional services.” *Fourteenth Report*, ¶ 4. And the *Report* ignored facts and data proving such competition.

⁴⁷⁰ See PHILLIP E. AREEDA AND HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION § 506d (Aspen Publishers 2007) (“*Antitrust Law*”) (“Substantial market power can persist only when there are significant and continuing barriers to expansion and entry.”); see also *id.* § 506a (“[T]he degree of market power depends on the response of buyers to price changes. Greater responsiveness (greater ‘elasticity’ of demand) minimizes market power.”).

FTC recently explained that “[m]arket shares may not fully reflect the competitive significance of firms in the market” and thus, must only be consulted in conjunction with other evidence of the state of competition.⁴⁷¹

This is not news to the Commission. Indeed, before the *Fourteenth Report*, the Commission routinely rejected excessive focus on market share: in determining whether a transaction is in the public interest, the Commission instead applies a “multi-factor, market-specific analysis” drawing “conclusions based on the totality of the circumstances present in a given market....”⁴⁷² As economist Michael Topper explained in response to the 2009 *Competition NOI*: “[m]arket structure indicators such as the number of competitors, market shares, or concentration ratios should only be a first step in a competition inquiry. The next step is to understand the conduct of providers and consumers in the market.”⁴⁷³ In fact, “[e]ven in highly concentrated markets, producer rivalry can lead to competitive outcomes....”⁴⁷⁴ Notably, the *Fourteenth Report* seems to recognize as much, stating that “prices of services across

⁴⁷¹ FEDERAL TRADE COMMISSION, HORIZONTAL MERGER GUIDELINES FOR PUBLIC COMMENT § 5.3, (Apr. 2010), <http://www.ftc.gov/os/2010/04/100420hmg.pdf> (“*Horizontal Merger Guidelines for Public Comment*”).

⁴⁷² *Verizon Wireless-Alltel Order*, 23 FCC Rcd at 17489 ¶ 94; see also *Verizon Wireless-Rural Order*, 23 FCC Rcd at 12497 ¶ 70 (noting that Commission’s merger review involves consideration of numerous variables and analyses deemed important for “predicting the incentive and ability of service providers to successfully restrict competition on price or non-price terms through coordinated interaction, and the incentive and ability of the merged entity unilaterally to elevate prices or suppress output.”) (internal citation omitted); *AT&T-Cingular Order*, 19 FCC Rcd at 21557 ¶ 69 (“HHI data provide only the beginning of the analysis. The Commission then examines other market factors that pertain to competitive effects, including the incentive and ability of other firms to react and of new firms to enter the market. Ultimately, the Commission must assess whether it is likely that the merged firm could exercise market power in any particular market”); NYNEX Corp. and Bell Atlantic Corp., *Memorandum Opinion and Order*, 12 FCC Rcd 19985, 19987 ¶ 2 (1997) (“*NYNEX-Bell Atlantic Order*”) (“Our examination of a proposed merger under the public interest standard ... extends beyond the traditional parameters of review under the antitrust laws.”).

⁴⁷³ DECLARATION OF MICHAEL D. TOPPER, ASSESSING THE COMPETITIVENESS OF MOBILE WIRELESS: AN ECONOMIC ANALYSIS 16 (Sept. 30, 2009) (“TOPPER”), attached as Exhibit A to Verizon Wireless 2009 *Competition NOI* Comments; see also ROSSTON-TOPPER at 21 (“While structural measures such as HHIs provide a starting place, industry structure is just a first step in an antitrust analysis assessing the competitiveness of the wireless market. The next step is to assess the actual performance of the industry, as measured by prices and quantities consumed.”).

⁴⁷⁴ TOPPER at 7.

competitors provide more direct evidence of competitive outcomes and the strength of competitive rivalry than do measures of concentration.”⁴⁷⁵

A narrow focus on concentration and HHIs is even more misguided when applied to a market with substantial fixed costs, like wireless, where it is simply not efficient or commercially viable for large numbers of companies to operate in the same area. Topper explains the relationship between economies of scale in network industries and efficient industry structure:

It is well recognized in economics that the number of competitors that can efficiently serve a market depends on the size of the market relative to the minimum efficient scale (MES) of production and distribution. In industries like wireless with substantial fixed costs, it will be inefficient and not commercially viable for a very large number of firms to operate in the same geographic area.⁴⁷⁶

For this very reason, the DOJ’s Antitrust Division recently cautioned the Commission not to expect the broadband market to resemble the perfectly competitive markets found in economics textbooks.⁴⁷⁷ Nonetheless here, again, the *Report* parts ways with accepted practice, highlighting claimed concentration without acknowledging the effects of scale economies.

Odder still is the *Report*’s refusal to evaluate whether the concentration about which it expresses concern has in fact given rise to pro-competitive and pro-consumer efficiencies. As

⁴⁷⁵ *Fourteenth Report*, ¶ 14.

⁴⁷⁶ TOPPER at 10 (internal citation omitted); see also MICHAEL L. KATZ, MEASURING EFFECTIVE CMRS COMPETITION ¶ 11 (July 13, 2009) (“KATZ”), attached as Exhibit A to Reply Comments of AT&T, WT Docket No. 09-66 (filed July 13, 2009) (“In the presence of economies of scale and density, it is economically inefficient and unlikely to be commercially viable to have a large number of suppliers, each operating at a small scale or low density. In such markets, it is a mistake to seek or expect to have a large number of suppliers and/or to have suppliers set prices equal to marginal costs (as would perfect competitors).”).

⁴⁷⁷ See *Ex parte* Submission of the United States Department of Justice, GN Docket No. 09-51, at 8 (filed Jan. 4, 2010). The Horizontal Merger Guidelines for Public Comment released in April 2010 state that “a primary benefit of mergers to the economy is their potential to generate significant efficiencies and thus enhance the merged firm’s ability and incentive to compete, which may result in lower prices, improved quality, enhanced services, or new products.” *Horizontal Merger Guidelines for Public Comment*, § 10.

the former economics director for the FCC’s Broadband Task Force concludes with regard to the *Fourteenth Report*: “even if we accept the premise that the market for wireless providers has become more concentrated, we nevertheless see an incredibly dynamic market that is yielding new devices, new services, and lower prices.”⁴⁷⁸ Yet the *Report* stops short and identifies increasing concentration as one of the handful of conclusions—ignoring the pro-consumer trends that have paralleled this concentration.

2. The Exclusion of MVNOs as Market Participants Skewed the *Report’s* Evaluation of Concentration

The *Report’s* concentration analysis is also flawed by its presumption that MVNOs exert no competitive pressure—it claims, without support, that “the ability of MVNOs to compete against their host facilities-based provider is limited,” and therefore declines to “count any MVNO or reseller as a competitor in the mobile wireless market when it calculates market concentration.”⁴⁷⁹ The facts belie this assessment.

As discussed above, MVNOs purchase mobile wireless services from facilities-based providers and resell these services to consumers. They typically do not own any network infrastructure or spectrum licenses. This does not mean, however, that they do not provide real competition for facilities-based providers. As the *Report* acknowledges, in 2009 MVNO provider TracFone Wireless had over 14 million subscribers, making it the *fifth largest* mobile wireless service provider after the four nationwide facilities-based providers.⁴⁸⁰ Such an unaffiliated entity must be considered relevant in a competitive analysis. Further, the *Report*

⁴⁷⁸ Posting of Scott Wallsten to Technology Policy Institute Blog, <http://www.techpolicyinstitute.org/blog/2010/05/the-fcc%e2%80%99s-new-wireless-competition-report-the-right-way-to-look-at-the-industry> (May 22, 2010).

⁴⁷⁹ *Fourteenth Report*, ¶ 32.

⁴⁸⁰ *See id.* ¶ 33.

recognized that “TracFone Wireless is generally regarded as the leader in the low-end prepaid niche.”⁴⁸¹ TracFone competes fiercely to win customers away from facilities-based providers, including Verizon Wireless and AT&T, and succeeds in doing so: in a recent three-month period TracFone gained market share while three of the four largest mobile operators lost market share.⁴⁸²

TracFone is not alone. As explained in depth above, MVNOs compete along a host of vectors, differentiating themselves in many ways from their underlying carriage providers. MVNOs target specific populations, offering specialized services, devices, applications, customer-care options, and service plans often unavailable from any other provider. As the *Thirteenth Report* recognized, “MVNOs distinguish themselves via content, but like facilities-based providers, they experiment with a number of business models, such as pre-paid and unlimited plans.”⁴⁸³

There is simply no basis for categorically dismissing the threat posed by a market participant simply because it relies on a retail competitor for a wholesale input.⁴⁸⁴ Such an analysis should instead focus on “the extent to which customers view various services as substitutes.”⁴⁸⁵ Customers, of course, generally do not care—and often do not know—whether a

⁴⁸¹ *Id.* ¶ 100 (internal citation omitted).

⁴⁸² See Press Release, comScore, Inc., comScore Reports March 2010 U.S. Mobile Subscriber Market Share (May 6, 2010), http://comscore.com/Press_Events/Press_Releases/2010/5/comScore_Reports_March_2010_U.S._Mobile_Subscriber_Market_Share (reporting that Verizon, Sprint, and T-Mobile each lost 0.1% while TracFone gained 0.3%).

⁴⁸³ *Thirteenth Report*, 24 FCC Rcd at 6200-01 ¶ 17.

⁴⁸⁴ See, e.g., *FTC v. Cardinal Health Inc.*, 12 F.Supp. 2d 34 (D.D.C. 1998) (observing that all forms of distribution must, at some level, compete with each other and thus undertaking a careful evaluation of whether manufacturers, wholesalers, and retailers were in the same market for antitrust purposes based on whether customers can substitute among them easily).

⁴⁸⁵ *Ex parte* Submission of the United States Department of Justice, GN Docket No. 09-51, at 4 (filed Jan. 4, 2010).

service involves resold offerings available at retail from another provider, focusing instead on a service's price and capabilities.

Even more puzzling is the fact that the *Report's* approach to MVNOs stands in stark contrast to the central role that the Commission has afforded to resale in its competition policy framework. The Commission has consistently acknowledged the significant role of resellers in competitive markets:

Resellers benefit the marketplace by focusing on residential and smaller business customers, giving them pricing and volume discounts and customer service that facilities-based carriers often make available only to larger customers. Resellers also exert downward pressure on the rates charged by facilities based providers of CMRS through their ability to purchase wireless service at high-volume rates and pass those savings on to residential and small business customers. Low-volume consumers benefit from the reseller's lower rates. They also benefit from the reseller's ability to impose market discipline on the facilities-based provider, which can result in lower prices overall.⁴⁸⁶

Market experience shows that MVNOs do, in fact, compete against facilities-based carriers, and that facilities-based providers affirmatively wish to sell them carriage. Indeed, since 2003, the year after the mandatory resale requirements sunset, MVNOs have increased subscribership by over 100 percent.⁴⁸⁷ Moreover, the MVNO/resale market is poised for dramatic growth, with both Clearwire and SkyTerra eyeing broad-based wholesale offerings.

⁴⁸⁶ Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance For Broadband Personal Communications Services, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857, 16874-75 ¶ 35 (1998) (internal citations omitted).

⁴⁸⁷ *Compare* Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Local Telephone Competition: Status as of December 31, 2007, Table 14 (Sept. 2008) (noting that as of December 2003, MVNO Resale Subscribers totaled about 9.4 million (6% of 157,042,082 total subscribers)) *with* Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, Local Telephone Competition: Status as of December 31, 2008, Table 17 (June 2010) (noting that as of December 2008, MVNO resale subscribers totaled about 20.9 million (8% of 261,284,000 total subscribers)).

The *Fourteenth Report's* flawed treatment of MVNOs is not, however, limited to its refusal to acknowledge their roles as price leaders and competitively significant market players. The *Report* compounds this error by attributing MVNO customers to the underlying facilities-based provider for purposes of computing HHIs.⁴⁸⁸ This type of error can have a disproportionately dramatic effect on HHI figures, skewing them much higher.⁴⁸⁹

Thus, the *Report's* refusal to recognize the competitive force exerted by resellers and MVNOs, as well as its attribution of MVNO customers to the underlying network provider, distort its evaluation of market concentration.

3. The Report Misused Subscriber Growth Statistics to Advance the Claim that Industry Concentration Is Increasing

The *Fourteenth Report* also misuses subscriber data in an attempt to bolster its flawed “continued industry concentration is bad” narrative. Although the Commission’s own data show that nearly all the major national and regional carriers experienced healthy subscriber growth—with the exception of Sprint—the *Report's* discussion of the “concentration” trend asserts the following:

The two largest providers, AT&T, Inc. (AT&T) and Verizon Wireless, have 60 percent of both subscribers and revenue, and continue to gain share (accounting for 12.3 million net additions in 2008 and 14.1 million during 2009). The two next largest providers, T-Mobile USA (T-Mobile) and Sprint Nextel Corp.

⁴⁸⁸ See *Fourteenth Report*, ¶ 50 n.110.

⁴⁸⁹ The effect of such an error is exponential, not linear, because the shares are squared for the HHI calculation. The leading antitrust treatise warns about this risk: “Because the HHI squares market shares before enumerating them, it is extremely sensitive to changes in market share. While even the HHI of a perfectly defined market implies more predictive power than the index actually has, the HHI of a poorly defined market can yield gross errors in prediction.” *Antitrust Law*, § 930b.

(Sprint Nextel), had a combined 1.7 million net loss in subscribers during 2008 and gained 827,000 subscribers during 2009.⁴⁹⁰

This gives the misleading impression that T-Mobile lost subscribers in 2008. In fact, as the “Net Additions by Service Provider” table in the *Fourteenth Report* discloses, *T-Mobile actually added 3 million subscribers in 2008.*⁴⁹¹ Indeed, in 2008 T-Mobile’s subscriber growth rate of 10 percent was higher than AT&T’s or Verizon Wireless’s.

The *Report* thus creates an artificial divide suggesting subscriber growth by the two largest carriers at the expense of all others that simply does not exist. The reality is that, while Sprint lost subscribers in 2008 and 2009, the other nationwide providers, as well as MetroPCS and Leap, reported net subscriber additions in both years.⁴⁹² In fact, T-Mobile, MetroPCS and Leap all added subscribers at rates *exceeding* those of AT&T or Verizon Wireless in 2008, and MetroPCS and Leap again posted far more substantial growth rates in 2009 than either AT&T or Verizon Wireless (excluding subscribers added due to the ALLTEL merger).⁴⁹³

Ultimately, by lumping Sprint and T-Mobile together in a way that conceals subscriber gains by T-Mobile, and ignoring the rapid subscriber gains of MetroPCS and Leap, the *Fourteenth Report* paints a false picture that Verizon Wireless and AT&T are gaining customers while the other major carriers are losing them. The Commission should clarify its presentation of these trends in the *Fifteenth Report*.

⁴⁹⁰ *Fourteenth Report*, ¶ 4.

⁴⁹¹ *See id.*

⁴⁹² *See id.*

⁴⁹³ *See id.* Even if subscribers added as a result of the ALLTEL merger are included in the 2009 total for Verizon Wireless, Leap still posted larger gains than Verizon Wireless, and MetroPCS only 3% less than Verizon. *See id.*

4. An Evaluation of the Effects of Consolidation Reveal Significant Consumer Welfare Benefits

As noted above, the *Report* highlights increased concentration but fails to assess the empirical effect of consolidation. As explained more fully in Verizon Wireless's comments in connection with the *Fourteenth Report*, the current market structure reflects a deliberate shift away from the cost-duplication that attended the previously fractured wireless marketplace, and toward a regime in which wireless providers could achieve scale and thereby increase customer welfare.⁴⁹⁴ As the market evolved, prices continued to fall and usage continued to climb. All of this occurred at a time when providers continued to cover more and more of the population.⁴⁹⁵ These clearly pro-competitive trends have occurred in the same years when the FCC approved a number of major wireless transactions, as depicted in the graph on page 11 of these comments.

As an illustrative example of the benefits of consolidation, in the second half of 2008, the Commission authorized Verizon Wireless to acquire ALLTEL and Rural Cellular Corp. ("RCC")⁴⁹⁶—two wireless providers primarily serving geographic areas not previously served by Verizon Wireless. This transaction has resulted in significant and tangible benefits for former ALLTEL and RCC subscribers, and broader market-wide benefits as well. These include:

A substantial broadband upgrade across the ALLTEL and RCC markets. Prior to the transaction, ALLTEL customers had access to EvDO Rev. 0 service in areas covering 76 percent of its POPs; in other areas ALLTEL offered only 1xRTT, which generally provides peak data rates of 144 kb/s—over twenty times slower than Verizon Wireless's EvDO Rev. A network.

⁴⁹⁴ See Comments of Verizon Wireless, WT Docket No. 09-66, at 20-22 (filed Sept. 30, 2010).

⁴⁹⁵ See generally FCC CMRS Competition Reports 2000-2008.

⁴⁹⁶ See generally *Verizon Wireless-Alltel Order*; *Verizon Wireless-Rural Order*.

RCC had only recently announced plans to upgrade its network in its GSM markets to EDGE technology, which is far slower in throughput speed than EvDO Rev. A; in CDMA areas, RCC offered only 1xRTT. As a result of the deals, Verizon Wireless has deployed EvDO Rev. A networks across the former ALLTEL and RCC service areas—and for ALLTEL regions, in advance of the one-year condition imposed in the FCC’s merger order. Former ALLTEL and RCC subscribers will also benefit from Verizon Wireless’s deployment of LTE and the services, devices, and content resulting from that deployment.

Access to a large variety of service plans, devices, and content. Customers previously served by ALLTEL and RCC gained access to Verizon Wireless’s varied service plans with data bundles and packaged offerings. For example, these customers now benefit from Verizon Wireless’s bundled service plans, which all include unlimited nights and weekend and unlimited mobile-to-mobile minutes between Verizon Wireless’s 92.1 million subscribers (as compared with ALLTEL’s 13 million and RCC’s 777,000). ALLTEL and RCC customers also benefitted for the first time from Verizon Wireless’s Nationwide and America’s Choice plans which offer a choice in the amounts of bundled minutes together with no domestic roaming or long distance charges for calls on the Verizon Wireless network and the networks of its domestic roaming partners. ALLTEL, in contrast, charged its customers \$0.59 per minute for nationwide roaming and \$0.40 per long distance minute while roaming in certain parts of the United States that were not part of its coverage area. RCC similarly charged its customers \$0.40 per minute for nationwide roaming, which included domestic long distance.

Former ALLTEL and RCC subscribers now have access to a larger variety of services, devices, and new content, including music, video, television and other multimedia services. For example, Verizon Wireless’s V CAST services allow subscribers to view video on demand,

graphics for 3D games, and full-motion video clips of the latest news, sports, weather, and entertainment. Similarly, these subscribers now have access to an expanded lineup of wireless devices, including some of the most innovative and sophisticated handsets available.

Access to Open Development devices and applications. Businesses and residents in the former ALLTEL and RCC markets now have access to third-party devices and applications certified for use on the Verizon Wireless network under the company's OD program. From smart grid to wireless medical devices, OD enables third party developers to introduce cutting-edge innovations carried over the nation's leading wireless network. The transactions bring OD innovation to new markets across the country.

Greater roll-out of broadband and network access. All existing and future Verizon Wireless customers, as well as wireless customers generally, benefitted from Verizon Wireless's entrance into new markets as a result of the ALLTEL and RCC transactions. Specifically, Verizon Wireless customers enjoyed the expansion of Verizon Wireless's seamless network access and wireless broadband services, particularly in rural areas. All consumers benefitted from the entrance of a new, strong competitor in these markets.

These benefits are consistent with the Commission's conclusion that the sales of ALLTEL and RCC to Verizon Wireless were in the public interest. More broadly, they demonstrate the validity of the findings it made in those and in other merger proceedings—that consolidation can bring benefits to consumers. The *Fourteenth Report* simply ignores those findings.

C. The Report's Spectrum Analysis is Flawed

The *Fourteenth Report's* spectrum analysis suffers from two critical flaws. First, it departs from Commission policy not to differentiate among mobile wireless spectrum bands in

competitive analysis to find competitive advantages in lower-band spectrum. While it is true that lower band spectrum has beneficial propagation characteristics, this does not make it more advantageous *per se*: higher band spectrum is well suited for providing high capacity, and increased capacity today is essential. Second, the *Report* incorrectly excludes MSS and WCS spectrum from its competitive spectrum analysis. As recent Commission actions make clear, this spectrum is suitable for the provision of mobile wireless and broadband services, and therefore should be included in any CMRS spectrum review.

1. The 1 GHz Line as a Measure of Competition is Unsupportable

There is no dispute that lower band spectrum possesses propagation characteristics favorable for expanding coverage and that higher band spectrum can achieve greater improvements in capacity, is often available in large contiguous blocks, and allows certain mobile technologies to perform better. The *Fourteenth Report* even recognizes this balance when it states that “spectrum resources in different frequency bands have distinguishing features that can make some frequency bands more valuable or better suited for particular purposes.”⁴⁹⁷ Despite the *Report’s* clear recognition that both lower and higher bands can afford significant benefits,⁴⁹⁸ it conversely concludes without explanation that spectrum below 1 GHz affords “competitive advantages” over spectrum above 1 GHz. This treatment fails to afford sufficient weight to the benefits of higher band frequencies in a capacity-constrained environment, while

⁴⁹⁷ *Fourteenth Report*, ¶ 283.

⁴⁹⁸ *Compare Fourteenth Report*, ¶ 269 (stating that the favorable propagation characteristics of lower band spectrum allow it to “provide superior coverage over larger geographic areas,” making it “ideal for delivering advanced wireless services to rural areas”) (quoting Service Rules for the 698-746, 747-762, and 777-792 MHz Bands, *Second Report and Order*, 22 FCC Rcd 15289, 15349 ¶ 158 (2007)) *with Fourteenth Report*, ¶ 272 (finding that higher-frequency spectrum “can be ideally suited for providing high capacity where it is needed, such as in high-traffic urban areas”).

over-emphasizing the benefits of lower band frequencies. For example, while mobile broadband (3G/4G) is growing rapidly and coverage exceeds 98 percent of the U.S. population,⁴⁹⁹ most demand for spectrum today is due to capacity constraints⁵⁰⁰—a need that can be addressed with higher band spectrum.

The Commission’s competition policies concerning spectrum input markets in the analogous spectrum aggregation context—specifically referenced in the *Fourteenth Report*⁵⁰¹—have never before differentiated among bands based on propagation characteristics, as the Commission explained in 2008:

[E]ver since the Commission first determined to evaluate potential spectrum aggregation of 800 MHz cellular spectrum, 800/900 MHz SMR, and 1.9 GHz broadband PCS spectrum for purposes of competitive review, *it has not differentiated among bands based on specific propagation characteristics or purported distinctions in trading value*. Nor did we do so last year when we recently expanded the initial spectrum aggregation screen to include 700 MHz band spectrum. We decline to do so here with respect to the particular BRS spectrum that we find, below, suitable for mobile telephony/broadband services.⁵⁰²

The *Fourteenth Report* departs from that policy without ever acknowledging it is doing so.

There is no basis to reverse course here and distinguish between spectrum bands on the basis of propagation characteristics for purposes of the mobile wireless competition analysis.

⁴⁹⁹ See *Fourteenth Report*, ¶ 120 tbl.13; National Broadband Plan at 76 (recognizing that “wireless broadband is growing rapidly” and that “[k]ey drivers of this growth include the maturation of third-generation (3G) wireless network services ... and the rollout of fourth-generation (4G) wireless technologies”).

⁵⁰⁰ See National Broadband Plan at 77 (finding that “[t]he growth of wireless broadband will be constrained if government does not make spectrum available”); FCC Office of Intergovernmental Affairs, Webinar: The National Broadband Plan, at 7 (May 25, 2010) (noting that there is “[i]nsufficient capacity for broadband” and recommending that the government “[m]ake more spectrum available”), http://reboot.fcc.gov/c/document_library/get_file?uuid=aecda170-3dc2-4c35-80b9-bbacd984ea4c&groupId=19001.

⁵⁰¹ See *Fourteenth Report*, ¶¶ 262-63, 282.

⁵⁰² Sprint Nextel Corporation and Clearwire Corporation, *Memorandum Opinion and Order*, 23 FCC Rcd 17570, 17596-97 ¶ 63 (2008) (“*Sprint Nextel-Clearwire Order*”) (emphasis added).

a. The *Report* Affords Insufficient Weight to the Benefits of Capacity, Contiguous Spectrum and Efficiency that Higher Bands Provide

As a threshold matter, the *Report* recognizes that “higher-frequency spectrum may be particularly effective for providing significant capacity, or increasing capacity, within a smaller geographic area.”⁵⁰³ Sprint and T-Mobile, which each have access to significant amounts of spectrum over 1 GHz, have both made this point. For example, when touting its spectrum position to investors, Sprint’s Chief Technology Officer explained: “While the lower band enables coverage to be deployed more cheaply initially, *the upper band allows greater overall capacity to handle more subscribers.*”⁵⁰⁴ T-Mobile has similarly advised investors that its spectrum position, which includes significant holdings in the 1.9 and 1.7/2.1 GHz bands, affords it the “[m]ost capacity in the industry.”⁵⁰⁵

The capacity benefits are in part attributable to the fact that larger blocks of contiguous spectrum advantageous for broadband are available in the higher bands.⁵⁰⁶ According to Sprint and its partner Clearwire, this is critical: the companies’ access to the 120 MHz of spectrum in the higher bands they claim is needed to provide “true broadband” gives them a competitive “advantage.”⁵⁰⁷ For example, in a Sprint presentation on WiMAX, the company argued:

⁵⁰³ *Fourteenth Report*, ¶ 272.

⁵⁰⁴ *Sprint Nextel CTO Offers Vigorous Defense of WiMAX*, TRDAILY, Apr. 22, 2008 (emphasis added) (quoting Barry West, Chief Technology Officer of Sprint Nextel Corporation).

⁵⁰⁵ Robert Dotson, CEO and President, T-Mobile USA and Brian Kirkpatrick, CFO, T-Mobile USA, Presentation, Deutsche Telekom Investor Day. T-Mobile USA: Regaining U.S. Market Position, at 23 (Mar. 18, 2010), http://www.download-telekom.de/dt/StaticPage/83/41/44/dtag_investor_day_presentation_usa_dotson_834144.pdf (measured on a “Site*Hz per Subscriber” basis) (“Deutsche Telecom Investor Day Presentation”).

⁵⁰⁶ See *Fourteenth Report*, ¶ 272 (“[I]n many parts of these higher bands, spectrum is licensed in larger contiguous blocks, which can enable operators to deploy wider channels and simplify device design.”) (footnote omitted).

⁵⁰⁷ John Saw, Senior Vice President and Chief Technology Officer, Clearwire, FCC National Broadband Plan Workshop, Spectrum, Tr. 35:17-21, 36:15-17 (Sept. 17, 2009), http://www.broadband.gov/docs/ws_25 (continued on next page)

As WiMAX and LTE use very similar radio technologies, the bandwidth efficiency should be roughly equal and, in the end . . . , having more spectrum available is a far greater advantage than the frequency band it occupies. Initial LTE services are planned for the 700 MHz spectrum the FCC auctioned in 2008. In each major market, the 700 MHz A- and B-Blocks provide a total of 24 MHz and the C-Block (Open Device block) has a total of 22 MHz. *Sprint/Clearwire have an average of 120 MHz of 2.5 GHz BRS spectrum in most major markets.*⁵⁰⁸

Likewise, access to large blocks of contiguous spectrum is why T-Mobile invested \$4.2 billion in AWS licenses,⁵⁰⁹ and now claims its next generation HSPA+ network yields the “Most Capable 3G+ National Network in 2010-2011.”⁵¹⁰ In contrast, spectrum below 1 GHz offers licensees no more than 20 MHz of contiguous spectrum. Bands above 1 GHz are configured with well more than 20 MHz of contiguous spectrum, in fact 45 MHz in AWS and 60 MHz in PCS.

In addition, some radio systems “perform better at higher frequencies.”⁵¹¹ As Dr. Charles Jackson explained in a previous report, “[s]everal closely related aspects of today’s mobile technologies—specifically diversity antennas, smart antennas, and multiple-input, multiple-output (MIMO)—*can be expected to work better at higher frequencies than at lower*

[spectrum.pdf](#) (testifying that “[y]ou’re looking at 120 megahertz . . . of spectrum to really deliver true broadband services” and “you also need to have contiguous blocks of spectrum to really be able to deliver the true . . . broadband experience”).

⁵⁰⁸ Sprint WiMAX Presentation at 12 (emphasis in original).

⁵⁰⁹ See FCC Advanced Wireless Services Auction No. 66, http://wireless.fcc.gov/auctions/66/charts/66press_3.pdf (last visited Jul. 14, 2010); see also *T-Mobile Calls AWS Auction Huge Success, Allowing 3G Rollout*, COMMUNICATIONS DAILY, Oct. 10, 2006 (quoting T-Mobile USA President Robert Dotson) (noting that because T-Mobile had doubled its spectrum position in the AWS Auction, “there is no compelling need. We solved the need... for our spectrum here in the U.S”).

⁵¹⁰ Deutsche Telekom Investor Day Presentation at 22.

⁵¹¹ *Fourteenth Report*, ¶ 273.

frequencies.”⁵¹² This is because these advanced antenna systems are most effective if they are well separated, and shorter wavelengths allow more antennas to be used in close proximity while maintaining needed separation.⁵¹³ Higher frequencies also can result in significant efficiencies when duplexing equipment is used,⁵¹⁴ allowing LTE/WiMAX operators to maximize the performance of their high-speed services.

More broadly, history has shown that spectrum above 1 GHz has the power to transform the industry. Between 1994 and 2000, the Commission auctioned 120 MHz of broadband PCS spectrum in the 1.9 GHz bands that “made mobile voice communications a mass-market reality and unleashed a tidal wave of innovation and investment.”⁵¹⁵ As the *Fourteenth Report* recognizes, this spectrum “facilitated the growth and development of a more competitive mobile wireless marketplace.”⁵¹⁶ These transformations demonstrate that higher band spectrum can and has played a significant role in promoting competition.

⁵¹² See DECLARATION OF CHARLES JACKSON, THE SUPPLY OF SPECTRUM FOR CMRS, 8 (Aug. 19, 2008) (emphasis added), appended to Joint Opposition to Petitions to Deny and Comments of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings Inc., WT Docket No. 08-95, Att. 4 (filed Aug. 19, 2008).

⁵¹³ See *id.* at 9.

⁵¹⁴ AT&T recently explained, “[a] single duplexer can span a larger block of spectrum at 2.5 GHz, for example, than it could at 700 MHz,” and “[b]roadband technologies, such as LTE and WiMAX, can exploit 20 MHz or more of contiguous spectrum in a single channel to deliver their highest spectral efficiency and highest throughputs.” See *Ex Parte* Letter from Jeanine Poltronieri, Assistant Vice President, External Affairs, AT&T, to Marlene Dortch, Secretary, FCC, WT Docket No. 09-66, at 3 (filed May 6, 2010).

⁵¹⁵ National Broadband Plan at 78.

⁵¹⁶ *Fourteenth Report*, ¶ 255. The National Broadband Plan described the resulting changes as profound: most markets saw significant increases in the number of wireless providers; price per-minute of mobile phone service dropped by half; mobile subscribers more than tripled; cumulative industry investment more than tripled; cell sites more than quadrupled; and industry employment tripled. See National Broadband Plan at 78.

b. The *Report* Over-Emphasizes the Importance of Lower Band Propagation Characteristics

While it is certainly true that spectrum in lower bands has superior propagation characteristics, the *Report* places undue weight on the coverage benefits attributable to lower band spectrum. This emphasis is due in large part to lower band spectrum's ability to serve rural areas.⁵¹⁷ Additional spectrum in rural areas, however, is not as critical as it once was. Instead, additional capacity, which can be achieved through spectrum both below and above 1 GHz, is now the critical need.

First, the FCC has previously recognized that demand for spectrum in rural areas, where lower band spectrum offers coverage advantages, is less of an issue than demand in urban areas.⁵¹⁸ Rural areas simply do not offer the economies of scale sufficient to support extensive new entry.⁵¹⁹ Indeed, as noted above, there is already significant mobile broadband (3G/4G) coverage across the nation—with coverage now exceeding 98 percent of the U.S. population.⁵²⁰ Rather, it is in urban areas where spectrum capacity is an issue;⁵²¹ and when it comes to improving capacity, higher bands have no disadvantage.

⁵¹⁷ See *Fourteenth Report*, ¶ 269.

⁵¹⁸ See, e.g., Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 19078, 19088 ¶ 13 (2004) (“We do not believe spectrum is overly congested in rural areas, as demand for spectrum in rural areas will in many cases be less than demand in suburban or urban areas.”).

⁵¹⁹ See *id.*, 19 FCC Rcd at 19115 n.203 (“The Commission [has] acknowledged ... that the underlying economics appear to make it unlikely that competition in RSAs will evolve in the near term to rival that in MSAs.”); 2000 Biennial Regulatory Review; Spectrum Aggregation Limits For Commercial Mobile Radio Services, *Report and Order*, 16 FCC Rcd 22668, 22680 ¶ 28 (2001) (“*Spectrum Cap Sunset Order*”) (“In rural markets ... demographic and geographic conditions generally appear to render additional large-scale entry economically difficult to support.”).

⁵²⁰ *Fourteenth Report*, ¶ 120 Table 13.

⁵²¹ See National Broadband Plan at 85 (noting that “increased spectrum demands are primarily an urban phenomenon”); *id.* at 93 (discussing “capacity-limited urban areas”).

Second, there is already plenty of lower band spectrum available in rural areas, which lessens the need for more. For example, spectrum below 1 GHz in rural areas was widely disseminated in the 700 MHz auction (Auction No. 73).⁵²² In that auction, 75 new entities won 428 licenses in 305 rural service areas.⁵²³ In addition, a non-nationwide wireless service provider won a license in every market, amounting to 754 (or 69 percent) of the 1090 licenses sold.⁵²⁴ Furthermore, spectrum in rural areas is available through the FCC's secondary markets policies. And, as noted above, Verizon Wireless has announced a plan to lease its 700 MHz spectrum to rural operators who can then offer the service.⁵²⁵

Third, the Commission's recent roaming order provides requesting carriers with a right to gain access to another's network for CMRS, even where the requesting carrier has spectrum in the same market (so-called "home roaming").⁵²⁶ For better or for worse, there is less incentive for providers to buildout rural areas when subscribers can use a roaming partner's network instead, which in turn lessens demand for additional spectrum to cover rural areas.⁵²⁷

⁵²² *Thirteenth Report*, 24 FCC Rcd at 6221 ¶ 68 ("As a result of this auction, a diverse mix of new entrants and small regional and rural providers as well as national providers succeeded in acquiring access to spectrum needed to deploy the next generation of wireless networks.").

⁵²³ News Release, FCC, Statement By Chairman Kevin J. Martin (Mar. 20, 2008), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280968A1.doc.

⁵²⁴ *Id.*

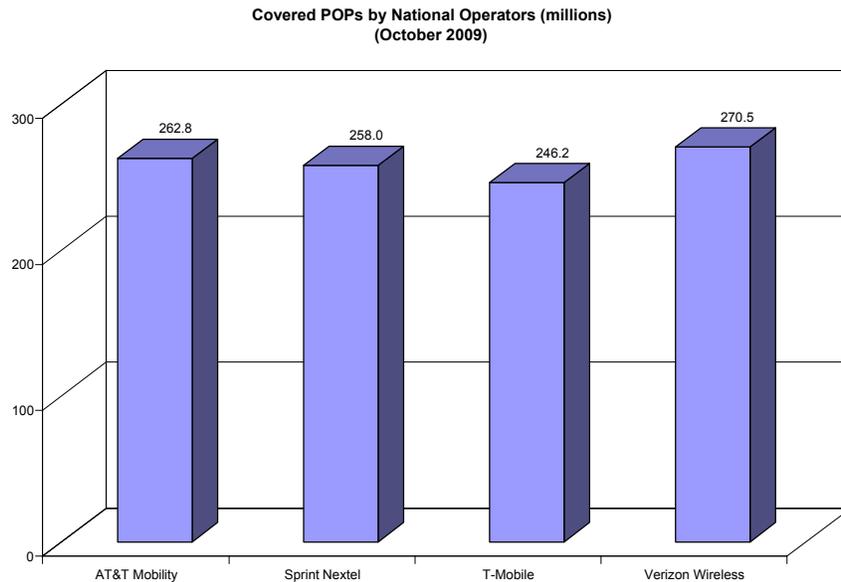
⁵²⁵ See *supra* note 119 and accompanying text.

⁵²⁶ Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services, *Order on Reconsideration and Second Further Notice of Proposed Rulemaking*, 25 FCC Rcd 4181 (2010).

⁵²⁷ The recent roaming order reversed a 2007 decision that exempted home roaming from the "automatic roaming" requirement, which generally gives any carrier the right to roam on another carrier's network. The prior exemption, which no longer exists, was put in place out of concern that "requiring home roaming could harm facilities-based competition and negatively affect build-out in these markets, thus adversely impacting network quality, reliability and coverage." Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, *Report and Order and Further Notice of Proposed Rulemaking*, 22 FCC Rcd 15817, 15835 ¶ 49 (2007), *recon.*, 25 FCC Rcd 4181 (2010).

For all of these reasons, the need for additional initial spectrum to provide coverage in rural areas is less significant today. As a result, the *Fourteenth Report's* over-emphasis on the coverage-enhancing characteristics of low band spectrum is misplaced.

In any event, carriers with spectrum holdings primarily above 1 GHz have achieved population coverage similar to that achieved by carriers with significant spectrum holdings below 1 GHz. As the chart below shows, there is very little difference in POPs covered by AT&T and Verizon, which have more significant spectrum holdings below 1 GHz, and Sprint and T-Mobile, which each hold significant spectrum above 1 GHz:



Source: *Fourteenth Report*, ¶ 30 Table 1 (Mobile Wireless Network Coverage, Selected Facilities-Based Providers: Voice Networks)

This undercuts the notion that spectrum above 1 GHz creates a competitive disadvantage.

c. The *Report* Uses Incomplete Auction Data as a Proxy for Spectrum Value Above and Below 1 GHz

The *Fourteenth Report* mistakenly concludes that “[t]he higher value that many providers have placed on low-band spectrum ... is demonstrated by a comparison of ... [t]he recent auctions of AWS and 700 MHz spectrum.”⁵²⁸ According to the *Report*, the average price for 700 MHz spectrum was \$1.28 per MHz-POP, as compared to \$0.54 per MHz-POP for AWS spectrum.⁵²⁹

The *Report* provides no reason why only these two select auction results—hardly a significant sampling—were compared and the results of other major auctions ignored. In fact, if all major mobile wireless spectrums auctions since 1995 are considered and prices adjusted for inflation, no price trends between spectrum above and below 1 GHz are discernable. Rather, pricing varies greatly from one auction to the next, even for the same spectrum, as the chart below demonstrates:

⁵²⁸ *Fourteenth Report*, ¶ 271.

⁵²⁹ *Id.*

Auction No.	Spectrum	Auction End Date	Net Price Per MHz-POP	CPI Adj. Net Price Per MHz-POP
4	PCS (1.9 GHz)	March-95	\$0.46	\$0.66
5	PCS (1.9 GHz)	May-96	\$1.19	\$1.65
10	PCS (1.9 GHz)	July-96	\$1.55	\$2.15
11	PCS (1.9 GHz)	January-97	\$0.29	\$0.40
22	PCS (1.9 GHz)	April-99	\$0.13	\$0.17
35	PCS (1.9 GHz)	January-01	\$3.69	\$4.58
71	PCS (1.9 GHz)	May-07	\$0.21	\$0.22
78	PCS (1.9 GHz)	August-08	\$0.21	\$0.21
66	AWS (1.7/2.1 GHz)	September-06	\$0.54	\$0.58
78	AWS (1.7/2.1 GHz)	August-08	\$0.11	\$0.11
44	700 MHz	September-02	\$0.03	\$0.04
49	700 MHz	June-03	\$0.03	\$0.04
73	700 MHz	March-08	\$1.29	\$1.32

Source: *see generally* <http://wireless.fcc.gov/auctions/>

Notes: Per MHz-POP prices all based on Population Census from 2000; prices based only on licenses from the 50 states (excludes Puerto Rico, American Territories and Gulf of Mexico⁵³⁰) and do not include licenses held by the FCC at end of each auction; CPI-adjusted prices reflect June 2010 dollar values (*see* <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.txt>)

Furthermore, the *Report's* comparison is hardly statistically valid as it fails to account for any variables other than frequency characteristics that could justify a price differential. In fact, each auction stands alone because of factors related to supply and demand, economic and market conditions, auction format, reserve prices, minimum opening bids, encumbrances, reserves and cost to clear. None of these variables are addressed in the *Fourteenth Report's* simplistic comparison.

In the case of AWS and 700 MHz auction prices, there are numerous reasons why the average price for AWS spectrum sold for less in Auction 66 than 700 MHz spectrum in Auction 73. The first is supply: in Auction 66, 90 MHz of mobile spectrum was available but in Auction 73 there was only 52 MHz—even less (46 MHz) if the unpaired 6 MHz E block is excluded.

⁵³⁰ This accounts for the difference between the \$1.29 price per MHz-POP shown above for Auction No. 73 and the \$1.28 price per MHz-POP cited by the FCC in the *Fourteenth Report*. *See Fourteenth Report*, ¶ 271.

The AWS auction had significantly more spectrum, which likely would decrease demand and thus yield lower prices per MHz-POP.

A second reason is encumbrances: AWS required significant band clearing over a period of years, unlike the Auction 73 700 MHz spectrum. A more apt comparison would be the lower 700 MHz spectrum auctioned in Auctions 44 and 49 (see chart above), which at the time was weighed down by uncertainty surrounding the timing for clearing TV stations from the band—uncertainty that depressed participation in the auction and is reflected in the low price of the spectrum. Even within Auction 73, the price of spectrum varied greatly based on demand, open access conditions, and encumbrances. However, if price was the sole determinant of spectrum quality, the 700 MHz lower C Block from Auctions 44 and 49 would be 30-35 times worse than the rest of the 700 MHz band.

A third reason is economic and market conditions. There was an explosion in data and broadband use between the 2006 AWS auction and the 2008 700 MHz auction, which substantially increased spectrum demand by 2008. The PCS auctions provide a useful comparison, showing a wide range of spectrum values under different economic conditions and other factors (including, among others, spectrum block size, designated entity restrictions for certain spectrum, and government-offered financing). Thus any effort to draw support for the 1 GHz line based on auction results is invalid.

2. The *Report* Wrongly Excluded MSS and WCS Spectrum Suitable for Mobile Wireless Services

The *Fourteenth Report* paints a confused picture of what spectrum is considered as part of its analysis of competition in the mobile wireless market. On the one hand, its analysis

references consideration of spectrum “suitable” for the provision of mobile wireless services⁵³¹—the standard used to analyze the competitive effects of transactions.⁵³² Elsewhere, it discusses spectrum bands “potentially available” for mobile wireless services⁵³³—the standard used in prior Competition Reports.⁵³⁴ While slightly different, both take into account spectrum that may be but is not yet used to provide mobile wireless service. Inexplicably, then, the *Fourteenth Report* excludes MSS and WCS spectrum “because . . . services offered in these bands do not impact competition in the mobile wireless services.”⁵³⁵ As discussed below, recent actions make even more clear that the MSS and WCS bands are both suitable and available to provide mobile service and compel their inclusion in any wireless competition analysis.⁵³⁶ Moreover, the Commission cannot logically exclude MSS spectrum from its assessment of the market at the same time it justifies approval of at least one MSS venture on the ground that it will enhance terrestrial mobile competition.

⁵³¹ See *id.* ¶¶ 267, 268, 282.

⁵³² See *id.* ¶ 282.

⁵³³ See *id.* App. A, ¶ 1.

⁵³⁴ See *Thirteenth Report*, 24 FCC Rcd at 6222-23 ¶ 69, 6224 tbl.5; *Twelfth Report*, 23 FCC Rcd at 2276-77 ¶ 77, 2277 tbl.8.

⁵³⁵ *Fourteenth Report*, ¶ 259. This conclusion is even more puzzling given the fact that both the *Twelfth Report* and the *Thirteenth Report* included substantive discussions of MSS and WCS spectrum, see *Twelfth Report*, 23 FCC Rcd at 2286 ¶¶ 97, 2345-52 ¶¶ 259-88; *Thirteenth Report*, 24 FCC Rcd at 6235-36 ¶¶ 95-96, 6298-308 ¶¶ 240-73, and every Competition Report since the *First Report* has included a discussion of satellite providers. See, e.g., *First Report*, 10 FCC Rcd at 8858 ¶¶ 42-43.

⁵³⁶ Also unclear is the extent to which the Commission’s spectrum competition analysis includes the 1.9 GHz spectrum given to Sprint Nextel as part of the 800 MHz rebanding proceeding. That spectrum is included in Table 24 (“Flexible Use Spectrum Usable for Mobile Wireless Services”), but it is unclear whether the spectrum is also accounted for in the discussion of Sprint’s PCS holdings in Table 25 (“Percentage Spectrum Holdings”) and Paragraph 277. Compare *Fourteenth Report*, ¶ 259 tbl.24 with *id.* ¶ 267 tbl.25 & ¶ 277.

a. The Exclusion of Spectrum Suitable to Provide Mobile Service from a Competition Analysis Defies Precedent

The *Fourteenth Report's* unexplained decision to exclude from its competitive analysis spectrum that is not currently being used—despite its potential and suitability to do so—is inconsistent with precedent. As noted, prior Competition Reports have considered spectrum bands “potentially available” for mobile wireless services as part of the competition report analysis before they actually became available for such use. For example, the Commission considered 700 MHz spectrum in the *Eighth* (2003), *Ninth* (2004), *Tenth* (2005) and *Eleventh* (2006) *Competition Reports*, even though the 700 MHz auction (Auction No. 73) did not occur until 2008. Similarly, the Commission discussed AWS spectrum in the *Ninth* (2004) and *Tenth* (2005) *Competition Reports*, even though the AWS auction (Auction No. 66) did not occur until 2006.

Moreover, the exclusion is inconsistent with the Commission’s analogous competition policies with respect to spectrum holdings, which look to whether spectrum is “suitable” to provide mobile services and has the “potential” to support comparable service. Starting in 1994, prior to auctioning and licensing broadband PCS spectrum, the Commission imposed a cap on the amount of spectrum an entity could aggregate in a given area.⁵³⁷ Intended to preserve and promote competition, the cap limited the aggregation of cellular, PCS and SMR spectrum—all spectrum with the “*potential to ... offer*” or “*capab[ility] of offering*” service comparable to that provided by cellular systems.⁵³⁸ In other words, the spectrum cap took into account not just

⁵³⁷ Implementation of Sections 3(n) and 332 of the Communications Act, *Third Report and Order*, 9 FCC Rcd 7988, 7999 ¶ 16, 8100-8110 ¶¶ 238-65 (1994).

⁵³⁸ *See id.* at 8109 ¶ 261, 8105 ¶ 252 & n.480 (emphasis added).

spectrum then used to provide cellular-type services, but also spectrum like PCS with the potential or capability to provide such services.

After phasing out the spectrum cap as the CMRS market became more competitive,⁵³⁹ the Commission adopted a “spectrum screen” in 2004 to help flag competitive concerns in transactions—once again including all “suitable” spectrum.⁵⁴⁰ The Commission included, in its evaluation of potential competitive harms, spectrum that is “*suitable for the provision of mobile telephony services.*”⁵⁴¹ “Suitability” is determined based on “whether the spectrum is capable of supporting mobile service given its physical properties and the state of equipment technology, whether the spectrum is licensed with a mobile allocation and corresponding service rules, and whether the spectrum is committed to another use that effectively precludes its uses for mobile telephony.”⁵⁴² In 2004, the spectrum that met this standard included cellular, PCS and SMR spectrum.⁵⁴³ At that time, the Commission declined to include other spectrum like AWS and MDS (now BRS) spectrum, as it did not meet the suitability criteria “because it is committed to non-mobile telephony uses currently and for the near-term future.”⁵⁴⁴

By 2007, the FCC determined that 700 MHz spectrum should be part of its spectrum input analysis even though much of it had yet to be auctioned: “700 MHz spectrum ... is ... capable of supporting mobile services We are also confident at this point in time that it will

⁵³⁹ See *Spectrum Cap Sunset Order*, 16 FCC Rcd at 22669-71 ¶¶ 2-6.

⁵⁴⁰ *AT&T-Cingular Order*, 19 FCC Rcd at 21568-69 ¶ 109. The screen identifies markets in which spectrum aggregation exceeds a predetermined amount.

⁵⁴¹ *Id.* at 21560-61 ¶ 81 (emphasis added).

⁵⁴² *AT&T-Dobson Order*, 22 FCC Rcd at 20311 ¶ 26.

⁵⁴³ *AT&T-Cingular Order*, 19 FCC Rcd at 21560-61 ¶ 81.

⁵⁴⁴ *Id.* at 21561 n.283.

be licensed and available on a nationwide basis in the sufficiently near-term – less than a year and a half.”⁵⁴⁵ While the Commission continued to exclude AWS and BRS spectrum in 2007 because it was committed to other uses,⁵⁴⁶ by 2008 circumstances had changed. Citing “sufficient progress ... in clearing AWS-1 spectrum” and “significant additional progress ... in completing the transition of BRS spectrum to the new band plan,”⁵⁴⁷ the Commission now includes AWS and BRS spectrum as part of its spectrum screen.⁵⁴⁸ Notably, it concluded that spectrum should be a relevant input “*if it will meet the criteria for suitable spectrum within two years.*”⁵⁴⁹

In sum, under the Commission’s spectrum competition policies, spectrum is considered as part of a competition analysis if, within two years, it *will* be “suitable” for the provision of mobile telephony or broadband service—meaning it is capable of supporting mobile service, has been licensed for mobile use, and is not committed to a use that precludes mobile operations. Under such a forward-looking approach, MSS and WCS spectrum should be included in any competition analysis.

⁵⁴⁵ *AT&T-Dobson Order*, 22 FCC Rcd at 20313 ¶ 31.

⁵⁴⁶ *Id.* at 20314 ¶ 32 (“At this time, however, we find it is not appropriate to include other spectrum bands – particularly AWS-1 and BRS spectrum – in the initial spectrum screen that we apply to the input markets for mobile telephony spectrum. These bands do meet one of the criteria for suitability.... this spectrum is currently committed to another use that effectively precludes its use for mobile telephony, and it is unclear whether it will be available for mobile use in the sufficiently near-term”).

⁵⁴⁷ *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17597 ¶ 66, 17599 ¶ 72.

⁵⁴⁸ The Commission also considers a broader relevant market that includes both mobile telephony and mobile broadband. *See id.* at 17596 ¶ 61 (“In light of recent developments and our determination to evaluate the broader combined market for mobile telephony/broadband services in our competitive analysis, we decide to include AWS-1 and certain BRS spectrum in an updated, market-specific initial spectrum screen in those markets where that spectrum is available.”).

⁵⁴⁹ *Id.* (emphasis added).

b. MSS ATC Spectrum is Suitable to Provide, and has the Potential to Compete with, Mobile Services

As a threshold matter, the Commission’s plan to consider MSS, including ATC services, as part of a separate report on satellite competition does not obviate the need to address that spectrum as part of the Mobile Wireless Competition Report.⁵⁵⁰ The FCC has a statutory obligation to consider the state of competition in the CMRS industry generally, not just select submarkets.⁵⁵¹ As the *Thirteenth Report* stated: “[a]ny mobile satellite service (MSS) that involves the provision of CMRS directly to end users is by definition, CMRS. Therefore, the Commission has included MSS in its analysis of competitive market conditions with respect to CMRS since the *First Report*.”⁵⁵² The Commission should therefore address MSS, including ATC services, in the *Fifteenth Report*.

Moreover, while the Commission has found MSS and terrestrial mobile wireless service to be imperfect substitutes,⁵⁵³ this is not the case with MSS ATC—which even the *Fourteenth Report* recognizes “could potentially enhance competition in the provision of mobile terrestrial wireless services.”⁵⁵⁴ In fact, the FCC has taken a number of steps—all *prior* to issuance of the

⁵⁵⁰ *Fourteenth Report*, ¶ 38 (“[T]he Commission’s forthcoming [satellite competition report] will include a more detailed discussion of MSS, including ATC services. Accordingly, this Report does not include a further discussion of MSS, and does not include MSS in its analysis of the mobile wireless services industry.”) (footnote omitted).

⁵⁵¹ See 47 U.S.C. § 332(c)(1)(C).

⁵⁵² *Thirteenth Report*, 24 FCC Rcd at 6298-99 ¶ 240 (footnote omitted).

⁵⁵³ See *id.* at 6301 ¶ 247.

⁵⁵⁴ *Fourteenth Report*, ¶ 37.

Fourteenth Report—that make MSS ATC spectrum clearly “suitable” to provide mobile services near-term.⁵⁵⁵

First, on March 26, 2010, the Commission approved applications transferring control of SkyTerra—the first MSS licensee to obtain ATC authority (then known as Mobile Satellite Ventures)—to Harbinger.⁵⁵⁶ The approval was conditioned on Harbinger’s commitment “to build a terrestrial network using SkyTerra’s ATC authorizations.”⁵⁵⁷ That network will be “an additional, nationwide facilities-based mobile broadband network” able to “provide service at 4G speeds to over 90 percent of the U.S. population.”⁵⁵⁸ The Commission approved the transaction “because of the competition it will bring in mobile wireless broadband services,” specifically noting Harbinger’s expectation that SkyTerra’s service “will enhance competition in the provision of terrestrial mobile broadband services, including those provided by AT&T and Verizon Wireless.”⁵⁵⁹ FCC staff also has lauded this deal as “increas[ing] the spectrum used for broadband, enhanc[ing] wireless competition, and spur[ring] innovation and entrepreneurship in the broadband ecosystem.”⁵⁶⁰ Importantly, Harbinger has stated that it will launch commercial service “before the third quarter of 2011 providing service to up to 9 million POPs,” and is required to provide coverage to at least 100 million people in the U.S. by December 31, 2012 and

⁵⁵⁵ The fact that the FCC has discussed MSS in its prior Competition Reports, as the *Fourteenth Report* acknowledges, *see id.* ¶ 38, but now fails to do so after taking steps that make it suitable for mobile service in the near term, is unexplainable.

⁵⁵⁶ SkyTerra Communications, Inc. and Harbinger Capital Partners Funds, *Memorandum Opinion and Order*, 25 FCC Rcd 3059 (IB/OET), *recon. pending* (“*SkyTerra-Harbinger Order*”).

⁵⁵⁷ *Id.* at 3089 ¶ 72.

⁵⁵⁸ *Id.* at 3088 ¶ 68.

⁵⁵⁹ *Id.* at 3088 ¶¶ 68, 70.

⁵⁶⁰ Paul de Sa, *Promoting Wireless Investment and Innovation*, BlogBand: The Official Blog of the National Broadband Plan, Mar. 29, 2010, <http://blog.broadband.gov/?m=03&y=2010>.

260 million people by December 31, 2015.⁵⁶¹ As noted above, Harbinger moved closer to making its plans a reality by announcing, on July 20, 2010, an eight-year, \$7 billion deal with Nokia to build and operate its satellite and mobile broadband network under the name LightSquared.⁵⁶²

Second, on January 13, 2010, the Commission granted ATC authority to TerreStar in conjunction with its MSS license that allows it to “build and operate a mobile satellite and terrestrial communication network ... offering voice, push-to-talk, Internet, email, messaging, conferencing, multicast video and data, and other services.”⁵⁶³ In granting the application, the FCC noted that “TerreStar proposes to provide Commercial Mobile Radio Service (‘CMRS’) via its ATC facilities.”⁵⁶⁴ TerreStar has stated that with the “successful launch” of its TerreStar-1 satellite, the validation of its smartphone and the FCC’s grant of ATC authority, “we are on track to reshape mobile communications when we launch commercial service later [in 2010].”⁵⁶⁵

Third, on January 15, 2009, DBSD (then known as New ICO) received ATC authority.⁵⁶⁶ According to the company’s most recent Form 10-Q filed on May 7, 2010, “[t]he DBSD MSS/ATC System can provide wireless voice, video, data and/or Internet service throughout the United States on mobile and portable devices. DBSD is currently in the process of

⁵⁶¹ *SkyTerra-Harbinger Order*, 25 FCC Rcd at 3097-98 (Appendix B: Harbinger Business Plan Letter of March 26, 2010). Harbinger has stated that in addition to its use of MSS ATC spectrum, its terrestrial broadband mobile 4G LTE network at the outset will also “consist[] of 8 MHz of 1.4 GHz terrestrial spectrum, [and] access to 5 MHz of 1.6 GHz terrestrial spectrum.” *Id.* at 3096. Because this spectrum is also suitable for and able to be used to compete with mobile services, it should also be included in the CMRS spectrum analysis.

⁵⁶² See LightSquared Press Release, *supra* note 79.

⁵⁶³ TerreStar Networks Inc., *Order and Authorization*, 25 FCC Rcd 228, 230-31 ¶ 7 (IB 2010).

⁵⁶⁴ *Id.* at 238 ¶ 30.

⁵⁶⁵ See Press Release, TerreStar Networks Inc., FCC Grants TerreStar ATC Authority (Jan. 14, 2010), <http://www.terrestar.com/press/20100114.html> (quoting Jeff Epstein, President, TerreStar).

⁵⁶⁶ See New ICO Satellite Services G.P., *Order and Authorization*, 24 FCC Rcd 171 (IB 2009).

demonstrating the operational status of its MSS/ATC System on a trial basis. DBSD has constructed terrestrial networks in Las Vegas, Nevada and Reston, Virginia to demonstrate its MSS/ATC system, and recently concluded a one year trial in Raleigh-Durham, North Carolina.”⁵⁶⁷

Fourth, on October 31, 2008, the FCC modified the ATC authority of Globalstar and granted it certain interim waivers of the ATC gating criteria, permitting Globalstar and its spectrum lessee, Open Range, to commence deployment of a broadband service.⁵⁶⁸ The waivers were granted to facilitate broadband deployment consistent with a \$267 million loan commitment from the Department of Agriculture’s Rural Development Utilities (“RUS”) Program, pursuant to which Open Range plans to deploy broadband ATC services to 546 communities in seventeen states by 2013.⁵⁶⁹ Ultimately, once Globalstar’s second generation satellite network is launched, the two companies will offer “a dual-mode mobile device that will support MSS, including two-way voice and data services with speeds of approximately 1 megabit per second in the downlink and 256 kilobits per second in the uplink, along with mobile broadband ATC service”⁵⁷⁰—a service that RUS has said will allow residents to “benefit from mobile and portable broadband, lower prices, enhanced service options and improved quality as a result of marketplace competition.”⁵⁷¹ In the meantime, Open Range is operating a terrestrial

⁵⁶⁷ ICO Global Communications (Holdings) LTD, Quarterly Report (Form 10-Q), at 21 (May 7, 2010), http://www.fqs.org/sec-filings/100507/ICO-Global-Communications-Holdings-LTD_10-Q/.

⁵⁶⁸ Globalstar Licensee LLC, *Order and Authorization*, 23 FCC Rcd 15975 (2008) (“*Globalstar ATC Modification Order*”), *recon. pending*.

⁵⁶⁹ *Id.* at 15984 ¶ 21.

⁵⁷⁰ *Id.* at 15977-78 ¶ 7.

⁵⁷¹ *See News Release*, “USDA Announces \$ 267 Million Rural Broadband Loan” (March 25, 2008), <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2008/03/0086.xml>.

broadband network using Globalstar spectrum reported to cover 500,000 rural residents, with coverage of 3 million residents in 13 states projected by the end of August.⁵⁷²

Finally, the National Broadband Plan, released prior to the *Fourteenth Report*, recommended that the FCC take further steps to “accelerate terrestrial deployments in the MSS bands.”⁵⁷³ In response, the FCC just released a *Notice of Proposed Rulemaking and Notice of Inquiry* that seeks to “remove regulatory barriers to terrestrial use, and to promote additional investments, such as those recently made possible by a transaction between Harbinger Capital Partners and SkyTerra Communications.”⁵⁷⁴ That item makes clear the competition MSS ATC services will provide:

As Globalstar, SkyTerra/Harbinger, and other MSS providers realize their plans to offer high-speed broadband services to consumers using terrestrial networks under their ATC authority, *the services they offer have the potential to expand the services offered in the overall market of mobile terrestrial wireless services and enhance competition in this larger mobile marketplace.*⁵⁷⁵

This underscores yet again why MSS spectrum must be included as an input in any CMRS competition analysis.

c. WCS Spectrum Is Suitable to Provide, and has the Potential to Compete with, Mobile Services

In addition, on the same day the *Fourteenth Report* was adopted, the Commission amended the WCS rules to “*immediately* make 25 megahertz of spectrum available for mobile

⁵⁷² See Open Range Communications Inc., Request for Special Temporary Authority, File No. SAT-STA-20100625-00147, at 5 (filed June 25, 2010).

⁵⁷³ National Broadband Plan at 88.

⁵⁷⁴ Fixed and Mobile Services in the Mobile Satellite Service Bands, ET Docket No. 10-142, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 10-126, at ¶ 1 (Jul. 15, 2010).

⁵⁷⁵ *Id.* ¶ 21 (emphasis added).

broadband services.”⁵⁷⁶ While the former WCS rules constrained operations to fixed services, the Commission found that the rule changes will allow mobile broadband services without risking harmful interference to neighboring operations, and that these changes will enable licensees to provide mobile broadband services in 25 MHz of the WCS band.⁵⁷⁷ The Commission took these steps to “*promote broadband competition and facilitate the development and provision of innovative broadband services, including mobile broadband services, to the American public in the 2305-2320 and 2345-2360 MHz bands allocated to WCS.*”⁵⁷⁸ The FCC also established aggressive buildout requirements that require WCS licensees providing mobile services to serve 40 percent of a license area’s population within 42 months, and 75 percent within 72 months.⁵⁷⁹ As a result, WCS spectrum is also suitable to provide, and has the potential to compete with, mobile services in the near term and must be included in the FCC’s assessment of the mobile wireless spectrum market.

3. The Report Failed to Attribute Clearwire Spectrum to Sprint

The *Report* recognizes that Sprint holds a majority interest in Clearwire,⁵⁸⁰ and that Sprint is reselling 4G service powered by Clearwire’s WiMAX network,⁵⁸¹ but presents its findings regarding spectrum holdings in a way that disaggregates the spectrum controlled by the

⁵⁷⁶ See *News Release*, FCC Unleashes 25 MHz of Spectrum for Mobile Broadband Use (May 20, 2010), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-298308A1.pdf.

⁵⁷⁷ Amendment of Part 27 of the Commission’s Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band, WT Docket No. 07-293, *Report and Order and Second Report and Order*, FCC 10-82, ¶ 1 (May 20, 2010).

⁵⁷⁸ *Id.* ¶ 36 (emphasis added).

⁵⁷⁹ *Id.* ¶ 3.

⁵⁸⁰ *Fourteenth Report*, ¶¶ 69, 113.

⁵⁸¹ *Id.* ¶ 113.

two companies.⁵⁸² For example, Chart 40 depicts providers' spectrum holdings by frequency band, measured on a MHz-POPs basis. The chart shows Verizon Wireless with approximately 26 billion MHz-POPs, AT&T with approximately 24 billion, Sprint with approximately 15 billion, T-Mobile with slightly less than 15 billion, and Clearwire with approximately 38 billion.⁵⁸³

This presentation of data has the effect of suggesting that Verizon Wireless and AT&T have access to more spectrum than Sprint, which is not the case. When Clearwire's spectrum is properly attributed to Sprint,⁵⁸⁴ it is clear that Sprint actually has access to more spectrum than any other provider, including Verizon Wireless and AT&T.⁵⁸⁵ Indeed, according to Sprint CEO Dan Hesse, Sprint's partnership with Clearwire "gives us the largest spectrum position of any company in America."⁵⁸⁶ Furthermore, the data itself seem suspect, as Clearwire has previously

⁵⁸² *Id.* ¶ 267, tbls.25-26 & Chart 40. The spectrum discussion also downplays the relationship between Sprint Nextel and Clearwire, stating only that Clearwire "is affiliated with Sprint Nextel." *Id.* ¶ 266.

⁵⁸³ *Id.* Chart 40.

⁵⁸⁴ The "spectrum screen" discussed above and in the *Fourteenth Report*, see ¶ 282, uses a 10% attribution threshold to determine spectrum that should be included in a spectrum input analysis. See *Wireless Telecommunications, Inc., Debtor-In-Possession, Assignor and The Vermont Telephone Company, Inc. and Clearwire Spectrum Holdings, LLC, Memorandum Opinion and Order*, 24 FCC Rcd 3177, 3185 ¶ 21 (WTB 2009) ("[W]e include spectrum that is deemed suitable for mobile telephony/broadband services in which Sprint Nextel would have a 10 percent or greater interest, including spectrum currently held by or being acquired by Clearwire."), *recon. denied*, 24 FCC Rcd 14466 (2009). Given Sprint's majority interest in Clearwire, Sprint should be attributed with Clearwire's spectrum for purposes of any spectrum input analysis. See *id.*

⁵⁸⁵ See Yankee Group 2009 Data, cited in Tricia Duryee, *Wireless Carriers Bicker Over Size of Spectrum Holdings*, MOCONEWS, Mar. 19, 2010, <http://moconews.net/article/419-wireless-carriers-bicker-over-size-of-spectrum-holdings/> ("Other than Clearwire, Sprint is likely in the best position of all. It has partnered with Clearwire to roll-out its 4G network, meaning that in addition to its 69 MHz of holdings, it can tap into Clearwire's 150 MHz.").

⁵⁸⁶ Richard Martin, *Sprint Wins In WiMax Deal, But Risks Still Loom*, INFORMATIONWEEK, May 7, 2008, <http://www.informationweek.com/news/mobility/wifiwimax/showArticle.jhtml?articleID=207600572>; see also Andrew Parker and Paul Taylor, *Sprint's 4G Move Opens Way to Merger*, FINANCIAL TIMES, Jul. 12, 2010, <http://www.ft.com/cms/s/0/c4d6eb6a-8de0-11df-9153-00144feab49a.html> ("We have the spectrum resources where we could add LTE if we choose to do that, on top of the WiMAX network.... The beauty of having a lot of spectrum is we have a lot of flexibility.") (quoting Sprint CEO Dan Hesse); Sprint WiMAX Presentation at 12 ("[H]aving more spectrum available is a far greater advantage than the frequency band it occupies.... Sprint/Clearwire have an average of 120 MHz of 2.5 GHz BRS spectrum in most major markets.") (emphasis removed).

claimed that it has nationwide spectrum holdings of “Over 43 Billion MHz POPs”⁵⁸⁷— significantly more than is reflected in Chart 40. For these reasons, the FCC should reassess its treatment of Sprint’s spectrum holdings.

D. The *Report* Too Often Failed to Acknowledge that Today’s Market is Advancing Consumer Welfare

1. The *Report* Did Not Acknowledge Consumer Satisfaction as a Basis for Low Churn

In several places the *Report* cites churn levels as a “reasonable proxy to determine whether switching costs are high enough to prevent consumers from making changes” in their service plans.⁵⁸⁸ The clear implication is that lower churn rates are an indication that switching costs are too high to allow customers to change providers. As the Report notes fleetingly, however, low churn may reflect not high switching costs but rather high levels of consumer satisfaction: “By examining the magnitude and trend over time of service provider churn, we can quantify the degree to which consumers have both *the desire* and the ability to change service providers to better meet their mobile wireless service needs.”⁵⁸⁹ This reference is never elaborated upon or discussed.

Because satisfaction affects customer churn, and surveys are showing increasing customer satisfaction, it is not surprising that churn may decline.⁵⁹⁰ As discussed by economists Gregory Rosston and Michael Topper, carrier network investments, improved customer care and

⁵⁸⁷ See Press Release, Clearwire Corporation, Clearwire Reports Third Quarter 2009 Results (Nov. 10, 2009), <http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1353839&highlight>.

⁵⁸⁸ *Fourteenth Report*, ¶ 230; see also *id.* ¶ 248. As the Report explains, “churn refers to the percentage of current customers an operator loses over a given period of time, *i.e.*, a company’s gross loss of customers during that time period.” *Id.* ¶ 230.

⁵⁸⁹ *Id.* ¶ 230 (emphasis added).

⁵⁹⁰ Verizon Wireless 2009 *Competition NOI* Comments at 10 & n.16 (citing ROSSTON-TOPPER at 23-24).

incentives, as well increasing customer experience over time with wireless network services, have limited churn rates and reflect an increase in the quality of the customer experience.⁵⁹¹ Therefore, any utilization of low churn data must take into account the role that increased consumer satisfaction plays in reducing churn rates.⁵⁹² Indeed, other evidence in the Report suggests that low churn rates do, in fact, reflect high consumer satisfaction. For example, Table 23 shows that the average Verizon Wireless customer remains a customer for 71 months—nearly six years.⁵⁹³ The periods for AT&T, Sprint, and T-Mobile are 67, 48, and 32 months, respectively.⁵⁹⁴ Indeed, it is much more likely that the decline in customer churn is due to carriers’ increasing emphasis on customer service as well as the quality of carriers’ management and employees, rather than switching costs.

2. The Report Emphasized the “Maturation” of the Voice Market Without Acknowledging Consumer Benefits, Such As Steeply Decreasing Prices

The *Report* identifies the “Maturation of the Mobile Voice Segment” as the first key trend in the mobile wireless industry.⁵⁹⁵ The *Report* bases this characterization on the fact that, by the end of 2008, 90 percent of Americans had a mobile wireless device and, although voice usage remained substantial, 2009 marked the first instance of reduced voice usage, perhaps because of increased text and multimedia messaging. Although the voice segment may be considered “mature” because a very high percentage of Americans already subscribe to the

⁵⁹¹ See ROSSTON-TOPPER at 24.

⁵⁹² See, e.g., General Motors Corporation and Hughes Electronics Corporation, Transferors And The News Corporation Limited, Transferee, For Authority to Transfer Control, *Memorandum Opinion and Order*, 19 FCC Rcd 473, 613 ¶ 325 (2003) (recognizing that “reduced churn” can be an indication of “increased consumer satisfaction”).

⁵⁹³ *Fourteenth Report*, tbl.23.

⁵⁹⁴ *Id.*

⁵⁹⁵ *Fourteenth Report*, ¶ 4.

service, the *Report* fails to acknowledge that this dynamic is further sharpening competition to the benefit of consumers. As the overall growth in the voice market slows, competitors vie ever more strongly to attract other providers' customers and retain their own.

A review of just a handful of offerings made in 2009 reflects the steep price reductions and new service offerings introduced in the voice services market.⁵⁹⁶ Given the voice service pricing wars, applying the "mature market" label to mobile voice services *without* acknowledging the resulting sharpening of competition falls short of an accurate characterization of the voice market over the last 18 months.

3. The *Report* Unnecessarily Refrained from Characterizing Competing Plans as Pro-Competitive

On occasion, the *Report* seems to go out of its way to cast a skeptical eye on carrier offerings and their role in competition. For example, the *Report* observed that some wireless providers introduced "additional features to existing plans," and among others identified Sprint's "Any Mobile, Anytime" feature allowing for unlimited mobile-to-mobile calling to any domestic wireless number. It went on to find, "[w]hile the monthly bill remains unchanged, the additional features are designed to *create a perception* that consumers are getting more value for their

⁵⁹⁶ Sprint cut the price of its prepaid Boost Unlimited plan that included unlimited voice, Web and text messaging service by half—from \$100 to \$50 per month. TOO MANY COOKS at 1. Leap introduced a new prepaid \$40 plan with unlimited voice, U.S. long distance, access to Cricket's premium extended calling area, domestic and international text and picture messaging. A \$45 version of the plan also included unlimited mobile Web and directory assistance. Press Release, Leap Wireless International, Inc., Leap to Introduce New Unique Nationwide Cricket Monthly Voice and Broadband Products Into Broad National Retail Distribution (Sept. 16, 2009), <http://phx.corporate-ir.net/phoenix.zhtml?c=191722&p=irol-newsArticle&ID=1332367&highlight=>. T-Mobile reduced its postpaid unlimited voice plan to \$50 per month for existing customers and reduced its unlimited data and unlimited text monthly add-on price to \$35 per month. Allie Winter, *T-Mobile Drops Unlimited Voice Plan to \$50*, RCRWIRELESS, Mar. 2, 2009, <http://www.rcrwireless.com/article/20090302/WIRELESS/903029987/t-mobile-usa-drops-unlimited-voice-plan-to-50>.

money.”⁵⁹⁷ Such characterization suggests that the Commission is inexplicably suspect of any new pricing features that do not result in a price cut or an increase in the number of minutes per tier.

Oddly, in other instances the *Report* goes on to avoid acknowledging the price cuts that did occur. For example, in its introduction to the pricing section, “Price Rivalry: Developments in Mobile Service Pricing Plans,” the *Report* contained one sentence on the relevant period: “As detailed below, the pricing conduct of mobile wireless providers in 2009 and early 2010 included *changes* in the monthly price of service plans....”⁵⁹⁸ These “changes,” of course, were dramatic price drops. As one analyst noted in April 2009, “[a] year ago, the benchmark price for unlimited voice and data plans was \$100 per month. A year later, it is \$50.”⁵⁹⁹ And the price war did not end in April. In fact, carriers continued to cut the price of prepaid offerings and another analyst called the ongoing prepaid price war “[p]erhaps the most dramatic story of the summer.”⁶⁰⁰ Meanwhile, as discussed elsewhere, providers slashed their postpaid plans as well. The Commission’s refusal to recognize declining prices is a significant omission from the *Report*.

⁵⁹⁷ *Fourteenth Report*, ¶ 90 (emphasis added).

⁵⁹⁸ *Id.* ¶ 88 (emphasis added). Similarly, the Report’s introduction on postpaid service observed that following the release of the Thirteenth Report, “pricing competition among the nationwide service providers in the postpaid market initially centered on changes in the composition of pricing plans, rather than outright price cuts.” *Id.* ¶ 89. It then failed to acknowledge that a price war did in fact ensue.

⁵⁹⁹ CRAIG MOFFETT ET AL., BERNSTEIN RESEARCH, U.S. WIRELESS: PRE-PAID PRICING... FIFTY IS THE NEW ONE HUNDRED 1 (April 14, 2009).

⁶⁰⁰ SIMON FLANNERY AND SEAN ITTEL, MORGAN STANLEY, TELECOM SERVICES: LOWERING LEAP/PCS ESTIMATES ON PREPAID PRESSURES 2 (Sept. 11, 2009).

E. The *Report* Erred in Using Investment and Profitability as Indices of Competition

1. The *Report* Overstated the Relevance of the Capex/Revenue Ratio and Understated Investment by the Largest Providers

The *Report* relies on flawed metrics in assessing carrier investment. In the *Fourteenth Report Public Notice*, the Bureau requested detailed information on capital expenditures as a metric to analyze the performance of the mobile wireless industry.⁶⁰¹ Building on that, the *Competition NOI* sought additional comment on “the relationship between competition and domestic investment in the mobile wireless ecosystem” and “what data should we use to measure investment (e.g., return on investment, return on invested capital, operating margins).”⁶⁰² The responsive record contained significant analysis explaining why data concerning capital expenditures (“capex”) relative to revenue is not a useful metric in evaluating a market’s competitiveness.⁶⁰³ Nonetheless, the *Report* completely ignores the record and proceeds to rely on a “capex-to-revenue ratio” to form the basis for one of the *Report*’s “key” findings: “robust capital investment but declining relative to industry size.”⁶⁰⁴ The *Report* also cites industry-wide

⁶⁰¹ See Wireless Telecommunications Bureau Seeks Comment on Commercial Mobile Radio Services Market Competition, WT Docket 09-66, *Public Notice* DA 09-1070, at 9 (WTB May 14, 2009) (“*Fourteenth Report Public Notice*”) (“Did capital expenditures by CMRS providers increase or decrease during 2008? For what purposes are providers using capital expenditures? Are there any studies or analyst reports on the capital expenditures of nationwide providers versus regional/local providers? Does data exist on capital expenditures by geographic region?”).

⁶⁰² 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, *Notice of Inquiry*, 24 FCC Rcd 11357, 11366 ¶ 28 (2009) (“*2009 Competition NOI*”).

⁶⁰³ See, e.g., Reply Comments of Verizon Wireless, WT Docket No. 09-66, at 23-24 (filed Oct. 22, 2009) (“Verizon Reply Comments”); Reply Comments of AT&T Inc., WT Docket No. 09-66, at 21-23 (filed Oct. 22, 2009).

⁶⁰⁴ *Fourteenth Report*, Executive Summary at 6.

CTIA data for the proposition that “annual capital investment as a percentage of total revenue has been declining.”⁶⁰⁵ The clear suggestion is that this trend is somehow problematic.

As Verizon Wireless explained in 2009, capital investment levels are strongly affected by factors completely unrelated to a company’s revenues in the same year, and more closely linked to technological cycles, the cost of capital, and other factors.⁶⁰⁶ For example, capital-intensive firms are likely to undertake substantial capital investments early on, and to follow that initial period with a period of declining capex-to-revenues ratios, in part because over the life cycle of a technology, capital costs reduce due to scale, until technological developments and changing business conditions warrant a new round of heavy investment (again, as a percentage of revenue). This cycle is particularly relevant to the wireless industry, where providers begin operations with very high capex and very low revenues. Indeed, the capex-to-revenue ratio is likely to oscillate precisely *because of* the relationship between today’s investment and tomorrow’s revenues. Investment often will not give rise to additional revenues for years to come, and there is no reason to believe that investment will keep pace with revenues, or vice versa.⁶⁰⁷ In fact, successful investment might have the effect of *decreasing* the capex-to-revenues ratio (by increasing the denominator in the equation in the years following an investment), and *failed* investment might have the effect of *increasing* the ratio (by decreasing

⁶⁰⁵ *Id.* ¶ 212.

⁶⁰⁶ See, e.g., WILLIAM L. MEGGINSON & SCOTT B. SMART, INTRODUCTION TO CORPORATE FINANCE 670-74 (2004) (discussing financial factors influencing long-term investment decisions); Duke K. Bristow, Benjamin D. King & Lee R. Petillon, *Venture Capital Formation and Access: Lingering Impediments of the Investment Company Act of 1940*, 2004 COLUM. BUS. L. REV. 77, 80, 128 n.4 (2004) (“Investment of risk capital is cyclical in nature....”), cited in Verizon Reply Comments at 22 n.102.

⁶⁰⁷ “[C]apital goods do not begin to yield benefits until they are actually being used. Often the decision to build a building or purchase a piece of equipment must be made years before the actual project is completed.” KARL E. CASE & RAY C. FAIR, PRINCIPLES OF ECONOMICS 262 (1989), cited in Verizon Reply Comments at 23 n.103.

it). Thus, a framework that affords significant weight to the capex-to-revenues ratio perversely punishes success and rewards failure.

Moreover, an analysis of capex alone does not take into consideration the expense of acquiring spectrum. In the past four years alone, wireless carriers have invested more than \$32.5 billion in acquiring new spectrum in Auction 66 (AWS-1) and Auction 73 (700 MHz Band).⁶⁰⁸ Thus, an increase in spectrum-related spending relative to capital expenditures might appear to reflect a decrease in the capex-to-revenue ratio, even though spectrum investments could be at very high levels and could more effectively serve consumer needs in a given period than spending that would fall into the “capex” category.⁶⁰⁹

As a result, the Executive Summary incorrectly understates investment, as well as leaves the false implication that capex relative to revenue is relevant to the competitive analysis.

2. Profitability Is Not a Reliable Indicator of Competition

The FCC also erred in introducing profitability into its assessment of the competitiveness of the CMRS market. The *Fourteenth Report Public Notice* sought comment on methods for analyzing the profitability of wireless telecommunications as an indicator of effective competition,⁶¹⁰ which the *Competition NOI* expanded upon.⁶¹¹ Again, the record included substantial evidence, as well as scholarly study backed up by enforcement experience,

⁶⁰⁸ See Auction of 700 MHz Band Licenses Closes; Winning Bidders Announced for Auction 73, *Public Notice*, 23 FCC Rcd 4572 (WTB 2008); Auction of Advanced Wireless Services Licenses Closes; Winning Bidders Announced for Auction 66, *Public Notice*, 21 FCC Rcd 10521 (WTB 2006).

⁶⁰⁹ The Executive Summary of the *Report* neglects to point out that three of the four nationwide providers, including Verizon Wireless, invested *more* in 2009 than in the previous two years, notwithstanding the recent economic downturn. Only Sprint showed a decline, which the *Report* suggests is attributable to its loss of customers. See *Fourteenth Report*, ¶ 213.

⁶¹⁰ *Public Notice* at 12.

⁶¹¹ *2009 Competition NOI* at ¶ 28.

demonstrating that accounting profit is not a reliable indicator of the state of competition in a market.⁶¹² This record appears to have been ignored, as no points raised were addressed. The *Fourteenth Report* instead concluded that, “[m]easures of profitability are useful indicators of absolute and relative provider performance, entry and exit conditions, growth conditions, and the intensity of rivalry.”⁶¹³ The *Report* contains a detailed analysis of providers’ profitability using Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) margin (EBITDA divided by service revenue), by EBITDA per subscriber, and by EBITDA minus capital expenditures (EBITDA minus capex) per subscriber.

As former FCC Chief Economist Michael Katz stated, “[i]t is well-recognized among economists that accounting measures of profitability are ill-suited for gauging competitive intensity. There are several well-known ways in which accounting profits diverge from economic profits. This divergence is a serious issue because economic profits are the measure relevant to the assessment of market performance.”⁶¹⁴ Even positive economic profit in the short term does not demonstrate anything apart from the fact that a provider has taken a risk by investing capital and that risk has—for the moment—borne fruit.⁶¹⁵ Economist Michael Topper

⁶¹² See, e.g., Verizon Wireless 2009 *Competition NOI* Comments at 16.

⁶¹³ *Fourteenth Report*, ¶ 4.

⁶¹⁴ KATZ at ¶ 5.

⁶¹⁵ See *id.* (“Even if it were possible to estimate economic profits accurately, the existence of positive economic profits does not indicate that competition is ineffective or that regulatory intervention is warranted. It is necessary to account for both the stochastic nature of competitive outcomes and the costs and limitation of governmental intervention. With respect to the stochastic nature of outcomes, high ex post levels of profit are consistent with low ex ante or expected levels of profit, which are what drive investment decisions.”) (emphasis omitted). Similarly, as Carl Shapiro (currently the Assistant Attorney General for Economics at the Department of Justice Antitrust Division) testified before the Antitrust Modernization Commission, “[I]t is error to infer genuine antitrust market power based on the gap between price and marginal cost. This error may be more pronounced in innovative industries . . . The gap between price and marginal cost provides a necessary return to cover various fixed costs, including R&D costs in innovative industries and the ‘first-copy’ in content-based markets. The key point to bear in mind here is that the competitive price can easily and significantly exceed marginal cost.” Carl Shapiro, Antitrust, (continued on next page)

further explains: “As is well known, the concept of accounting profits differs significantly from an economic-based concept of profits. For example, opportunity cost is virtually ignored under accounting profits, thereby neglecting the very important concept of risk and the returns to wireless providers for bearing the risk.”⁶¹⁶

Although some have argued that there is a strong positive relationship between high concentration and profitability that serves as an indicator of a lack of competition in a market,⁶¹⁷ research instead suggests that the relationship is not a reliable indicator and that superior performance could also account for the attainment and maintenance of large market shares over time.⁶¹⁸ Notably, attempts in the 1970s to base a competition enforcement program on the relationship between concentration and profitability were strikingly unsuccessful.⁶¹⁹ Thus, as noted above with respect to churn, increased profitability is the result of carriers’ focus on customer service, not any change in competition. Accordingly, the *Report* errs by attempting to use profitability as an indicator of competition in the market for mobile wireless services.

Innovation, and Intellectual Property, Testimony before the Antitrust Modernization Commission, at 7 (Nov. 8, 2005), <http://faculty.haas.berkeley.edu/shapiro/amcinnovation.pdf>.

⁶¹⁶ TOPPER at 22-23 (footnote omitted); see also Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 *American Economic Review* 82 (1983).

⁶¹⁷ See, e.g., Comments of Consumer Federation of America *et al.*, WT Docket No. 09-66, at 19-20 (filed June 15, 2009).

⁶¹⁸ See William E. Kovacic, *Failed Expectations: The Troubled Past and Uncertain Future of the Sherman Act as a Tool for Deconcentration*, 74 *IOWA LAW REVIEW* 1105, 1136-39 (1989) (discussing scholarship on issue); Almarin Phillips, *Market Concentration and Performance: A Survey of the Evidence*, 61 *NOTRE DAME L.REV.* 1099 (1986).

⁶¹⁹ Kovacic, *Failed Expectations*, 74 *IOWA LAW REVIEW* at 1108 (“Never in antitrust history has so massive a litigation program yielded such disappointing results. Most of the government’s deconcentration cases either collapsed before trial or failed to establish liability.”).

V. CONCLUSION

For the reasons discussed herein, the Commission should find that the mobile wireless market and adjacent markets subject to this review are effectively competitive and are producing substantial—and growing—consumer benefits. Further, the Commission should address and correct the analytical shortcomings of its *Fourteenth Report* described herein.

Respectfully submitted,

Bryan N. Tramont
Adam D. Krinsky
Russell P. Hanser

WILKINSON BARKER KNAUER, LLP
2300 N Street N.W., Suite 700
Washington, D.C. 20037
(202) 783-4141

Counsel to Verizon Wireless

/s/ Steven E. Zipperstein

Steven E. Zipperstein

Vice President, Legal & External Affairs &
General Counsel

John T. Scott, III

Vice President & Deputy General Counsel

VERIZON WIRELESS

1300 I Street N.W.

Suite 400 West

Washington, D.C. 20005

(202) 589-3760

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