

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993)	WT Docket No. 09-66
)	
Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless including Commercial Mobile Services)	

COMMENTS OF CTIA-THE WIRELESS ASSOCIATION®

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Dated: September 30, 2009

EXECUTIVE SUMMARY

CTIA agrees with the Commission that the wireless market is expanding. As demonstrated throughout these comments, the increasingly dynamic and complex wireless ecosystem is made up of not only wireless carriers, but also infrastructure suppliers, wireless device manufacturers, operating system providers, and applications developers. Even as the wireless market has evolved well beyond what the Commission has reviewed in its previous competition reports, it remains intensely competitive at every level.

During the past two years, the wireless market has transformed into a multi-faceted ecosystem, characterized by intensifying competition and innovation throughout all segments. As a result, U.S. consumers and businesses are reaping the benefits of the lowest prices, the highest minutes of use, the most innovative services and devices, the most robust mobile broadband networks, and the least concentrated wireless market among our global competitors. Indeed, the vibrant and highly dynamic nature of the mobile wireless ecosystem is confirmed by every major market indicator:

- number of competitors in each sector and relative market shares
- average minutes of use
- advertising expenditures
- capital expenditures and network investments
- subscribership levels
- number of devices manufactured for U.S. market
- operating system choices
- level of application development
- infrastructure deployments
- expanded consumer choice in service offerings
- network coverage
- pricing trends
- innovations in calling and data plans and offerings
- enhancements in service policies, customer care, and transparency

As the Commission's most recent CMRS Competition Report makes clear, by any measure, the mobile wireless ecosystem is the poster child for competition.

In comments filed today in the Commission's companion *Fostering Innovation and Investment in the Wireless Communications Market* docket, CTIA demonstrates that the U.S. wireless industry today is also defined by intense innovation and investment. The staggering innovation in wireless networks and services is in fact fueled by the highly competitive nature of the wireless market, in which providers in every segment of the wireless ecosystem are vying for consumers' favor. As former Vice President Gore said at CTIA WIRELESS 2009®, the U.S. has "the most competitive wireless industry of any nation in the world," which has resulted in "a continued pulse of investment to expand the capacity of broadband networks."

Importantly, the current fiercely competitive state of the mobile wireless sector was no accident: it emerged from long-standing, market-driven policies, embraced on a bipartisan basis, favoring flexibility over command-and-control and competition over economic regulation. As the information and data presented herein make clear, these policies have served U.S. consumers and the broader U.S. economy well. CTIA hopes that the current Commission will continue this tradition, and has highlighted additional steps that the Commission can take to facilitate on-going competition and ensure that consumers will continue to reap tremendous benefits from the mobile wireless sector.

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ATTACHMENTS:

- Attachment A: Letter from Christopher Guttman-McCabe, CTIA – The Wireless Association, to Marlene Dortch, Federal Communications Commission, WT Docket No. 09-66 (filed Sept. 10, 2009, *as amended* by Erratum filed Sept. 11, 2009).
- Attachment B: Best Buy Mobile Wireless Buyers’ Guide

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COMMENTS OF CTIA-THE WIRELESS ASSOCIATION®

CTIA – The Wireless Association® (“CTIA”)¹ hereby submits the following comments in response to the Federal Communications Commission’s (“Commission” or “FCC”) August 27, 2009 Notice of Inquiry (“*Mobile Wireless Competition NOI*” or “*NOI*”) in the above-referenced proceeding,² and looks forward to sharing with the Commission facts and data describing the vibrant, dynamic, and fiercely-competitive wireless “ecosystem.”³ CTIA agrees with the Commission that the wireless market is expanding. As demonstrated throughout these comments, this complex ecosystem, made up of not only wireless carriers, but also infrastructure suppliers, wireless device

¹ CTIA – The Wireless Association® is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service (“CMRS”) providers and manufacturers, including cellular, Advanced Wireless Service, broadband PCS, ESMR, and 700 MHz licensees, as well as providers and manufacturers of wireless data services and products.

² *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*, WT Docket No. 09-66, Notice of Inquiry, FCC 09-67 (rel. Aug. 27, 2009) (“*Mobile Wireless Competition NOI*” or “*NOI*”).

³ *Id.* at ¶ 1.

manufacturers, operating system providers, and application developers, is intensely competitive at every level.

I. INTRODUCTION

CTIA welcomes the Commission's latest review of the state of competition in the mobile wireless market and appreciates the Commission's efforts to "expand and enhance" its fact-based analysis of competitive conditions. As CTIA details in these comments, while the wireless market has maintained the vigorously competitive nature that has formed the basis for FCC findings of effective competition during each of the past 13 years, the wireless market has also evolved well beyond what the Commission has reviewed in its previous competition reports. During the past two years, the wireless market has transformed into a complex and dynamic ecosystem, characterized by intensifying competition and innovation throughout all segments of the wireless ecosystem. As a result, U.S. consumers and businesses are reaping the benefits of the lowest prices, the highest minutes of use, the most innovative services and devices, the most robust mobile broadband networks, and the least concentrated wireless market among our global competitors.

CTIA also lauds the Commission for seeking new public input on its already detailed analytical framework, exploring ways to improve the quality and rigor of its economic analysis and seeking new sources of relevant data. The *NOI*'s expanded scope of inquiry into the broader mobile wireless "ecosystem" should benefit the Commission's future policy making. Even as the Commission seeks to broaden its focus, CTIA suggests that the Commission has in its precedents the right tools to assess the competitive nature of the wireless ecosystem. Rather than seeking to "modify or change the analytic framework used ... to analyze competitiveness in the mobile wireless

market,”⁴ the Commission should continue to base its findings on the sound economic principles and the market-based framework used traditionally by the Commission.

In reviewing the broader mobile wireless ecosystem, the Commission will see that the relevant data clearly show that all segments – service providers, infrastructure suppliers, wireless device manufacturers, operating system providers, and applications developers – are fiercely competitive. The vibrant and highly dynamic nature of the mobile wireless ecosystem is confirmed by every major market indicator:

- number of competitors in each sector and relative market shares
- average minutes of use
- advertising expenditures
- capital expenditures and network investments
- subscribership levels
- number of devices manufactured for U.S. market
- operating system choices
- level of application development
- infrastructure deployments
- expanded consumer choice in service offerings
- network coverage
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- enhancements in service policies, customer care, and transparency

As the Commission’s most recent CMRS Competition Report makes clear, by any measure, the mobile wireless ecosystem is the poster child for competition.

In comments filed today in the Commission’s companion *Fostering Innovation and Investment in the Wireless Communications Market* docket, CTIA demonstrates that the U.S. wireless industry today is defined by intense innovation and investment.⁵ As CTIA explains in this filing, the staggering innovation in wireless networks and services is in fact fueled by the highly competitive nature of the wireless market, in which

⁴ *NOI* at ¶ 7.

⁵ CTIA Comments, WT Docket No. 09-66 (filed Sept. 30, 2009) (“*2009 CTIA Innovation and Investment Comments*”).

providers in every segment of the wireless ecosystem are vying for consumers' favor. As former Vice President Gore said at CTIA WIRELESS 2009®, the U.S. has “the most competitive wireless industry of any nation in the world,” which has resulted in “a continued pulse of investment to expand the capacity of broadband networks.”⁶

Importantly, the current fiercely competitive state of the mobile wireless sector was no accident: it emerged from long-standing, market-driven policies, embraced on a bipartisan basis, favoring flexibility over command-and-control and competition over economic regulation. As the information and data presented herein make clear, these policies have served U.S. consumers and the broader U.S. economy well. For example, as economists Gregory Rosston and Michael Topper recently observed: “Recent developments suggest that wireless providers are responding to consumer demands for more ‘openness’ to third-party content and applications without the need for regulatory mandate.” CTIA hopes that the current Commission will continue this tradition, and has highlighted additional steps that the Commission can take to facilitate on-going competition and ensure that consumers will continue to reap tremendous benefits from the mobile wireless sector.

II. THE STRUCTURE OF THE U.S. WIRELESS MARKET REVEALS A COMPLEX ECOSYSTEM, EACH SEGMENT OF WHICH DEMONSTRATES INTENSE COMPETITION

The mobile wireless market is no longer simply made up of wireless carriers but is now a complex and dynamic ecosystem, with competition and innovation flourishing at every level. Service providers, infrastructure suppliers, wireless device manufacturers,

⁶ See Reuters, *International CTIA WIRELESS 2009® Keynote Remarks from Al Gore Identify Wireless as the Solution to Key Challenges Faced by the Climate, Economy and Global Security* (Apr. 6, 2009), available at <http://www.reuters.com/article/pressRelease/idUS186772+06-Apr-2009+BW20090406> (last visited Sept. 23, 2009) (“Vice President Gore remarks”).

operating system providers, and applications developers all compete vigorously to win new customers and meet existing customers’ emerging needs. Importantly, the wireless industry and its value chain are neither linear nor static, and the dynamic interaction between these component parts is creating a “virtuous cycle” of innovation and consumer benefits.



A. Service Providers

A wide variety of facilities- and non-facilities-based wireless carriers vie head-to-head to win and retain consumers’ business. There are eight facilities-based carriers that serve more than one million subscribers, more than 140 separate wireless carriers, and 43 non-facilities based Mobile Virtual Network Operators (“MVNOs”).⁷ These carriers compete and differentiate themselves through service offerings, usage plans, network coverage and reliability, and service quality and customer care, among other features.

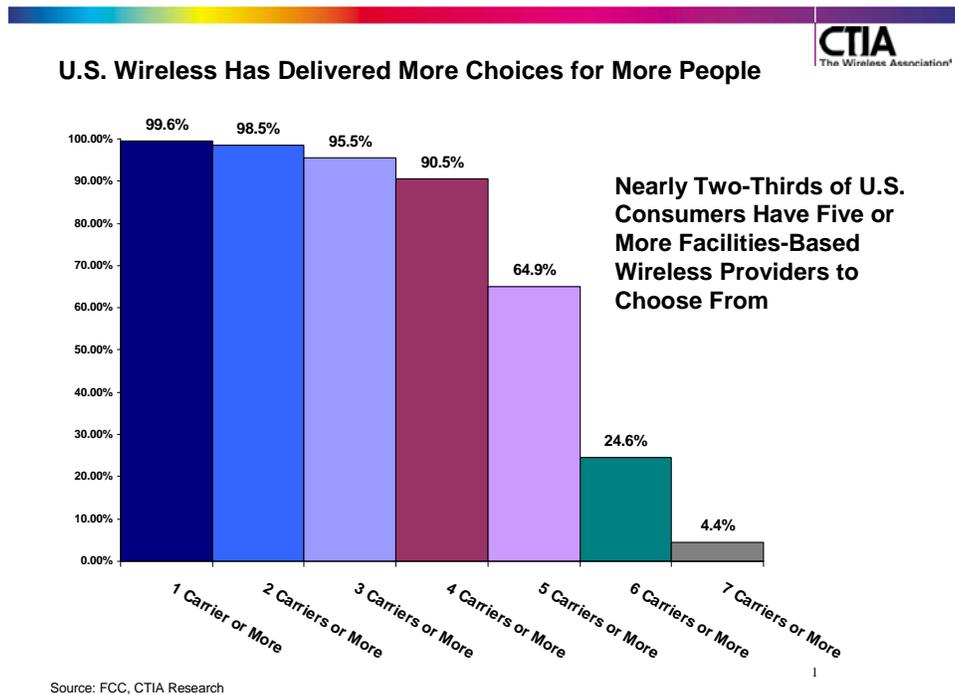
Consumers Enjoy a Wide Array of Choice of Service Providers

As CTIA has demonstrated in prior filings, American consumers have more choices than consumers in nearly every developed country in the world. As the FCC itself has found, more than 95.5% of Americans have a choice of three or more facilities-

⁷ See CTIA’s Wireless Industry Indices: Semi-Annual Data Survey Results: A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry, Year-End 2008 Results, at 4 (May 26, 2009) (“CTIA’s Wireless Industry Indices Report”); see also Nick Jotischky et al., *Global MVNO Operations - A study of current business models and emerging opportunities*, Informa Telecoms & Media (May 2009), available at <http://www.telecomsmarketresearch.com/research/TMAAAQPN-WCIS-Insight--Global-MVNO-Operations---A-study-of-current-business-models-and-emerging-opportunities.shtml> (last accessed Sept. 23, 2009) (“Global MVNO Operations”) (“The MVNO market remains competitive in USA with 43 such companies in operation . . . as of 3Q 2008.”).

based wireless carriers, with each offering a different combination of services and features. In addition, 90.5% of Americans have a choice of four or more facilities-based wireless carriers, while 64.9% have a choice of five or more.⁸

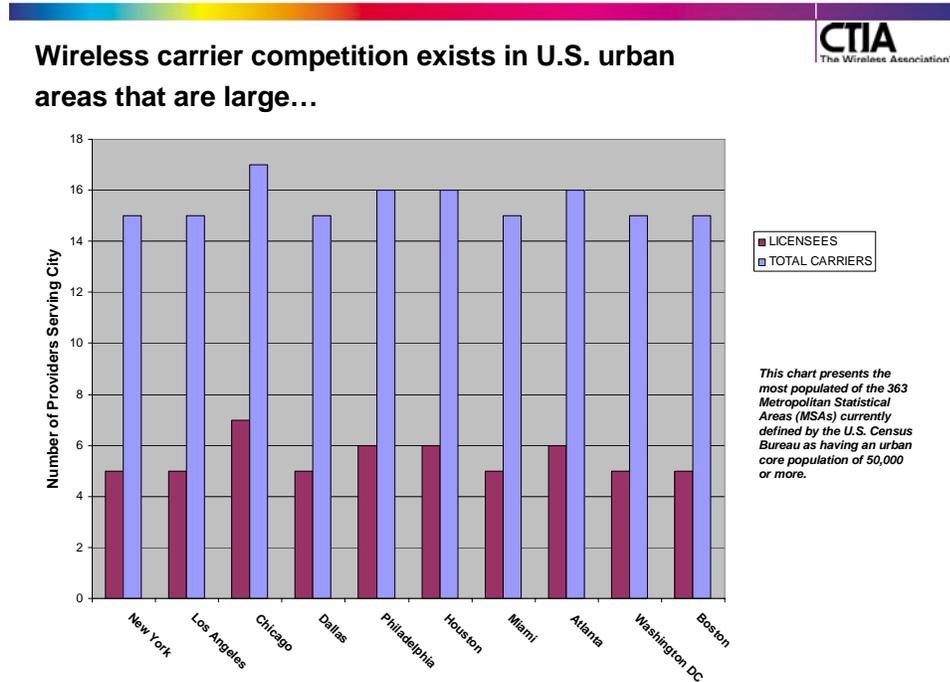
Based on FCC data, the following chart illustrates the robust array of facilities-based wireless providers available to U.S. consumers:



These numbers are significantly enhanced when MVNO competition is considered. Competition between wireless service providers is not limited to the largest urban areas, rather it extends broadly across the country. In the following two charts, CTIA demonstrates that there is vigorous competition in the top 10 largest Metropolitan Statistical Areas (“MSAs”) in the nation, but also in the 10 least populous Core Based Statistical Areas (“CBSAs”) in the nation (*i.e.*, CBSAs nos. 931-940).

⁸ See, e.g., Comments of CTIA – The Wireless Association, WT Docket No. 09-66, at 3 (filed June 15, 2009) (“CTIA CMRS Competition Report Comments”).

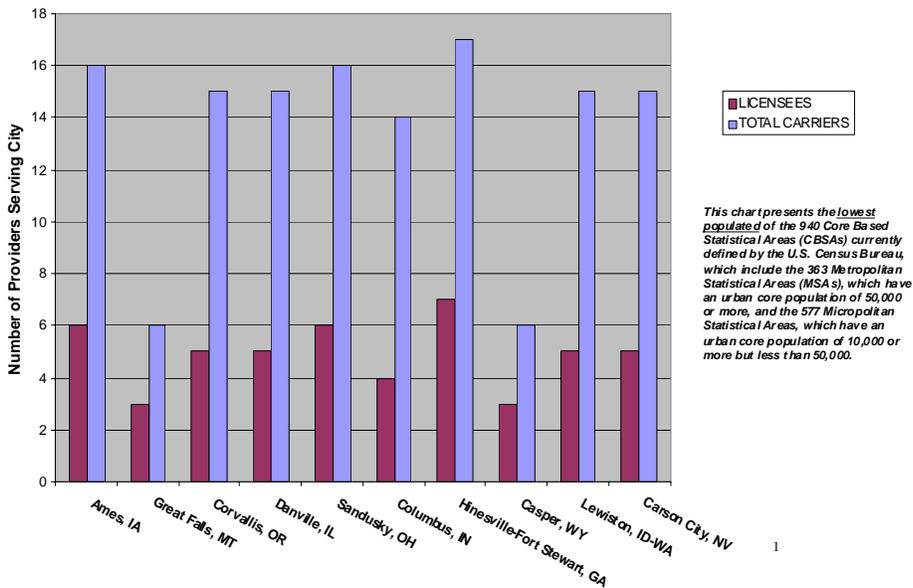
The following chart depicts the staggering levels of competition in the most populous MSAs:



As depicted in this chart, there are no less than five facilities-based wireless carriers in every one of these large U.S. metropolitan areas. Considering facilities-based and non-facilities based providers, there are no less than fourteen providers in each area. Given this abundance of wireless service providers, it is no surprise that we witness the intense competitive behavior described below.

As a complement to the chart above, CTIA also looked at the ten least populous of the 940 CBSAs and also found abundant competition among service providers, with no fewer than three facilities-based providers and, in many cases, fourteen or more providers in total:

...and U.S. cities that are small!



By any measure, consumers have abundant choices when selecting their wireless provider, and carriers compete vigorously to meet U.S. consumers’ wireless needs.

U.S. Has Least Concentration and Lowest HHI When Compared to Global Competitors in Europe and Asia

Though some critics have argued that wireless competition is more robust in Europe and Asia, the facts belie those claims. The U.S. market is the most competitive of the 26 Organization for Economic Co-Operation and Development (“OECD”) countries tracked by Bank of America/Merrill Lynch (“BofA/Merrill Lynch”) in the *Global Wireless Matrix*, with the lowest Herfindahl-Hirschman Index (“HHI”) measurement in the group.⁹ The combined market share of the top two U.S. carriers, moreover, is less

⁹ See Attachment A; see also Letter from Christopher Guttman-McCabe, CTIA – The Wireless Association, to Marlene Dortch, Federal Communications Commission, GN Docket No. 09-51, WC Docket No. 07-52 (filed May 12, 2009) (citing Glen Campbell et al., *Global Wireless Matrix: 1Q09, The Slowdown*, Bank of America / Merrill Lynch, at 186 (Apr. 13, 2009) (“BofA / Merrill Lynch”)) (“May 12, 2009 CTIA Ex Parte”).

than that of the top two providers in all but one of those 26 OECD countries:¹⁰ That means that the U.S. is less concentrated than all of the reviewed countries of Europe and Asia.

The following charts overwhelmingly demonstrate that, despite protestations of some commenters that the U.S. wireless industry lacks competition, it is in fact the most competitive market of all those surveyed by BofA/Merrill Lynch:

Wireless Mobile Competition in OECD Countries, 4Q08						
HHI Values						
Operators	1	2	3	4	Others	HHI Sum
Australia	1,656.49	1,062.76	324.00	75.69	0.00	3,118.94
Austria	1,814.76	1,036.84	380.25	33.64	0.00	3,265.49
Belgium	1,998.09	954.81	595.36	0.00	0.00	3,548.26
Canada	1,354.24	936.36	806.56	4.00	4.84	3,106.00
Czech Republic	1,592.01	1,497.69	453.69	0.00	0.00	3,543.39
Denmark	2,134.44	702.25	475.24	31.36	0.00	3,343.29
Finland	1,560.25	1,406.25	533.61	0.00	0.00	3,500.11
France	2,218.41	1,310.44	278.89	0.00	0.00	3,807.74
Germany	1,332.25	1,135.69	275.56	174.24	0.00	2,917.74
Greece	1,697.44	954.81	778.41	0.00	0.00	3,430.66
Hungary	1,927.21	1,232.01	479.61	0.00	0.00	3,638.83
Italy	1,482.25	1,102.24	349.69	94.09	0.00	3,028.27
Japan	2,460.16	784.00	334.89	17.64	0.00	3,596.69
Korea	2,550.25	992.25	324.00	0.00	0.00	3,866.50
Mexico	5,227.29	388.09	20.25	12.25	0.00	5,647.88
Netherlands	2,480.04	729.00	533.61	0.00	0.00	3,742.65
New Zealand	2,777.29	2,237.29	0.00	0.00	0.00	5,014.58
Norway	3,069.16	1,989.16	0.00	0.00	0.00	5,058.32
Poland	1,082.41	1,043.29	912.04	21.16	0.00	3,058.90
Portugal	1,953.64	1,260.25	412.09	0.00	0.00	3,625.98
Spain	2,025.00	992.25	470.89	3.24	0.00	3,491.38
Sweden	2,171.56	858.49	275.56	54.76	0.00	3,360.37
Switzerland	3,831.61	416.16	316.84	0.00	0.00	4,564.61
Turkey	3,102.49	635.04	364.81	0.00	0.00	4,102.34
United Kingdom	650.25	630.01	484.00	436.81	42.25	2,243.32
United States	812.25	712.89	331.24	146.41	210.25	2,213.04

Note that this calculation actually overstates the YE2008 HHI for the US, as it counts all "others" as a single operator with a 14.5% market share, instead of as 145 separate operators, with market shares ranging from 5% to less than 0.001%. Also note that when the United State numbers are adjusted to account for the Verizon Wireless – Alltel transaction (which took place in 1Q09) the overstated U.S. HHI still rises to only 2280. Source: Merrill Lynch, "Global Wireless Matrix 4Q08"

Source: BofA / Merrill Lynch, Global Wireless Matrix

¹⁰ *Id.*

Market Shares -- No Wireless Carrier Has a Dominant Share of the Market

Importantly, no single carrier has anything close to a dominant share of the market for mobile wireless services. As of the end of 2008, the following were the customer totals and market shares for the largest wireless providers: AT&T Mobility (“AT&T”) – 77.0 million customers (28.5 % of the market); Verizon Wireless – 72.2 million (26.7 %); Sprint Nextel Corporation (“Sprint Nextel”) – 49.2 million (18.2 %); and T-Mobile USA (“T-Mobile”) – 32.8 million (12.1 %).¹¹ Other carriers served 39.2 million customers (14.5 %).¹² Moreover, far from being stable, market shares have shown considerable variation over time, suggesting a sector not needing regulation to shake it out of the doldrums.

Again, international comparison demonstrates the strength of competition in the U.S. wireless market. For example, the U.K. Office of Communications’ (“Ofcom”) recent “Mostly Mobile” report illustrates further why the U.S. market continues to set the standard for wireless competition.¹³ In the United Kingdom, which Ofcom found to be the most competitive market in Europe, the top four wireless carriers serve 93.5% of the market, and the top five network operators serve 100% of the market.¹⁴ By comparison, the U.S. wireless market is even more competitive and less concentrated. As of year-end 2008, the top four U.S. carriers served 85% of the market, and the top five served less

¹¹ *Id.*

¹² *Id.*

¹³ See Ofcom, *Mostly Mobile – Ofcom’s Mobile Sector Assessment* (July 9, 2009), available at <http://www.ofcom.org.uk/consult/condocs/msa/msa.pdf> (“Mostly Mobile”). See also Letter from Christopher Guttman-McCabe, CTIA – The Wireless Association, to Marlene Dortch, Federal Communications Commission, WT Docket No. 09-66, available at http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=7020038256, (filed Sept. 10, 2009, as amended by Erratum filed Sept. 11, 2009) (included as Attachment A) (“2009 CTIA Ofcom Mostly Mobile Ex Parte”).

¹⁴ May 12, 2009 CTIA *Ex Parte*.

than 90% of the market. The Ofcom report also shows that the benefits of competition are flowing to consumers not only in the form of lower prices, but also through new services and innovation.¹⁵

The following chart illustrates the market shares of the 26 countries surveyed by BofA/Merrill Lynch:

Wireless Mobile Competition in OECD Countries, 4Q08					
Mobile Operator Market Share by Subscribership (%)					
Number of Operators	1	2	3	4	Others
Australia	40.7	32.6	18	8.7	
Austria	42.6	32.2	19.5	5.8	
Belgium	44.7	30.9	24.4		
Canada	36.8	30.6	28.4	2	2.2
Czech Republic	39.9	38.7	21.3		
Denmark	46.2	26.5	21.8	5.6	
Finland	39.5	37.5	23.1		
France	47.1	36.2	16.7		
Germany	36.5	33.7	16.6	13.2	
Greece	41.2	30.9	27.9		
Hungary	43.9	35.1	21.9		
Italy	38.5	33.2	18.7	9.7	
Japan	49.6	28	18.3	4.2	
Korea	50.5	31.5	18		
Mexico	72.3	19.7	4.5	3.5	
Netherlands	49.8	27	23.1		
New Zealand	52.7	47.3			
Norway	55.4	44.6			
Poland	32.9	32.3	30.2	4.6	
Portugal	44.2	35.5	20.3		
Spain	45.0	31.5	21.7	1.8	
Sweden	46.6	29.3	16.6	7.4	
Switzerland	61.9	20.4	17.8		
Turkey	55.7	25.2	19.1		
United Kingdom	25.5	25.1	22	20.9	6.5
United States	28.5	26.7	18.2	12.1	14.5

* The figure for the third U.S. carrier was increased to account for their wholly-owned MVNO subsidiary.

Source: BofA / Merrill Lynch, Global Wireless Matrix

¹⁵ See, e.g., Mostly Mobile at 28. For example, considering both price and minutes of use, U.S. consumers fare better than their UK counterparts, as the price per minute in the UK is 140% above the U.S., \$0.12 to \$0.05, and the minutes of use per month in the UK is below 200, while in the U.S. it is above 800. May 12, 2009 CTIA *Ex Parte* at 3; see also 2009 CTIA *Ofcom Mostly Mobile Ex Parte* at 1-2.

Steady Flow of New Entrants

Although providing wireless services is a capital-intensive enterprise, opportunities for new competitors to enter the market remain readily available. Thus, even though there has been some consolidation among existing carriers, the number of choices in many markets actually is growing, not shrinking. In fact, new service providers have emerged from both the 700 MHz and Advanced Wireless Services (“AWS-1”) auctions, including EchoStar, Chevron, Cox Communications (“Cox”), and Stelera Wireless.¹⁶ Additionally, companies like T-Mobile, Leap Wireless, and MetroPCS Communications acquired significant spectrum in the AWS-1 auction to expand service to new areas. A number of the other incumbent companies that acquired spectrum in these auctions have already begun delivering service in their expanded service areas, increasing competition in these new markets.¹⁷ New entrants have gained access to the spectrum they need both through the auction process and through spectrum leasing or resale arrangements with existing facilities-based carriers.¹⁸

In addition, wireless providers are leveraging other platforms as well. For example, on September 30, 2009, AT&T and Terrestar Networks announced plans to offer an integrated solution combining AT&T’s primary cellular wireless connectivity with the ability to connect to a Terrestar’s satellite network as a backup, using one phone

¹⁶ *Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4573, Attachment A (Mar. 20, 2008).

¹⁷ *See, e.g., Roger Cheng, 3rd UPDATE: MetroPCS, Leap Wireless See Subscriber Growth*, Wall Street Journal (May 7, 2009).

¹⁸ *See, e.g., Marguerite Reardon, Cox to Offer Wireless Service*, CNET, Oct. 27, 2008, available at http://news.cnet.com/8301-1035_3-10076435-94.html?tag=mncol;title (last accessed Sept. 23, 2009) (“Cox isn’t stopping with just reselling Sprint’s wireless service. It also plans to build a 3G wireless network. And it will eventually build a 4G network using LTE technology [with] the nearly \$550 million worth of spectrum it bought in the . . . AWS and the 700 MHz wireless auctions.”).

number and one smartphone device. Aimed primarily toward enterprise and government users, TerreStar will offer its Genus™ dual-mode cellular / satellite smartphone to enable users to access TerreStar’s satellite network when AT&T’s cellular wireless network is unavailable.¹⁹

U.S. Consumers Enjoy a Robust MVNO Market

A dynamic resale market for mobile wireless services has also emerged. MVNOs continue to compete with facilities-based providers and offer personalized, differentiated products and services, with 43 MVNOs operating in 2008.²⁰ These MVNOs target specific demographic and specialized interest groups by appealing to various lifestyles, age groups, and speakers of different languages, offering everything from “hip and trendy” features to affordable and user-friendly options.²¹ Two nationwide MVNOs, TracFone and Virgin Mobile USA, serve roughly 16.6 million subscribers offering affordable handsets and (primarily) pre-paid plans.²² As with facilities-based carriers, the MVNO community has seen both entry and exit of service providers due to the

¹⁹ See AT&T News Release, AT&T Announces Agreement with Terrestar to Offer Integrated Cellular / Satellite Solution, Sept. 30, 2009, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=27180> (last visited Sept. 30, 2009); Terrestar Networks News Release, Terrestar Announces Distribution Agreement with AT&T, Sept. 30, 2009, available at <http://www.terrestar.com/press/20090930.html> (last visited Sept. 30, 2009).

²⁰ See generally Global MVNO Operations, *supra* note 7.

²¹ See *CNET’s Quick Guide: MVNO Carriers*, CNET, at http://reviews.cnet.com/4520-3504_7-6780359-3.html?tag=lnav (last accessed Sept. 23, 2009). For example, Boost Mobile and Virgin Mobile appeal to young urbanites and the “twenty-something” demographic, while Kajeet is focused on “tweens” and Jitterbug by Greatcall, Inc. serves the needs of senior citizens.

²² See Press Release, Virgin Mobile USA, Virgin Mobile USA Announces Selected Q4 and 2008 Subscriber Information (Jan. 7, 2009), available at <http://www.reuters.com/article/pressRelease/idUS135042+07-Jan-2009+PRN20090107> (last accessed Sept. 23, 2009); America Movil, America Movil’s Fourth Quarter of 2008 Financial and Operating Report (Feb. 8, 2009), available at http://www.americamovil.com/docs/reportes/eng/2008_4.pdf (last accessed Sept. 23, 2009).

competitive intensity of the wireless marketplace, thus compelling MVNOs to modify their offerings in response to consumer demand, combine with competitors, or exit the market.²³



B. Infrastructure Suppliers

A wireless carrier’s service is only as good as the network it rides on. The transformation of the network from voice-centric to multi-media confirms the significant levels of innovation and investment that have occurred in the network over the past 30 years. From first generation analog networks focused on voice calls to the broadband and video capabilities of today’s systems – the developments are staggering. Now, we are entering an entirely new phase with LTE and WiMAX deployments that will further advance the virtuous cycle of innovation and investment in the wireless sector.

Service providers are constantly working with their infrastructure suppliers to expand and upgrade their networks, and over the past several years have deployed high-speed networks to reach more than 234 million people. Third generation (“3G”) broadband technologies Evolution-Data Optimized (“EV-DO”) Rev. A and High-Speed Packet Access (“HSPA”) offer average download speeds between 400-600 kbps (or more), and burst speeds up to 1.6 Mbps. More high-speed facilities are being deployed

²³ See Tara Seals, *Virgin Mobile to Acquire Helio*, XCHANGE, June 27, 2008, at <http://www.xchangemag.com/hotnews/mvno-virgin-mobile-to-acquire-helio.html> (last accessed Sept. 23, 2009) (“Call it a tale of two business models: Successful MVNO Virgin Mobile USA Inc. will take over struggling MVNO Helio”); *Virgin Mobile – Helio is Now Part of Virgin Mobile*, available at <http://web.virginmobileusa.com/helio>.

every day, and providers are transitioning to 4G technology (generally LTE or WiMAX) with downlink speeds approaching 40 Mbps for WiMAX and 100 Mbps for LTE.

A number of infrastructure suppliers – including Alcatel-Lucent, Avaya, Ericsson, Motorola, and Nokia Siemens Networks – are competing fiercely to build out carriers’ 3G networks and provide HSPA technology to carriers using the Global System for Mobile communications (“GSM”) standard and EV-DO technology to carriers using the Code Division Multiple Access (“CDMA”) standard. In addition, suppliers such as Huawei are also expanding their efforts in the U.S. wireless infrastructure market.²⁴ Infrastructure suppliers are also competing for 4G network contracts. Two competing platforms – LTE and WiMAX – have emerged, and suppliers are already working with carriers to conduct network testing and deployment trials.

The U.S. is a world leader in the deployment of mobile broadband infrastructure, and these advanced networks are facilitating an increasingly robust mobile broadband experience for consumers. For comparison purposes, while all of North America accounts for approximately 7% of the total world-wide GSM subscribers, the U.S. alone has 24% of the world’s 130+ million 3rd Generation GSM HSPA subscribers. Indeed, AT&T has more HSPA subscribers than any other carrier in the world. Similarly, looking at EV-DO technology, used by Verizon Wireless, Sprint Nextel, Leap Wireless, and other carriers, there are 63.1 million subscribers in the U.S., out of a total 106.78 million worldwide. Thus, 59% of all EV-DO subscribers are in the United States.

As with other areas of the mobile wireless ecosystem, the infrastructure supplier segment continues to evolve. The recent Sprint Nextel-Ericsson network services agreement reflects the innovative relationships developing between companies at

²⁴ “Huawei Poised to Crack U.S. Market?”, *Wireless Week* (Mar. 27, 2009).

different levels of the competitive wireless ecosystem. Pursuant to the agreement, Ericsson assumed responsibility for day-to-day operations for Sprint Nextel's CDMA, iDEN, and wireline networks. Sprint Nextel, meanwhile, retains ownership and control of the network assets, will continue to make network strategy and investment decisions, and will continue to control the customer experience and provide technical support.²⁵ Thus, this agreement is another example of the dynamic evolution that is taking place in the wireless industry.

The infrastructure segment also continues to develop and advance new product technologies and approaches to enhance coverage and capacity of the network.²⁶ For example, the industry is increasingly embracing the use of distributed antenna systems ("DAS") and other smart antenna technologies to improve network coverage. In fact, AT&T just completed the installation of a DAS system inside the new Dallas Cowboys stadium.²⁷ The network consists of more than 500 strategically placed antennas distributed throughout the stadium and provides integrated cellular coverage indoors and outside the stadium.

In addition, the development of femtocells to improve network coverage and capacity is a great example of the virtuous cycle of innovation and investment in the infrastructure segment. Femtocells are essentially personal cell sites installed in a home. These devices resemble a computer modem, receive nearby cell phone signals, and

²⁵ Press Release, Ericsson, Sprint Gains Network Advantage: Innovative Network Services Deal with Ericsson Delivers Competitive Edge (July 9, 2009), *available at* <http://www.ericsson.com/ericsson/press/releases/20090709-1328069.shtml> (last accessed Sept. 23, 2009).

²⁶ Vendors also work very closely with service providers to develop creative network management strategies. Most recently, Sprint Nextel and Ericsson announced a relationship under which Ericsson will manage operations of the Sprint Nextel network. *See Sprint Nextel Ericsson Network Deal: Seven Year Agreement Worth 5 Billion* (July 10, 2009) *available at* <http://www.phonesreview.co.uk/2009/07/10/sprint-nextel-ericsson-network-deal-seven-year-agreement-worth-5-billion/> (last visited Sept. 24, 2009).

²⁷ *See AT&T Provide Boost To Cowboys Stadium Mobile Connectivity* (Sept. 18, 2009), *available at* <http://www.stadiatech.com/7266> (last visited Sept. 24, 2009).

transmit the signals over a broadband connection. A number of carriers including, AT&T, Verizon Wireless, and Sprint have made femtocells available to consumers and some analysts predict that sales will jump eightfold in 2009 from the 100,000 sold in 2008.²⁸

These developments highlight the competition and innovation in the infrastructure supply segment of the wireless ecosystem.



C. Device Manufacturers

While there is an ongoing debate about service provider access to certain wireless devices, there can be no debate about the innovation and investment that has occurred in the device market over the past 30 years, particularly in recent years. As outlined below, there are at least 32 companies manufacturing devices into the U.S. market:

HANDSET MANUFACTURERS PRODUCING/SELLING IN THE U.S.		
Alcatel	HTC	PCD
Apple	Huawei	Research in Motion
ASUS	Jitterbug	Samsung
Axxesstel	Kyocera	Sanyo
BandRich	LG	Sharp
BenQ	Motorola	Siemens
Cal-Comp	Nokia	Sierra Wireless
Casio	Novatel Wireless	Sony Ericsson
Firefly	Option	Uniden
HP	Palm	Waxess USA
	Pantech & Curitel	ZTE

²⁸ See Andrew Berg, AT&T Launches Femtocell Solution (Sept. 21, 2009), *available at* <http://www.wirelessweek.com/News/2009/09/ATT-Femtocell-Solution/> (last visited Sept. 24, 2009); Chris Gaylord, Your Own Personal Cell Phone Tower (Sept. 14, 2009 ed.), *available at* <http://features.csmonitor.com/innovation/2009/09/14/your-own-personal-cell-phone-tower> (last visited Sept. 24, 2009).

With 32 companies manufacturing more than 630 unique devices for the U.S. market – more devices than in any other country in the world – the wireless device market in the U.S. is hyper-competitive.²⁹ For example, the 630 handsets manufactured for the U.S. market dwarfs the fewer than 180 available in the U.K.³⁰

Moreover, manufacturers continue to incorporate new features and applications that take advantage of the latest network upgrades and technologies and appeal to a wide variety of users. This evolution is particularly true over the past 18 months. As recently as mid-2008, the highest selling handset in the country was the Motorola RAZR. Since that time, the market has changed dramatically.³¹ As a result, handsets are becoming productivity tools, entertainment hubs, and information gateways in ways that are constantly evolving.

The following graphic depicts some of the many functionalities now available in U.S. consumers' wireless devices:

²⁹ As of February 12, 2009, manufacturers whose wireless devices are sold in the U.S. include Alcatel, Apple, ASUS, Axxesstel, BandRich, BenQ, Cal-Comp, Casio, Firefly, HP, HTC, Huawei, Jitterbug, Kyocera, LG, Motorola, Nokia, Novatel Wireless, Option, Palm, Pantech & Curitel, PCD, Research in Motion, Samsung, Sanyo, Sharp, Siemens, Sierra Wireless, Sony Ericsson, Uniden, Waxess USA, and ZTE.

³⁰ See BT, <http://www.bt.co.uk>; O2, <http://www.o2.co.uk>; 3, <http://www.3.co.uk>; Virgin Mobile, <http://www.virginmobile.com>; Carphone Warehouse, <http://www.carphonewarehouse.co.uk>; Vodafone, <http://www.vodafone.co.uk>. Handsets of the same model with differing color schemes were not counted as unique handsets.

³¹ Press Release, The NPD Group: iPhone 3G Leads U.S. Consumer Mobile Phone Purchases in the Third Quarter of 2008 (Nov. 10, 2008), available at http://www.npd.com/press/releases/press_081110.html (“The displacement of the RAZR by the iPhone 3G represents a watershed shift in handset design from fashion to fashionable functionality,” said Ross Rubin, director of industry analysis for NPD. “Four of the five best-selling handsets in the third quarter were optimized for messaging and other advanced Internet features.””).

Wireless Devices are Multi-Function Tools Convergence WITH Consumer Electronics



Source: QUALCOMM

The competitive environment continues to spark increasingly advanced devices. Currently, 84% of all new devices are Web-capable³² and 20% are equipped with Wi-Fi capability,³³ with more on the way. Touch screens are now available on 26% of all new devices.³⁴ Additionally, consumers have access to unlocked handsets that can be attached to any compatible carrier's network. U.S. consumers are rapidly embracing a world of wireless devices beyond smartphones, including laptops, netbooks, and special function devices such as the Kindle or Peek. As the following chart illustrates, carriers reported

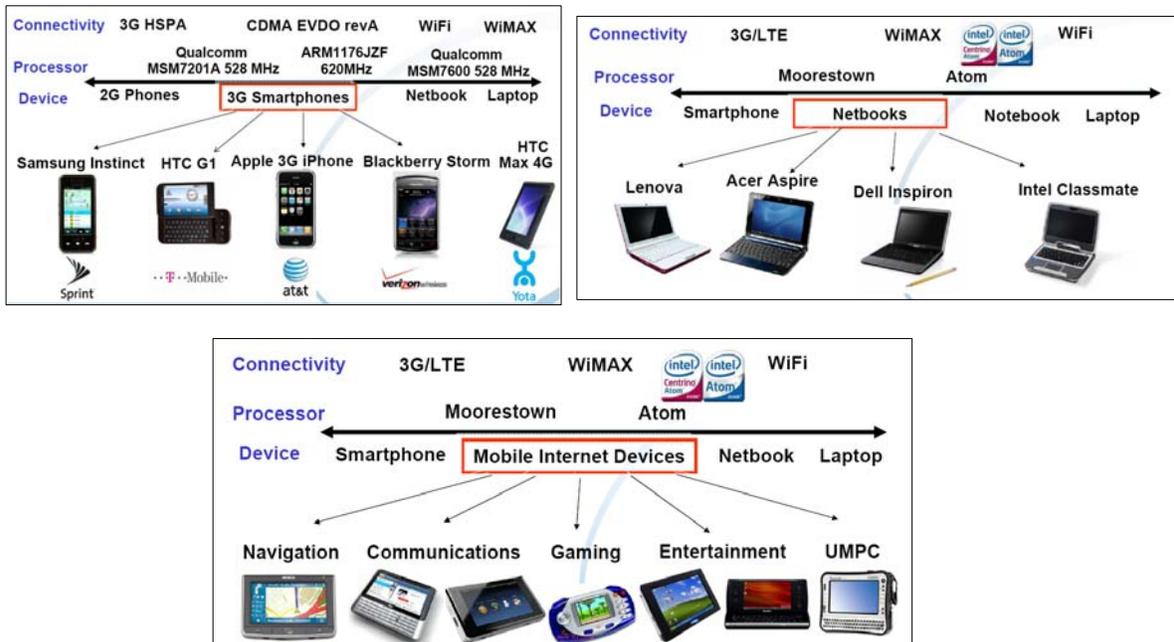
³² See CTIA's Wireless Industry Indices: Semi-Annual Data Survey Results: A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry, Mid-Year 2008 Results (rel. November 2008) ("CTIA's Wireless Industry Indices Report") at 10.

³³ Press Release, The NPD Group, Feature Phones Comprise Overwhelming Majority of Mobile Phone Sales in Q2 2009 (Aug. 19, 2009), available at http://www.npd.com/press/releases/press_090819.html (last accessed Sept. 23, 2009) ("The NPD Group Press Release"). In fact, Sprint Nextel recently announced that it will feature Wi-Fi in all of its "major devices going forward." Mike Dano, *Sprint's Blackberry Tour to sprout WiFi Next Year*, FierceWireless, July 9, 2009, at <http://www.fiercewireless.com/story/sprints-blackberry-tour-sprout-wifi-next-year/2009-07-09> (last accessed Sept. 23, 2009).

³⁴ The NPD Group Press Release, *supra* note 332.

more than seven million wireless enabled laptops, netbooks, and aircards on their networks at the end of 2008:³⁵

At the end of 2008, carriers reported more than 7 million wireless-enabled laptops, netbooks and aircards on their networks



Sources: CTIA Research, Yankee Group 2008

Attached to this filing as an appendix is the most recent version of Best Buy’s Mobile Wireless Buyers’ Guide.³⁶ This guide highlights how diverse the handset market has become in the United States. With so many manufacturers vying for U.S. customers, it is no surprise that the U.S. has become “the market” for introducing new wireless devices. In the last 24 months, many of the most advanced handsets have been launched in the U.S., including Apple’s iPhone 3GS; LG’s Voyager and Venus; Samsung’s Instinct

³⁵ See CTIA’s Wireless Industry Indices: Semi-Annual Data Survey Results: A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry, Year-End 2008 Results (rel. May 2009) (“CTIA’s Wireless Industry Indices Report”) at 10.

³⁶ See Attachment B.

and Instinct S30; Google's G1 and MyTouch; Research in Motion's Blackberry Storm, Bold, Pearl Flip, Tour, and Curve 8900; and the Palm Pre.³⁷ Consumers are responding favorably to the latest device features and innovations. For example, smartphones, which incorporate PDA capabilities and HTML browsers, are becoming increasingly popular and now account for 28% of all handset sales according to the NPD Group.³⁸

There are also an increasing number of non-phone wireless devices being deployed in the United States. Amazon's Kindle, for example, utilizes 3G wireless networks to allow users to download books, newspapers, magazines, and blogs anytime and anywhere but does not offer voice calling.³⁹ The Peek Pronto and Peek Classic

³⁷ See, e.g., Press Release, Apple, Apple Announces the New iPhone 3GS—The Fastest, Most Powerful iPhone Yet (June 8, 2009), available at <http://www.apple.com/pr/library/2009/06/08iphone.html> (last accessed Sept. 23, 2009); Press Release, Verizon Wireless, The Hottest Phones of the Season Have Arrived: Verizon Wireless Introduces the Voyager and Venus by LG (Nov. 19, 2007), available at <http://news.vzw.com/news/2007/11/pr2007-11-19.html> (last accessed Sept. 23, 2009); Press Release, Sprint Nextel, Award-Winning Samsung Instinct(TM) Available Exclusively from Sprint on June 20 for Just \$129.99 (June 18, 2008), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irolnewsArticle_newsroom&ID=1124417 (last accessed Sept. 23, 2009); Press Release, Sprint Nextel, Samsung Instinct s30, Exclusively from Sprint, Adds Attractive Styling, Instant Messaging, Improved Web Experience and Enhanced Open Development Capabilities to Popular Instinct (Mar. 31, 2009), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irolnewsArticle_newsroom&ID=1271892&highlight=instinct (last accessed Sept. 23, 2009); Martyn Williams and James Nicolai, *T-Mobile's Android-based G1 Goes on Sale*, ComputerWorld, Oct. 22, 2008, at http://www.computerworld.com/s/article/9117740/T_Mobile_s_Android_based_G1_goes_on_sale (last accessed Sept. 23, 2009); Press Release, Verizon Wireless, BlackBerry Storm Available in U.S. November 21 Exclusively from Verizon Wireless (Nov. 13, 2008), available at <http://news.vzw.com/news/2008/11/pr2008-11-13.html> (last accessed Sept. 23, 2009); Bonnie Cha, *Flipping Out: RIM BlackBerry Pearl Flip 8220 debuts*, CNET, Sept. 9, 2008, at http://reviews.cnet.com/8301-12261_7-10036487-51.html (last accessed Sept. 23, 2009); Press Release, BlackBerry, T-Mobile USA to Offer Customers the Thinnest and Lightest Full-QWERTY BlackBerry Smartphone (Jan 7. 2009), available at <http://na.blackberry.com/eng/newsroom/news/press/release.jsp?id=1984> (last accessed Sept. 23, 2009); Press Release, Sprint Nextel, Sprint to Offer Palm Pre Nationwide on June 6 (May 19, 2009), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irolnewsArticle_newsroom&ID=1289761&highlight=Palm%20Pre (last accessed Sept. 23, 2009).

³⁸ The NPD Group Press Release, *supra* note 33.

³⁹ Press Release, Amazon.com, Introducing Kindle DX – Amazon's Large Screen Addition to the Kindle Family of Wireless Reading Devices (May 6, 2009), available at <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irolnewsArticle&ID=1285140&highlight=> (last accessed Sept. 23, 2009); Press Release, Amazon.com, Introducing Amazon Kindle 2 (Feb. 9, 2009), available at <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irolnewsArticle&ID=1254544&highlight=> (last accessed Sept. 23, 2009). Research firm iSuppli predicts that approximately 5.2 million e-readers will be sold this year. Brad Stone, *Best Buy and Verizon Jump into E-Reader Fray*, N.Y. TIMES, Sept. 22, 2009,

devices provide push e-mail and text messaging to users, but do not include voice-calling functionality.⁴⁰ These new releases further underscore the highly competitive nature of the current and future wireless device market.



D. Operating System Developers

As consumers and enterprise users became more reliant on mobile connectivity, they also have sought a mobile experience capable of handling applications more traditionally found on home or office computers. Indeed, the applications and uses of mobile devices are near limitless – from email, text messaging and word processing, to web browsing, digital photography, and video programming. These capabilities rely, however, on sophisticated software platforms necessary to run these demanding devices and applications.

Mobile operating systems are important because they manage both the hardware features of the device, such as the antennas, camera, touch screen, thumbwheel and keyboards, as well as software applications like email, text-messaging, web browsing, GPS functionality and other applications. Mobile operating systems are responsible for how these functions and features interact. Since current generation smartphones feature

available at http://www.nytimes.com/2009/09/23/technology/internet/23ebooks.html?_r=1 (last accessed Sept. 23, 2009).

⁴⁰ Press Release, Peek, Peek Responds to Growing Demand for Affordable Mobile Messaging Devices with Launch of Peek Pronto (Mar. 24, 2009), *available at* <http://www.getpeek.com/img/PeekProntoRelease.pdf> (last accessed Sept. 23, 2009).

increasingly sophisticated functions, software and hardware providers must also develop increasingly sophisticated operating systems.

And the market for mobile operating systems continues to grow increasingly competitive. In sharp contrast to the highly commoditized personal computer market, the numerous operating systems available today offer unique user interfaces, feature specifications, and customer experiences.⁴¹ These differences provide additional choice and value to consumers, carriers, application developers, and other participants in the mobile wireless ecosystem.

The number of companies producing independent operating systems for mobile wireless devices has blossomed to more than nine. The Apple iPhone OS, Research in Motion BlackBerry OS, QUALCOMM Binary Runtime Environment for Wireless (“BREW”), Open Handset Alliance (with Google) Android, Nokia Symbian OS, Sun Microsystems Java, Linux LiMo, Palm PalmOS and WebOS, Microsoft Windows Mobile, and other mobile operating systems are all competing to be the system of choice. Of note, none of these leading systems is owned by a mobile wireless carrier.

The fluid market shares for mobile operating systems highlight the fierce competitive pressures of the mobile wireless ecosystem:

<u>Smartphone Market Shares 2Q 2009</u>		<u>Smartphone Market Shares 2Q 2008</u>	
Symbian OS	50.3%	Symbian OS	58.2%
BlackBerry OS	20.9%	BlackBerry OS	16.7%
iPhone OS	13.7%	Windows Mobile	14.3%
Windows Mobile	9.0%	iPhone OS	2.1%
Android	2.8%	Android	0.0%
Others	3.3%	Others	8.6% ⁴²

⁴¹ See Press Release, Canalsys, Smart Phones Defy Slowdown (Aug. 17, 2009), *available at* <http://www.canalsys.com/pr/2009/r2009081.htm> (last accessed Sept. 23, 2009).

⁴² *Id.*

It is striking the two newest operating systems – iPhone OS and Android – now hold more than 15% market share. The iPhone OS only debuted in June 2007. And the initial Android system was not released until October 2008. Also reflective of the intense competition for mobile operating systems is the decline in the Symbian OS and Windows Mobile market shares during the past year. With systems providers regularly offering software updates, new system improvements, and increased “application” functionality, this sector of the mobile ecosystem will continue to thrive.

There is also a major push towards open source software in the wireless mobile world, and the ecosystem is embracing it as a way to provide consumers with even more flexibility from their mobile handsets.⁴³ Google’s Android mobile operating system saw its first major handset release with the G1.⁴⁴ In addition, both T-Mobile and Sprint are members of the Open Handset Alliance.⁴⁵ Verizon Wireless is participating in the LiMo Foundation, an open source group working on expansion of the popular open-source Linux operating system to mobile handsets.⁴⁶ In June 2008, Nokia and others announced their intent to create the Symbian Foundation to extend the reach of the Symbian software platform. The Foundation has committed “to moving the platform to open source during the next two years, with the intent to use the Eclipse Public License. This will make the

⁴³ “Android is open source; it can be liberally extended to incorporate new cutting edge technologies as they emerge. The platform will continue to evolve as the developer community works together to build innovative mobile applications.” *Id.*

⁴⁴ See Martyn Williams and James Niccolai, *T-Mobile's Android-based G1 goes on sale* (Oct. 22, 2008), available at http://www.computerworld.com/action/article.do?command=viewArticleBasic&taxonomyName=mobile_and_wireless&articleId=9117740&taxonomyId=15&intsrc=kc_top (last visited Sept. 24, 2009).

⁴⁵ See *Sprint Joins Open Handset Alliance* (Nov. 5, 2007), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1072575&highlight=handset (last visited Sept. 24, 2009).

⁴⁶ See Eric Benderoff, *Verizon Takes A 'Googley' Approach To Software* (May 14, 2008), available at http://featuresblogs.chicagotribune.com/eric2_0/2008/05/verizon-takes-a.html#more (last visited Sept. 24, 2009).

platform code available to all for free, bringing additional innovation to the platform and engaging even a broader community in future developments.”⁴⁷ These are profound developments that will spur even greater competition and innovation in the mobile wireless ecosystem.



E. Applications Developers

Until recently, the applications that existed for mobile phones largely consisted of ringtones and basic arcade-style games. Cell phones did not have the processing capacity, display capability, memory, and connectivity necessary to create the experience most users were accustomed to on their personal or workplace computers.⁴⁸ But the appeal of mobility and the development of advanced devices and smartphones have resulted in tremendous innovation and investment in the applications space over the past two years.

With the increased ability to access the Internet on-the-go and significant growth and adoption of smartphones, an explosion of applications to run on these devices also has occurred. This segment of the wireless ecosystem began in earnest only 14 months ago, with the launch of the iTunes App Store. In that 14 months, more than 100,000

⁴⁷ See *Mobile Leaders To Unify The Symbian Software Platform And Set The Future Of Mobile Free* (June 24, 2008), available at http://www.symbian.org/media/news/pr2008_1.php (last visited Sept. 22, 2009).

⁴⁸ See http://www.sharpe.com/mob_hist.htm (last visited on Sept 22, 2009).

mobile-specific applications have been made available from six different stores on six different platforms.⁴⁹

⁴⁹ See, e.g., Press Release, Apple, Apple's App Store Downloads Top 1.5 Billion in First Year (July 14, 2009) (also indicating that more than 100,000 applications developers are participating in the iPhone Developer program), available at <http://www.apple.com/pr/library/2009/07/14apps.html> (last accessed Sept. 23, 2009) ("Apple App Store Press Release"); Androlib – Applications, <http://www.androlib.com/android.category.applications-j.aspx> (last accessed Sept. 23, 2009); Palm Software Store, http://software.palm.com/us/html/top_products_treo.jsp?device=10035300025 (last accessed Sept. 23, 2009); Pocketgear App Store, <http://appstore.pocketgear.com/palm/> (last accessed Sept. 23, 2009); Press Release, BlackBerry, RIM Launches BlackBerry App World (Apr. 1, 2009), available at <http://na.blackberry.com/eng/newsroom/news/press/release.jsp?id=2223> (last accessed Sept. 23, 2009); Elizabeth Woyke, *Nokia's Gigantic App Store*, Forbes.com, May 7, 2009, at <http://www.forbes.com/2009/05/07/nokia-ovi-store-technology-wireless-nokia.html> (last accessed Sept. 23, 2009); Jon Zilber, *New Apps for Palm Pre*, Palm – The Official Palm Blog, June 8, 2009, available at <http://blog.palm.com/palm/2009/06/new-apps-for-new-palm-pre.html> (last accessed Sept. 23, 2009); Jason Ankeny, *Microsoft to launch WinMo app store next month?*, FierceDeveloper, Jan. 19, 2009 (reporting that Microsoft is planning a marketplace for Windows Mobile devices) at <http://www.fiercedev.com/story/microsoft-launch-winmo-app-store-next-month/2009-01-19> (last accessed Sept. 23, 2009); Brad Linder, *Mobile Minute: Samsung launching yet another mobile app store*, Aug. 31, 2009, at <http://www.downloadsquad.com/tag/windows-marketplace-for-mobile> (last accessed Sept. 23, 2009); James Middleton, *Sony Ericsson jumps on app store bandwagon*, Informa Telecoms & Media Group, June 4, 2009, available at <http://www.telecoms.com/11775/sony-ericsson-jumps-on-app-store-bandwagon> ("By teaming up with independent app store GetJar, Sony Ericsson will expand its mobile content offering with a library of over 45,000 free applications that will complement a series of premium apps from Sony Ericsson.").

The following chart shows the application stores that are available to consumers:

<u>Application Store</u>	<u>Date Launched</u>	<u>Number of Apps Available</u>
iTunes App Store	July 2008	> 85,000 ⁵⁰
Android Market	October 2008	> 10,000 ⁵¹
Palm Software Store	January 2009	> 5,000 ⁵²
BlackBerry App World	April 2009	> 2,500 ⁵³
Nokia Ovi Store	May 2009	20,000 Apps and Media Files ⁵⁴
Palm App Catalog	June 2009	45 ⁵⁵
Windows Mobile Marketplace	Expected Oct 2009	(600 expected) ⁵⁶

Like mobile wireless broadband services generally, consumers have embraced the world of applications and services being designed for their mobile platforms.⁵⁷

⁵⁰ See Apple Hot News available at <http://www.apple.com/hotnews> (last visited Sept. 22, 2009).

⁵¹ See Robin Wauters, *Android Market: 10,000+ Applications Strong Today* (Sept. 7, 2009), available at <http://www.washingtonpost.com/wp-dyn/content/article/2009/09/08/AR2009090802799.html/> (last visited Sept. 23, 2009).

⁵² See http://software.palm.com/us/html/top_products_treo.jsp?device=10035300025 (last visited Sept. 24, 2009); see also <http://appstore.pocketgear.com/palm/> (last visited Sept. 24, 2009).

⁵³ See <http://appworld.blackberry.com/webstore/content/reviews/1414> (last visited Sept. 22, 2009).

⁵⁴ See Elizabeth Woyke, *Nokia's Gigantic App Store* (May 7, 2009), available at <http://www.forbes.com/2009/05/07/nokia-ovi-store-technology-wireless-nokia.html> (last visited Sept. 24, 2009).

⁵⁵ See intoMobile, *Four New Apps Arrive in the App Catalog* (Aug. 28, 2009), available at <http://www.intomobile.com/2009/08/28/four-new-apps-arrive-in-the-app-catalog.html> (last visited Sept. 22, 2009).

⁵⁶ See e.g. Brad Linder, "Windows Mobile Marketplace photos, rules released", Download Squad available at <http://www.downloadsquad.com/2009/05/05/windows-mobile-marketplace-photos-leaked-rules-released/> (last accessed Sept. 30, 2009).

⁵⁷ See, e.g., Jason Chen, *BlackBerry's app store called 'App World' goes live tonight*, Gizmodo Blog, Mar. 4, 2009, available at <http://i.gizmodo.com/5164429/blackberrys-app-store-named-app-world-goes-live-tonight>; Yardena Arar, *BlackBerry App Store Gets a Name: BlackBerry App World*, PCWORLD, Mar. 4, 2009, available at http://www.pcworld.com/article/160711/blackberry_app_store_gets_a_name_blackberry_app_world.html (last accessed Sept. 23, 2009); see also Colin Gibbs, *T-Mobile USA unveils new portal*, RCR Wireless News, Nov. 21, 2008, available at <http://www.rcrwireless.com/article/20081120/WIRELESS/811209989/0/CARTOON> (reporting that T-Mobile introduces web2go portal, to improve mobile Internet browsing, shopping and downloads, including a customizable home page, and allowing users to "continue to access some of their downloaded content even after upgrading to new phones"); T-Mobile – Web2go(SM), <http://support.t-mobile.com/doc/tm23842.xml?jsessionid=NqRU6ePhJP-ftVscgs?> (last accessed Sept. 23, 2009).

Consumers already have downloaded billions of applications, and are projected to download 6.67 billion by 2014.⁵⁸ For example, more than 2 billion applications have been downloaded from the iTunes App Store alone.⁵⁹

Applications stores have launched onto the scene, but it is critical to note that wireless broadband users can reach outside the applications store framework to download and use applications available over the Internet. In addition to the content available via applications stores, consumers can also access Internet content and applications through a variety of Web browsers.

Applications developers are now creating many highly specialized mobile-to-mobile (“M2M”) applications that further vital public interest goals. For example, applications are now being designed to increase productivity and connectivity in the environmental and utility sector (*e.g.*, with smart grid systems), the financial sector (mobile banking, investing, and mWallet), the transportation sector (*e.g.*, traffic management and fleet control), the health care sector (*e.g.*, telemedicine and mHealth), the public safety and homeland security sector (*e.g.*, database access, video transmission, and mobile detection systems), and the farming sector (*e.g.*, crop and irrigation management). The development of these innovative applications is the result not only of vigorous competition among wireless carriers, but also competition across all levels of the mobile wireless ecosystem.

⁵⁸ See Andrew Thomas, *Smartphone downloads to top 6.67 bn by 2014* (Aug. 12, 2009), available at <http://www.tgdaily.com/content/view/43606/97/> (last visited Sept. 24, 2009).

⁵⁹ See “Apple breaks 2 billion apps mark on iTunes for iPhone and iPod Touch, NY Daily News (Sept. 28, 2009), available at http://www.nydailynews.com/tech_guide/2009/09/28/2009-09-28_apple_breaks_2_billion_apps_mark.html#ixzz0SY1ATvch.

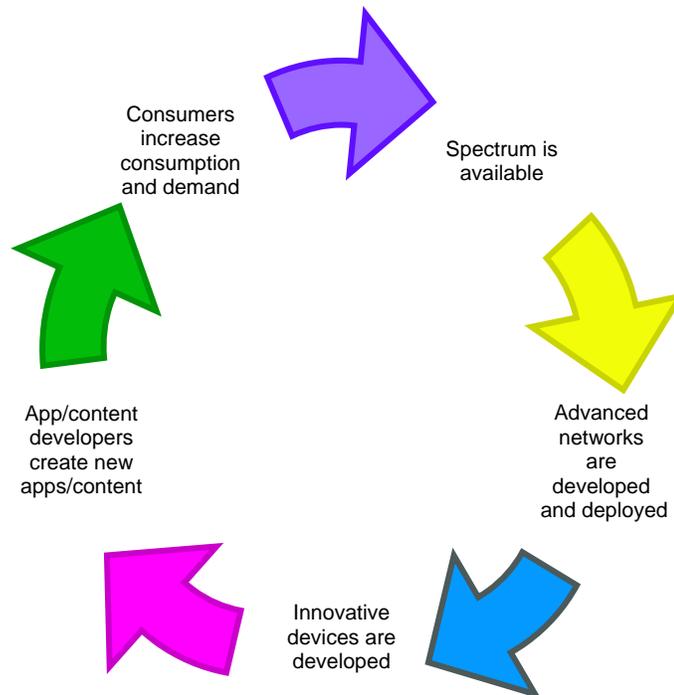


F. The Virtuous Cycle of Innovation

The dynamic, highly competitive interaction among the components of the wireless ecosystem is creating a virtuous cycle of innovation. Existing spectrum allocations enable wireless providers to invest billions of dollars to deploy 3G and 4G facilities across their networks. These new facilities benefit other sectors of the wireless ecosystem by providing additional network coverage, capacity and capabilities. This allows device manufacturers to create more sophisticated devices with new technical capabilities. The advanced devices, in turn, facilitate competition by encouraging developers to create innovative, bandwidth-intensive applications. These new applications lead to greater consumer demand in terms of both new subscribers and higher usage levels among existing subscribers. The additional subscriber demand then necessitates the allocation of additional spectrum.⁶⁰

⁶⁰ See also *Mostly Mobile* at 27-28.

The following figure depicts the virtuous cycle occurring in the wireless ecosystem:



Competition and innovation occur in each link of the wireless “value chain.” But instead of thinking of a linear wireless value chain, the wireless market is best characterized by a virtuous cycle of innovation and investment. This loop characterizes the ongoing interactions between all aspects of the industry as innovation and investment occur at any time along the circle depending on developments somewhere else on the circle. This virtuous cycle operates in all directions, further enhancing competition and innovation at all levels of the wireless ecosystem. The Commission could consider the ecosystem as experiencing a modified Newton’s Third Law of Motion – in this case the Third Law of Wireless Innovation – for every innovation or investment in the cycle, there is the probability of another innovation or investment occurring elsewhere in the cycle.

Thus, as subscriber demand grows, applications developers will enter the market and offer new, bandwidth-intensive software. The competition for the latest and greatest applications will spark competition among device manufacturers to improve their product lines. With increased consumer demand, the new data services have the potential to stretch network capacity and create congestion. Thus, carriers must upgrade their networks and obtain additional spectrum.⁶¹

In recently filed comments, CTIA has called on the Commission to identify and reallocate significant amount of spectrum – with a goal of at least 800 MHz – for licensed commercial wireless services.⁶² While it is impossible to quantify precisely what amount of additional spectrum will be required to meet the existing pace of adoption and innovation, such an allocation would be an important step towards meeting rapidly accelerating consumer demand and maintaining U.S. leadership in the global mobile broadband marketplace. This need for additional spectrum to meet exploding consumer demand is discussed further in Section VI.B.

III. MARKET PERFORMANCE AND WIRELESS PROVIDER CONDUCT CONFIRM THAT THE WIRELESS ECOSYSTEM IS HIGHLY COMPETITIVE

Having detailed, above, the competitive structure of the wireless ecosystem, in this section CTIA describes the compelling indicia of market performance and conduct that reflect the fierce competition taking place in the wireless space. As shown below, the overwhelming evidence of market performance (including investment, output, innovation, and advertising) and recent carrier conduct (including price and non-price

⁶¹ *See id.*

⁶² *See generally* Letter from Christopher Guttman-McCabe, Vice President, Regulatory Affairs, CTIA, to Julius Genachowski, Chairman, Federal Communications Commission, *et al.*, GN Docket No. 09-51 (filed Sept. 29, 2009) (“*CTIA Spectrum Demand Ex Parte*”).

behavior) demonstrate that the competitive wireless market is functioning well and is delivering many pro-consumers benefits.

A. Investment, Build-Out, and Positive Economic Contributions

As noted above, CTIA is also filing today extensive comments in the Commission's companion proceeding regarding *Fostering Innovation and Investment in the Wireless Communications Market*, in which CTIA demonstrates that the U.S. wireless industry today is defined by massive investment and economic contributions to the national economy.⁶³ Without repeating every aspect of those comments, CTIA highlights in this section the remarkable investments being made by wireless carriers.

Despite the crippling recession in the U.S. economy, wireless carriers continue to invest billions of dollars to increase the coverage, quality, and capacity of their networks to meet evolving consumer demands. In 2008, U.S. wireless carriers reported incremental capital expenditures in their operational systems of \$20.17 billion, resulting in a total cumulative capital expenditure in operational systems of more than \$90 billion over the last four years (not including the more than \$33 billion paid to the Federal Treasury for spectrum during the AWS-1 and 700 MHz auctions, or for carriers' investments in pre-operational systems).⁶⁴ The wireless industry's astounding growth and improved service quality would not be possible without the ongoing investments carriers are making in new technologies and infrastructure.

Carrier investment is particularly strong in the mobile broadband space. Over the past few months, a number of wireless companies have detailed their plans for expanding

⁶³ 2009 CTIA *Innovation and Investment Comments* at Section I.D. See also Letter from Christopher Guttman-McCabe, Vice President, Regulatory Affairs, CTIA, to Julius Genachowski, Chairman, Federal Communications Commission, *et al.*, GN Docket No. 09-51, *et al.* (filed July 9, 2009) ("2009 CTIA Wireless Economic Contributions Ex Parte").

⁶⁴ See CTIA's Wireless Industry Indices Report at 124.

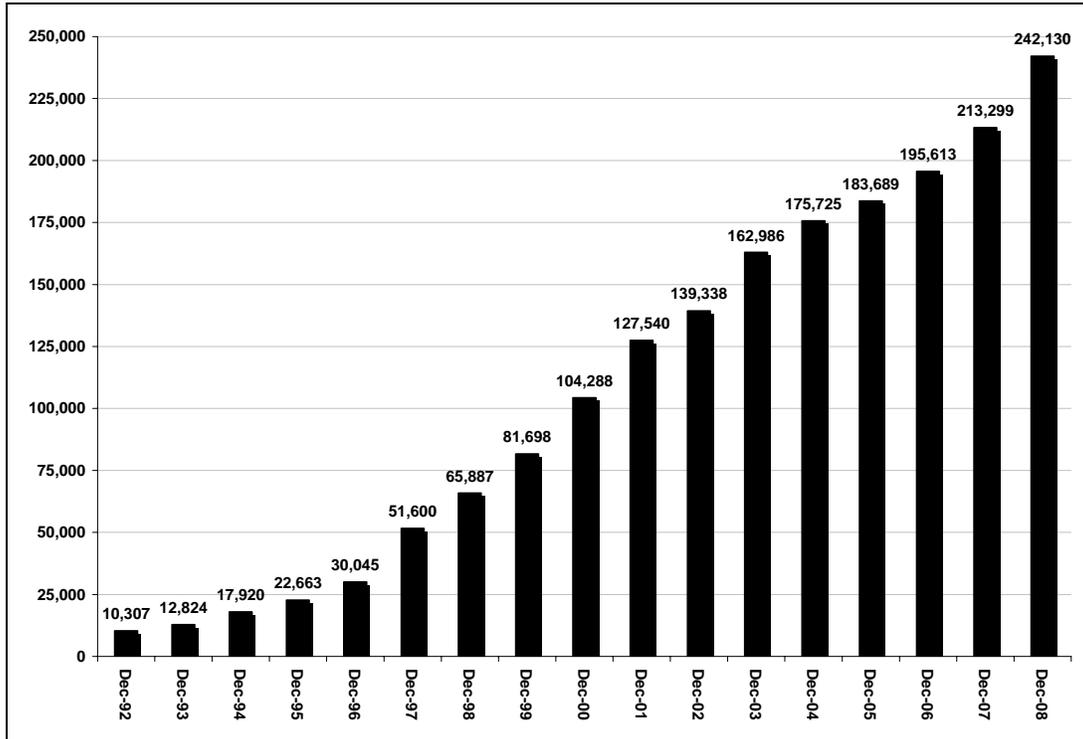
and upgrading their networks with next-generation technologies to accommodate the explosive growth of wireless high-speed Internet access and broadband service offerings. AT&T plans to upgrade its 3G network and deploy HSPA 7.2 before trialing LTE in 2010 and beginning LTE deployment in 2011. MetroPCS plans to deploy LTE in the second half of 2010. Sprint Nextel has been rapidly expanding its 4G network across numerous U.S. cities this year and plans to expand the network to Boston, Houston, New York, San Francisco, and Washington, D.C. in 2010. Stelera Wireless is planning to bring HSPA-enabled data services to 55 cities by the end of 2009. T-Mobile plans to expand its 3G network to reach a potential 200 million wireless users by the end of 2009, and has launched HSPA+ in Philadelphia. U.S. Cellular's EV-DO network upgrade will reach 60% of its cell sites by the end of 2009, covering about 75% of its post-paid subscribers. And Verizon Wireless plans to conduct pre-commercial LTE network tests in 2009 and launch its LTE network commercially in 20-30 markets during the second half of 2010 (with nationwide build-out finished in late 2013 or early 2014).⁶⁵

⁶⁵ See, e.g., Press Release, AT&T, AT&T to Deliver 3G Mobile Broadband Speed Boost (May 27, 2009), available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26835> (last accessed Sept. 24, 2009); Will Park, *AT&T 3G network going 850Mhz nationwide by 2010*, INTO MOBILE NEWS, Feb. 24, 2009, at <http://www.intomobile.com/2009/02/24/att-3g-network-going-850mhz-nationwide-by-2010.html> (last accessed Sept. 24, 2009); Phil Goldstein, *MetroPCS to launch LTE in 2010*, FIERCEWIRELESS, Mar. 4, 2009, at <http://www.fiercewireless.com/story/metropcs-seeks-launch-lte-2010/2009-03-04> (last accessed Sept. 24, 2009); Phil Goldstein, *MetroPCS to lean on ZTE for its LTE phones*, FIERCEWIRELESS, Apr. 28, 2009, at <http://www.fiercewireless.com/story/metropcs-picks-zte-its-lte-phones/2009-04-28> (last accessed Sept. 24, 2009); Press Release, Sprint Nextel, Sprint Extends 4G Leadership by Announcing Additional U.S. Markets for Sprint 4G (Aug. 11, 2009), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1319758&highlight= (last accessed Sept. 24, 2009); *Stelera Selects Ceragon IP Solutions to Backhaul Wireless Broadband in Rural America*, PR Newswire, May 4, 2009, available at http://www.breitbart.com/article.php?id=prnw.20090504.UKSU004B&show_article=1; Sinead Carew, *T-Mobile USA unveils high-speed plans, new device*, REUTERS, Mar. 25, 2009, available at <http://www.reuters.com/article/ousivMolt/idUSTRE5200WV20090325> (last accessed Sept. 24, 2009); Sarah Reedy, *US Cellular accelerates EV-DO push, weighing LTE trial*, TELEPHONY ONLINE, May 6, 2009, at <http://telephonyonline.com/wireless/news/us-cellular-evdo-upgrade-0506/> (last accessed Sept. 24, 2009); Sascha Segan, *Verizon Tweaks LTE Launch Date: It's Now 2H10*, GEARLOG, May 13, 2009, at http://www.gearlog.com/2009/05/verizon_tweaks_lte_launch_date.php (last accessed Sept. 24, 2009); Tricia Duryee, *Verizon Wireless Details Its Next Generation 4G Plans*, WASHINGTON POST, Feb. 18, 2009, available at <http://www.washingtonpost.com/wp->

As further evidence of carriers' investment in their networks, they continue to deploy additional cell sites – adding almost 30,000 additional sites between December 2007 and December 2008. The number of new cell sites added each year over the last five years, moreover, has increased significantly from year-to-year, both in terms of raw numbers and as a percentage of the total number of cell sites. Furthermore, the number of cell sites is likely to increase substantially as carriers continue deploying networks in the AWS-1 and 700 MHz spectrum and upgrading their existing networks to 3G and 4G technologies. These considerable ongoing investments will allow carriers to expand and enhance the scope and reliability of their networks to support new and better services for American consumers.

[dyn/content/article/2009/02/18/AR2009021800747.html](http://www.fcc.gov/dyn/content/article/2009/02/18/AR2009021800747.html) (last accessed Sept. 24, 2009); Marguerite Reardon, *Verizon promises 4G wireless for rural America*, CNET, Apr. 1, 2009, at <http://news.cnet.com/wireless/?keyword=rural> (last accessed Sept. 24, 2009) (quoting Tony Melone, Verizon Wireless, Chief Technology Officer, to the effect that, using the 700 MHz spectrum, “we plan to roll out LTE throughout the entire country, including places where we don't offer our CDMA cell phone service today”).

Operational Cell Sites Exceeded 242,000 at Year-End 2008



Source: CTIA Semi-Annual Survey

Wireless carriers have also continued to expand their coverage and broadband service deployment in rural areas. In Alaska, for example, ACS Wireless⁶⁶ and General Communication, Inc. (through its Alaska DigiTel and Alaska Wireless brands)⁶⁷ have deployed EV-DO Rev. A technology in their networks. Other carriers, including Bluegrass Cellular, Cellular South, Nex-Tech Wireless, and

⁶⁶ See Press Release, Alaska Communications Systems, ACS Launches Rev A Technology: Provides Fastest Mobile Data Speeds Available in the Nation (July 31, 2008), available at <http://www.acsalaska.com/assets/releases/2008-07-31.pdf> (last accessed Sept. 24, 2009).

⁶⁷ See Press Release, General Communication, Inc., GCI Achieves Wireless Milestone with 100,000 Customers (Feb. 3, 2009), available at <http://www.gci.com/investors/wirelessmilestoneannouncement.pdf> (last accessed Sept. 24, 2009) (noting launch of EV-DO Rev. A cards in the fourth quarter of 2008, growing GCI's high-speed data customer base).

nTelos among others, have also been aggressively deploying high-speed wireless broadband networks and solutions for customers in rural markets across the country.⁶⁸

B. Service, Device, and Calling Plan Innovation

Network investment is the cornerstone of the striking innovation taking place across the wireless ecosystem, with an expansive range of services, devices, and calling plans now available to consumers as a result of robust, agile, and innovative wireless networks. While CTIA sets forth in this filing a number of the highlights of the innovative practices of the wireless industry, CTIA also encourages the Commission to carefully consider its extensive comments filed in the Commission's companion proceeding regarding *Fostering Innovation and Investment in the Wireless Communications Market*.⁶⁹

⁶⁸ See Press Release, Bluegrass Cellular, Bluegrass Cellular Announces New 3G Coverage In Cumberland County (Apr. 22 2009), available at http://www.bluegrasscellular.com/about/news/bluegrass_cellular_announces_enhanced_voice_and_3g_coverage_in_grayson_coun (last accessed Sept. 24, 2009) (“Bluegrass Cellular recently added 3G high speed data service coverage to Burkesville, KY in Cumberland County . . . The site adds high speed wireless data access to the existing 3G, EV-DO high speed data network that Bluegrass Cellular has in place across its 38 county coverage area.”); multiple Press Releases announcing the deployment of 3G high-speed facilities across Bluegrass Cellular's coverage area, available at <http://www.bluegrasscellular.com/about/news> (last accessed Sept. 24, 2009); Press Release, Cellular South, Cellular South to Expand Availability of Advanced 3G Mobile Broadband Services Throughout Much of Mississippi (Mar. 10, 2009), available at <https://www.cellularsouth.com/news/2009/20090310.html> (last accessed Sept. 24, 2009); Press Release, Nex-Tech Wireless, Nex-Tech Wireless Broadband Services Continue to Exceed Customer Expectations (Sept. 2008), available at <http://www.nex-techwireless.com/news.aspx> (last accessed Sept. 24, 2009) (noting impact of deploying EV-DO in central and western Kansas and eastern Colorado); Nex-Tech Wireless, Brochure, available at <http://www.nex-techwireless.com/applicationdata/1/Documents/iconnect.pdf> (last accessed Sept. 24, 2009) (“With iConnect data services from Nex-Tech Wireless, you can use your wireless phone for more than just phone calls.”); Press Release, nTelos, NTELOS Holdings Corp. Reports Third Quarter 2008 Operating Results (Nov. 4, 2008), available at <http://www.ir-site.com/images/library/ntelos/11-04-08.html> (last accessed Sept. 24, 2009) (stating that nTelos has upgraded 46 % of its network to EV-DO Rev. A, projects upgrading 70 % of cell sites by year-end 2008); Press Release, nTelos, NTELOS Holdings Corp. Reports First Quarter 2009 Operating Results (Apr. 30, 2009), available at <http://www.ir-site.com/images/library/ntelos/04-30-09.html> (last accessed Sept. 24, 2009) (“EV-DO Upgrade Progress: The Company upgraded an additional 48 cell sites to the EV-DO Rev. A platform during the first quarter, adding service to the Harrisonburg, Virginia market. In total, 881 sites have been upgraded to EV-DO. The Company has approximately 160 sites in the Richmond/Norfolk, Virginia markets scheduled for upgrade in second quarter 2009, which would complete the final phase of the planned EV-DO upgrade.”).

⁶⁹ See generally 2009 CTIA Innovation and Investment Comments.

Innovative Services. Carriers continue to provide an ever-increasing array of mobile services to consumers, including voice and data services (with data services generally available on handsets, smartphones, and computers). AT&T, for example, provides high-speed broadband services across its 3G BroadbandConnect network, available in most major metropolitan areas. The network provides typical throughput speeds of 700 kbps to 1.7 Mbps download and 500 kbps to 1.2 Mbps upload.⁷⁰ Verizon Wireless also provides high-speed broadband services across a network covering 264 major metropolitan areas and 268 primary airports. Its Mobile Broadband EV-DO Rev. A network delivers download speeds of 600 kbps to 1.4 Mbps and upload speeds of 500-800 kbps.⁷¹ Similarly, T-Mobile just launched in Philadelphia the newest version of HSPA, HSPA+, that can deliver up to 21 Mbps.⁷² Other examples of current service offerings include:

- Nex-Tech Wireless: Has deployed 3G service to 82% of its service area, providing broadband access on wireless devices and on computers through an aircard.
- Sprint Nextel: Its mobile broadband network provides throughput speeds of 400 to 700 kbps download and 40 to 70 kbps upload in EV-DO Rev 0 coverage areas, and throughput speeds of 600 kbps to 1.4 Mbps download and 350 to 500 kbps upload in EV-DO Rev. A coverage areas.⁷³

⁷⁰ See AT&T Wireless Connections & Coverage, <http://www.wireless.att.com/businesscenter/solutions/wireless-laptop/connections-coverage.jsp> (last accessed Sept. 23, 2009). In addition, its Enhanced Data for GSM Evolution (“EDGE”) network spans more than 17,000 cities and almost 40,000 miles of U.S. highways, providing typical download speeds of 70-135 kbps. *Id.*

⁷¹ See Verizon Wireless Coverage & Speed, <http://b2b.vzw.com/broadband/coveragearea.html> (last accessed Sept. 23, 2009). EV-DO network areas that have not yet been upgraded to EV-DO Rev. A provide throughput speeds of 400 to 700 kbps download and 60-80 kbps upload.

⁷² “T-Mobile USA Launches HSPA+ in Philly,” *Wireless Week* (Sept. 18, 2009), available at <http://www.wirelessweek.com/News/2009/09/T-Mobile-USA-HSPA-Plus-Philadelphia/>.

⁷³ See Sprint Mobile Broadband Network, http://www.nextel.com/en/coverage/support/mobile_broadband_network_popup.shtml (last accessed Sept. 24, 2009).

- T-Mobile: Offers mobile Internet access through General Packet Radio Service (“GPRS”), EDGE, and Wi-Fi Internet connectivity⁷⁴ and is deploying a 3G HSPA network that is available in 200 cities covering more than 150 million people.⁷⁵

Moreover, as noted above, wireless providers are leveraging other platforms as well.

A recent example is the joint announcement of AT&T and Terrestrial Networks to offer an integrated solution combining AT&T’s primary cellular wireless connectivity with the ability to connect to a Terrestrial’s satellite network as a backup, using one phone number and one smartphone device. This offer is aimed primarily at enterprise and government users, and will use Genus™ dual-mode cellular / satellite smartphones to enable users to access Terrestrial’s satellite network when AT&T’s cellular wireless network is unavailable.⁷⁶

Innovative Devices. As detailed above in the discussion of the wireless ecosystem, the wireless device market has experienced remarkable innovation.⁷⁷ From simple, voice-only devices to complex smartphones that more closely resemble a handheld computer than a telephone, the breadth and depth of the more than 630 devices manufactured for the U.S. market far eclipses that in other developed countries. Thus, while there is an ongoing debate about exclusive handset arrangements in the wireless industry and the impact they have on carriers and consumers, there is no doubt that the

⁷⁴ See T-Mobile Internet (GPRS/EDGE/Wi-Fi), http://www.t-mobile.com/Business/Information.aspx?tp=Bus_Tab_DataSolutions&tsp=Bus_Sub_MobileInternet (last accessed Sept. 24, 2009).

⁷⁵ See Press Release, T-Mobile USA Unveils the Motorola CLIQ with MOTOBLUR (Sept. 10, 2009), available at http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Pr_20090910&title=T-Mobile%20USA%20Unveils%20the%20Motorola%20CLIQ%20With%20MOTOBLUR (last accessed Sept. 23, 2009).

⁷⁶ See AT&T News Release, AT&T Announces Agreement with Terrestrial to Offer Integrated Cellular / Satellite Solution, Sept. 30, 2009, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=27180> (last visited Sept. 30, 2009); Terrestrial Networks News Release, Terrestrial Announces Distribution Agreement with AT&T, Sept. 30, 2009, available at <http://www.terrestrial.com/press/20090930.html> (last visited Sept. 30, 2009).

⁷⁷ See Section II.C., *supra*.

intense level of competition among device manufacturers has produced a multitude of features in the last 18 months. These innovations include handsets with video cameras, digital cameras featuring improved picture quality and resolution, additional Global Positioning System (“GPS”) functions, widespread Wi-Fi and Bluetooth connectivity, enhanced audio features, personal health features, touch screens, and a range of “form factors.”

In a similar vein, service providers now make available to U.S. consumers a number of wireless devices that leverage other wireless platforms, like Wi-Fi. These devices can access any Wi-Fi hotspot, not just those branded by the carriers, and enable the use of the Wi-Fi connection for data delivery – and in some cases, voice service. Carriers across the country, including each of the national carriers, offer handsets with integrated Wi-Fi, and there are at least 29 handsets featuring Wi-Fi on the market, with many more on the way.⁷⁸ Unlicensed Mobile Access – the seamless switching of voice and data sessions from the commercial wireless network – is another area of Wi-Fi access where American wireless companies are leading the world in innovation and investment. Twelve of the 26 dual-mode handsets available worldwide are sold in the U.S.⁷⁹ Of all wireless providers worldwide, only eight offer UMA service, and two of them are in the

⁷⁸ See, e.g., Verizon Wireless, available at <http://www.verizonwireless.com>; AT&T Mobility, available at <http://www.wireless.att.com>; Sprint Nextel Corp., available at <http://www.sprint.com>; T-Mobile USA, Inc., available at <http://www.t-mobile.com/>. See also nTelos Wireless, available at <http://nteloswireless.com/phones/htc/htc6800.php>; Phone Scoop, available at www.phonescoop.com; Cincinnati Bell Inc., available at http://www.cincinnati-bell.com/consumer/wireless/phones_and_devices/?id=blackberry_8120r.

⁷⁹ See UMA Today, *Dual Mode Handsets*, available at <http://www.umatoday.com/mobileHandsets.php> (last visited Sept. 24, 2009) (Details are not available for all of these handsets); see also T-Mobile USA, Inc. available at <http://www.t-mobile.com/shop/phones/> (last visited Sept. 24, 2009); Cincinnati Bell Inc., available at http://www.cincinnati-bell.com/consumer/wireless/phones_and_devices/?view=fusionwifi (last visited Sept. 24, 2009).

U.S.⁸⁰ Finally, as described above, U.S. consumers are now rapidly embracing a world of wireless devices beyond cell phones and smartphones, including laptops, netbooks, and special function devices such as the Kindle or Peek.

Innovative Calling Plans. The Commission historically has allowed “competitive market forces to govern rate and rate structures for wireless services,” and the wireless industry has a long history of innovation in pricing and service plans.⁸¹ In May 1998, for example, AT&T Wireless revolutionized wireless pricing with the introduction of its Digital One Rate plan,⁸² which allowed customers to purchase a bucket of minutes to use on a nationwide basis for a single flat rate, without any roaming and long-distance charges.⁸³ Other wireless carriers moved quickly to respond to this new pricing strategy, and today a multitude of wireless carriers offer similar plans.⁸⁴

Carriers continue to introduce new calling plans to differentiate themselves from one another competitively and to meet consumer demand for varied pricing and usage

⁸⁰ See UMA Today, *UMA Operators*, available at <http://www.umatoday.com/operators.php> (last visited Sept. 24, 2009); see also, T-Mobile USA, Inc., *T-Mobile Unlimited HotSpot Calling*, available at <http://www.theonlyphoneyouneed.com> (last visited Sept. 24, 2009); Cincinnati Bell Inc., *Why Fusion Wifi*, available at http://www.cincinnati-bell.com/consumer/wireless/fusion_wifi/ (last visited Sept. 24, 2009).

⁸¹ See *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 15817, ¶ 35 (2007)

⁸² *Twelfth CMRS Competition Report*, 23 FCC Rcd. at 2291-92.

⁸³ See Press Release, AT&T, *AT&T Wireless Is Separate, Independently-Traded Company Following Split-off From AT&T* (July 9, 2009), available at <http://www.corp.att.com/news/2001/07/09-3904> (last visited Sept. 28, 2009); Press Release, AT&T, *AT&T Launches First National One-Rate Wireless Service Plan* (May 7, 1998), available at <http://www.allbusiness.com/media-telecommunications/telecommunications/6876757-1.html>; and See *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*, Eleventh Report, 21 FCC Rcd. at 10947, 10983 (2006) (“*Eleventh CMRS Competition Report*”).

⁸⁴ See *Eleventh CMRS Competition Report*, 21 FCC Rcd. at 10983; see also <http://www.uscc.com/uscellular/SilverStream/Pages/uscellular.html> (last visited Sept. 29, 2009).

levels. As a result, consumers can now choose from a variety of “friends and family,” free long distance, unlimited calling, national, local, pre-paid, and data service plans.⁸⁵

The competition among carriers intensified with the arrival of unlimited usage plans, which continue to provide consumers with numerous cost-saving opportunities and alternatives. In late February 2009, Boost Mobile announced a \$50 per month plan that includes unlimited nationwide calling, text and multimedia messaging, Web browsing, and walkie-talkie functionality.⁸⁶ T-Mobile dropped the price of its unlimited calling plan to \$50 per month for its long-time customers.⁸⁷ Virgin Mobile also offers a \$50 per month unlimited calling plan, as does MetroPCS, whose plan includes unlimited calling, text messaging, Web browsing, and BlackBerry e-mail access.⁸⁸ Tracfone offers its “Straight Talk” plan of unlimited minutes and text messaging, nationwide, for \$45 per month.⁸⁹ Sprint recently announced a new calling plan, “Any Mobile, Anytime,” which allows subscribers to make unlimited calls to any U.S. cell phone without using up voice

⁸⁵ See, e.g., CTIA CMRS Competition Report Comments at 24-29. For example, Nex-Tech Wireless’ Calling Circle plan allows subscribers to choose 5, 10, or 20 wireless or landline numbers that can be called without using monthly plan minutes. See Press Release, Nex-Tech Wireless, Nex-Tech Wireless Expands Services, Offers Calling Circle (Sept. 2008).

⁸⁶ See Calvin Azuri, *New Unlimited Plan from Boost Mobile Saves Customers Money*, TMCNET, Feb. 24, 2009, at <http://fixed-mobile-convergence.tmcnet.com/topics/mobile-communications/articles/51107-new-unlimited-plan-from-boost-mobile-saves-customers.htm> (last accessed Sept. 24, 2009) (“Azuri Article”).

⁸⁷ See Allie Winter, *T-Mobile USA drops unlimited voice plan to \$50*, RCR WIRELESS, Mar. 2, 2009, available at <http://www.rcrwireless.com/article/20090302/WIRELESS/903029987/1099> (last accessed Sept. 24, 2009).

⁸⁸ See Sascha Segan, *Virgin Mobile Introduces \$50 Unlimited Calling Plan*, APPSCOUT, Apr. 9, 2009, at http://www.appscout.com/2009/04/virgin_mobile_introduces_50_un.php (last accessed Sept. 24, 2009) (“Segan Article”); Jamie Lendino, *MetroPCS Introduces BlackBerry w/\$50 Unlimited Plan*, GEARLOG, Mar. 10, 2009, at http://www.gearlog.com/2009/03/breaking_metropcs_introduces_b.php (last accessed Sept. 24, 2009) (“Lendino Article”).

⁸⁹ See Kent German, *TracFone offers \$45 unlimited plan*, CNET, July 2, 2009, at http://news.cnet.com/8301-17938_105-10276677-1.html (Last Accessed Sept. 24, 2009) (“German Article”).

minutes.⁹⁰ Verizon Wireless has also introduced an unlimited calling plan targeting small businesses.⁹¹

Pre-paid consumers are also benefiting from the trend in unlimited plans. AT&T's unlimited "GoPhone" calling plan is providing new options for prepaid consumers.⁹² Likewise, T-Mobile and other carriers offer "pay by the day" plans.⁹³

As discussed in more detail below, carriers are also diversifying their messaging and data service offerings with innovative options responsive to consumer demand. For messaging, some carriers are offering unlimited messaging add-ons, large messaging buckets, and bundled options. With respect to data plans, carriers are offering a variety of unlimited use, metered, and "pay-as-you-go" plans.⁹⁴ Via its Cricket operations, Leap Wireless is also offering prepaid broadband service to compete with home Internet providers. The \$40 monthly plan lets PC users surf over the carrier's EV-DO Rev. A network with a 5GB per month cap.⁹⁵ In addition, Leap Wireless recently announced a

⁹⁰ "Sprint Offers Unlimited Calling To Any Cell Phone," CNET News (Sept. 10, 2009), *available at* http://news.cnet.com/8301-30686_3-10349618-266.html.

⁹¹ See Marin Perez, *Verizon Adds Business Calling Plans*, INFORMATIONWEEK, May 13, 2009, *available at* <http://www.informationweek.com/news/mobility/business/showArticle.jhtml?articleID=217400801&subSection=Mobility> (last accessed Sept. 24, 2009).

⁹² See Phil Goldstein, *AT&T unveils \$3 per day unlimited GoPhone calling plan*, FIERCEWIRELESS, May 8, 2009, *available at* http://www.fiercewireless.com/story/t-unveils-3-day-unlimited-gophone-calling-plan/2009-05-08?utm_medium=nl&utm_source=internal (last accessed Sept. 24, 2009) (AT&T Mobility is launching a new calling plan through its prepaid GoPhone service, which will "give users unlimited calling with no roaming or long distance fees for \$3 per day... customers using this new plan will also be able to get text messaging and data service at the same pay-per-use rates as all other GoPhone 'Pay As You Go' plans").

⁹³ Press Release, T-Mobile USA, *T-Mobile Offers Customers Additional Service Plan Flexibility* (June 23, 2008), *available at* http://www.t-mobile.com/company/PressReleases_Article.aspx?assetName=Prs_Prs_20080623&title=T-Mobile%20Offers%20Customers%20Additional%20Service%20Plan%20Flexibility (last accessed Sept. 24, 2009) (announcing "FlexPay" which offers customers the opportunity to subscribe to T-Mobile rate plans without a contract and highlighting "pay by the day" service).

⁹⁴ See Section IV.B.3, *infra*.

⁹⁵ See Marin Perez, *Leap Wireless Reveals Ambitious Plans*, INFORMATIONWEEK (Sept. 15, 2008), *available at*

new broadband offering, which includes a larger 10 GB data limit for \$50 per month, including all fees and taxes.⁹⁶ Peek Pronto, a specialized device that sends and receives unlimited email and text messages from anywhere in the U.S., recently introduced a new service plan which offers a lifetime subscription for \$300.⁹⁷

Innovative Policies. Competitive forces continue to drive carriers to modify other service features and policies. Such policies and features include, but are not limited to: pro-rated early termination fees (“ETFs”); extended trial periods with money-back guarantees; multiple pre-paid and post-paid plans; and the ability to change plans without penalty. For example, five of the largest wireless providers in the U.S now offer pro-rated early termination fees and the ability to change wireless service plans without incurring a contract extension.⁹⁸ Consumers also have a wide variety of wireless plans to choose from that do not include ETFs, including a variety of prepaid or “pay-as-you-go” options.

Carriers’ ETF and service plan change policies are just two components of their consumer-friendly practices. As detailed in the following chart, features such as consumer trial periods (with “money-back guarantees”), street-level coverage maps, the ability to bring a handset to a carrier’s network, and prepaid and non-contract options have similarly evolved to meet the needs of U.S. consumers:

<http://www.informationweek.com/news/mobility/business/showArticle.jhtml?articleID=210601722> (last accessed Sept. 24, 2009); *see also* TeleGeography’s CommsUpdate, *Leap targets broadband market*, TELEGEOGRAPHY, Sept. 16, 2008, *available at* http://www.telegeography.com/cu/article.php?article_id=25090&email=html (last accessed Sept. 24, 2009) (“The service, which will use Leap’s EV-DO Rev A high speed data network, will allow Windows-based PCs and portable devices to connect via a USB modem. It is being marketed as an alternative to wired broadband systems such as DSL and cable.”).

⁹⁶ “Leap Launches New Plans, Expands Distribution,” *Fierce Wireless* (Sept. 16, 2009).

⁹⁷ “Peek Hawks Pronto Messenger With Lifetime Subscription for \$300,” (Sept. 28, 2009), *available at* <http://gizmodo.com/5369537/peek-hawks-pronto-messenger-with-lifetime-subscription-for-300>.

⁹⁸ *See* CTIA U.S. Wireless Carrier Consumer Practices, *infra* at 45.

U.S. Wireless Carriers' Consumer Practices

	ETF policies	Trial period	Point of sale information/documentation	Online, street-level coverage maps	Ability to change plan w/o contract extension	Ability to purchase service w/o a contract (prepaid)	Ability to bring your own phone	Ability to pay full price for a handset and take service w/o a contract	Military Personnel Benefits	
									Suspension	Termination
AT&T	Prorates new and renewed 1 & 2 year consumer contracts. Fees decline by \$5 each completed month of the contract ¹	30-day ²	Follows CTIA Consumer Code ³	Yes ⁴	Yes ⁵	Yes ⁶	Yes ⁷	Yes ⁸	Yes ⁹	No ETF ¹⁰
Sprint Nextel	Prorates new and renewed 1 & 2 year consumer contracts. Fees decline by \$10 per month, beginning with the 5th month of the contract until reaching \$50 for the remaining 5 months of the contract ¹¹	30-day ¹²	Follows CTIA Consumer Code ¹³	Yes ¹⁴	Yes ¹⁵	Yes ¹⁶	Yes ¹⁷	Yes ¹⁸	Yes ¹⁹	No ETF ²⁰
T-Mobile USA	Prorates new and renewed 1 and 2 year consumer contracts. \$100 with < 180 days left, \$50 with < 90 days left, and the lesser of \$50 or the customers' standard monthly charge with < 30 days left ²¹	14-day (30 days in CA) ²²	Follows CTIA Consumer Code ²³	Yes ²⁴	Yes ²⁵	Yes ²⁶	Yes ²⁷	Yes ²⁸	Yes ²⁹	No ETF ³⁰
U.S. Cellular	Starting in the 5 th month, the ETF will be reduced by \$7.50/month (24 month contract) or \$18.50/month (12 month contract) ³¹	30-day ³²	Follows CTIA Consumer Code ³³	No, State-level only ³⁴	Yes ³⁵	Yes ³⁶	Yes ³⁷	Yes ³⁸	Yes ³⁹	No ETF
Verizon Wireless	Prorates new and renewed contracts. Fees decline by \$5 per month ⁴⁰	30-day ⁴¹	Follows CTIA Consumer Code ⁴²	Yes ⁴³	Yes ⁴⁴	Yes ⁴⁵	Yes ⁴⁶	Yes ⁴⁷	Yes ⁴⁸	No ETF ⁴⁹

Information Current as of June 3, 2009

Although the chart above focuses on five of the largest carriers, smaller carriers are also implementing pro-consumer policies.⁹⁹

In addition, as a group, and under the aegis of CTIA, the mobile wireless industry has been innovative in developing industry solutions to vexing problems. The industry has taken leadership positions with voluntary guidelines addressing a host of issues including a Consumer Code;¹⁰⁰ Wireless Content Guidelines;¹⁰¹ Best Practices and

⁹⁹ As two examples, ACS Wireless offers a 30-day trial period and prepaid plans with no contracts, while Stelera Wireless offers month-to month services. *See* ACS Wireless, ACS Wireless Policies, <http://www.acsalaska.com/personal/wireless/wireless-policies.asp> (last accessed Sept. 23, 2009); ACS Wireless, Wireless Plans, Features and Options, <http://www.acsalaska.com/personal/wireless/wireless-plans.asp> (last accessed Sept. 23, 2009); Stelera Wireless, Coverage and Pricing, <http://dev.stelerawireless.com/CoverageandPricing/tabid/101/Default.aspx> (last accessed Sept. 23, 2009).

¹⁰⁰ CTIA Consumer Code for Wireless Service, *available at* http://files.ctia.org/pdf/The_Code.pdf (last visited Sept. 24, 2009).

¹⁰¹ Wireless Content Guidelines, *available at* <http://www.ctia.org/content/index.cfm/AID/10394> (last visited Sept. 24, 2009).

Guidelines for Location-Based Services;¹⁰² and Best Practices and Guidelines for Mobile Financial Services.¹⁰³ And while Rep. Edward Markey (D-MA) identified mobile phone chargers as a concern during a recent FCC oversight hearing,¹⁰⁴ CTIA already had announced its commitment to support a common format for wireless phone chargers, known as the “Universal Charging Solution” (“UCS”).¹⁰⁵

Moreover, recent consumer satisfaction ratings from J.D. Power and Associates, Consumer Reports, and American Customer Satisfaction Index also indicate that wireless carriers are competing to meet consumer needs.¹⁰⁶ J.D. Power and Associates in particular noted the intensifying competition in the industry and the improvements driven by ongoing investment in carrier networks.¹⁰⁷

¹⁰² CTIA Best Practices and Guidelines for Location -Based Services, *available at* http://files.ctia.org/pdf/CTIA_LBS_BestPracticesandGuidelines_04_08.pdf (last visited Sept. 24, 2009).

¹⁰³ CTIA Best Practices and Guidelines for Mobile Financial Services, *available at* http://files.ctia.org/pdf/CTIA_MFS_Guidelines_BP_Final_1_14_09.pdf (last visited Sept. 22, 2009).

¹⁰⁴ See Kim Hart, *FCC chief gets new net neutrality support in House from Waxman* (Sept. 17, 2009), *available at* <http://thehill.com/component/content/article/545-technology/59329-fcc-chief-gets-new-net-neutrality-support-in-house> (last visited Sept. 24, 2009).

¹⁰⁵ See Press Release, CTIA, CTIA–The Wireless Association[®] Announces One Universal Charger Solution to Celebrate Earth Day (April 22, 2009), *available at* <http://www.ctia.org/media/press/body.cfm/PRID/1817>. “Developed by the Open Mobile Terminal Platform industry standards group and recently adopted by the GSMA, the UCS aims to reduce energy consumption and enhance the customer experience through the adoption of a single “one-charger-fits-all” solution for new wireless devices by January 1, 2012. The UCS will use the Micro-USB format as the common universal charging interface, and use energy efficient chargers in compliance with U.S. “Energy Star” requirements for external power adapters that will provide an estimated 50 percent reduction in standby energy consumption.”

¹⁰⁶ See Press Release, J.D. Power and Associates, The Gap in Call Quality Performance among Carriers Narrows As Competition Intensifies across the Wireless Service Industry (Mar. 18, 2009), *available at* <http://www.jdpower.com/corporate/news/releases/pressrelease.aspx?ID=2009041> (last accessed Sept. 24, 2009) (“J.D. Power and Associates Press Release”); *Best cell-phone service: 51,700 readers reveal that carriers are improving and that a pay-as-you-go plan could be a good option for more people*, Consumer Reports, Jan. 2009, at 28, 34 (“Consumer Reports Article”); *Scores by Industry: Wireless Telephone Service*, American Customer Satisfaction Index, *available at* http://www.theacsi.org/index.php?option=com_content&task=view&id=147&Itemid=155&i=Wireless+Telephone+Service (last accessed Sept. 23, 2009).

¹⁰⁷ See J.D. Power and Associates Press Release, *supra* n. 61.

Emerging Mobile-to-Mobile (“M2M”) Services. The benefits of wireless services, however, extend far beyond consumer or enterprise mobile broadband use. With the evolution from cell phones to smartphones and wireless data devices, enhanced network functionality, devices, and applications are improving healthcare, the environment, education, manufacturing efficiency, and workforce productivity.¹⁰⁸ In particular, the wireless ecosystem is expanding to include a variety of M2M services. Commission policies should encourage the continued innovation and investment in these critical areas, not negatively impacting the important expansion of the benefits of mobile wireless and mobile broadband. As discussed in this section and in greater detail in CTIA’s comments to the companion *Fostering Innovation and Investment in the Wireless Communications Market* proceeding, wireless services are increasing important for M2M applications used in the provision of mHealth and smart grid.¹⁰⁹

For example, in the area of mHealth, new wireless devices have been developed to improve the ability of patients with chronic illness to manage their conditions. Many of these devices are designed to improve patients’ compliance with prescribed medication regimens, which is extremely important given that “as much as 60 percent of patients do not adhere to their prescribed medication regimens.”¹¹⁰ For example, the MedMinder Systems’ wireless enabled pillbox has been deployed in a pilot program by Harvard Pilgrim Health Care for use by patients with chronic kidney disease.¹¹¹ The wireless pillbox “lights up, sounds alarms, places phone calls and even emails users for alerts and

¹⁰⁸ *Innovation NOI* at ¶¶ 16-18.

¹⁰⁹ *2009 CTIA Innovation and Investment Comments* at Section I.C.

¹¹⁰ *CA Health Study* at 12.

¹¹¹ See Brian Dolan, *Harvard Pilgrim to pilot wireless pillbox for CKD patients* (Aug. 31, 2009), available at <http://mobihealthnews.com/4153/harvard-pilgrim-to-pilot-wireless-pillbox-for-ckd-patients/> (last visited Sept. 28, 2009).

notifications” regarding their medication regime.¹¹² Similarly, the 2009 winner of the DiabetesMine Design Challenge transformed an iPhone into a combined glucose meter and insulin pump, with a storage container for strips.¹¹³ By eliminating the need for diabetics to carry several devices, it increases the likelihood of regular monitoring.

Physicians increasingly rely on new applications and devices that utilize wireless technology to improve healthcare management. One such solution is the EMMA[®] system which links a patient’s home with the pharmacy and prescribing physician. A Medication Delivery Unit (“MDU”) is installed in the patient’s home and is enabled via a wireless, two-way connection that allows a physician to remotely manage the medication stored in the MDU.¹¹⁴ Another device is a wireless tablet, recently certified for use on the Verizon Wireless network, that permits clinicians to access patient data wirelessly, in real-time from a portable medical chart.¹¹⁵ Likewise, a high-magnification microscope attachment (the “CellScope”) has been designed for cell phones that would allow users to take images of sputum or blood samples and forward the images wirelessly for analysis.¹¹⁶ Due to its portability and affordability, this device can be used by health workers in remote areas and could be used to monitor disease outbreaks more quickly and

¹¹² *Id.*

¹¹³ See Diabetesmine, *ANNOUNCING OUR WINNERS: The 2009 DiabetesMine™ Design Challenge* (May 18, 2009), available at <http://www.diabetesmine.com/2009/05/announcing-our-winners-the-2009-diabetesmine-design-challenge.html> (last visited Sept. 28, 2009).

¹¹⁴ See <http://www.inrangesystems.com/index.php?page=understanding-emma> (last visited Sept. 28, 2009); see also *CA Health Study* at 8.

¹¹⁵ See Brian Dolan, @CTIA Verizon on mHealth 4G (Apr. 1, 2009), available at <http://mobihealthnews.com/1112/ctia-verizon-on-mhealth-4g/> (last visited Sept. 28, 2009).

¹¹⁶ See Brian Dolan, *White House: We are excited about wireless health* (July 21, 2009), available at <http://mobihealthnews.com/3345/white-house-we-are-excited-about-wireless-health> (last visited Sept. 29, 2009); Blum Center for Developing Economies, *CellScope for Disease Diagnosis*, available at <http://blumcenter.berkeley.edu/global-poverty-initiatives/mobile-phones-rural-health/remote-disease-diagnosis> (last visited Sept. 29, 2009).

affordably than with conventional technology.¹¹⁷ With regard to mobile device applications used by physicians, a survey conducted by MDsearch found that 53 percent of responding physicians owned a smartphone and that 63 percent of those with smartphones used mobile medical applications over the device.¹¹⁸

Moreover, new M2M wireless technologies hold the promise for significantly improving home health care. According to the California HealthCare Foundation, “[r]esearch has shown that using remote monitoring devices in a patient’s home, coupled with follow-up phone contact, can lower the cost of delivery while maintaining quality.”¹¹⁹ A recent report predicted that M2M device shipments may top 430 million units by 2013,¹²⁰ with many of these devices in the healthcare sector. In this regard, Verizon Wireless, in partnership with Alcatel-Lucent and Ericsson, has launched a new 4G innovation center for M2M devices that will operate on the Verizon Wireless network.¹²¹ Similarly, AT&T recently opened a device certification lab to accelerate the deployment of healthcare-related tracking devices.¹²²

¹¹⁷ See Blum Center for Developing Economies, CellSchope for Disease Diagnosis, available at <http://blumcenter.berkeley.edu/global-poverty-initiatives/mobile-phones-rural-health/remote-disease-diagnosis> (last visited Sept. 29, 2009).

¹¹⁸ See Brian Dolan, *Survey: 63% physicians with smartphones use apps* (Sept. 11, 2009), available at <http://mobihealthnews.com/4354/survey-63-of-physicians-with-smartphones-use-apps/> (last visited Sept. 29, 2009).

¹¹⁹ *CA Health Study* at 13.

¹²⁰ See Brian Dolan, *AT&T, Verizon, Sprint to fast-track health devices* (Sept. 3, 2009), available at <http://mobihealthnews.com/4221/att-verizon-sprint-to-fast-track-health-devices/> (last visited Sept. 29, 2009).

¹²¹ See Brian Dolan, *@CTIA Verizon on mHealth 4G* (Apr. 1, 2009), available at <http://mobihealthnews.com/1112/ctia-verizon-on-mhealth-4g/> (last visited Sept. 28, 2009).

¹²² See Brian Dolan, *AT&T, Verizon, Sprint to fast-track health devices* (Sept. 3, 2009), available at <http://mobihealthnews.com/4221/att-verizon-sprint-to-fast-track-health-devices/> (last visited Sept. 28, 2009).

Wireless services are also playing an increasing role in the implementation of smart grids.¹²³ A recent report issued jointly by Accenture and Vodafone found that wireless technology can be used to reduce carbon emissions in European Union (“EU”) member countries by 113 metric tons per year in carbon dioxide equivalent (“CO₂e”) and cut energy costs by £43 billion (approximately \$70 billion).¹²⁴ According to the report, more than 80 percent of these savings would be attributable to smart M2M wireless communications.¹²⁵ The implementation of smart grids utilizing wireless technology alone would reduce carbon emissions in the EU by approximately 43 metric tons CO₂e and save £11.4 billion (approximately \$18 billion) per year by 2020.¹²⁶

As an initial matter, sound spectrum management policy dictates that the Commission promote smart grid deployments that utilize commercial wireless networks, rather than the establishment of new spectrum allocations or set asides dedicated to particular uses, such as smart grids or utility functions. In this era of increasing demand for spectrum, it would be inefficient to devote unique spectrum for the creation of new wireless smart grid networks when commercial networks can satisfy the smart grid systems and a host of other wireless uses over the same spectrum. A number of utilities and manufacturers have already decided to take advantage of this expertise and utilize CMRS networks for various smart grid applications.

CMRS networks are an ideal solution for smart grid applications. These networks deliver economies of scope and scale and are designed to achieve interoperability.

¹²³ See Comment Sought on the Implementation of Smart Grid Technology, Public Notice, DA 09-2017 (Sept. 4, 2009).

¹²⁴ Accenture and Vodafone, Carbon Connections: Quantifying Mobile’s Role in Tackling Climate Change at 4 (July 2009) (“Carbon Connections”).

¹²⁵ *Id.* at 8.

¹²⁶ *Id.* at 16.

CMRS networks also utilize commercially available equipment. Smart grids should be designed to utilize similar commercially available equipment, rather than proprietary solutions designed for a single energy grid or company. Moreover, CMRS networks with 3G technology have been deployed to more than 92 percent of the U.S. population. Over the next several years, carriers will deploy 4G technologies with downlink speeds of 100 Mbps. Because smart grid standards have only been recently announced and the utility industry still is evaluating first generation smart grid products,¹²⁷ CMRS networks will be significantly robust once next generation smart grid products are developed.

The U.S. wireless industry has been at the forefront of the movement to bring smart grids to reality. First, wireless carriers have developed new, innovative pricing plans for smart grid deployments utilizing CMRS networks.¹²⁸ These new plans make it more economical to utilize commercial wireless networks for smart grid applications.

Second, many wireless carriers have forged partnerships or developed innovative products to facilitate smart grid development and deployment. T-Mobile, for example, developed a SIM card specifically designed for M2M applications. The M2M SIM is much smaller than traditional SIM cards – it is only about the size of a pin head – and is designed to withstand harsh weather conditions where M2M devices may be deployed.¹²⁹

T-Mobile also entered into a strategic alliance with Echelon, a smart meter provider,

¹²⁷ See Katherine Ling, *Obama Admin Releases Initial 'Smart Grid' Standards* (Sept. 24, 2009), available at <http://www.nytimes.com/gwire/2009/09/24/24greenwire-obama-admin-releases-initial-smart-grid-standa-98180.html> (last visited Sept. 29, 2009).

¹²⁸ See Fierce Wireless, *AT&T To Offer Wireless Smart Grid Technology To Utility Companies* (March 2009), available at <http://www.fiercewireless.com/press-releases/t-offer-wireless-smart-grid-technology-utility-companies-0> (last visited Sept. 29, 2009).

¹²⁹ See Marguerite Reardon, *T-Mobile goes for smart grids* (Apr. 23, 2009), available at http://news.cnet.com/8301-1035_3-10226418-94.html (last visited Sept. 29, 2009).

whereby T-Mobile's M2M SIM card will be built into Echelon products and data from the smart meters will be transported over T-Mobile's wireless network.¹³⁰

AT&T entered into a similar arrangement with SmartSynch, a smart meter maker that has smart grid solutions already deployed at more than 100 utilities in North America,¹³¹ whereby data from SmartSynch's meters are carried over the AT&T wireless network.¹³² AT&T also reached an arrangement with Cooper Power Systems ("CPS") whereby data from CPS's outage monitors and voltage sensors will be transmitted wirelessly via AT&T's network.¹³³

Verizon Wireless entered into agreements with Ambient and Itron, two companies that provide utilities with solutions for creating smart grid communication platforms and technologies. Under these agreements, which are intended to facilitate the deployment of smart grid projects across the country, Verizon Wireless will carry the traffic from Ambient's Smart Grid platform and Itron's mesh networks that connect smart meters.¹³⁴

¹³⁰ See Ariel Schwartz, *T-Mobile Joins the Smart-Grid Wireless Network Brigade* (May 5, 2009), available at <http://www.fastcompany.com/blog/ariel-schwartz/sustainability/t-mobile-joins-smart-grid-wireless-network-brigade> (last visited Sept. 29, 2009).

¹³¹ See Fierce Wireless, *AT&T To Offer Wireless Smart Grid Technology To Utility Companies* (March 2009), available at <http://www.fiercewireless.com/press-releases/t-offer-wireless-smart-grid-technology-utility-companies-0> (last visited Sept. 29, 2009).

¹³² See Katie Fehrenbacher, *Phone Companies Heart Smart Grid: SmartSynch, AT&T Sign Up Texas Utility* (Apr. 16, 2009), available at <http://earth2tech.com/2009/04/16/phone-companies-heart-smart-grid-smartsynch-att-sign-up-texas-utility> (last visited Sept. 29, 2009). Texas-New Mexico Power has already agreed to utilize this solution for 10,000 smart meters in Texas. *Id.*

¹³³ See Press Release, AT&T, *AT&T and Cooper Power Systems to Offer Wireless Smart Grid Sensors* (June 24, 2009), available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26874> ("AT&T/Cooper Press Release"); Jeff St. John, *AT&T Links Cooper Power Systems' Smart Grid Devices* (June 25, 2009), available at <http://www.greentechmedia.com/articles/read/att-links-cooper-power-systems-smart-grid-devices> (last visited Sept. 29, 2009). Under the CPS agreement, AT&T will co-sell the outage monitors and voltage sensors. AT&T/Cooper Press Release at 1.

¹³⁴ See Transmission & Distribution World, *Verizon Wireless and Ambient Join to Offer Smart Grid Communications System* (Mar. 25, 2009), available at http://tdworld.com/info_systems/vendor_updates/verizon-ambient-smart-grid-0309 (last visited Sept. 29, 2009); Jeff St. John, *Verizon, Itron Hook Up Smart Grid Communications* (Apr. 1, 2009), available at

Leap Wireless recently announced that it was sponsoring a new start-up incubator for companies and entrepreneurs in communications and communications convergence, with a particular focus on wireless smart grids.¹³⁵ Sprint Nextel and Clearwire also have announced that they plan to support smart grid deployments as well.¹³⁶

Finally, mobile virtual network operators (“MVNOs”) have been established primarily to serve the M2M market.¹³⁷ For example, KORE Telematics – a specialized MVNO providing M2M wireless service – serves more than 550 applications providers powering diverse applications (including utility metering) over the AT&T wireless network.¹³⁸ Similarly, CrossBridge Solutions is another MVNO that offers wireless utility metering services that can power smart grid applications. CrossBridge Solutions utilizes a variety of CMRS services to serve client needs, including Sprint’s CDMA/1xRTT/EV-DO wireless network and AT&T’s GPRS/EDGE wireless network.¹³⁹

C. Advertising

Another sometimes overlooked measure of effective industry competition – advertising revenue – also demonstrates that CMRS carriers compete vigorously with one another for customers. These significant advertising dollars are being spent by wireless carriers to educate consumers as to why they should choose one carrier over another.

<http://www.greentechmedia.com/green-light/post/verizon-itron-hook-up-smart-grid-communications-1315> (last visited Sept. 29, 2009).

¹³⁵ See Press Release, CommNexus San Diego, San Diego Wireless Heavyweight Leap Wireless Supports New Start-up Incubator (June 17, 2009), *available at* http://news.prnewswire.com/DisplayReleaseContent.aspx?ACCT=ind_focus.story&STORY=/www/story/06-17-2009/0005045873&EDATE=.

¹³⁶ See Julie Blin, *Smart grids: The next wireless goldmine?* (May 15, 2009), *available at* <http://www.fiercebroadbandwireless.com/story/smart-grids-next-wireless-goldmine/2009-05-15> (last visited Sept. 29, 2009).

¹³⁷ *Id.* (referencing MVNOs Kore Telematics and CrossBridge Solutions).

¹³⁸ See KORE Telematics, About KORE, *available at* <http://www.koretelematics.com/en/corporate/index.html> (last visited Sept. 30, 2009).

¹³⁹ See CrossBridge Solutions, Welcome to CrossBridge Solutions, *available at* <http://www.crossbridge-solutions.com> (last visited Sept. 29, 2009).

Only a desire to compete for customers would drive companies to spend so much money on efforts to differentiate their brand from a competing brand.

Economic scholars, even critics of advertising, generally agree that advertising is useful when it advises consumers about new products or price information. In International Advertising: Communicating Across Cultures, Barbara Mueller notes that advertising allows consumers to “compare goods, which often results in lower prices and improved product quality; advertising stimulates the economy by encouraging consumption; and it has the potential to improve living standards.”¹⁴⁰ Additionally, Marieke de Mooij, in Advertising Worldwide, asserts that “the purposes of advertising – such as to enable greater volumes to be sold, to inform of new products and to establish competitive advantage – are interwoven with the working of the free market economy and the economies of scale and competitiveness that it brings Advertising helps to build strong brands, stimulates innovation.”¹⁴¹ A famous study conducted by renowned economist Lee Benham in the early 1970s also showed that the presence of advertising caused far lower product prices.¹⁴²

Bearing in mind these theoretical and empirical points, the fact that wireless providers spend billions of dollars each year on advertising highlights the competitive industry environment. In fact, Verizon Wireless and AT&T alone spent a combined \$4.4

¹⁴⁰ BARBARA MUELLER, INTERNATIONAL ADVERTISING: COMMUNICATING ACROSS CULTURES 256 (1996).

¹⁴¹ MARIEKE DE MOOIJ, ADVERTISING WORLDWIDE 503-504 (1994).

¹⁴² Lee Benham, *The Effect of Advertising on the Price of Eyeglasses*, 15(2) JOURNAL OF LAW AND ECONOMICS, 1972, at 337-52 (noting that the cost of prescription eyeglasses was far lower in states that allowed advertising than in states that banned it).

billion on advertising in 2008.¹⁴³ As illustrated in the first chart below, as of the first quarter of 2009, Verizon Wireless, AT&T, and Sprint Nextel were the second, third, and seventh largest advertising purchasers, respectively, among *all* advertisers.¹⁴⁴

Top Ten Advertisers: Q1 2009 vs. Q1 2008

Top Ten Advertisers: Q1 2009 vs. Q1 2008¹

Rank	Company	Jan-Mar 2009 (Millions)	Jan-Mar 2008 (Millions)	% Change
1	Procter & Gamble Co	\$674.1	\$820.0	-17.8%
2	Verizon Communications Inc	\$577.1	\$559.8	3.1%
3	AT&T Inc	\$459.4	\$465.1	-1.2%
4	General Motors Corp	\$424.2	\$524.6	-19.1%
5	Johnson & Johnson	\$397.2	\$308.2	28.9%
6	News Corp	\$341.2	\$404.6	-15.7%
7	Sprint Nextel Corp	\$317.7	\$243.7	30.3%
8	Walt Disney Co	\$303.7	\$337.0	-9.9%
9	Time Warner Inc	\$263.4	\$348.5	-24.4%
10	General Electric Co	\$261.4	\$251.0	4.1%
	Total	\$4,019.5	\$4,262.6	-5.7%

Source: TNS Media Intelligence
¹ Figures do not include FSI, House Ads or PSA activity.

Moreover, both Verizon Wireless and Sprint Nextel increased their advertising spending from the first quarter of 2008 to the first quarter of 2009 (Sprint Nextel by 30.3% and Verizon Wireless by 3.1%).¹⁴⁵ And recent data confirms the continuing trend of significant carrier advertising expenditures: as illustrated in the second chart below, AT&T, Verizon Wireless, Sprint Nextel, and T-Mobile ranked, first, second, third, and

¹⁴³ Mike Dano, *Dead brands: A stroll through the wireless operator graveyard*, FIERCEWIRELESS, May 28, 2009, available at <http://www.fiercewireless.com/slideshow/dead-brands-stroll-through-wireless-operator-graveyard> (last accessed Sept. 24, 2009).

¹⁴⁴ TNS Media Intelligence, *Top Ten Advertisers: Q1 2009 vs. Q1 2008*, available at <http://www.marketingcharts.com/television/us-ad-spend-plunges-142-only-online-posts-growth-9424/tns-media-intelligence-top-10-advertisers-q1-2009jpg/> (last accessed Sept. 24, 2009) (“Top Ten Advertisers”).

¹⁴⁵ *Id.*

twelfth among *all* leading national advertisers, spending \$2.24 billion, \$2.14 billion, \$1.56 billion and \$606 million, respectively, on advertising in 2007.¹⁴⁶

WIRELESS COMPANIES' AND RELATED COMPANIES' RANK AMONG LEADING NATIONAL ADVERTISERS					
Out of 200 companies					
2007 Rank	Megabrand	Parent company	Measured U.S. ad spending		
			2007	2006	% change
1	AT&T	AT&T	\$2243.2	\$2332.5	-3.8
2	Verizon	Verizon Communications	2144.1	1926.0	11.3
3	Sprint	Sprint Nextel Corp.	1156.9	1027.8	12.6
12	T-Mobile	Deutsche Telekom	606.7	594.9	2.0
25	Comcast	Comcast Corp.	411.8	359.6	14.5
27	HP	Hewlett-Packard Co.	394.9	454.6	-13.1
30	Best Buy	Best Buy Co.	375.0	354.4	5.8
37	Microsoft	Microsoft Corp.	328.0	376.5	-12.9
38	Sony	Sony Corp.	324.7	273.1	18.9
48	Apple	Apple	289.8	281.9	2.8
58	Circuit City	Circuit City Stores	265.6	304.1	-12.6
86	Alltel	Alltel Corp.	190.3	159.2	19.5
133	Samsung	Samsung Group	142.6	156.3	-8.7
170	Nextel	Sprint Nextel Corp.	116.3	188.9	-38.4
171	RadioShack	RadioShack Corp.	116.1	149.9	-22.6

Source: Advertising Age/TNS Media Intelligence

In light of these economic theories, advertising revenue statistics help demonstrate that the U.S. wireless industry is robustly competitive.

D. Open Networks and Applications

As described extensively above and in CTIA's comments to the companion *Fostering Innovation and Investment in the Wireless Communications Market* proceeding, there has been an explosion in the number and diversity of applications available to consumers.¹⁴⁷ Wireless carriers have also, independently, moved to empower their consumers with additional choices by opening up their networks to

¹⁴⁶ *Ad spending in wireless*, RCR WIRELESS, Aug. 13, 2008, available at <http://www.rcrwireless.com/article/20080813/WIRELESS/624776919/ad-spending-in-wireless> (last accessed Sept. 24, 2009).

¹⁴⁷ See Section II.E., *supra*. See also 2009 CTIA Innovation and Investment Comments at Section I.B.

compatible wireless handsets. Verizon Wireless¹⁴⁸ and AT&T,¹⁴⁹ for example, both opened their networks to compatible devices. Such open networks represent a major competitive achievement for carriers and directly benefit consumers.

The networks are becoming more open, and new software is driving wireless services. There has been a major push towards open source software in the wireless mobile world, and carriers are embracing it as a way to provide consumers with even more flexibility from their mobile handsets.¹⁵⁰ Carriers and manufacturers are also engaging with the broader wireless community through development relationships and tools that they make available on their websites to promote ongoing innovation. Thus, manufacturers and other suppliers and carriers have Software Development Kits (“SDKs”) and other developer-oriented resources accessible through their websites in order to promote the development of applications that will meet and stimulate the interests of millions of consumers, from personal to enterprise applications.¹⁵¹

¹⁴⁸ See, e.g., Press Release, Verizon Wireless, Verizon Wireless to Introduce ‘Any Apps, Any Device’ Option for Customers in 2008 (Nov. 27, 2007), available at https://www22.verizon.com/opendev/112707_news.aspx (last accessed Sept. 24, 2009).

¹⁴⁹ Leslie Cauley, *AT&T Flings Cellphone Network Wide Open*, USA TODAY, Dec. 5, 2007, available at http://www.usatoday.com/tech/wireless/phones/2007-12-05-att_N.htm (last accessed Sept. 24, 2009).

¹⁵⁰ See, e.g., Press Release, Sprint Nextel, Sprint Joins Open Handset Alliance (Nov. 5, 2007), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1072575 (last accessed Sept. 24, 2009); Eric Benderoff, *Verizon takes a ‘Googley’ approach to software*, CHICAGO TRIBUNE, May 14, 2008, at http://featuresblogs.chicagotribune.com/eric2_0/2008/05/verizon-takes-a.html (last accessed Sept. 24, 2009).

¹⁵¹ See, e.g., Apple Developer Connection, iPhone Dev Center, <http://developer.apple.com/iphone/> (last accessed Sept. 24, 2009); Android Developers, <http://developer.android.com/> (last accessed Sept. 24, 2009); LG Mobile Developer Network, <http://developer.lgmobile.com/> (last accessed Sept. 24, 2009); MOTODEV, <http://developer.motorola.com/> (last accessed Sept. 24, 2009); Forum Nokia, <http://www.forum.nokia.com/> (last accessed Sept. 24, 2009); BlackBerry Themes & Animated Graphics, <http://www.plazmic.com/en/index.shtml> (last accessed Sept. 24, 2009); Samsung Mobile Innovator, <http://innovator.samsungmobile.com/index.do> (last accessed Sept. 24, 2009); Sony Ericsson - Mobile Developer Support, http://developer.sonyericsson.com/site/global/home/p_home.jsp (last accessed Sept. 24, 2009); AT&T devCentral, <http://developer.att.com/developer/index.jsp?page=toolsAndTech> (last accessed June 4, 2009); Sprint Application Developer’s Website, http://developer.sprint.com/site/global/home/p_home.jsp (last accessed Sept. 24, 2009); T-Mobile Partner Network, http://developer.t-mobile.com/site/global/home/p_home.jsp (last accessed Sept. 24, 2009);

As discussed above, a number of applications stores have opened in the past 14 months.¹⁵² Application stores provide an opportunity for consumers to have a direct role in determining the functionality of their handsets rather than relying on carrier frameworks. In addition, they allow independent developers to earn revenue from sales and advertising by creating innovative applications for consumers to download.

The success of these applications stores – the direct result of ongoing investment and innovation – confirms that the wireless ecosystem is highly competitive and consumer-focused. As economists Gregory Rosston and Michael Topper recently observed: “Recent developments suggest that wireless providers are responding to consumer demands for more ‘openness’ to third-party content and applications without the need for regulatory mandate.”¹⁵³

IV. CONSUMERS AND THE U.S. ECONOMY CONTINUE TO BENEFIT FROM THE PERFORMANCE OF THE WIRELESS INDUSTRY

A. Consumption and Output Growth

Rapid, sustained growth in consumption is a typical indicator of a vibrant marketplace. Statistics on wireless use show explosive rates of penetration and total usage, not only for voice minutes but also for data-centric applications. By the end of 2008, there were more than 270.3 million active wireless subscribers, up nearly 15 million over the prior year.¹⁵⁴ With some 308 million persons residing in the U.S. and its

Verizon Wireless Open Development, <https://www22.verizon.com/opendev/> (last accessed Sept. 23, 2009); Verizon Developer Community, <http://www.vzwdevelopers.com/aims/> (last accessed Sept. 24, 2009).

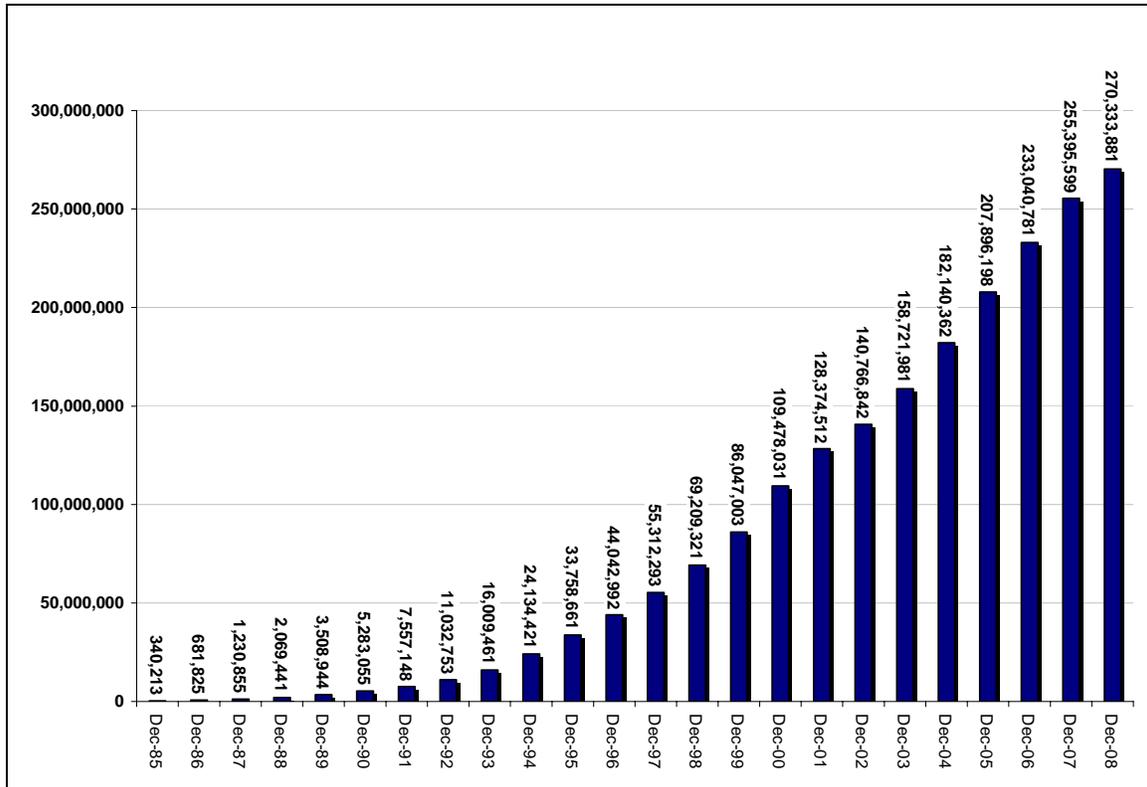
¹⁵² See Section II.E., *supra*.

¹⁵³ “An Antitrust Analysis of the Case for Wireless Network Neutrality,” Gregory L. Rosston and Michael D. Topper (July 2009).

¹⁵⁴ See CTIA – The Wireless Association®, *ANNUALIZED WIRELESS INDUSTRY SURVEY RESULTS - DECEMBER 1985 TO DECEMBER 2008*, available at http://files.ctia.org/pdf/CTIA_Survey_Year-End_2008_Graphics.pdf (last accessed Sept. 24, 2009).

territories,¹⁵⁵ wireless penetration in the U.S. now stands at approximately 87.8%, up from 83.2% at year-end 2007.¹⁵⁶

Estimated Wireless Subscribers Exceed 270 Million in 2008



Source: CTIA Semi-Annual Survey

Total wireless output – including both minutes of use (“MOU”) and messages – has also continued to climb. In 2008, MOUs grew by 100 *billion* minutes over the prior year to reach 2.2 trillion.¹⁵⁷ For the fourth quarter of 2008, BofA/Merrill Lynch reported that wireless customers in the U.S. were using an average of 829 MOU per month.¹⁵⁸ The big news, however, was in messaging growth rates. Total text messages almost

¹⁵⁵ See U.S. Census Bureau, International Data Base, <http://www.census.gov/ipc/www/idb/summaries.html> (last accessed Sept. 21, 2009) (accessing data on the populations of the United States, Guam, the U.S. Virgin Islands, Commonwealth of the Northern Mariana Islands, Puerto Rico and American Samoa via drop-down menu at the International Database summary page maintained by the Census).

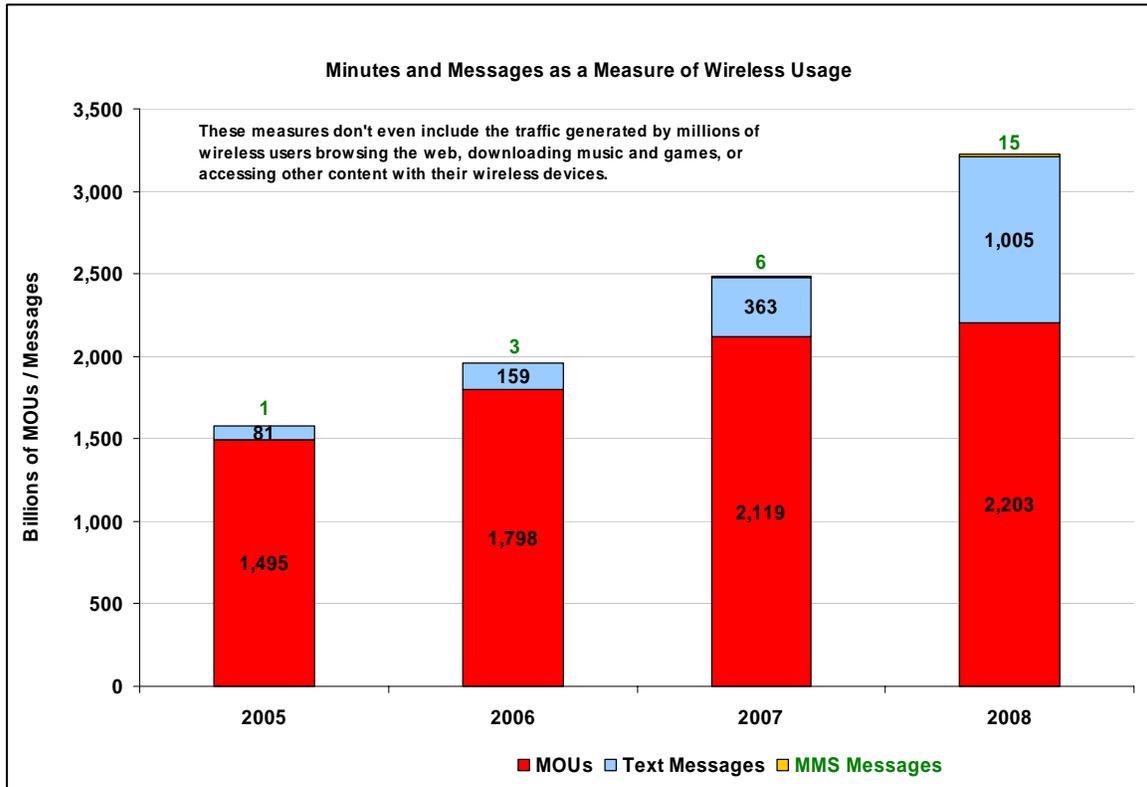
¹⁵⁶ See CTIA’s Wireless Industry Indices Report at 30.

¹⁵⁷ See CTIA’s Wireless Industry Indices Report at 187.

¹⁵⁸ BofA / Merrill Lynch at 35.

tripled, growing from 362.5 billion to 1.005 trillion.¹⁵⁹ Similarly, MMS messages more than doubled, climbing from 6.1 billion to 14.9 billion.¹⁶⁰

Reported Wireless Minutes of Use Exceed 2.2 Trillion in 2008



Source: CTIA Semi-Annual Survey

Higher-bandwidth data usage also surged as consumers increasingly turned to their wireless devices for Web browsing, mobile content downloads, game-play, social networking and office systems access. For example, consumer research firm comScore found that the number of people regularly using their mobile device to access news and information on the Internet more than doubled from January 2008 to January 2009.¹⁶¹

¹⁵⁹ See CTIA's Wireless Industry Indices Report at 187.

¹⁶⁰ See *id.*

¹⁶¹ Press Release, comScore, Mobile Internet Becoming A Daily Activity For Many (Mar. 16, 2009), available at

comScore vice president Mark Donovan explained that, “Over the course of the past year, we have seen use of mobile Internet evolve from an occasional activity to being a daily part of people’s lives.”¹⁶² Donovan noted that social networking and blogging via mobile devices are growing at a “torrid pace.”¹⁶³ Continuing upgrades in wireless networks and devices are also making high bandwidth applications like mobile video popular. According to Nielsen, 2008 saw a healthy 14% increase in subscribers who access video content via their phones, and “overall satisfaction with the mobile video experience is high among current users.”¹⁶⁴

B. Consumer Benefits of Price Rivalry

1. Market competition continues to result in lower prices for consumers

In many industries, the kind of extremely strong consumer demand that exists for wireless services would result in rapidly rising prices. This is not the case in the U.S. wireless market, however, thanks to vibrant competition that keeps prices low. Indeed, according to independent third party analysis, and as shown in the following chart, U.S. consumers benefit from the lowest cost per minute among 26 OECD countries.¹⁶⁵

http://www.comscore.com/Press_Events/Press_Releases/2009/3/Daily_Mobile_Internet_Usage_Grows (last accessed Sept. 24, 2009).

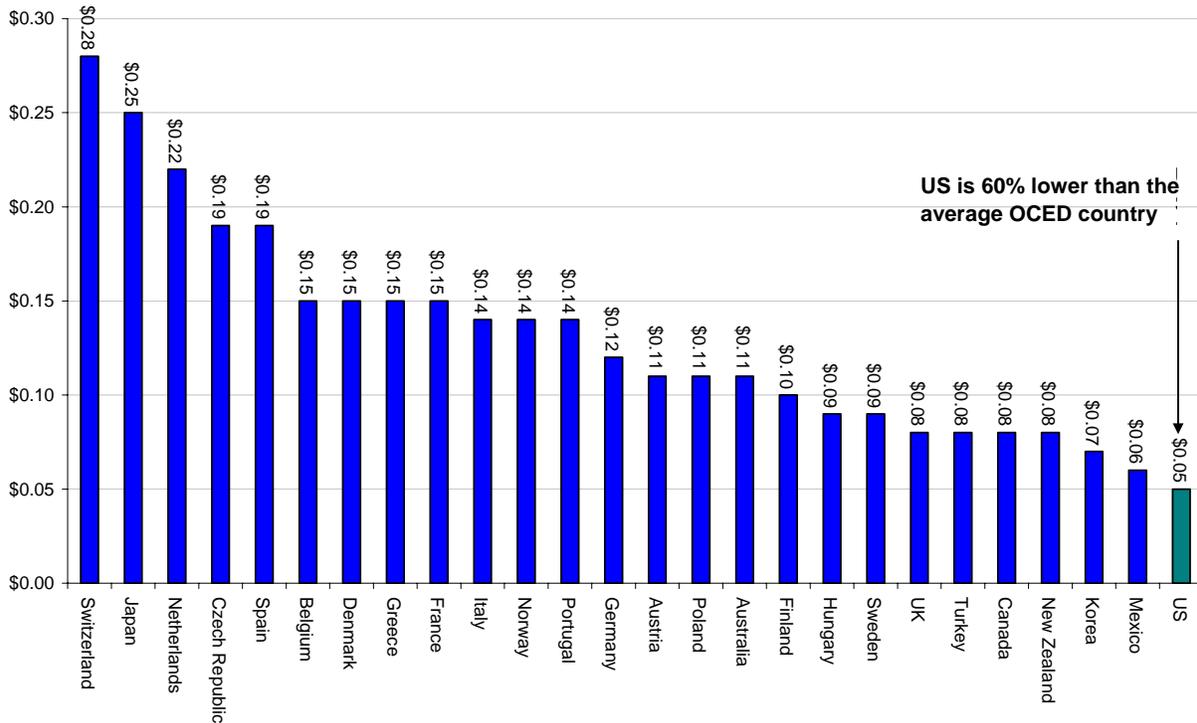
¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Mobile Video: Despite Uptick, Still Room For Growth In U.S.*, NIELSEN WIRE, Jan. 8, 2009, at http://blog.nielsen.com/nielsenwire/online_mobile/mobile-video-update-despite-uptick-still-room-for-growth-in-us/ (last accessed Sept. 24, 2009).

¹⁶⁵ *BofA / Merrill Lynch, supra* note 9.

Comparative Revenue Per Minute in 26 OECD Countries, 1Q09



Source: BofA/Merrill Lynch, “Global Wireless Matrix 4Q08”

Competition is evident in the way that carriers continue to develop innovative calling plans to satisfy all levels of subscriber usage, as discussed above.¹⁶⁶ As discussed more fully above, friends and family plans, free long distance plans, national and local plans, and unlimited calling and data options all have the effect of reducing per-minute and per-bit costs for consumers.¹⁶⁷ Indeed, the fact that multiple carriers now offer unlimited plans shows that carriers are very responsive when competitors introduce new pricing models.¹⁶⁸

The recent results of competitive pricing are especially evident in the text messaging market. Many carriers now bundle unlimited messaging as part of their

¹⁶⁶ See Section III.B., *supra*.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

unlimited calling plans,¹⁶⁹ offer unlimited messaging as an optional add-on, or offer plans with buckets of text messages.¹⁷⁰ By offering these messaging “buckets” and bundled plans, wireless carriers continue to offer better value. Consumers have responded, as shown above, by rapidly increasing the volume of messaging they use.

2. **The recent OECD report does not reflect reality for American consumers**

Against the current backdrop of a dizzying array of calling plans and marketplace price competition, it was more than a little surprising to see the OECD release a report in August 2009 which concluded that the U.S. has some of the highest priced “baskets” of wireless services compared to other OECD countries.¹⁷¹ The OECD’s curious result is easier to understand after reading its own cautionary explanation:

It is important to note again that the OECD calling pattern in the basket can be significantly different than common calling profiles in a specific country. For example, the high-usage OECD basket includes 1,680 outgoing voice calls per year while users in the United States average 9,600 minutes of voice calls (combined incoming and outgoing) per year. In this case the basket provides the cost of buying exactly the calls and messages in the OECD basket rather than what may be considered a “typical” bundle in the market.¹⁷²

Given that the *average* U.S. calling profile is multiple times greater than the OECD’s “high usage” basket,¹⁷³ few Americans would want to buy OECD’s “baskets.”

¹⁶⁹ See, e.g., Sean Cooper, *Cricket Wireless Offers Unlimited Data for \$35 a Month, Look Ma, No Cap*, Engadget Mobile, Mar. 3, 2008, available at <http://www.engadgetmobile.com/2008/03/23/cricket-wireless-offers-unlimited-data-for-35-a-month-look-ma/> (last accessed Sept. 24, 2009) (“Cooper Article”); German Article, *supra* note 52; Azuri Article, *supra* note 49; Lendino Article, *supra* note 51.

¹⁷⁰ See Segan Article, *supra* note 51.

¹⁷¹ OECD Communications Outlook 2009 275-77 (Aug. 2009), available at <http://www.oecd.org/sti/telecom/outlook>.

¹⁷² *Id.* at 275.

¹⁷³ For example, the OECD defines a “medium use” customer as someone making 780 calls (1,368 minutes) a year, and sending 600 SMS and 8 MMS messages a year. That assumed “medium” basket works out to about 114 minutes, 50 SMS messages, and less than one MMS message a month. By contrast, CTIA’s semi-annual survey shows that the average wireless consumer uses around 760 minutes a month, and over 400 text messages a month. Even if one only counts half of those minutes as outgoing

George Ford, Chief Economist at the Phoenix Center for Advanced Legal and Economic Public Policy Studies, concluded in a recent review of the OECD report that its “approach to measuring mobile prices and the manner in which the reported results are used are invalid (or at least misleading) and contribute little to the policy debate.”¹⁷⁴ Indeed, he calculated that American consumers would pay *more* for service at their current usage levels if they signed-up for the pricing plans offered in the Netherlands, which the OECD report cited as having the lowest wireless rates.¹⁷⁵

The OECD also erred by basing its sampling of U.S. prices on a limited number of U.S. carriers and calling plans.¹⁷⁶ Notably, it ignored the availability of low volume plans, which would have fared better when evaluated against the OECD’s petite-sized baskets. For example, a 200 minute plan is available from Sprint, T-Mobile offers a 300 minute plan, and Boost Mobile offers a no-minimum plan at \$0.10/minute.¹⁷⁷ Thus, if the methodology of the OECD report were corrected to consider more typical U.S. consumer usage patterns and the diversity of plan options available, including low volume offerings, the report would conclude what others have – that U.S. consumers benefit from some of the lowest wireless prices in the world.

C. Consumer Benefits of Non-Price Rivalry

Consumers also benefit from wireless carriers’ competition on metrics other than price. Some carriers strive to set themselves apart by focusing on coverage and service

minutes (to mirror the OECD assumption), that is still more than three times as many minutes as the OECD methodology assumes.

¹⁷⁴ George S. Ford, *Be Careful What You Ask For: A Comment on the OECD’s Mobile Phone Price Metrics*, Phoenix Center Perspectives 09-03, 1 (2009), available at <http://www.phoenix-center.org/perspectives/Perspective09-03Final.pdf> (last accessed Sept. 24, 2009).

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 6.

¹⁷⁷ *Id.*

quality. Verizon Wireless, for example, promotes itself as having “America’s largest and most reliable wireless network”¹⁷⁸ through its famous “Can you hear me now?” campaign.¹⁷⁹ Similarly, AT&T’s wireless advertising message – “more bars in more places” – was designed to capture what customers associate with the best wireless coverage.¹⁸⁰ Others, including Sprint Nextel, T-Mobile, and others, emphasize providing the newest handsets with the most innovative features.¹⁸¹ Finally, wireless carriers strive to differentiate themselves based on customer service by promoting their J.D. Power and Associates ranking for customer care (or other accolades) on their websites, demonstrating that carriers view customer service as a competitive factor.¹⁸²

D. Mobile Broadband Activity and Adoption

¹⁷⁸ See Verizon Wireless – Why Verizon Wireless?, <http://www.verizonwireless.com/b2c/splash/whyvzw.jsp> (last accessed Sept. 22, 2009).

¹⁷⁹ See Theresa Howard, ‘Can you hear me now?’ a hit, USA TODAY, Feb. 22, 2004, available at http://www.usatoday.com/money/advertising/adtrack/2004-02-22-track-verizon_x.htm (last accessed Sept. 22, 2009) (reporting that Verizon views its high-quality service as its competitive advantage instead of promotional deals).

¹⁸⁰ See Bryan Gardiner, AT&T: ‘More Bars in More Places’ is the New ‘Fewest Dropped Calls’, Wired.com, Aug. 23, 2007, at <http://www.wired.com/epicenter/2007/08/att-more-bars-i/> (last accessed Sept. 22, 2009).

¹⁸¹ See, e.g., Priya Ganapati, *Why Verizon’s phones aren’t more exciting*, CNN.COM, Sept. 18, 2009, available at <http://edition.cnn.com/2009/TECH/09/17/verizon.cellphones/> (last accessed Sept. 22, 2009) (reporting that wireless carriers seek to attract new customers by getting the newest high-end handsets, as evidenced by T-Mobile’s introduction of the Android phones HTC myTouch and Moto Cliq, AT&T’s offering of the Apple iPhone 3G and 3G S, Sprint’s launch of the Palm Pre and HTC Hero); *Palm Pre Coming Soon? Sprint Rolls Out Print Ads*, Gearlog.com, Apr. 17, 2009, at http://www.gearlog.com/2009/04/palm_pre_coming_soon_sprint_ro.php (last accessed Sept. 22, 2009) (stating that Sprint paid \$264,000 to display a colored print ad of the Palm Pre in the Wall Street Journal and featured the device in its new television commercial); Press Release, Sprint Nextel, *The Innovation and Openness of a True Mobile Internet Experience Coming Soon to America’s Most Dependable 3G Network from Sprint on HTC Hero with Google* (Sept. 3, 2009), available at http://newsreleases.sprint.com/phoenix.zhtml?c=127149&p=irol-newsArticle_newsroom&ID=1327394&highlight= (last accessed Sept. 22, 2009) (announcing the arrival of the Android phone HTC Hero on October 11, 2009); PRNewswire, *Cellular South is among the first U.S. wireless carriers to announce availability of an Android smartphone with Google mobile*, FierceWireless.com, Sept. 22, 2009, at http://www.fiercewireless.com/press-releases/cellular-south-among-first-u-s-wireless-carriers-announce-availability-android-smartp?utm_medium=nl&utm_source=internal (last accessed Sept. 22, 2009).

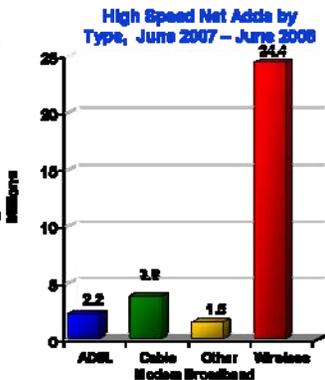
¹⁸² See *id.*

The competition present in the market for wireless voice and text messaging is carrying over into the market for mobile broadband, and all indicators suggest that, as consumers continue to embrace these services, they will enjoy both technical innovation and innovation in service offerings. Mobile broadband Internet access is the fastest growing segment of the U.S. broadband market.¹⁸³ The following graph demonstrates how wireless broadband additions from June 2007 to June 2008 dwarfed the additions for cable companies and traditional telephone companies combined, both in total numbers and as a percentage of all broadband additions.

Wireless is a Growing Means of High-Speed Access

- From June 2007 to June 2008, 78.6% of all new high speed connections were mobile wireless subscriptions.
- Mobile wireless' high-speed subscribership grew more than 1.5 times, rising from 35.3 million to 59.7 million subscribers.
- Mobile wireless' share of total broadband lines rose from 35% to 45% of total broadband lines.

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Source: FCC Report, "High-Speed Services for Internet Access: Status as of June 30, 2008," July 2008.

The FCC's 2008 *High-Speed Services Report* found that total mobile wireless high-speed lines more than doubled, increasing from 25.3 million in June 2007 to 59.7 million in June 2008.¹⁸⁴ Most notably, mobile wireless now accounts for 45% of all broadband connections in the United States.¹⁸⁵

¹⁸³ See *High-Speed Services for Internet Access: Status as of June 30, 2008* (rel. July 2009) ("2008 High-Speed Services Report").

¹⁸⁴ 2008 *High-Speed Services Report* at Tables 1, 6.

¹⁸⁵ 2008 *High-Speed Services Report* at Table 1.

Wireless consumers have a number of options for mobile Internet access. They can pay for actual bits used, a bucket of bits, or for an unlimited plan.¹⁸⁶ As with mobile voice, carriers are also competing to offer unlimited data plans. Cricket offers unlimited EV-DO Rev. 0 data for \$35 per month.¹⁸⁷ Boost Mobile and MetroPCS include Internet access with their unlimited voice/text plans, while Virgin Mobile offers it as a \$10 add-on option.¹⁸⁸ AT&T's "Smart Limits for Wireless" suite even allows customers to set a Web-use limit in advance and pay only that amount, rather than the standard \$35/month unlimited Web service.¹⁸⁹ The innovation in broadband plans mirrors that on the voice side, demonstrating that competition is working to meet the needs of consumers.

Consumers are even showing interest in wireless broadband as a competitive alternative to traditional wireline Internet access. The advent of netbooks and the growth of aircards for laptops are facilitating competition across wired and wireless platforms.¹⁹⁰ Unlike traditional wireline Internet access, wireless is not a third pipe into the *home*, but rather a third pipe to the *person*, wherever they are, whenever they want access to information.

¹⁸⁶ See, e.g., Sprint Nextel Mobile Broadband Connection Plans, <http://nextelonline.nextel.com/NASApp/onlinestore/en/Action/DisplayPlans> (last accessed Sept. 24, 2009); AT&T Data Cell Phone Plans, http://www.wireless.att.com/cell-phone-service/cell-phone-plans/data-cell-phone-plans.jsp?_requestid=38195 (last accessed Sept. 24, 2009); Cooper Article, *supra* note 92; Azuri Article, *supra* note 49; Lendino Article, *supra* note 51; Segan Article, *supra* note 88.

¹⁸⁷ See Cooper Article, *supra* note 92.

¹⁸⁸ See Azuri Article, *supra* note 49; Lendino Article, *supra* note 51; Segan Article, *supra* note 88.

¹⁸⁹ Tamara Chuang, *AT&T adds feature to limit mobile web use*, OC REGISTER, Feb. 24, 2009, available at <http://gadgetress.freedomblogging.com/2009/02/24/att-adds-feature-to-limit-mobile-web-use/11109/> (last accessed Sept. 24, 2009).

¹⁹⁰ See Philip Elmer-DeWitt, *Netbook sales will soar to 22 million in 2009*, CNNMONEY.COM, May 4, 2009, available at <http://brainstormtech.blogs.fortune.cnn.com/2009/05/04/netbook-sales-will-soar-to-22-million-in-2009-idx/> (last accessed Sept. 24, 2009); see also Cisco Systems, Inc., *Cisco Visual Network Index: Forecast and Methodology, 2008-2013*, 2 (2009), available at http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481360.pdf (last accessed Sept. 24, 2009) (predicting laptop aircards to be a major driver of mobile traffic by 2013).

E. Consumers Use Numerous Sources of Information to Select – and Change – Wireless Carriers

Well-informed consumers are best positioned to benefit from a competitive marketplace. Wireless consumers have a plethora of readily available information that is disseminated through a multitude of sources, including the carriers themselves. At carrier retail stores and on their websites, consumers can perform personalized coverage checks (including the capability to “drill-down” to street level coverage data), and can evaluate and compare the myriad of pricing plans and handset options.¹⁹¹ Moreover, dozens of carriers voluntarily comply with the CTIA Consumer Code for Wireless Service.¹⁹² More than half of the 10-point Code commits carriers to providing adequate information to consumers in a variety of contexts, whether in stores, on websites, in advertising, in contract documents, or on customer bills. Outside of their stores and websites, carriers devote impressive levels of advertising resources to reaching new and existing customers. As noted above, the top four wireless carriers rank among the top twelve companies nationwide in total advertising expenditures, collectively spending over \$6.5 billion in 2007.¹⁹³

Independent third parties also assist consumers in their choices. Multiple Web-based sources offer reviews and provide guidance on how to shop for a service provider

¹⁹¹ See, e.g., AT&T Mobility Coverage Viewer, <http://www.wireless.att.com/coverageviewer/> (last accessed Sept. 24, 2009); AT&T - Cities Supporting AT&T 3G/Mobile Broadband, http://www.wireless.att.com/coverageviewer/popUp_3g.jsp (last accessed Sept. 24, 2009); Sprint Coverage Tool, <http://coverage.sprintpcs.com/IMPACT.jsp?PCode=vanity:coverage> (last accessed Sept. 24, 2009); T-Mobile USA Personal Coverage Check, <http://www.t-mobile.com/coverage/pcc.aspx> (last accessed Sept. 24, 2009); Verizon Wireless Coverage Locator, <http://www.verizonwireless.com/b2c/CoverageLocatorController> (last accessed Sept. 24, 2009); Cincinnati Bell Wireless Coverage, <http://www.cincinnati-bell.com/consumer/wireless/coverage/> (last accessed Sept. 24, 2009); MetroPCS Wireless Coverage, <http://www.metropcs.com/coverage/> (last accessed Sept. 24, 2009).

¹⁹² See CTIA – The Wireless Association®, *Consumer Code for Wireless Service*, available at http://files.ctia.org/pdf/The_Code.pdf (last accessed Sept. 24, 2009).

¹⁹³ See Section III.D, *supra*.

and choose a mobile phone. For example, Best Buy's online "Mobile Phone Resource Center," shown below, provides content from CNET that educates consumers on all aspects of choosing wireless service and devices, down to the pros and cons of CDMA vs. GSM.¹⁹⁴

Best Buy's Mobile Phone Resource Center Educates Consumers on Their Wireless Options

BEFORE YOU BUY
Get buying advice

HAVING FUN
Ringtones and photos

SMARTPHONES
iPhone and more

TIPS & TRICKS
Do it yourself

CELL PHONE BUYING GUIDE

Buying guide

- **Pick a service provider**
- Choose a plan
- How to pick a phone
- Ten key features to consider
- **To Main Page**

Pick a cell phone service provider

Buying a cell phone is more than a matter of choosing a handset--you also have to pick a service provider, or carrier, as well. Each carrier in the United States offers a different selection of technologies and services, so it's important to think about your needs when making a choice. For that reason, selecting a carrier should be the first step in the cell phone buying process.

Twisting technology

Wireless carriers in the United States operate over two different networks: Code Division Multiple Access (CDMA) and Global System for Mobile Communication (GSM). Though each technology transmits voice and data, they do so in different ways, which makes them incompatible. As a result, you can't take a CDMA phone and use it on GSM or vice versa.

Of the U.S. carriers, AT&T and T-Mobile use GSM while Sprint, Verizon, and smaller carriers such as MetroPCS and U.S. Cellular use CDMA. Though Nextel is part of Sprint, Nextel-branded phones use a third technology called iDEN, or Integrated Digital Enhanced Network.

CDMA coverage is very strong in the United States, particularly in rural areas, but GSM service has a larger global footprint (it's the standard in Europe, for example) and GSM phones use the convenient SIM cards, which you allow you to, among other things, switch phones more easily. Also, when taken on a global scale, GSM users will find a wider selection of handsets.

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CNET.com is the place consumers go to find the right products to fit their lifestyle. Learn more.

Best Buy featured products

Jabra - Bluetooth Car Speaker - Black

Plantronics - Voyager Pro Wireless Headset for Bluetooth-Enabled

Source: Best Buy, available at http://bestbuy-cnet.com.com/4352-13749_7-6590054.html.

As noted above, CTIA has also attached to this filing, as Attachment B, the most recent version of Best Buy's Mobile Wireless Buyers' Guide. This guide provides a wealth of information regarding the main handsets now available in the United States. In addition, J.D. Power and Associates provides information on carrier call quality, recently noting

¹⁹⁴ See Best Buy – CNET Mobile Phone Resource Center, http://bestbuy-cnet.com.com/4352-13749_7-6590054.html (last accessed Sept. 24, 2009). Other examples include: MyRatePlan.com – Cell Phones & Rate Plans, <http://www.myrateplan.com> (last accessed Sept. 24, 2009) (for calling plan comparisons); Phone Scoop – Phones, <http://www.phonescoop.com/phones/> (last accessed Sept. 24, 2009) (for reviews on handsets); and Mountain Wireless Cellular Ratings and Reviews, <http://www.mountainwireless.com> (last accessed Sept. 24, 2009) (for carrier reviews).

the improvements driven by ongoing investment in carrier networks.¹⁹⁵ *Consumer Reports* also publishes an annual review of wireless offerings.¹⁹⁶

With access to an unprecedented amount of information, consumers can make informed decisions as to the carrier that best meets their needs, the appropriate calling plan and the right device. Subscribers use this information not only for choosing their initial carrier, but for determining when it is in their best interest to switch carriers. Churn rates – which range between 1.5 and 3.0 percent *per month*,¹⁹⁷ are a good indication that consumers are aware of alternatives and are willing and able to switch to other providers. Based on 270 million subscribers, current churn rates mean that each month somewhere between approximately four million and eight million subscribers switch to an alternative carrier. The desire to minimize these numbers forces carriers to stay focused on the service they are providing to existing customers.

F. The U.S. Wireless Industry is a Major Contributor to the U.S. Economy

The U.S. wireless industry is a major and growing component of the American economy. Even at a time when the U.S. economy has been struggling through a recession, the wireless industry continues to commit substantial resources to meet evolving consumer demands. It significantly contributes to the economic health of the country through wireless providers' massive capital investments, productivity

¹⁹⁵ See J.D. Power and Associates Press Release, *supra* note 61.

¹⁹⁶ See, e.g., Consumer Reports Article, *supra* note 61; *Cell phones: Our tests of 70 standard and smart models show they're sharing many more features*, CONSUMER REPORTS, Jan. 2009, at 34.

¹⁹⁷ *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, 6271, ¶ 181, n. 499 (Jan. 15, 2009) (citing John C. Hodulik et al., *US Wireless 411, UBS Investment Research*, UBS, Mar. 18, 2008, Table 20: Monthly Churn at 25) (“*Thirteenth CMRS Competition Report*”).

enhancements, and the creation of highly paid and skilled jobs nationwide.¹⁹⁸ In 2007, the wireless industry contributed nearly \$100 billion in value added to the U.S. Gross Domestic Product (“GDP”).¹⁹⁹ This contribution exceeded those of the motor vehicle manufacturing, motion picture, and rail, water, and air transportation sectors.²⁰⁰ Moreover, the continued growth and increased investment of the wireless industry, especially in the broadband arena, is estimated to further enhance GDP by \$126-184 billion over the next two years.²⁰¹

Such investments in wireless voice and broadband services also positively impact the economy by improving domestic productivity. According to a 2008 report released by the economic analyst firm Ovum, wireless services are driving productivity gains by: improving employees’ decision-making, travel time, and management of inventory and other resources; empowering small businesses; increasing health care efficiencies; automating field service and fleet management; and increasing cost savings as a result of replacing wireline phones with mobile devices.²⁰² The improved wireless efficiencies associated with voice services resulted in approximately \$157 billion in consumer gains in 2004, while those associated with broadband services are expected to result in

¹⁹⁸ See Letter from Christopher Guttman-McCabe, CTIA Vice President for Regulatory Affairs, to Chairman Genachowski and Commissioners Copps and McDowell, GN Docket No. 09-51, WT Docket Nos. 08-165 and 09-66, at 2, Mobile in America Attachment at 10 (filed July 9, 2009) (“2009 CTIA Wireless Economic Contributions Ex Parte”).

¹⁹⁹ Harold Furchtgott-Roth, *The Wireless Services Sector: A Key to Economic Growth in America 2008 Report*, at 4-5, Table 10 (Jan. 2009) (“Furchtgott-Roth Wireless Services Sector Report”).

²⁰⁰ *Id.* at 5; see also 2009 CTIA Wireless Economic Contributions Ex Parte, Mobile in America Attachment at 11.

²⁰¹ Alan Pearce and Michael Pagano, *Accelerated Wireless Broadband Infrastructure Deployment: Impact on GDP & Employment 2009-2010*, at 8-9, 22, Table 3 (Dec. 2008) (“Pearce and Pagano Report”).

²⁰² Roger Entner, Ovum, *The Increasingly Important Impact of Wireless Broadband Technology and Services on the U.S. Economy*, at 6 (2008).

productivity gains of \$860 billion between 2005-2016.²⁰³

Finally, the industry's investment in building wireless infrastructure and improving the delivery of wireless services to consumers and businesses has increased jobs and income across the country.²⁰⁴ Wireless carriers directly employ more than 268,000 people in jobs that command compensation that is more than 50% higher than the national average for production workers.²⁰⁵ Significantly, more than 2.4 million American jobs are directly or indirectly dependent on the U.S. wireless industry.²⁰⁶ As demand for wireless service remains strong even in difficult economic times, it can be expected that wireless voice and broadband services will continue to play a major role in creating jobs and restoring America's economic vitality.

V. THE COMMISSION SHOULD ADHERE TO ITS TRADITIONAL APPROACH AND CONSIDER A RANGE OF WIDELY ACCEPTED INDICATORS TO ASSESS COMPETITION IN THE MOBILE WIRELESS CONTEXT

In the five most recent CMRS Competition Reports, the Commission has reviewed market conditions using a sound and well-respected analytical framework that groups various market indicators into four categories: (1) market structure; (2) provider conduct; (3) consumer behavior; and (4) market performance.²⁰⁷ Traditional market

²⁰³ *Id.* at 4, 6.

²⁰⁴ Pearce and Pagano Report at 3.

²⁰⁵ CTIA Semi-Annual Survey; Furchtgott-Roth Wireless Services Sector Report at 8, Table 13.

²⁰⁶ 2009 CTIA Wireless Economic Contributions *Ex Parte*, Mobile in America Attachment at 18.

²⁰⁷ *NOI* at ¶ 8. The Commission acknowledged the appropriateness of its four-pronged approach in the most recent *CMRS Competition Report*, noting that its analysis was based on a "range of standard indicators commonly used for the assessment of effective competition." *Thirteenth CMRS Competition Report* at 6197, ¶ 5 (2009). It also noted that its assessment of whether effective competition existed did not depend solely on a review of the number of competitors in the market and the market shares of such competitors, but rather "on an analysis of both the structural and behavioral characteristics of the CMRS marketplace." *Id.* The most recent *Thirteenth CMRS Competition Report* also presented a market performance section that evaluated "the outcomes of competitive conditions . . . from the consumer's point of view, focusing on the benefits to consumers of competition, such as lower prices, higher consumption, and better quality." *Id.* at 6197, ¶ 6. The sections on market structure, provider conduct and consumer

indicators considered in the context of the four categories include: (1) *for market structure*, the number of commercial mobile providers offering service nationwide and in local markets, HHI concentration measures (including international comparisons), market entries and exits, spectrum access issues, spectrum acquisition opportunities, and non-regulatory barriers to market entry;²⁰⁸ (2) *for provider conduct*, pricing plan data, technology deployments and upgrades, trends regarding technology choice, network coverage indicators, capital expenditure indicators, roaming data, data on the development and introduction of mobile applications, advertising and marketing data, and network quality data;²⁰⁹ (3) *for consumer behavior*, information regarding consumer access to information on mobile services, subscriber churn, and barriers to switching providers²¹⁰ and (4) *for market performance*, pricing trend, average revenue per unit, subscriber growth, network MOU, penetration rate, and network quality data.

A. The Commission’s Current Approach is Supported by Sound Economic Principles

In light of the broader inquiry described in the *NOI*, the Commission asks whether the data-driven, analytical framework described above is sufficient to adequately assess the state of competition in the mobile wireless ecosystem or whether an alternative economic framework would provide better analytical tools for analyzing the market.²¹¹ CTIA believes that the Commission’s traditional framework, including the indicators noted above, is most suited to assessing the state of competition even as the Commission begins to consider the broader mobile wireless ecosystem. In examining this new

behavior examined the “various structural and behavioral determinants of such market outcomes.” *Id.*

²⁰⁸ See *Thirteenth CMRS Competition Report* at 6198-243, ¶¶ 12-110.

²⁰⁹ See *id.* at 6243-70, ¶¶ 111-176.

²¹⁰ See *id.* at 6270-73, ¶¶ 177-186.

²¹¹ *NOI* at ¶ 9.

wireless ecosystem, the Commission would be well-served to adhere to established precedent and sound economic principles, and maintain its traditional analytical approach. The traditional framework has consistently allowed the Commission to assess accurately the state of competition among CMRS providers. The fact that the scope of the Commission's review has now been broadened to include a wider range of actors within the larger mobile wireless ecosystem in no way warrants the fashioning of a new and novel framework for assessing whether particular markets within that ecosystem are competitive. As the data presented herein makes clear, application of the Commission's traditional analytical framework and widely-embraced economic principles across all relevant segments of the mobile wireless ecosystem confirms that the mobile wireless ecosystem is indeed fiercely competitive.

The economic literature and widely accepted economic principles suggest that the traditional analytical framework and broad set of market indicators historically relied upon by the Commission in its annual reviews should once again be used in this proceeding. In 2008, CTIA, in response to concerns that an objective, *a priori* standard for "effective competition" needed to be defined, retained prominent economists Robert Hahn, Robert Litan, and Hal Singer to evaluate the Commission's traditional approach to assessing the state of competition in the CMRS and other communications markets. Drs. Hahn, Litan, and Singer demonstrated in their work that it was unnecessary for the Commission to develop a new and novel method for evaluating the state of CMRS competition. In fact, by considering methodologies used previously by the Commission to evaluate the state of competition in the CMRS market and other contexts, the economists determined that the Commission's traditional analytical framework captured essentially all of the salient aspects needed for a rigorous, fact-based review. Based on

their review of prior FCC decisions, Drs. Hahn, Litan, and Singer concluded that the CMRS market should be deemed competitive if: (1) no incumbent firm possesses classic or exclusionary market power; (2) high barriers to entry that are controlled by an incumbent or that arise from regulation do not exist; and (3) there is no evidence of coordinated business activities among incumbents.²¹² Further, they determined that even where one or more of these conditions is present, the market may still be competitive.

The paper produced by these economists notes that the Commission, in its merger reviews, examines the “effect of a proposed transaction on market concentration, consumer choice, prices, and remaining market participants’ output decisions (both unilateral and in coordination with other firms).”²¹³ The paper also pointed out that “in conducting merger analysis,” “the Commission considers the transparency of information, the presence of mavericks [in the market], and the potential for technological development.”²¹⁴ These indicators, along with the consumer behavior-based indicators (*i.e.*, data on subscriber churn, minutes of use, consumer access to information, *etc.*) long used by the Commission constitute the main elements that should be considered in assessing the current state of competition in the broader set of markets comprising the mobile wireless ecosystem.

Hahn, Litan, and Singer also analyzed the standards and approach used by the Commission to evaluate incumbent local exchange carrier (“ILEC”) forbearance requests following the sunset of Section 272, noting that in that inquiry the Commission defines the appropriate product market, identifies market participants, assesses whether any

²¹² Reply Comments of CTIA – The Wireless Association, WT Docket No. 08-27, at Attachment A, ¶ 22 (filed Apr. 10, 2008) (“*Hahn, Litan, and Singer*”).

²¹³ *Hahn, Litan, and Singer* at ¶19.

²¹⁴ *Id.*

market participants have market power (*i.e.*, have the ability to unilaterally raise prices above the competitive level or through exclusive conduct), and whether the charges, practices, classifications, and regulations of particular providers are likely to remain just and reasonable and not unjustly or unreasonably discriminatory in the absence of regulation.²¹⁵

The analytical approach suggested by Drs. Hahn, Litan, and Singer (and used traditionally by the Commission) is also consistent with the leading economics literature. Professors Dennis Carlton and Jeffrey Perloff, in one of the leading textbooks on industrial organization, identify seven assumptions of a competitive marketplace: substitutable goods, information regarding price and quality, price taking behavior, low transaction costs, low externalities, low barriers to entry and exit, and divisible output.²¹⁶ Each of these core assumptions is subsumed into one or more of the elements identified by Hahn, Litan, and Singer.²¹⁷

Professor Jean Tirole evaluates six general areas of competitive behavior (or the absence thereof): price competition, non-price competition, barriers to entry and exit, information availability, strategic behavior, and innovation through research and development.²¹⁸ Again, all of these indicators are common to the Commission's traditional approach and the market-based analytical framework suggested by Drs. Hahn, Litan, and Singer.

²¹⁵ *Id.* at ¶ 21.

²¹⁶ See Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* 57 (3d ed. 2000).

²¹⁷ Substitutability and price taking behavior both inform the classic market power analysis. The availability of information and presence of externalities is best considered in the analysis of business activity coordination. Finally, transaction costs and divisible output are considered as part of the analysis of barriers to entry and exclusionary market power, which have been given special focus by the Commission.

²¹⁸ See JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* (6th ed. 1993).

B. The Commission’s Analysis Should Not Be Constrained by Section 623, Profitability Data, or HHI Thresholds

Given the utility and soundness of the traditional analytical framework, there is no need to replace it with a definition of “effective competition” based on 47 U.S.C. § 623 (1)(1).²¹⁹ Section 623 (1)(1)’s “effective competition” standard was fashioned to deal with a specific service, multi-channel video, with market structure conditions (*i.e.*, the number of providers in a local franchise area and the market share of such providers) very different from the less concentrated CMRS market. It would therefore be inappropriate for the Commission to replace the current analytical framework for determining whether the CMRS market is subject to effective competition with the more rigid standard applied under 47 U.S.C. § 623 (1)(1).

Similarly, an investigation as to whether CMRS providers are earning “abnormal profits”²²⁰ also has no place in this inquiry. In competitive markets like CMRS, where no one provider is dominant, such an inquiry is wholly unwarranted. As CTIA stated in its comments in response to the *CMRS Competition Public Notice*, “profitability in the intensely-competitive wireless industry is what the government should strive for, not disdain.”²²¹

We note that, in its recent comments to the Commission on its National Broadband Plan, the Federal Trade Commission (“FTC”) suggested that “[t]he Merger Guidelines provide a competitive analysis approach that can help evaluate the extent of broadband Internet access competition in any given relevant product and geographic

²¹⁹ See *WTB Seeks Comment on CMRS Market Competition*, Public Notice, 24 FCC Rcd 5618, 5620 (May 14, 2009) (“*CMRS Public Notice*”).

²²⁰ *Id.* at 5629.

²²¹ CTIA CMRS Competition Report Comments at 8.

market.”²²² The Horizontal Merger Guidelines (“Merger Guidelines”), issued jointly by the Department of Justice and FTC in 1992 (revised in 1997), are designed not to address whether to substitute *ex ante* regulation for competition but, instead, when *ex post* antitrust enforcement should be exercised in an unregulated market.²²³ Nonetheless, we agree with the FTC that the Merger Guidelines may offer useful insight into when a market may be considered competitive.

The Merger Guidelines separate competitive concerns into two categories: (1) coordinated effects, based on the likelihood that all the firms remaining in a market post-merger would collude or act together to raise price, and (2) unilateral effects, in which the concern is that the competition overall will be reduced when two formerly competing firms act as a single entity, perhaps coming to dominate an overall market. It should be clear that, under this framework and given the price and non-price rivalry described above, the U.S. wireless industry is competitive. Numerous observers of the wireless sector have reached a similar conclusion. For example, Jonathan Nuechterlein and Philip Weiser observed that:

Competition in this [cellular] market is fierce; the overwhelming majority of the population lives in a county served by at least four alternative providers of wireless services; customers can and do switch from one carrier to another; the quality and diversity of wireless services continues to improve; and prices have

²²² Federal Trade Commission, Comments before the Federal Communications Commission in the Matter of a National Broadband Plan for Our Future, GN Docket No. 09-51 (Sept. 4, 2009), *available at* <http://www.ftc.gov/os/2009/09/090904fccnbp.pdf>. The Horizontal Merger Guidelines are *available at* <http://www.usdoj.gov/atr/public/guidelines/hmg.pdf>.

²²³ For an argument as to why competitive circumstances in telecommunications generally warrant the use of *ex post* general competition law rather than *ex ante* regulation, *see* Shelanski, Howard, *Inter-Modal Competition and Telecommunications Policy in the United States*, 60 COMMUNICATIONS & STRATEGIES 15-37 (2005) (“*Shelanski Inter-Modal Competition*”).

fallen precipitously since 1990, often to levels competitive with wireline services.²²⁴

As described above, another measure of market structure is HHI. Although the mobile wireless HHI in the U.S. is the lowest of the 26 major industrialized countries tracked by BofA/Merrill Lynch, HHI is but one of many factors the Commission should consider in the market structure component of its “effective competition” review. CTIA explains below that, particularly when considering the wireless ecosystem, the importance of HHI *thresholds* as a factor is waning.

HHI is typically used by the Department of Justice (“DOJ”) and Federal Trade Commission (“FTC”) to measure changes in market concentration that occur as a result of mergers by two firms in the same product market. HHI is calculated by summing the squares of the individual market shares of all of the participants. HHI figures can range from 10,000 (in the case of a pure monopoly) to a number approaching zero (in the case of an atomistic market). As the DOJ/FTC 2006 Commentary on the Horizontal Merger Guidelines states, “market share and concentration data provide only the starting point for analyzing the competitive impact of a merger. Indeed, the Agencies do not make enforcement decisions solely on the basis of market shares and concentration.”²²⁵ Although under the current guidelines HHI figures above 1800 (generally indicating a market of no more than approximately six equally sized firms) are considered to be highly concentrated, this threshold has not been revised since 1982, a time when the

²²⁴ Nuechterlein, Jonathan and Philip Weiser, *Digital Crossroads: American Telecommunications Policy in the Internet Age* (Cambridge, MA: MIT Press, 2005): 261 (citing FCC’s Ninth Annual CMRS Competition Report). Similarly, Professor Howard Shelanski observed that: “Today there are more wireless subscribers than conventional landline telephone subscribers in the United States. Moreover, those subscribers are paying less than wireless customers did at the time of the 1996 Act’s passage. Wireless bills fell by 34 percent from 1997 to 2004 even with the dramatically increasing usage. Competition in the mobile wireless market continues to drive operators to attract customers through price and non-price methods.” *Shelanski Inter-Modal Competition, supra* at 16-17.

²²⁵ DOJ/FTC Commentary on the Horizontal Merger Guidelines (March 2006).

economic literature and the DOJ and FTC's enforcement practices were very different from what they are today. Indeed, since the 1980s, the DOJ and FTC have under both Democratic and Republican Administrations have routinely cleared combinations in which the post-merger HHI exceeded 1800.

The current head of the DOJ's Antitrust Division has addressed the limited utility of HHI thresholds. In a recent speech announcing a proceeding to explore whether the current Merger Guidelines should be revised and updated, she stated, "[i]t is no secret that today the HHI thresholds offer relatively little in the way of meaningful guidance to businesses considering merging. We are interested in whether and how the thresholds could be made more useful."²²⁶

As an illustration of why the current HHI thresholds might no longer be useful, only two of the 26 countries reviewed by BofA/Merrill Lynch had wireless industries with HHIs close to 1800: the U.S. at 2,213 and the United Kingdom at 2,243. In fact, of the total 26 countries reviewed, the U.S. and the U.K. are the only two countries below 2,900.²²⁷ We also note the recent announcement that the third and fourth largest wireless carriers in the UK, Orange and T-Mobile, have announced their intention to merge, creating a new largest carrier in the UK, with a 37% market share.²²⁸ Assuming that this proposed combination receives necessary regulatory approval, the U.S. market would be the only market below 2900.

²²⁶ Speech of Christine Varney, Assistant Attorney General for Antitrust Enforcement, Department of Justice (Sept. 22, 2009).

²²⁷ See 2009 CTIA *Ofcom Mostly Mobile Ex Parte* at 2.

²²⁸ *Id.*

C. The Commission Should Continue Using Traditional Data Sources to Conduct a Rigorous Market Review

The *NOI* also seeks comment on the sources of data that should be used to compile the next Competition Report, the metrics used to quantify certain measures, definitional issues and how certain data should be analyzed.²²⁹ As CTIA explained in response to proposals to replace the traditional analytical framework, there is no need to reinvent the wheel. Much of the information the Commission needs to conduct a rigorous review can be secured from its traditional information sources, including American Roamer, industry associations, financial industry analysts, company releases, Securities and Exchange Commission filings, trade publications, research and scholarly publications, and related materials. In addition, metrics and definitional issues are often addressed in the materials submitted, and if the Commission imposes gating standards for the consideration and use of information that are too rigid, it will discourage the development of a comprehensive proceeding record and risk compromising the legitimacy of its findings. Finally, in most cases the Commission has the internal resources (whether it be in the Wireless Telecommunications Bureau, Office of Engineering & Technology, Office of Strategic Planning & Policy Analysis or other areas) to define reasonable standards from which data comparisons and evaluations can be made.

²²⁹ See *NOI* at ¶ 11.

VI. THE COMMISSION CAN TAKE ADDITIONAL STEPS TO FACILITATE COMPETITION IN MOBILE WIRELESS MARKETS

A. The Commission Should Continue its Policy of Consumer-Focused Regulatory Restraint

The Commission should continue its policies grounded in free and open auctions, flexible service rules, and competition-driven, consumer-focused regulatory restraint. The wireless industry is different from traditional telecommunications services because of its high level of competition. In a monopoly environment, detailed regulations substitute for the lack of competition. In a market with multiple providers, however, competition is a less costly and less enhancement-inhibiting “regulator.” Some would argue that in the U.S. wireless market we have very demanding regulators: our customers.

Even well-intentioned regulation imposes real costs for carriers. Small providers are especially impacted: because they lack the efficiencies of scale of the larger carriers, their cost of compliance with new mandates, on a per-subscriber basis, is often larger. For any-sized carrier, however, the costs of regulation divert limited resources from other uses, such as deploying additional sites to cover previously unserved areas or to enter new markets where existing competition is weak. It also drains resources from research, development and innovation, which has the effect of hindering competition as well. The Commission’s light regulatory approach to the wireless industry over the past decade and a half has proven to be successful in creating a vibrantly competitive, consumer-driven market. Thus, CTIA urges the Commission to move with caution and to impose new regulations only when necessary in response to actual problems, not imagined or speculative ones.

B. Additional Spectrum for Commercial Wireless is Needed to Meet Consumer Demand and Ensure Future Competition

Above, we have detailed the sharp growth in the use of wireless services. If the current statistics (*e.g.*, 2.2 trillion MOUs and 1 trillion text messages in 2008) are not staggering enough, Cisco predicts that wireless data use is expected to double every year through 2012, resulting in data traffic that is twenty times what it was in mid-2008.²³⁰ As consumers increasingly adopt and rely on mobile broadband services and the advanced capabilities that these services permit, carriers will need additional spectrum to meet network capacity demands and facilitate further deployment of bandwidth-intensive next-generation voice, data, and video services. Carriers who are unable to meet this exploding consumer demand will be unable to compete effectively. Thus, to ensure that a sufficient number of competitors have access to the essential input for mobile service, more spectrum must be allocated for commercial wireless use.

Despite having some of the highest wireless usage rates, the U.S. lags far behind its fellow OECD countries in the quantity of additional spectrum identified for reallocation to licensed commercial use. As mentioned above, the U.S. – the world leader in mobile Internet use – has a mere 50 MHz of spectrum in the pipeline for dedicated commercial use licensing. This spectrum (the AWS-2 and AWS-3 bands) has been long pending, plagued by technical challenges, and is ripe for Commission action. By contrast, Ofcom, the regulator in United Kingdom, is in the process of reallocating 355 MHz of spectrum for commercial wireless services, which would bring the U.K.’s total up to 710 MHz, about 300 MHz more than the amount available in the U.S.

²³⁰ Cisco Systems, Inc., *Approaching the Zettabyte Era*, 3 (June 16, 2008), available at http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481374_ns827_Networking_Solutions_White_Paper.html (last accessed Sept. 25, 2009).

Similarly, in Germany, 340 MHz of spectrum has been identified for reallocation, which will bring the total up to 645 MHz, more than 200 MHz more than the current U.S. allocation.

CTIA has asked the FCC and NTIA to identify a significant amount of new spectrum – with a target of at least 800 MHz – for reallocation to licensed commercial use. In addition, to find the large quantity of additional spectrum that is needed, a comprehensive spectrum inventory should be undertaken that will identify underutilized bands. CTIA strongly supports the Radio Spectrum Inventory Act, currently pending in Congress, which would require the FCC and NTIA to conduct such an inventory for spectrum between 300 MHz and 3.5 GHz.²³¹ In light of the importance of this issue to future competition, and given the long lead times needed to reallocate spectrum, the Commission should urge Congressional leaders to take action on this legislation this year.

As detailed in a recent filing, CTIA believes that any inventorying effort should be combined with a dual commitment from U.S. policymakers.²³² First, U.S. policymakers should launch an effort to identify and allocate at least 800 MHz of additional spectrum for licensed commercial wireless use within the next six years. Recognizing the long lead times necessary to achieve such major spectrum allocations, this process should begin immediately. Second, policymakers should work to meet short-term needs by pairing and allocating readily available spectrum in the 1755-1780 MHz and 2155-2180 MHz bands for licensed commercial wireless use as quickly as possible.

²³¹ The bill was introduced in the Senate as S. 649 and in the House as H.R. 3125. While the FCC could inventory non-Federal spectrum without legislation, the inclusion of Federal spectrum in the inventory is critical to understanding how the full spectrum range can be most efficiently utilized.

²³² See generally Letter from Christopher Guttman-McCabe, Vice President, Regulatory Affairs, CTIA, to Julius Genachowski, Chairman, Federal Communications Commission, *et al*, GN Docket No. 09-51 (filed Sept. 29, 2009) (“*CTIA Spectrum Demand Ex Parte*”).

C. The Commission Can Facilitate Build-Out by Wireless Providers, Including New Entrants, by Addressing Tower Siting and Pole Attachment Issues

1. The Commission should act on CTIA's pending petition for declaratory ruling to address chronic tower siting delays

While spectrum is the most critical input for the provision of wireless service, that spectrum is of little use without a way to deploy it through the use of antennas and transmitters. Carriers' inability to site antennas, resulting from actions (or inactions) of local zoning authorities, delays the introduction of new wireless service in an area. Congress recognized this and enacted Section 332(c)(7)(B) with the intent to ensure prompt action on wireless siting applications. Unfortunately, ambiguities in the statutory language has allowed some zoning authorities to severely delay the expansion of wireless services. CTIA members reported last year that they collectively had more than 3300 wireless siting applications pending before local jurisdictions. Some 760 had been pending for more than a year, and 180 had been pending for more than *three years*. Surprisingly, close to half of the applications pending for more than one year were merely collocation requests which involved no new tower construction.

Last year, CTIA filed a petition for declaratory ruling which asks the Commission to clarify the obligations and restrictions placed on zoning authorities by Section 332.²³³

As requested by the Petition, the Commission should:

- Establish timeframes within which local zoning authorities must act on tower siting and wireless facility applications (45 days for collocation; 75 days for other facilities).
- Hold that where a zoning authority does not act on an application within the benchmarks set out above, the application will be deemed granted, or, in the

²³³ CTIA 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, WT Docket No. 08-165 (filed July 11, 2008) (the "Petition").

alternative, establish a presumption that a reviewing court should issue an injunction granting the application unless the zoning authority justifies the delay.

- Clarify that a zoning authority may not deny an application filed by one provider based on the presence of another wireless provider in the area.
- Announce that, in the case of a Section 253 preemption challenge, it will invalidate zoning ordinances that require all applicants for wireless facilities to obtain variances, regardless of the proposed facility's location or scope.

2. **The Commission should clarify CMRS carriers' right to access utility poles**

In addition to tower siting challenges, the expansion of wireless service and competition is hindered by difficulties in gaining reasonable access to electric utility distribution poles. Placing antennas on poles is necessary where there are unique circumstances affecting coverage, such as spectrum propagation challenges, or where new tower construction is simply infeasible. Despite existing federal and state regulations that provide for rights of attachment and non-discrimination, wireless carriers continue to face difficulties in negotiating and obtaining fair pole attachment agreements. Therefore, CTIA urges the Commission to clarify and affirm its existing rules on nondiscriminatory and reasonable pole attachment rates. Specifically, the Commission should:

- Affirm its tentative conclusion to set a unified rate for all providers capable of providing broadband service, which rate should be as low as possible for the electric utilities to receive just compensation.
- Establish a presumption for space used by a wireless attachment and specify that "Usable Space" includes the pole top.
- Address electric utilities' unsubstantiated objections to wireless attachments based on RF emissions and safety issues.

Gaining better access to poles will improve wireless coverage in areas such as residential zones, parks and similar areas where consumers expect coverage but often oppose the aesthetic impact of new wireless infrastructure.

D. The Commission Should Facilitate More Efficient Clearing of Spectrum Already Allocated and Auctioned for CMRS

In addition to allocating additional resources for wireless broadband provision, Commission action to speed access to existing allocated spectrum will provide short-term relief for congested wireless networks and wireless providers attempting to expand or offer service in underserved areas. Existing AWS-1, 2GHz, and 700 MHz licensees face a myriad of impediments to use of the bands to provide service.

In the AWS-1 band, for example, companies like T-Mobile, Leap Wireless, and MetroPCS acquired significant spectrum in the AWS-1 auction to both serve areas that they previously serve and to expand high-speed wireless offerings.²³⁴ These same licensees, however, must clear incumbent licensees and government agencies, some of whom continue to delay their coordination and relocation obligations. Every extra day of delay impacts competition, innovation, and broadband deployment.

Another spectrum band suffering from impediments to full deployment is the 2 GHz band. Licensees in the 2 GHz band must first relocate Broadcast Auxiliary Service licensees before full utilization of the bands for which they are licensed. Finally, the specter of interference in the 700 MHz bands – heralded as “beachfront property” for wireless broadband provision – from unauthorized wireless microphone users has held back the potential of this important allocation. Swift Commission action in these existing

²³⁴ See *id.* at 6.

bands will continue to provide wireless providers with the access to spectrum needed to swiftly meet consumer demand.

E. The Commission Should Continue to Permit Wireless Providers to Manage Their Networks to the Benefit of Their Customers

The Commission should refrain from imposing any new regulations on wireless carriers that would prevent their ability to manage their networks in a manner that best meets customers' desires and expectations. Wireless networks are fundamentally different from wireline networks. On a wireline network, significant increases in the volume of data traffic do not have a detrimental effect on the other services offered by the provider – *e.g.*, voice or television. On a wireless network, however, voice and data share a single air interface between the consumer device and the base station. Wireless networks rely on careful management of scarce capacity to ensure that bandwidth intensive applications do not prevent or degrade the use of voice services. To minimize latency and maximize capacity available to users, the network must determine which packets are less sensitive to immediate delivery. Thus, voice data are accorded the highest priority, and interactive data receive priority over standard data. Consumers *want* carriers to “discriminate” among applications to address this time sensitivity so that their calls and applications will function as well as possible over the more limited bandwidth available on wireless networks.

The capacity of a cell site is shared between all users in that cell. Modern data networks such as EV-DO and HSDPA use a technique called multi-user diversity to increase capacity of data networks beyond the capacity possible for voice-only networks. The wireless system monitors the quality of the connection between the base station and the mobile handset and transmits data during intervals when the connection is performing

well. If the system carefully schedules transmissions to each user, then the system as a whole will perform better than the average connection to each user would allow without scheduling. The Commission should allow carriers the flexibility to continue using such techniques and other new and innovative approaches in order to manage their networks in a manner that results in the best customer experience.

VII. CONCLUSION

All segments of the mobile wireless ecosystem – service providers, infrastructure suppliers, device manufacturers, operating system providers, and applications developers – are fiercely competitive, and the industry’s vibrant and highly dynamic nature is confirmed by every major market indicator. Because the Commission’s long-standing, flexible, market-driven policies have served U.S. consumers and the broader U.S. economy well thus far, the Commission should retain approach of consumer-focused regulatory restraint and continue to recognize that the U.S. wireless industry is one of the most competitive wireless markets in the world, delivering unparalleled competition, value and innovation to wireless consumers.

Respectfully submitted,

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Dated: September 30, 2009