

The Wireless Industry Overview

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Wireless Industry: Economic Impact

Jobs

- Former FCC Commissioner Dr. Harold Furchtgott-Roth says, “[e]mployment and employment compensation are two of the primary measures of economic activity in an industry.”¹
- Wireless industry directly/indirectly employ >2.4 million Americans.⁵⁴
- Carriers directly employ >250,393 people.²
- Wireless jobs paid >50% higher than the national average of other production workers.¹
- Wireless broadband investment will create as many as 205,000 jobs by 2015.³
- Estimates of productivity gains from wireless broadband services >\$860 billion between 2005-2016.⁴
 - Businesses expect a 15% improvement in their bottom line.⁵

The U.S. wireless industry’s growth and economic investments benefit American workers.

Infrastructure Investment

- Every \$1 invested in wireless broadband will create an additional \$7-10 for GDP.⁹
- Wireless economic contributions have grown faster (16%) than the rest of the economy (3%).¹
- Cumulative capital investment by U.S. wireless industry in 2010 was almost \$25 billion.²
- Wireless capital expenditures were >\$264 billion from 1997-2010.²
- In 2010, U.S. providers reported making capital investments totaling \$24.9 billion.² Wireless providers in the 5 largest European countries (France, Germany, Italy, Spain and U.K.) spent \$13.5 billion combined.⁸
- Wireless services provided \$100 billion in “value added” contributions to the U.S. GDP in 2007.¹

Misc

- Accessories

- Consumers spend >\$63 billion/year in the world on wireless accessories (cases, batteries, memory cards, hands-free kits, headsets, etc).⁶
- In the U.S., the average consumer spends \$60 on accessories for their wireless device.⁹

- Mobile Entertainment

- Mobile entertainment content and services (games, music, social media, etc) revenue projected to increase from \$33.2 billion in 2010 to \$38.4 billion in 2011.¹⁰

- Enterprise

- Businesses spent more than \$1.9 billion in 2010 on non-handsets (e.g. tablets, notebooks, e-readers); by 2014, it will be more than \$5 billion on non-handsets.¹¹

Wireless Industry: Innovation

Innovation – Applications

- In 2008, Apple's iTunes and Android Market application stores opened.¹²
- December 2009: >100,000 apps.
- May 2010: >240,000 apps on 7 operating systems (OS) from 7 different stores.
- May 2011: >1.19 million apps on >11 OS from >27 different non-carrier stores.

Innovation – Applications Continued

| Application Store | Date Launched | Number of Apps Available |
|-------------------------------|---------------------|--------------------------|
| Appia (formerly PocketGear) | June 2008 | 140,000 |
| Apple iTunes App Store | July 2008 | 392,871 |
| Android Market | October 2008 | 206,143 |
| Blackberry App World | April 2009 | 26,771 |
| Nokia Ovi Store | May 2009 | 54,024 |
| Palm App Catalog | June 2009 | 6,363 |
| Windows Mobile Marketplace | October 2009 | 2,336 |
| Intel AppUp | January 2010 | 2,089 |
| Apple Store for iPad | April 2010 | 34,120 |
| Dell Mobile Application Store | August 2010 | 48,610 |
| Amazon Appstore for Android | November 2010 | 4,082 |
| Windows Phone Marketplace | Holiday Season 2010 | 11,731 |
| Opera Mobile Store | March 2011 | N/A |

Innovation – Applications Continued

- Mobile app downloads to increase to 25 billion by 2015, from only 2.6 billion in 2009.¹³
- App revenue:¹⁴
 - 2010: \$5.2 billion
 - 2011: \$15.1 billion
 - 2015: \$57 billion
- By 2016, more than 44 billion apps will have been downloaded.¹⁵
 - Global population ~7 billion so 6 mobile app downloads for every man, woman and child.¹⁶
- Average smartphone had 22 apps; feature phone 10 apps.¹⁷
- 1 in 4 American adults actively use apps.¹⁸
 - Children downloaded almost 1/3 of apps on their parent's phone.¹⁹
- North America is poised to lead in downloading smartphone apps by 2011, surpassing the current leader Europe and still leading Asia-Pacific.²⁰

Innovation – Devices

- 270 million data-capable devices were in the hands of consumers in 2010; compared to 257 million in 2009.²
 - >78.2 million of these are smartphones; compared to 49.8 million in 2009.²
 - >242 million of these are web-capable devices; compared to 238.4 million in 2009.²
 - >13.6 million of these are wireless-enabled tablets, laptops and modems; compared to 11.9 million in 2009.²
- 4G Handsets:
 - In 2010, the first 4G handset (HTC Evo) was introduced at International CTIA WIRELESS.
 - As of June 13, 2011:
 - AT&T: Motorola Atrix 4G; HTC Inspire 4G; Samsung Infuse 4G; HP Veer 4G.
 - CellularOne: Motorola Atrix 4G; HTC Inspire 4G.
 - MetroPCS: Samsung Craft; Samsung Galaxy Indulge.
 - Sprint: Motorola Photon 4G; HTC Evo 4G; HTC Evo View 4G (tablet); HTC Evo Shift 4G; Samsung Epic 4G; Nexus S 4G; RIM 4G PlayBook (tablet).
 - T-Mobile: myTouch 4G; Google G2 and G2x; Samsung Galaxy S 4G; Streak 7 (tablet).
 - Verizon Wireless: Thunderbolt ; Samsung Droid Charge; LG Revolution; Motorola Droid Bionic; Motorola Xoom (tablet).

Innovation – Devices Continued

- >630 different handsets and devices are manufactured for the U.S. market.
 - In UK, 147 handsets are available.²¹
- Choose from devices manufactured by >32 companies.
 - Between April 2010-March 2011, more than 120 new smartphones from major handset makers were launched.²²
- >10 wireless operating systems: Android (Open Handset Alliance); Blackberry OS (Research in Motion); BREW (Qualcomm); Java (Sun Microsystems); LiMo (Open Source Linux for Mobile); OS X iPhone (Apple); Palm OS (Palm); WebOS (Palm); Windows Phone (Microsoft); Samsung (bada).
- Some of the most advanced wireless devices are launched first in the U.S. – Apple iPhone 4, iPad 2; Google Nexus S and 4G; BlackBerry Curve 8900 and Torch; Motorola Droid Bionic; Samsung Galaxy S II; HTC EVO 3D and Thunderbolt; Amazon Kindle; Barnes & Noble Nook; Motorola Xoom.

Innovation – Devices Continued

- Average price of a smartphone has fallen by more than 50% in the last four years.²³
 - Q4 2006, average smartphone price after discount was \$220; Q1 2011, the average smartphone price after discount is \$93.²³
- The average price of a wireless handset has gone from \$85 to less than \$35.²³
- 35% of American adults own smartphones.²⁴
- 83% of U.S. adults have a cell phone of some kind.²⁴
 - 42% of them own a smartphone.²⁴
- By the end of 2011, Nielsen projects there will be more smartphones in the U.S. market than feature phones.²⁶
- In 2009, more than 10.3 million tablets were sold in the U.S.²⁷
- By 2015, tablets will surpass laptop sales with one-third of U.S. consumers owning a tablet.²⁷
- By 2015, there will be >15 billion network devices worldwide, or almost 2 devices per person.²⁸

Innovation – Devices Continued

- Top 5 Devices in Q3 2008 in U.S.²⁹
 1. Motorola RAZR V3
 2. Motorola MotoKRZR
 3. LG VX8300
 4. Apple iPhone
 5. LG VX8500 (Chocolate, VX8500, VX8550)

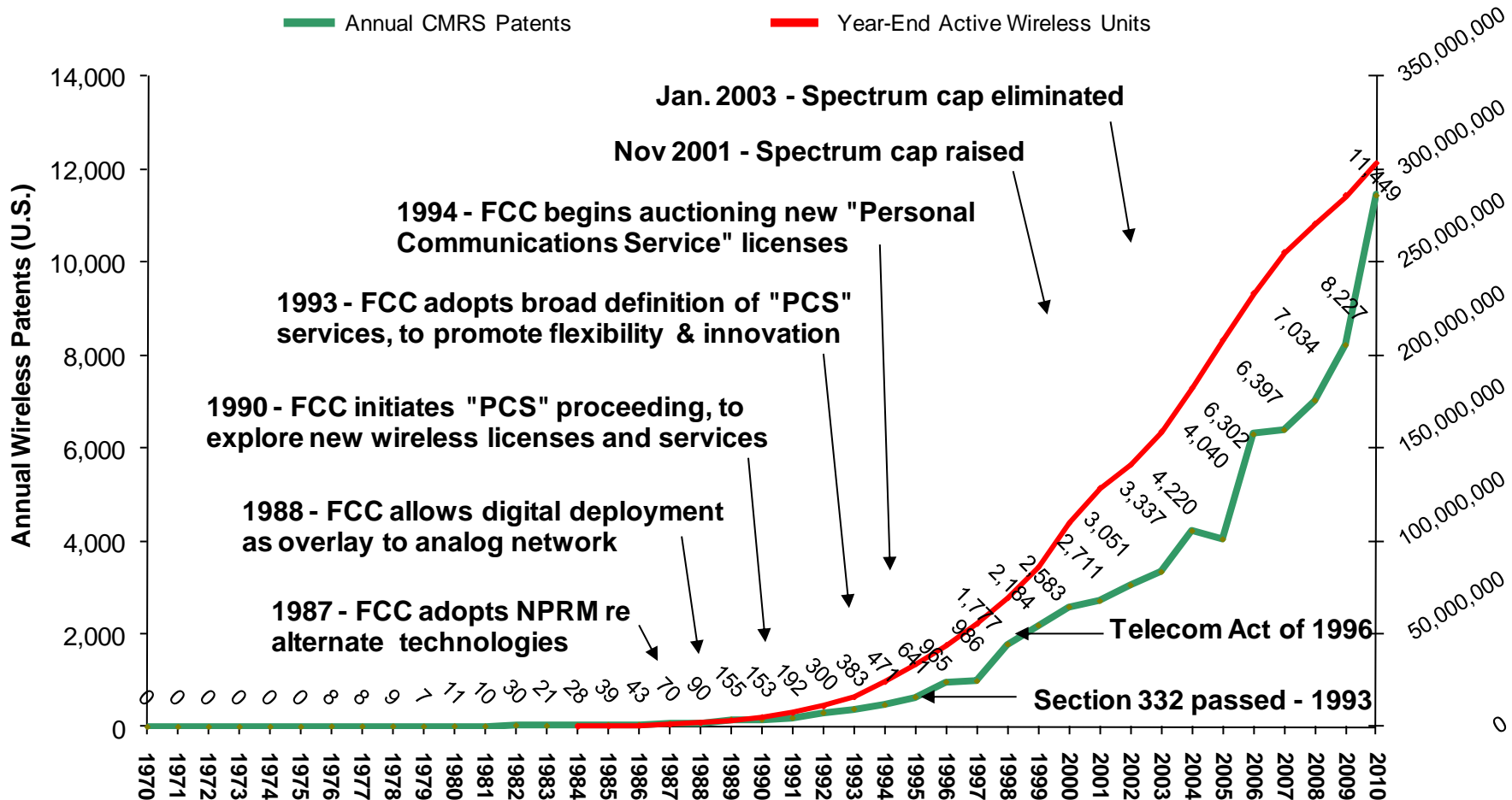
- Top 5 Devices in Q3 2009 in U.S.³⁰
 1. Apple iPhone 3GS
 2. RIM BlackBerry 8300 (Curve, 8310, 8320, 8330, 8350i)
 3. Motorola RAZR V3
 4. LG enV2
 5. LG Voyager

- Top 5 Devices in Q3 2010 in U.S.³¹
 1. Apple iPhone 3GS
 2. Samsung Intensity/Doubletake
 3. Motorola Droid
 4. RIM BlackBerry 8500 (Curve 8520, 8530)
 5. Apple iPhone 4

R&D Patents

- Driven largely by intense competition in all sectors of the industry, upgrades in technology continue to be introduced at a staggering pace – and R&D plays a pivotal role in their development.
- According to the U.S. Patent Office, more than 40,000 wireless-related patents have been granted in the U.S. in the last 20 years, not including additional Wi-Fi related patents.
- In 2005 4,040 patents were granted. By 2010 the number had grown to 11,449.

R&D Patent Continued



Wireless Industry Landscape

U.S. Wireless-Only Households

- As of December 2010, there were 29.7% U.S. wireless-only households.³² As of December 2005, there were 8.4% wireless-only households.³³
- July '09-June '10: CDC wireless-only households (Top 10 states with adults and children).³⁴

| Rank | State | % | Rank | State | % |
|------|--------------|------|------|----------|------|
| 1 | Arkansas | 35.2 | 6 | Kentucky | 31.5 |
| 2 | Mississippi | 35.1 | 7 | Oregon | 30.6 |
| 3 | Texas | 32.5 | 8 | Colorado | 30.4 |
| 4 | North Dakota | 32.3 | 9 | Nebraska | 30.4 |
| 5 | Idaho | 31.7 | 10 | Oklahoma | 30.1 |

U.S. Wireless-Only Households Continued

- July '09-June '10: CDC wireless-only/wireless-mostly households is about 46%.³⁴
- Here are the top 5 states with 18+ age adults.³⁴

| Rank | State | % |
|------|-------------|-------|
| 1 | Texas | 52.8% |
| 2 | Arkansas | 50.9% |
| 3 | Mississippi | 49.8% |
| 4 | Arizona | 48.1% |
| 5 | Nebraska | 47.3% |

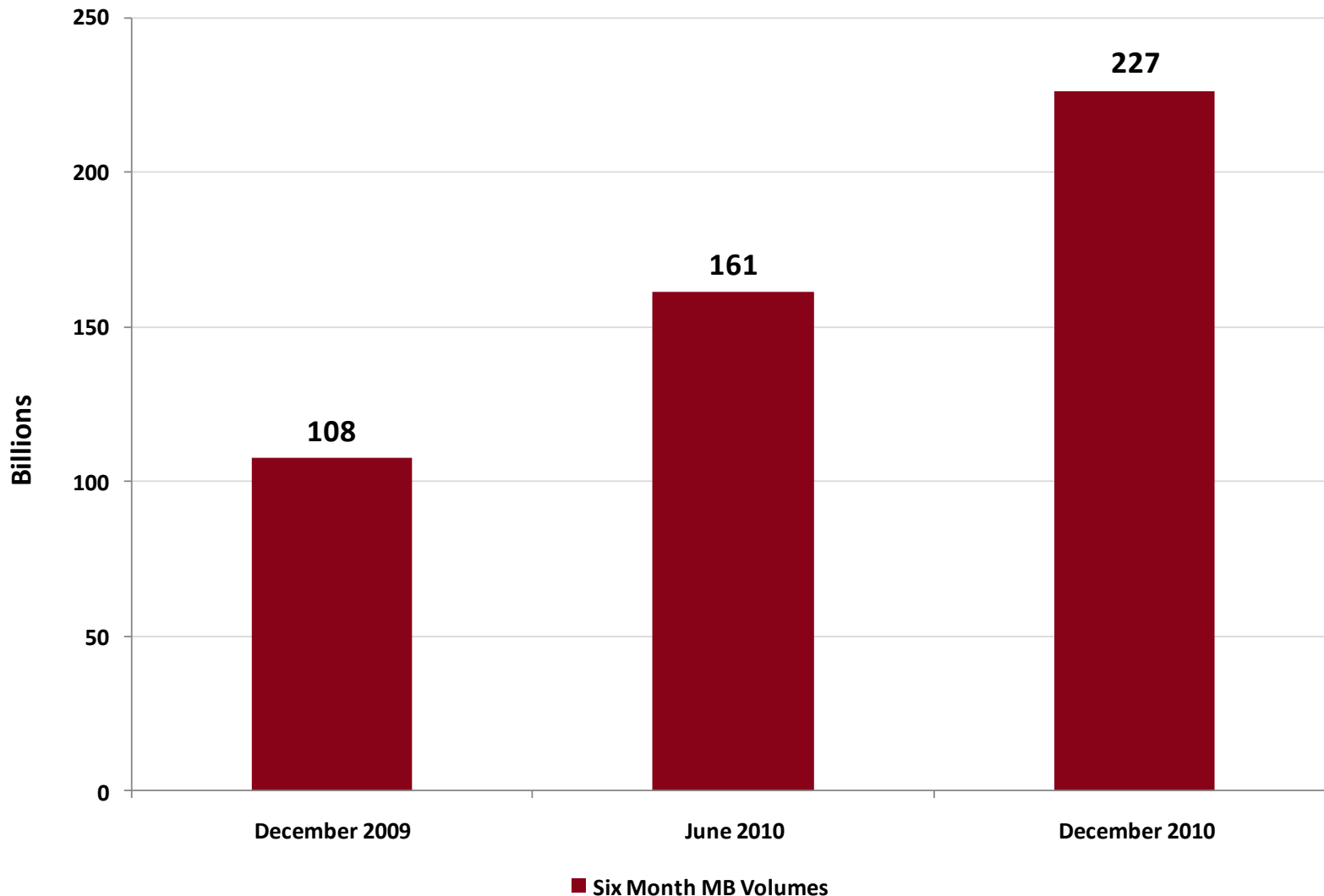
U.S. Prepaid Market

- Prepaid/Pay-As-You-Go market demographics:³⁵
 - Gender: 54.3% are female; 45.7% are male
 - Age: 20.8% are 45-54; 17.4% are 65+; 15.1% are 35-44; 17% are 55-64
 - Income: 30.8% income \$25-<\$50k; 29.7% income <25k; 17.6% income \$50-75k; 8.7% income \$75-100k, 13.2% income \$100k+
 - Ethnicity: 80.2% are white; 10.9% are black/African American; 6.7% are Asian; Native Hawaiian; other Pacific Islander
- >63.9 million wireless prepaid/pay-as-you-go subscriptions at year-end 2010.³⁶
- Prepaid/Pay-As-You-Go share of overall wireless market (penetration) is 21.1%.³⁶
- Prepaid/Pay-As-You-Go revenue accounts for almost 10% of all-industry revenues.³⁶

Data Usage

- In 2010, U.S. carriers transmitted 388 billion MB of data.²
 - The Library of Congress has more than 22 million books in its catalog. If each book is equal to one MB, then wireless service providers are delivering two times the Library of Congress' book catalog for wireless consumers every hour of every day of the year.²
- From December 2009 to December 2010, wireless data traffic in the U.S. more than doubled, growing from 107.8 billion MB in the last half of 2009 to more 226.5 billion MB in the last half of 2010.²
- Cisco Systems, The Yankee Group and Coda Research projected (on average) that data traffic in 2014 would be 35 times the volume of traffic in 2009.³⁷
- Cisco's Visual Networking Index (VNI) has projected that wireless data traffic in North America will grow 20 times from 2010 to 2015, on top of the already extraordinary growth we've experienced.³⁷
 - Combining Cisco's projections for the last two years, wireless data traffic in 2015 is expected to be 56 times the volume of traffic in 2009.³⁷

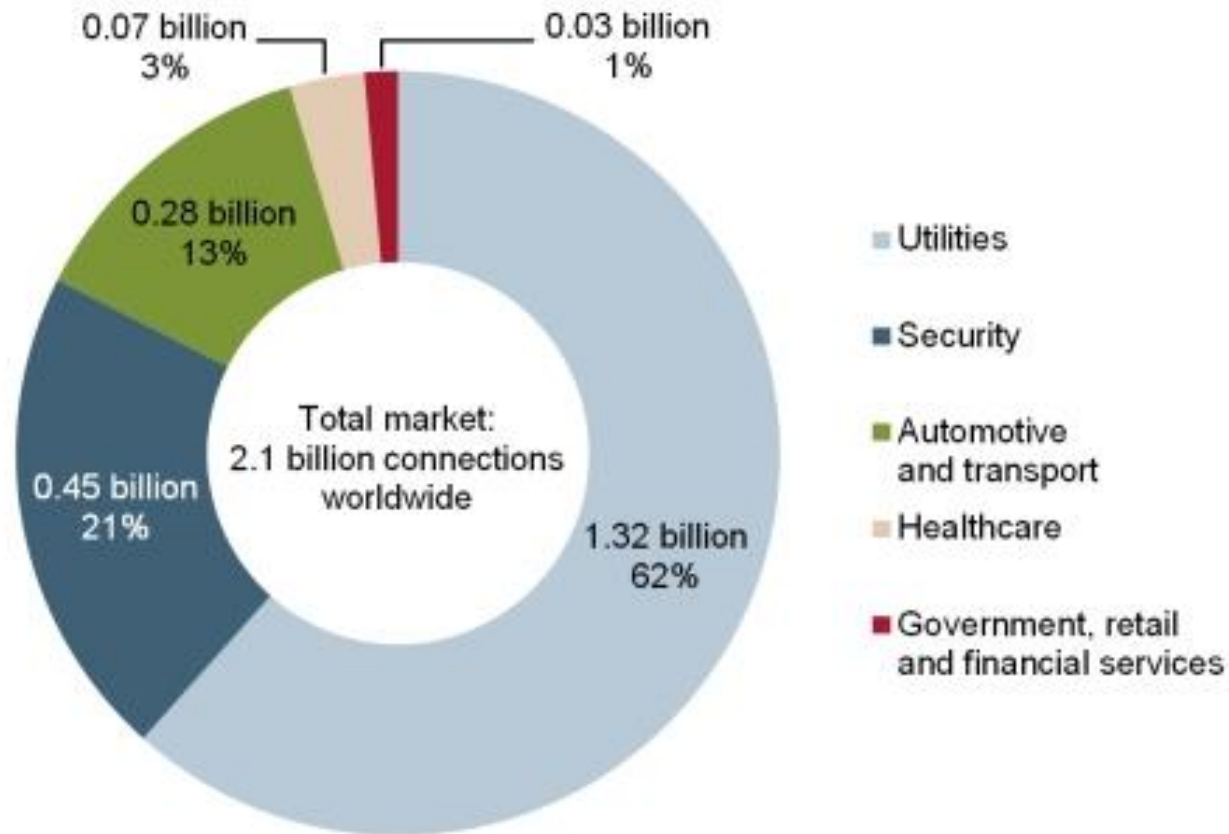
Total Reported MB of Traffic – 6 month measure



Machine-2-Machine (M2M)

- M2M are applications or mobile units that use wireless networks to communicate with other machines. These applications may include telemetry and telematic devices, remote monitoring systems (e.g. smart grid, healthcare, transportation, etc) and other devices that provide status reports to businesses' centers (e.g. operations, traffic management, data management, etc).
- By 2020, >2.1 billion M2M devices worldwide; compared to 62 million in 2010.³⁸
- Year-over-year growth is expected to be between 36% to 52%.³⁸

Machine-2-Machine (M2M) Continued



Wireless Technology – Healthcare

- 83% of wireless Internet users have looked online for health information.³⁹
- By 2016, there will be >80 million wearable wireless sensors for fitness and wellbeing.⁴⁰
- WHO reports 8 in 10 countries are using mHealth, e.g., for help lines, emergency toll-free numbers and telemedicine.⁴¹
 - 85% of the world’s population is covered by a commercial wireless signal.
 - 5 billion cellphone subscribers in the world.
- Experts estimate that if the 45% of Americans who suffer from such chronic conditions as diabetes, congestive heart failure and chronic obstructive pulmonary disease were monitored remotely via mobile wireless applications, the cost savings to the U.S. healthcare system from reduced ER visits, hospitalizations and nursing home stays would top more than \$21 billion per year of the \$1.4 trillion we spend treating chronic diseases.⁴²

Wireless Technology – Healthcare Continued

- Examples:
 - Text4baby – Sends texts healthcare tips every week to pregnant women and new moms. While all expectant mothers and new moms may benefit from the text messages, [text4baby](#) is focused on reaching and engaging those populations who are statistically more at-risk to experience traumatic births, by promoting healthy behavior through mobile technology. A program of the [National Healthy Mothers, Healthy Babies Coalition](#) (HMHB), text4baby is the largest free national health initiative to date and is made possible through a public-private partnership that boasts more than 350 organizations, [CTIA-The Wireless Foundation](#) as one of the program's founding partners.
 - Apps can turn any web-enabled phone into an interactive diabetes monitoring and management device, and wireless-enabled pillboxes that are being used in a pilot program for patients with chronic kidney disease.
 - There are systems that link a patient's home with the pharmacy and prescribing physician, and even a medication dispensing unit that can be installed in a patient's home and enabled wirelessly by the prescribing physician using a secure two-way connection.

Wireless Technology – Education

- Project K-Nect, a program that gave smartphones and wireless service to 9th grade math students in North Carolina. Students in the program used their phones to communicate and collaborate with each other and tutors. When compared to other students in their school, district and state, Project K-Nect students were more likely to achieve proficiency in Algebra I & II as well as feel more successful in math in general (85%). When compared nationwide, Project K-Nect students (61%) have a greater self-perception that they are succeeding academically than their peers (39%).
- In Los Angeles, an 8th grade history teacher uses Twitter to engage his students, especially those who are shy.⁴³

Wireless Technology – Energy

- Carriers and suppliers are using more energy-efficient and environmentally responsible equipment and components in their overall operations to find energy savings of up to 70 percent and substantial reductions in their carbon dioxide (CO₂) emissions.
- In February 2010, the Telework Research Network said that if 40 percent of employees telecommuted half the time, they'd save more than 280 million barrel of oil; reduce greenhouse gases by 53 million tons (similar to taking almost 10 million cars off the road for a year); and increase national productivity by 5.5 million man-years, or \$235 billion worth of work.
- Energy is a major expense for wireless carriers, accounting for about 86 percent of their operating costs. Wireless carriers are exploring the use of alternative energy sources such as wind, bio-fuel and solar power at cell sites.
- Morgan Stanley predicts the worldwide smart grid market will have grown annually from about \$20 billion in 2010 to almost \$100 billion by the year 2030.

Wireless Technology – Energy Continued

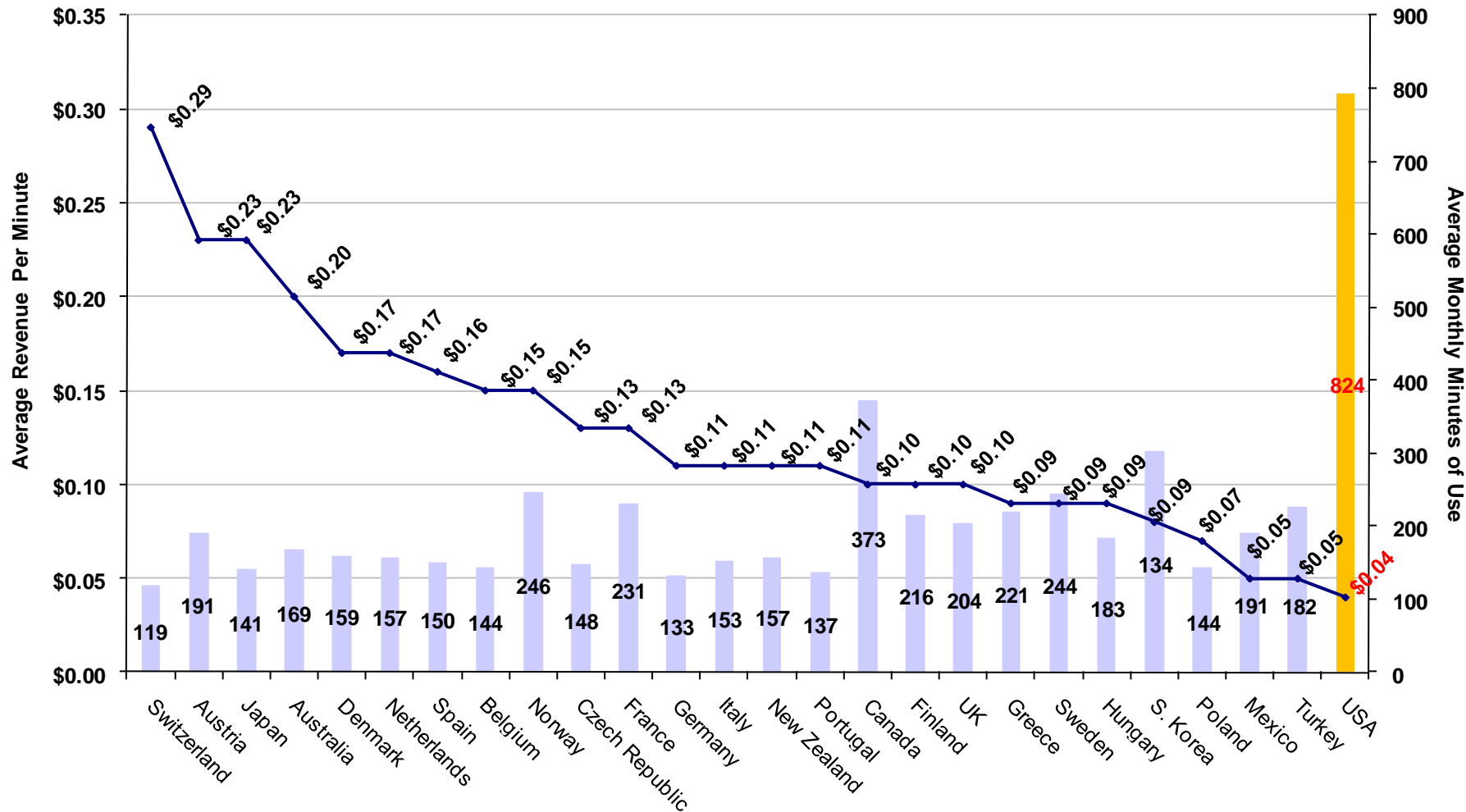
- In a joint Accenture and Vodafone report on smart grids using wireless technology, they found wireless technology cut energy costs by £43 billion (approximately \$70 billion), with more than 80% of these savings attributable to machine-to-machine communications.
- Accenture, a consultancy firm, listed more than 90 smart grid projects around the world and estimate that by the end of 2009, there were more than 76 million smart meters installed worldwide.
- By 2015, ABI Research says there will be approximately 212 million smart meter systems and smart grid projects installed worldwide.
- If America's power grid was just 5 percent more efficient, IBM estimates it would save greenhouse emissions equivalent to 53 million cars.

Wireless Technology – Energy Continued

- Examples:
 - With more than 355,000 electronic and 227,000 water customers, the Jacksonville Electric Authority (JEA) estimates that its smart grid upgrade in 2002 will save them more than \$90 million over the next 15 years.
 - Florida International University found the Broward County traffic-monitoring system that cost almost \$10 million to install actually provided more than \$142 million in benefits for the community since it reduced travel time, fuel consumption, carbon emissions and secondary accidents.
 - The tragedy of the collapse of the I-35W Mississippi River Bridge in Minneapolis, Minnesota was heartbreaking. When the new bridge, named the I-35W Saint Anthony Falls Bridge, was built, it was one of the nation’s “smartest.” With wireless sensors throughout the bridge, the Minnesota Transportation Department can monitor it for any weakness or structural damage. The wireless devices also monitor weather and when the roads become slippery in the winter, anti-icing systems are automatically deployed. According to the U.S. Transportation Department, these “smart” winter weather-management systems can reduce costs by 10 to 50 percent.

U.S. vs. World: Value

The U.S. Offers You the Most for Your Money
(Average Revenue per Voice Minute v. Average Monthly MOUs, YE2010)



Source: Bank of America Merrill Lynch Research, April 2011

U.S. Ranks #1

- Lowest revenue per minute of OECD countries.
 - Average revenue per minute is nearly 70% lower than the averages of the other 25 countries.⁸
 - Average revenue per minute is nearly 70% lower than the average European country.⁸
 - At the end of 2010, the average revenue per minute in the U.S. was \$0.04. Across Europe's developed countries, the average revenue per minute was \$0.13. As a result, the average wireless consumer in Europe used just 172 minutes a month compared to 793 minutes a month for the U.S.⁷
 - Most minutes of use (MOUs) – 2.24 trillion MOUs in 2010 (or 6.1 billion MOUs per day).²
 - Highest MOUs per month per user and the lowest average revenue per minute of service of the 26 OECD countries tracked by Bank of America Merrill Lynch.⁴⁴
- Largest mobile data market.⁴⁵
- Most mobile Internet users than any other country.⁴⁵
 - Adoption of wireless Web, accounting for 29.3% of all mobile Web surfing.⁴⁵
- 3G Technology has been deployed to more than 98% of the U.S. population.⁴⁶

U.S. Ranks #1 Cont'd

- Total U.S. population is <5% of the world's total population.⁴⁷
- Total U.S. subscribership is <6% of the world's total wireless subscribers.⁴⁸
- The U.S. is home to >20% of global 3G/4G subscribers.⁴⁸
- The U.S. is home to 56% of global mobile WiMAX subscribers.⁴⁸
- The U.S. is home to >90% of global LTE subscribers.⁴⁸
- U.S. has >164 million 3G/4G subscribers.⁴⁸

Spectrum

What's Spectrum?

- ALL of the apps, speed, devices and other innovations of the wireless industry are in jeopardy without more spectrum.
 - Spectrum is simply defined as the radio frequencies that are designated for specific uses, such as personal communications services and public safety.

“As the demand increases, and the benefits are more compelling by the day, it’s all the more reason why unleashing more spectrum must be a national priority. That’s what I want to talk about today: four core reasons why spectrum is at the top of my agenda -- American competitiveness, opportunity, the enormous dollar benefits of freeing up spectrum and the enormous costs of delay.”

- FCC Chairman Julius Genachowski
International CTIA WIRELESS 2011 Show

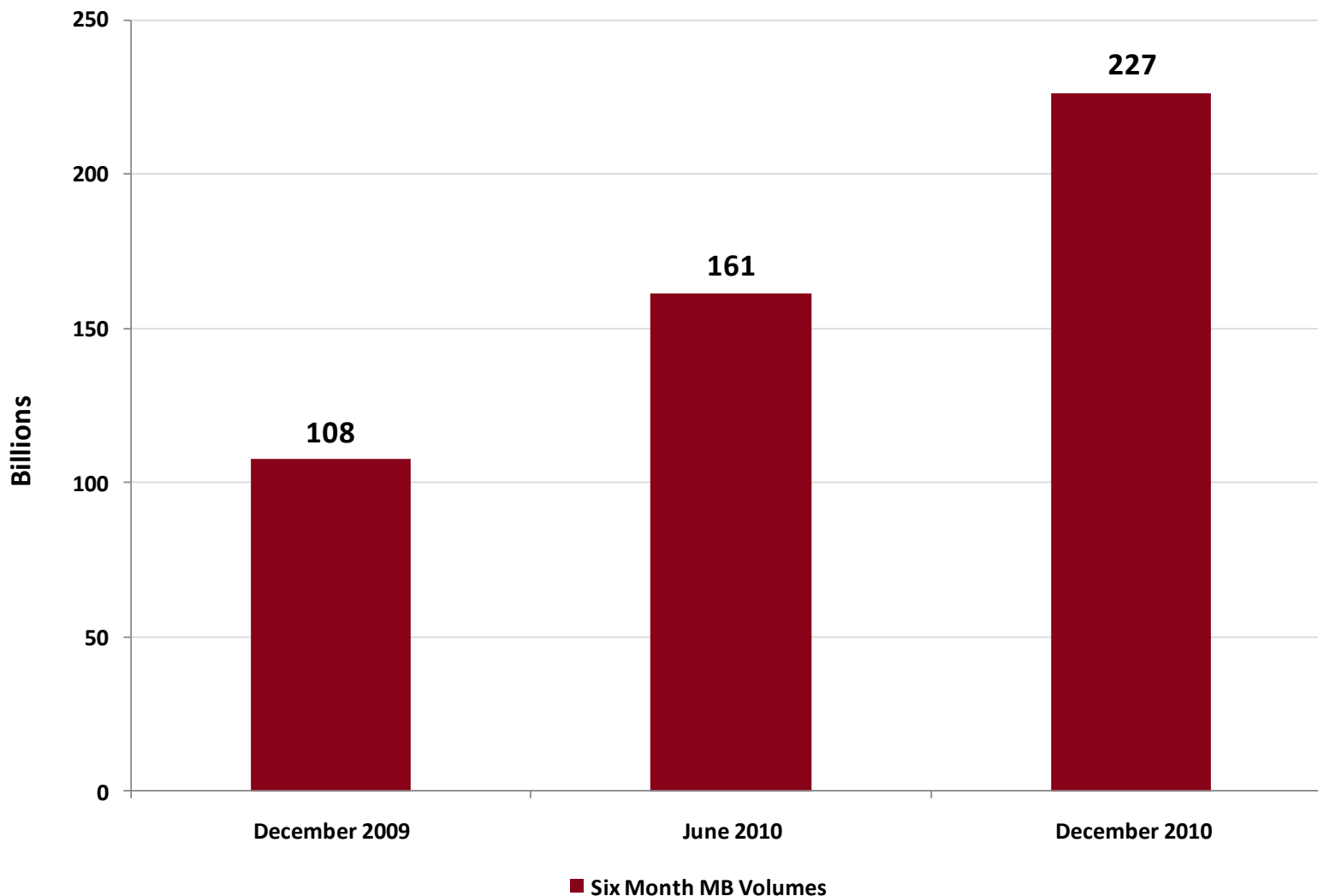
Spectrum is Our Highway

- To the wireless industry, spectrum is our equivalent to lanes on a highway.
 - Cars are like our mobile devices, such as cellphones, smartphones, tablets and wireless Internet cards. In the last ten years, there has been a tremendous increase in the number of cars, or devices, and in the amount of time they're spending on the 'roads'. To meet that demand, our members need more lanes, or spectrum. Otherwise, we'll have a significant traffic jam.
- The demand placed on wireless spectrum by one smartphone is equivalent to 24 cellphones. One tablet is equal to 122 cellphones.⁴⁹

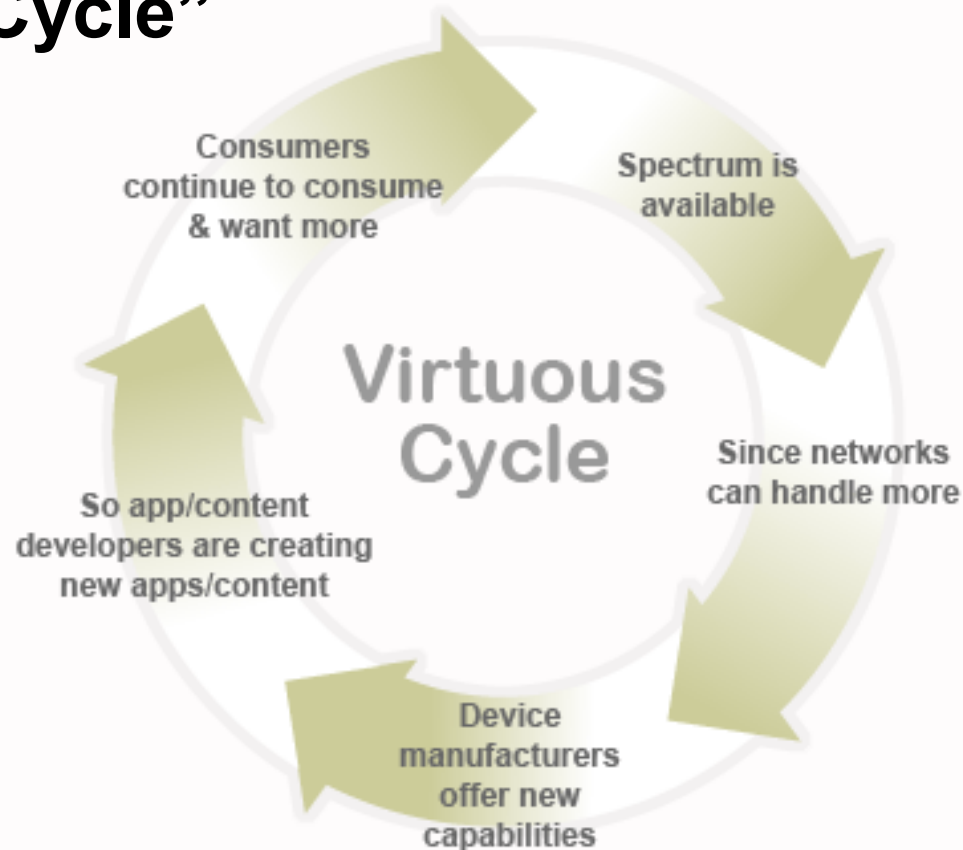
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Total Reported MB of Traffic – 6 month measure



“Virtuous Cycle”



As long as more spectrum is available, the industry will continue to invest in networks to handle more capacity, device manufacturers will continue to develop new capabilities for handsets and content developers will continue to create new apps and content. Ultimately, this cycle benefits the consumers who continue to want and expect more from their mobile devices. As long as spectrum is made available, this cycle will never end.

Spectrum Shortfall Consequences











- While it is impossible to identify with precision all of the potential harms of not bringing sufficient spectrum to market, Peter Rysavy, an analyst says:
 - Not being able to augment capacity through additional spectrum will have multiple adverse consequences:
 - networks will perform at lower levels and be less reliable
 - service plans will change
 - the vibrant cycle of innovation in the wireless ecosystem will stall.⁵⁰
 - This spectrum drought could lead to the U.S. ceding global leadership in mobile communications and computing to other countries.⁵⁰
 - This outcome could impact not only wireless innovation in the U.S. could also impact investment, job growth and improvement in our health care, education and energy sectors.⁵⁰

NBP on Spectrum

- Auctions generate billions of dollars in revenues to the U.S. Treasury.
 - 700 MHz and AWS—1 auctions raised ~\$30B for the U.S. taxpayers
- National Broadband Plan Identification of Spectrum

| Band | Action/Timing | MHz Reallocated/ Repurposed |
|--------------------|--|-----------------------------------|
| WCS (2.3 GHz Band) | 2010 Order | 20 |
| AWS-2/AWS-3 | 2010 Order 2011 Auction | 60 |
| 700 MHz D Block | 2010 Order 2011 Auction | 10 |
| MSS | 2010 Order (L-Band and Big LEO) (L Band: SkyTerra and Inmarsat) (Big LEO: DBSD and TerreStar) 2011 Order (S-Band) (S Band: Globalstar and Iridium) | 90 |
| Broadcast TV | 2011 Order 2012/13 Auction 2015 Clearing | 120 |
| Total | | 300 |

Spectrum Availability & Pipeline

| |  USA |  Japan |  Germany |  U.K. |  France |  Italy |  Canada |  Spain |  S. Korea |  Mexico |
|--|---|---|---|--|---|---|--|---|--|--|
| Subscribers# | 302.9M | 117.1M | 107.4M | 79.9M | 63.2M | 90.0M | 24.6M | 56.0M | 50.8M | 91.0M |
| Average Consumers' Minutes of Use per Month** | 793 | 141 | 133 | 204 | 231 | 153 | 373 | 150 | 303 | 191 |
| Average Revenue per Minute – A Measure of the Effective Price per Voice Minute** | \$0.04 | \$0.23 | \$0.11 | \$0.10 | \$0.13 | \$0.11 | \$0.10 | \$0.16 | \$0.08 | \$0.05 |
| Efficient Use of Spectrum -- Subscribers Served per MHz of Spectrum Allocated | 739,579 | 337,351 | 174,634 | 213,067 | 168,461 | 240,000 | 90,992 | 134,940 | 188,030 | 350,000 |
| Spectrum Assigned for Commercial Wireless Use | 409.5 MHz* | 347 MHz | 615 MHz | 375 MHz | 375 MHz | 375 MHz | 270 MHz | 415 MHz | 270 MHz | 260 MHz |
| Potentially Usable Spectrum/In the Pipeline*** | 50 MHz | 400 MHz | Recently auctioned 350 MHz | 310 MHz | 250 MHz | 250 MHz | up to 200 MHz | 270 MHz | 120 MHz | 150 MHz |
| <p>*Figure includes AWS-1, 700 MHz spectrum not yet in use and 55.5 MHz of spectrum at 2.5 GHz. #Regulatory and company websites. ** Glen Campbell, et al., "Global Wireless Matrix 1Q11," Bank of America Merrill Lynch, May 1, 2011, at Tables 1-2. ***Regulatory and company websites and press reports.</p> | | | | | | | | | | |

CTIA's Position

- We've identified the following areas for the FCC that are ripe for reallocation:
 - Broadcast spectrum
 - Spectrum below 3 GHz that is currently allocated for fixed wireless use
 - Spectrum allocated to U.S. satellite providers
- CTIA encourages policymakers to focus its efforts on spectrum that is:
 - Between 400 MHz and 3 GHz
 - Available in large, contiguous blocks
 - Adjacent to current spectrum allocations
 - Internationally harmonized

Wireless Taxes and Fees

Wireless Taxes & Fees

- Average taxes and fees on wireless consumers is >16.3%, compared to an average general business tax of 7.4%.⁵¹
 - 47 states and the District of Columbia impose local, state and federal taxes and fees higher than other taxable goods and services.⁵¹
 - 22 states and the District of Columbia discriminate against wireless customers by taxing them more than 15%.⁵¹
 - Nebraska (23.69%); Washington (23%); New York (22.83%); Florida (21.62%); Illinois (20.90%); Rhode Island (19.67%); Missouri (19.28%); Pennsylvania (19.13%); Kansas (18.39%); Texas (17.48%); Maryland (17.28%); Utah (17.21%); South Dakota (17.07%); Arizona (17.02%); Washington, DC (16.63%); Tennessee (16.63%); Arkansas (16.12%); Oklahoma (15.79%); North Dakota (15.73%); California (15.72%); New Mexico (15.57%); Kentucky (15.47%); and Colorado (15.45%).⁵¹

- Center for Disease Control’s semi-annual survey illustrates how high wireless taxes place the greatest burden on those Americans who can least afford it.
 - Adults living in poverty (42.8%) and adults living near poverty (35.2%) were more likely than higher income adults (24.1%) to be living in wireless-only households.⁵²

- Wireless Tax Fairness Act of 2011 (H.R. 1002/S. 543) would protect consumers from new taxes, fees and surcharges.

Digital Goods and Services Tax Fairness Act (H.R. 1860; S. 971)

- Online downloads of music, apps and books may be taxed more than if the same items were purchased in-person at a store.
- Bipartisan Congressional members recognized the unfair treatment of wireless services and are working to prevent an expansion of a broken telecommunications tax system.
- Need to establish a national framework to prevent multiple and discriminatory taxation on music, books and other products downloaded over the Internet with mobile devices or other Internet connections.
- Legislation needed to provide tax administrators and consumers a better understanding of how digital commerce should be taxed while continuing to encourage digital commerce to flourish and assist the nation's economic recovery and enhance American economic competitiveness.

Safe Driving

CTIA's Position

- Mobile devices are one of the greatest public safety tools (>296,000 wireless E911 calls every day), but we believe there are appropriate and inappropriate times to use them.
- Safety is always #1.
- Consumers should make their own decision about what legislation they support – whether that's hands-free or bans on talking on their mobile device while driving.
- Support ban on manual texting and emailing while driving
 - Worked with Dept. of Transportation, National Conference of State Legislatures, the American Legislative Exchange Council and other state organizations to develop model legislation (<http://distraction.gov/files/dot/texting-law-021910.pdf>)
- Support wireless restrictions or limits for inexperienced or novice drivers
 - Developed with the National Safety Council our teen-focused TV PSA– “On the Road, Off the Phone” (www.onroadoffphone.org)

CTIA's Position Cont'd

- We call for a 3-prong solution:
 - 1. Legislation** – Worked with the U.S. Department of Transportation, the National Conference of State Legislatures, the American Legislative Exchange Council and other state organizations to craft model legislation that could be adopted across the country that would prohibit manual texting and emailing while driving.
 - <http://distraction.gov/files/dot/texting-law-021910.pdf>
 - 2. Technology** – Support but caution that it cannot be based on inflexible mandates that could stifle innovation. They must also be affordable and consumer-friendly.
 - 3. Education** – This is vital. Agree with DOT Secretary LaHood that personal responsibility is important and every single person needs to be aware about the serious dangers and possible consequences of texting and driving. For more than 12 years, the wireless industry has been focused on educating everyone about the dangers of distracted driving.

Wireless Industry: Timeline

Wireless Industry Highlights

- Oct. 13, 1983 – The first commercial cell phone service was operational in Chicago.
- Dec. 1983 – Baltimore/Washington, DC corridor was the 2nd commercial service system to be activated.
- 1984 – CTIA (then known as Cellular Telecommunications Industry Association) was founded.
- 1985 – 340,213 subscribers; total revenue was \$482.4 million; carriers directly employed almost 3,000 people.
- 1987 – Cell phone industry tops \$1 billion in revenue.
- 1988 – Average consumer used his/her phone for 122 minutes per month, paying \$98.02.
- 1992 – World's first commercial text message sent by Logica CMG employees.

Wireless Industry Highlights Cont'd

- 1995 – 33.8 million subscribers using 37.8 billion minutes; total revenue was \$19 billion; carriers directly employed almost 68,000.
- 1996 – U.S. has 44 million cell phone users at year-end.
- 1998 – First “bucket” of minutes plan offered.⁵³
- 2000 – 109 million subscribers using 258.8 billion minutes; total revenue was \$52.5 billion; industry directly/indirectly employed 1 million Americans.
- 2001 – Average consumer used his/her phone for 384 minutes per month, and the average wireless bill was \$45.56.
- October 13, 2003 – 20th Anniversary of Commercial Wireless Communications.
- 2004 – U.S. has 180 million wireless subscribers.

Wireless Industry Highlights Cont'd

- 2005 – 207.9 million subscribers using 1.5 trillion minutes; 81 billion SMS messages sent and received; total revenue was \$113.5 billion; carriers directly employed 233,067 Americans.
- 2007 – U.S. wireless services delivered nearly \$100 billion in "valued added" contributions to the U.S. GDP.
- 2008 – 270.3 million subscribers using 2.2 trillion minutes; 1 trillion SMS messages sent and received; total revenue was \$148.1 billion; industry directly/indirectly employed 2.4 million Americans.⁵⁴
 - The average monthly minutes-of-use was 829 (Merrill Lynch) and the average wireless bill was \$50.07.²
 - Jul – Apple iTunes App Store was launched = >65,000 apps.¹²
 - Oct – Android Market = >1,000 apps.¹²

Wireless Industry Highlights Cont'd

- 2009

- There are more than 285.6 million U.S. wireless subscriber connections which is approximately 91% of the total U.S. population.
- Wireless subscribers use more than 6.2 billion minutes per day (2.275 trillion for the year) and more than 5 billion SMS messages per day (1.563 trillion for the year). More than 34 billion MMS sent and received.
- Data traffic on wireless networks for the last six months was 107.8 MB.
- Palm Software Store (January), BlackBerry App World (April), Nokia Ovi Store (May), Palm App Catalog (June) and Windows Mobile Marketplace (July) application stores open.

Wireless Industry Highlights Cont'd

- 2010

- HTC Supersonic 4G phone for Sprint introduced at International CTIA WIRELESS (March)
- CTIA launches “Be Safe. Be Smart. Be Fair: Responsible Wireless Use” website.
- After the devastating January earthquake in Port-au-Prince, Haiti, a record-breaking \$35 million is donated via text message.
- FCC proposes National Broadband Plan, recommending 500 MHz of spectrum be allocated for commercial wireless use by 2020.
- In June, President Obama signs a memorandum committing to freeing up 500 MHz of spectrum for the wireless industry.
- There are more than 302.9 million U.S. wireless subscriber connections, which is approximately 96% of the total U.S. population.
- More than 29.7% of U.S. households are wireless-only.
- U.S. wireless consumers used more than 2.2 trillion voice minutes; exchanged more than 2.1 trillion text messages, and more than 56.6 billion MMS.
- Data traffic for 2010 was 388 billion MB.

- 2011

- CTIA unveils redesigned AccessWireless.org at International CTIA WIRELESS.
- CTIA launches “go wireless, go green” website on Earth Day.

Wireless Policy Milestones

- 1912 – **Radio Act of 1912** – Served as the first federal statute to establish a structure for spectrum management and authorized the Secretary of Commerce to issue radio licenses.
- 1927 – **Radio Act of 1927** – Congress transferred radio licensing authority from the Department of Commerce to the Federal Radio Commission (FRC), which issued and revoked licenses, assigned radio frequencies and regulated transmission power levels.
- 1934 – **Communications Act of 1934** – Replaced the FRC with the Federal Communications Commission (FCC) to regulate interstate communication by wire and radio.
- 1981 – **Cellular Communications Systems Order** – FCC determined the cellular industry should have two carriers per market and creates cellular “A” and “B” licenses for each area of the country.

Wireless Policy Milestones Continued

- 1982 – **Communications Amendments Act of 1982** – Congress gave the FCC authority to issue licenses by lottery and required applicants to meet certain minimal conditions.
- 1988 – **Auxiliary Cellular Services Order** – FCC adopted technical flexibility rules for cellular radio without mandating specific standards, which permitted the introduction of advanced cellular technologies by the industry.
- 1993 – **Omnibus Budget Reconciliation Act** – Congress authorized the FCC to auction spectrum licenses, granted the FCC broad authority to forbear from applying unnecessary regulation and preempted state regulation of wireless rates and entry.
- 1996 – **Telecommunications Act** – Congress established a national framework for wireless tower siting.
- 1997 – **Balanced Budget Act** – Congress directed the FCC to reallocate spectrum in the 700 MHz band to commercial and public safety from its previous use for television broadcasting, resulting in the auctioning of recaptured spectrum.

Wireless Policy Milestones Continued

- 1999 – **Wireless Communications and Public Safety Act of 1999** – The FCC designated 911 as the universal emergency number for wireline and wireless service and promoted the use of technologies that help public safety service providers locate wireless 911 callers.
- 2003 – **Secondary Markets Order** – The FCC created a “secondary market” which permitted licensees to lease any amount of their spectrum.
- 2004 – **Commercial Spectrum Enhancement Act** – Congress created the Spectrum Relocation Fund, financed by auction proceeds, to recover the costs associated with relocating radio communication systems from certain bands.
- 2005 – **Deficit Reduction Act** – Congress required television broadcasters to terminate their analog broadcasts on February 18, 2009 and extended the FCC’s auction authority through the end of fiscal year 2011.

Additional Resources/Social Networks

- CTIA's Position on Policy Topics:
http://www.ctia.org/advocacy/policy_topics/
- CTIA's FCC filings: <http://www.ctia.org/advocacy/filings/>
- CTIA's Blog: <http://www.ctia.org/blog/>
- CTIA's website: <http://www.ctia.org/>
- CTIA Twitter: @ctia
- CTIA Facebook: www.facebook.com/CTIAthewirelessassoc
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