

U.S. Wireless Development and Policy: A Snapshot

Presentation to Montana Telecommunications
Association

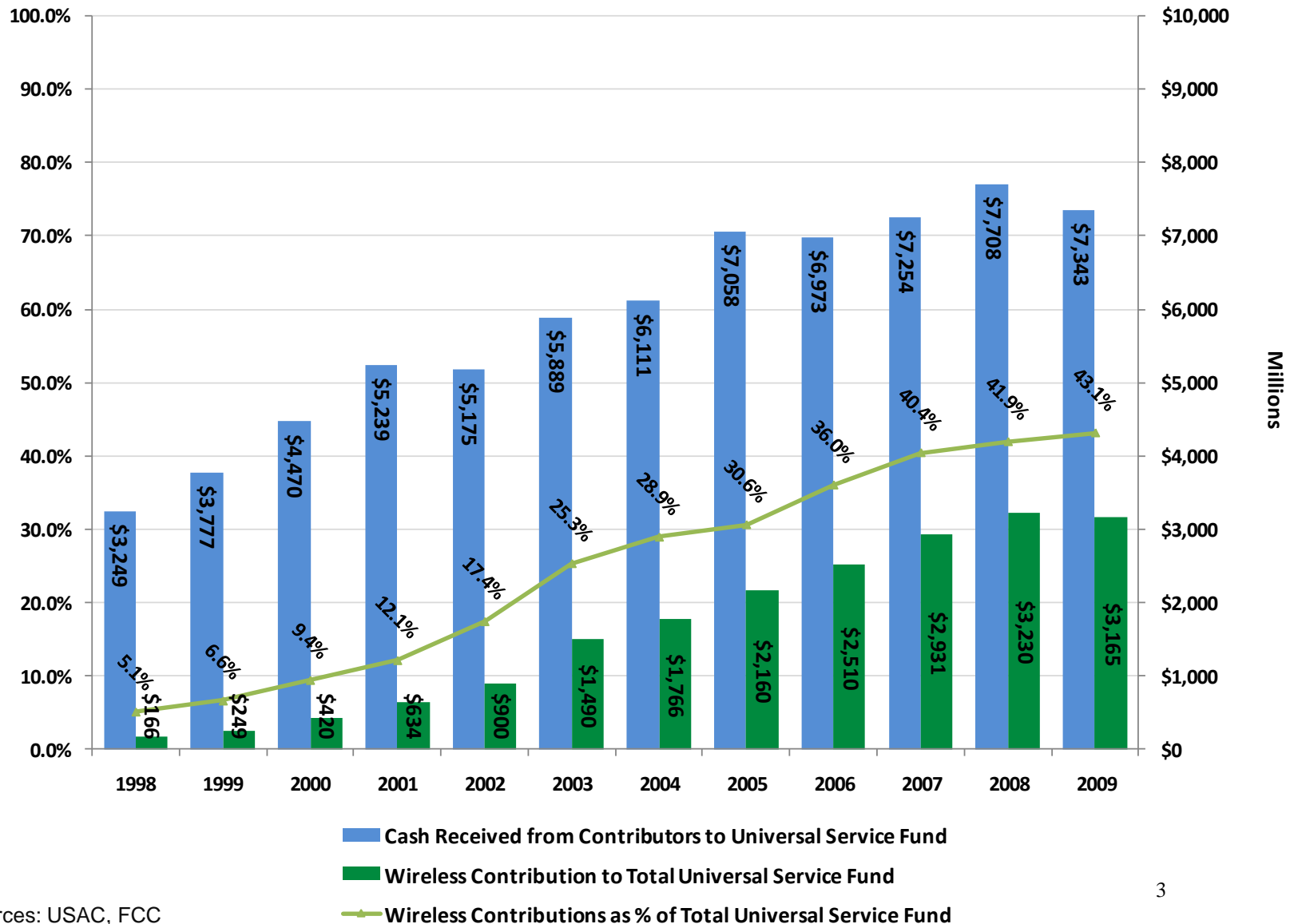
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August 2, 2011

Overview

- CTIA – The Wireless Association®
- The Shape of the Wireless Ecosystem Today
- Key Regulatory Issues
 - Spectrum
 - Universal Service
 - Intercarrier Compensation

What Wireless Contributes to the Universal Service Fund



Sources: USAC, FCC

Deployment of Mobile Broadband Advances National Goals and Priorities

Support for mobile broadband is consistent with...

- The National Broadband Plan

“Mobile broadband represents the convergence of the last two great disruptive technologies – Internet computing and mobile communications – and may be more transformative than either of these previous breakthroughs.”

- The President’s Wireless Initiative

The President has noted that “[f]ew technological developments hold as much potential to enhance America’s competitiveness, create jobs, and improve the quality of our lives as wireless high-speed access to the Internet.”

- Consumer Demand...

A Dynamic & Multi-Faceted Industry

Facilities-Based Providers

Wireless Carriers (National, Regional, Local)



Non-Facilities-Based Providers

Mobile Virtual Network Operators (MVNOs)



Manufacturers & Suppliers

Handset, Chip and Network Equipment

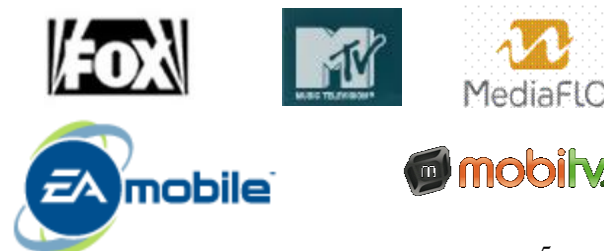
Manufacturers, Tower Companies



Application/Software Developers

Television/Entertainment, Mobile Gaming,

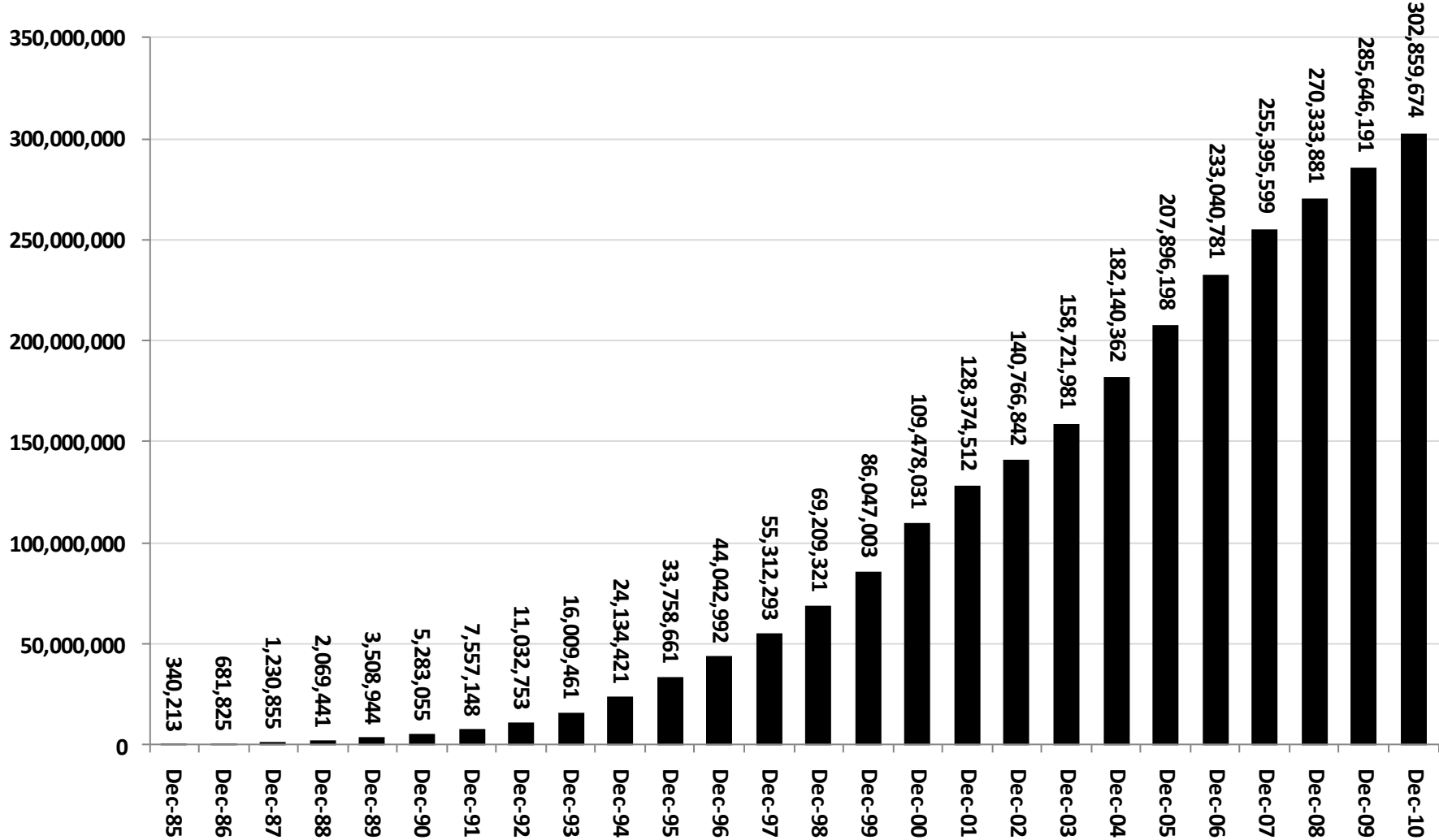
Mobile Video, Ringtones



The U.S. Wireless Story Today

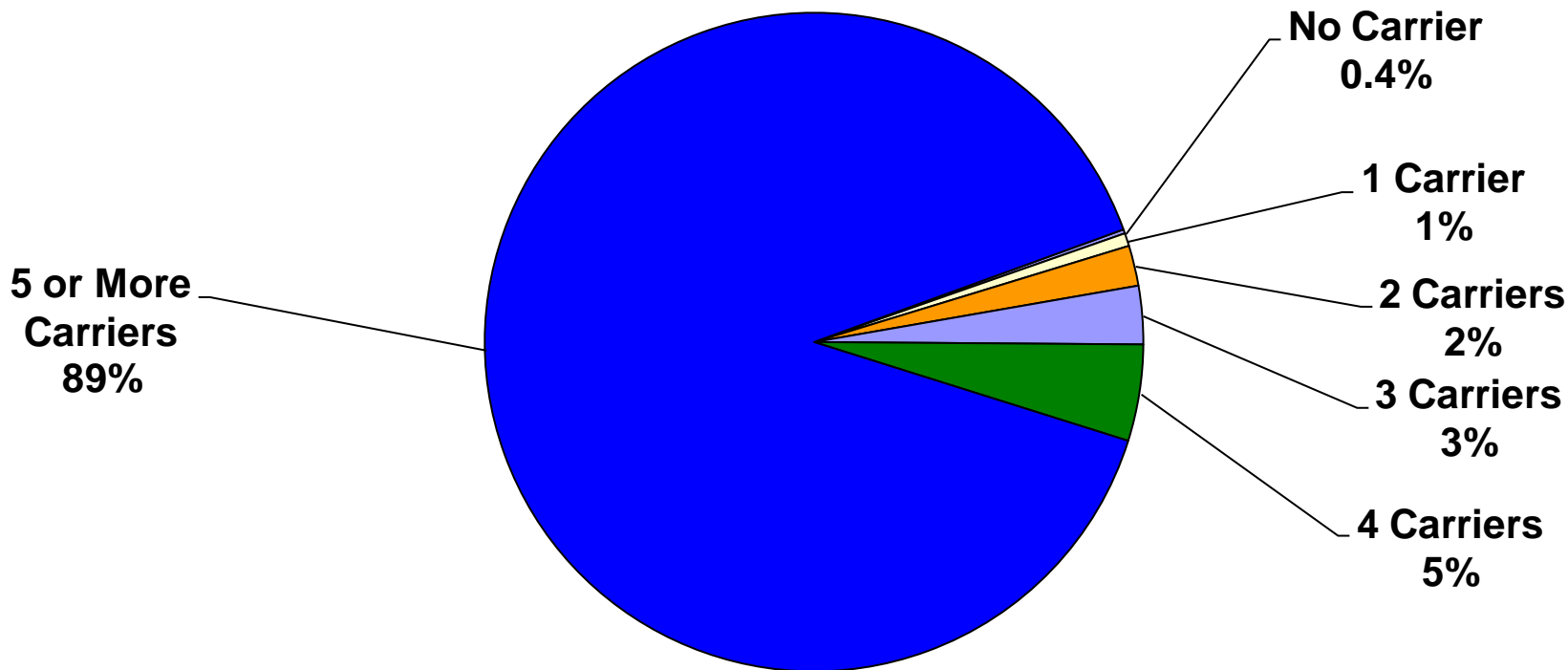
- 89.3% of U.S. households have a wireless phone.
- 29.7% of U.S. households only have a wireless phone.
 - Another 15.7% receive almost all of their calls wirelessly, even though they have landline service.
- Wireless consumers in the U.S. can choose among more than 630 different wireless devices.
 - Available from service providers, independent retailers, and manufacturers.
- More than 2.4 million jobs are either directly or indirectly dependent on the U.S. wireless industry.
- Overall economic contribution: Wireless services provide over \$100 billion in “value added” contributions to the U.S. GDP annually.

Wireless Subscriber Connections Passed 300 Million



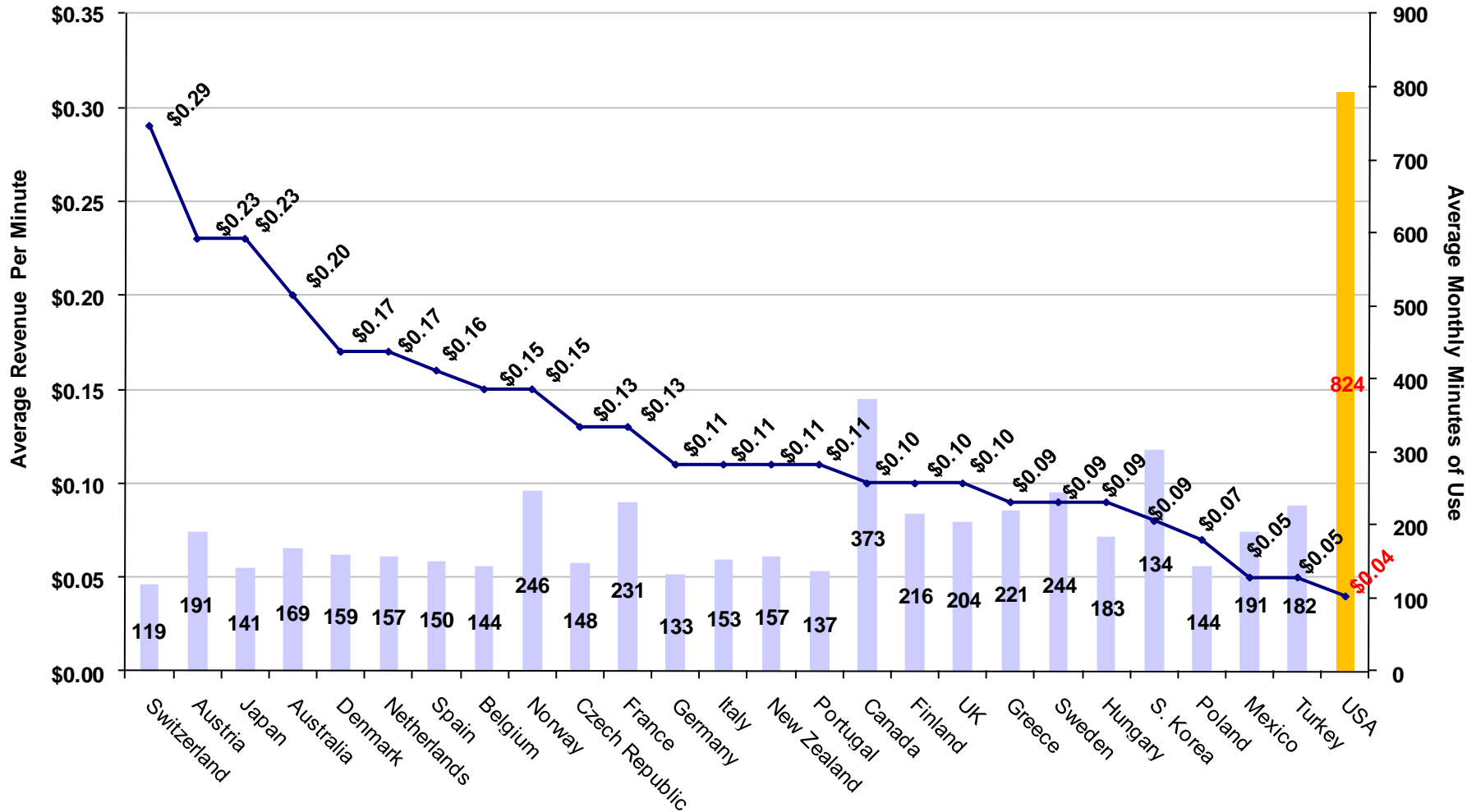
Wireless Has Delivered More Choices for More People

Nearly 90 Percent of Consumers Have a Choice of Five or More Wireless Service Providers



U.S. vs. World: Value

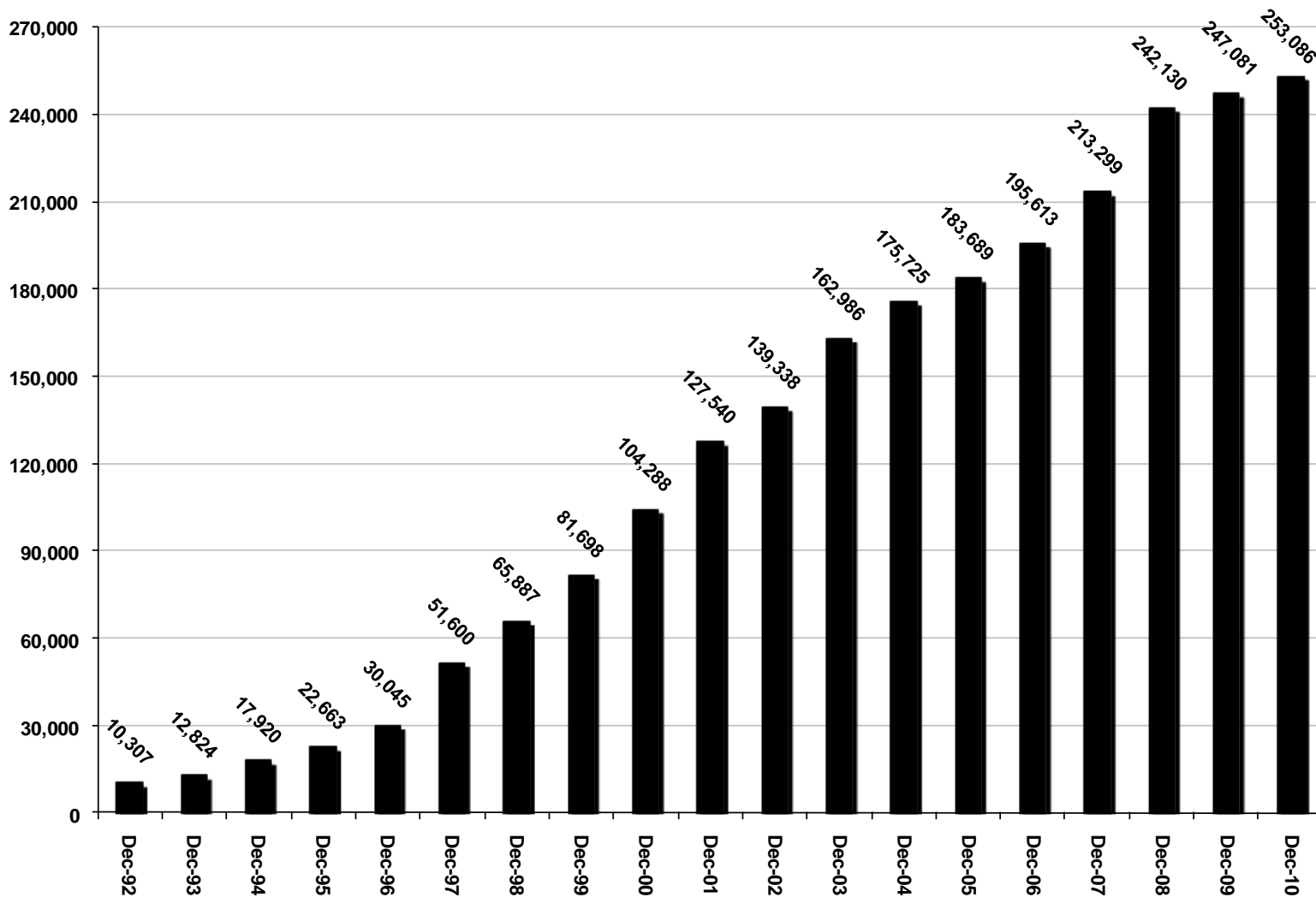
The U.S. Offers You the Most for Your Money
(Average Revenue per Voice Minute v. Average Monthly MOUs, YE2010)



Infrastructure Investment

- Wireless capital expenditures were >\$264 billion from 1997-2010.
- Cumulative capital investment by U.S. wireless industry in 2010 was almost \$25 billion.²
 - Wireless providers in the 5 largest European countries (France, Germany, Italy, Spain and U.K.) spent \$13.5 billion combined.
- Every \$1 invested in wireless broadband will create an additional \$7-10 for GDP.⁹

More Cell Sites Are Being Deployed

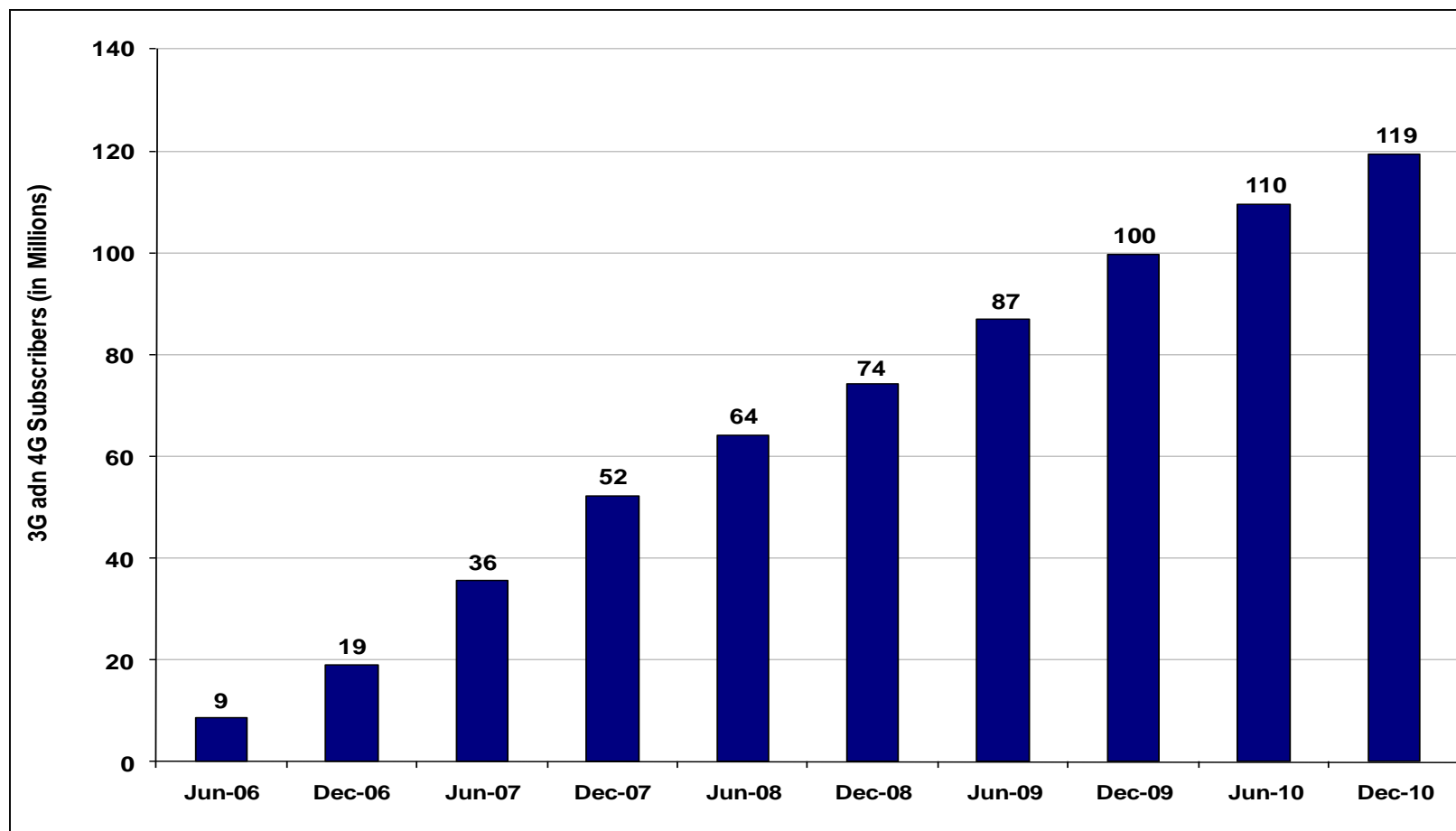


Rapid Build-out of 3G Networks and Dawn of the 4G Era

- AT&T – as of early 2010, HSPA covered 230 million POPs. As of January 2011, entire HSPA network upgraded with HSPA+. Plans to launch LTE in areas covering 75 million people by mid-2011 and to complete LTE build-out by 2013.
- Clearwire – WiMax network reached 120 million POPs by the end of 2010.
- T-Mobile – HSPA network covered 212 million people as of mid-2010. HSPA+ network covered 200 million people as of year-end 2010.
- Verizon – 3G data network serves nearly 93 million customers. As of December 2010, launched LTE network covering 110 million people. Plans to extend LTE to 289 million people by end of 2013
- MetroPCS – Launched LTE in 13 cities as of January 2011.
- Regional Operators include: Alaska Communications Systems, Bluegrass Cellular, Cellular South, General Communication Inc., Nex-Tech Wireless, nTelos, and Stelera Wireless.

Explosive Growth in Consumer Demand for Mobile Broadband Services

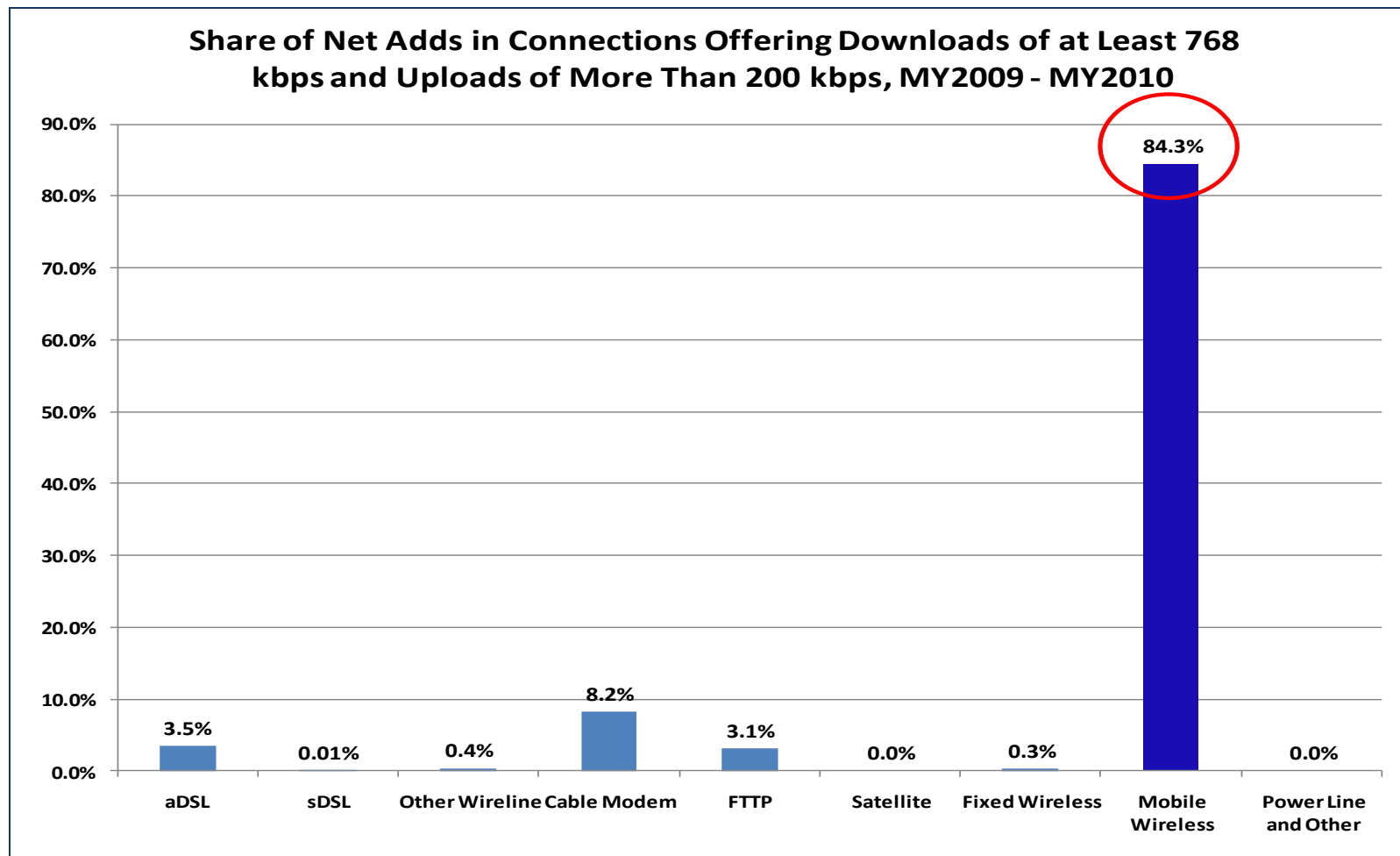
Unique High-Speed Wireless Subscribers Is Growing



Sources: comScore, MobiLens

Explosive Growth in Consumer Demand for Mobile Broadband Services

Growth In Broadband Connections With Download Speeds Of At Least 768 Kbps

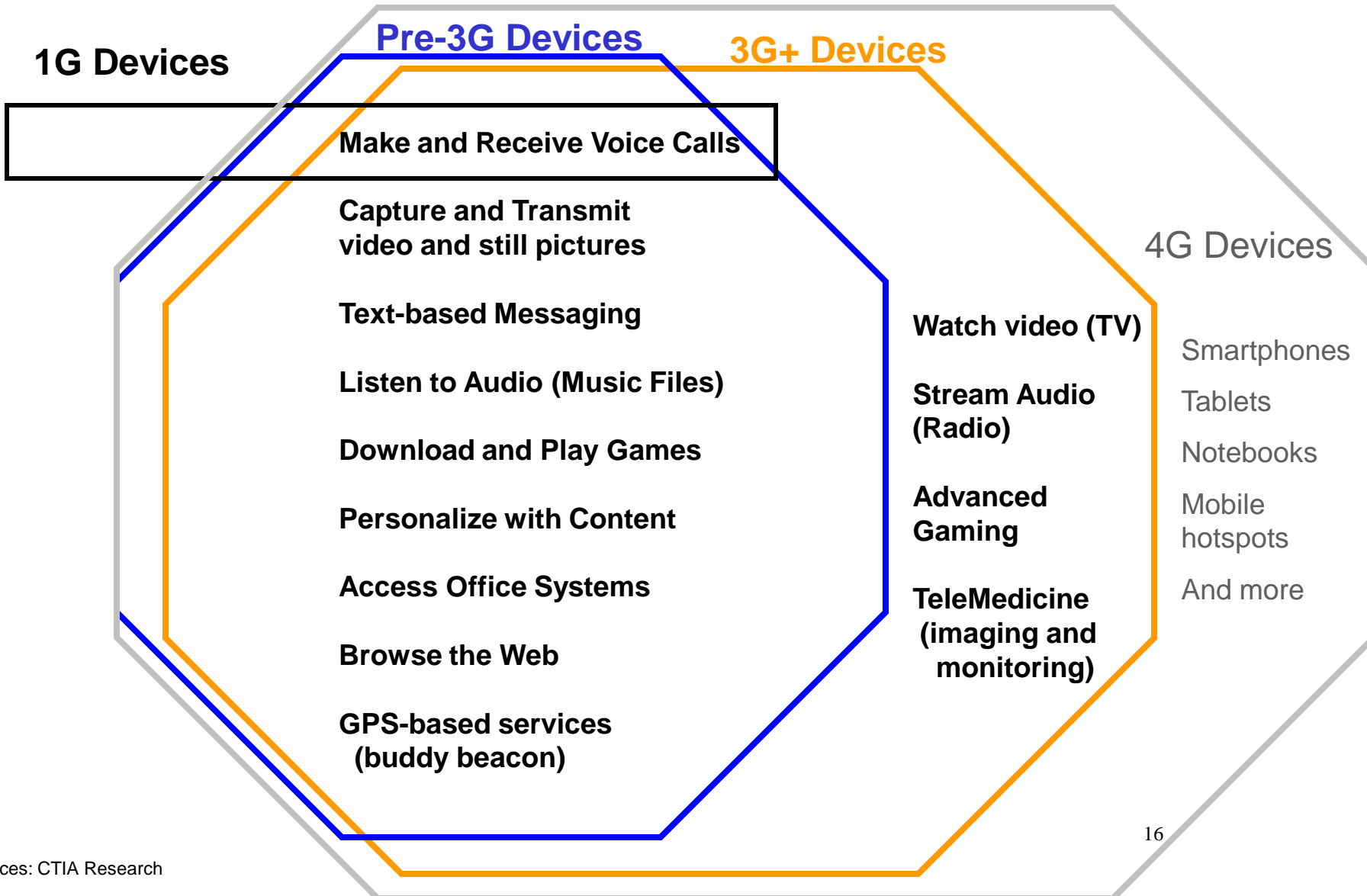


Source: FCC Internet Access Services Report, March 2011

Wireless Devices have Evolved to be Multifunction and Multiform



Makes Possible New Applications While Preserving Older Capabilities



Beyond Telephones – Making Wireless Devices Multi-Function Tools



Growing Appetite for Sophisticated Devices

- Smartphones
 - 83% of U.S. adults have a cell phone of some kind²⁴
 - 42% of them own a smartphone
 - Average price of a smartphone has fallen by more than 50% in the last four years.²³
 - By the end of 2011, Nielsen projects there will be more smartphones in the U.S. market than feature phones.²⁶
- Tablets
 - 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
- Devices
 - By 2015, there will be >15 billion network devices worldwide, or almost 2 devices per person.²⁸

What are Wireless Users Doing?

Do you ever use your phone to... (% of cell phone users)

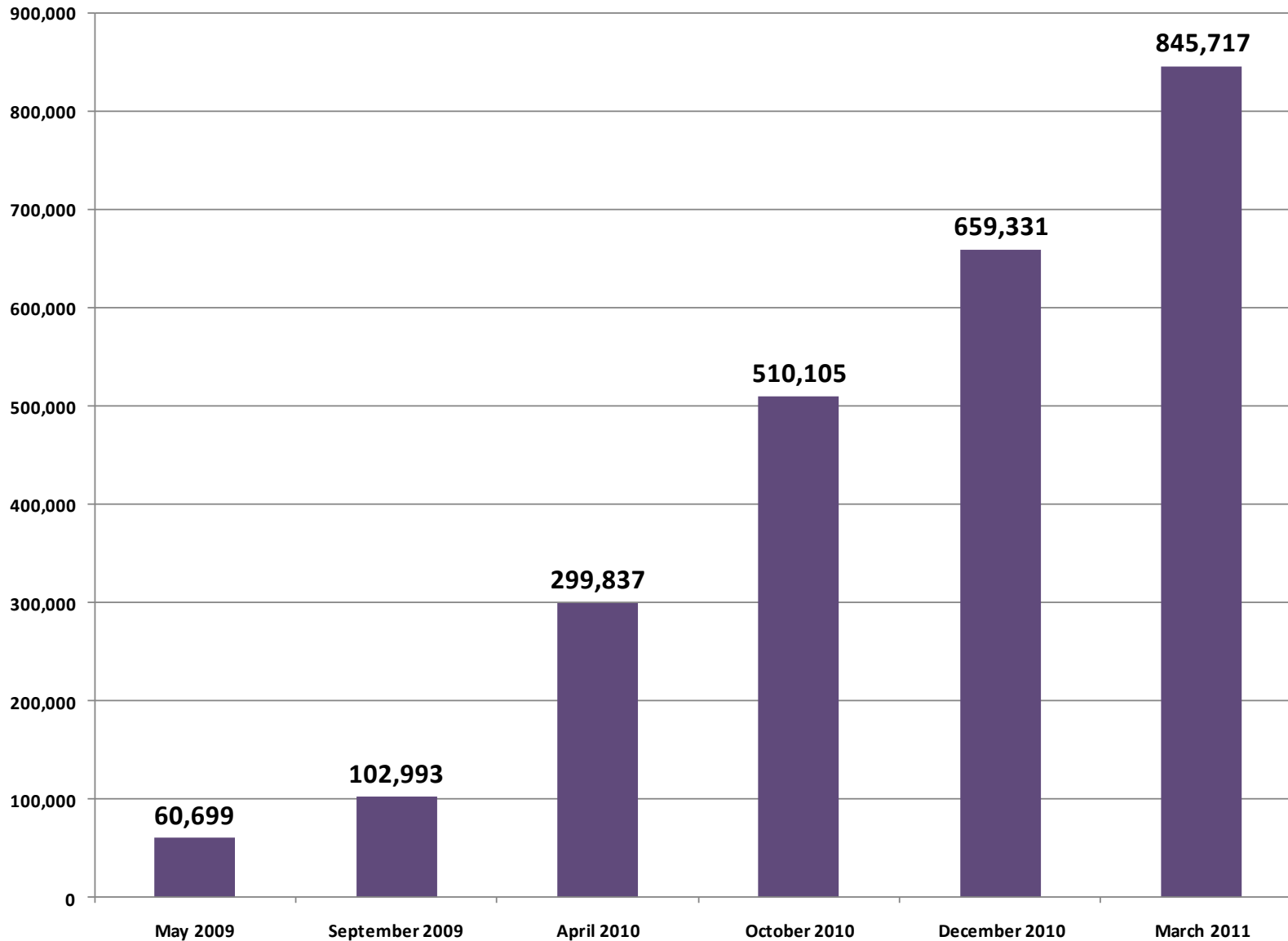
	Millennials (Ages 18-34)	Gen X (35-46)	Younger Boomers (47-56)	Older Boomers (57-65)	Silent Gen. (66-74)	G.I. Gen. (75+)	All adults (18+)
Take a picture	91	83	78	60	50	16	76
Send or receive text messages	94	83	68	49	27	9	72
Access the internet	63	42	25	15	17	2	38
Play a game	57	37	25	11	10	7	34
Record a video	57	39	23	11	7	4	34
Send or receive email	52	35	26	22	14	7	34
Play music	61	36	18	10	7	5	33
Send or receive instant messages	46	35	22	15	13	6	30

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=2,252 adults 18 and older.

Examples of existing third-party applications stores

- iTunes App Store
- Android Market
- Palm Software Store
- BlackBerry App World
- Nokia Ovi Store
- Palm App Catalog
- Windows Mobile Marketplace
- Getjar
- PocketGear / Handango
- Handster
- Handmark
- MobiHand
- Mobango
- AndAppStore
- OpnMarket

Growing Numbers of App Offerings

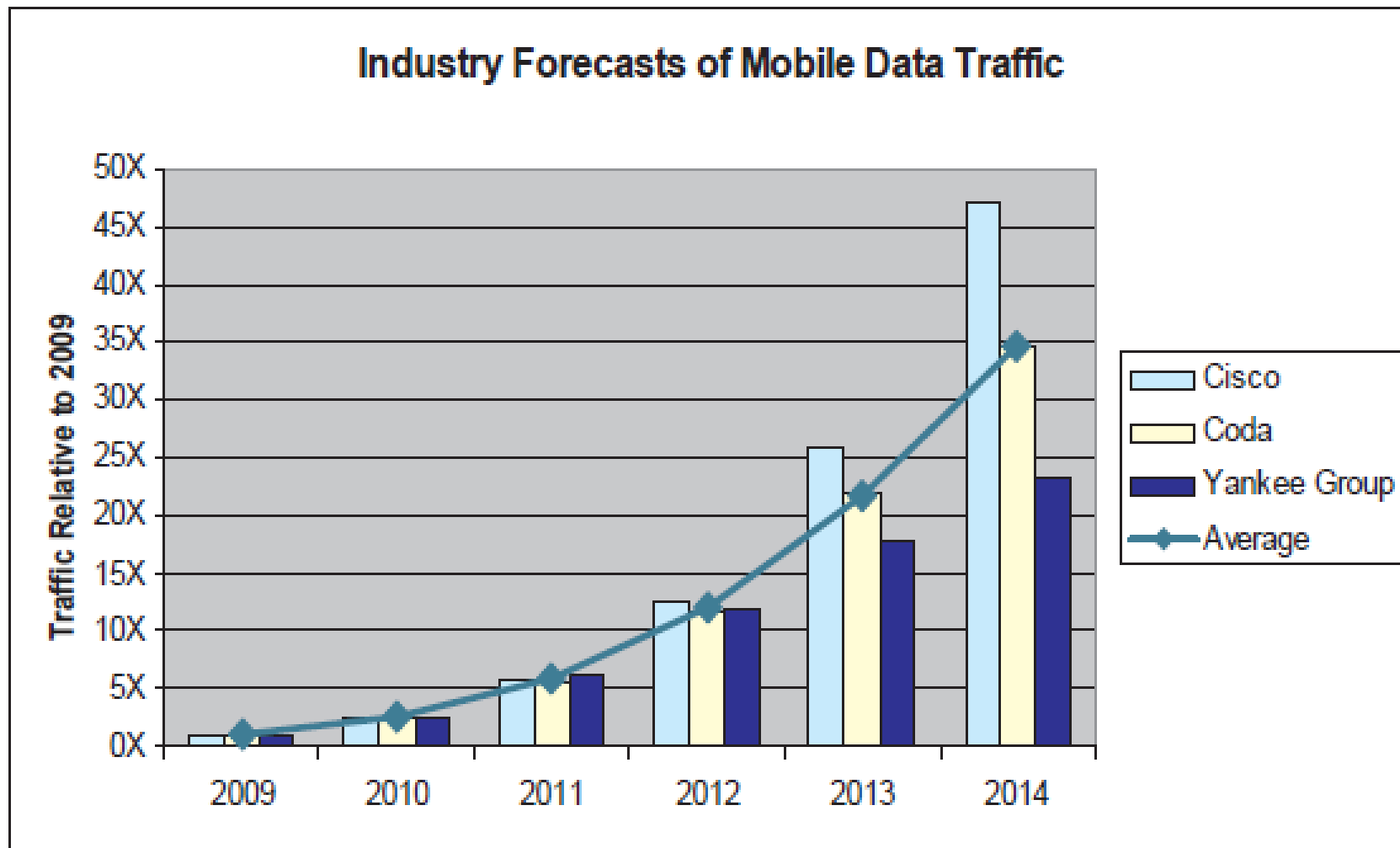


Wireless is a Tool for Delivering:

- Social connectivity (individual, personal, familial)
- Productivity applications (to small businesses, and large ones, and government agencies)
- Health care information (to doctors, nurses and patients)
- Educational opportunities and data (for students, teachers and institutions)
- Smart Grid (benefitting consumer and utilities)
- Intelligent transportation
- Mobile Payments

What the wireless user wants depends on who that user is.

Mobile Data Projections



Wireless Data Traffic

An aerial photograph of the Library of Congress building, showing its iconic central dome and surrounding wings. The image is overlaid with a dark blue, semi-transparent filter. The text is centered in the lower half of the image.

**2 times the total data
in the Library of Congress
transmitted every hour, every day!**

There is Still More to be Done

CTIA pointed out to U.S. policymakers that:

- Approximately 23.2 million U.S. residents did not have access to 3G mobile broadband service at their primary place of residence.
- Approximately 42% of road miles in the U.S. did not have access to 3G mobile broadband service.
- The estimated investment needed to build-out infrastructure to facilitate ubiquitous mobile broadband service was approximately \$22 billion.
- In order to achieve full 3G mobile broadband coverage, approximately 16,000 new cell sites needed to be constructed, and 55,000 existing sites needed to be augmented with 3G technologies.
- Wireless providers are moving forward with 4G investment and deployment (e.g., LTE, WiMAX, etc.).

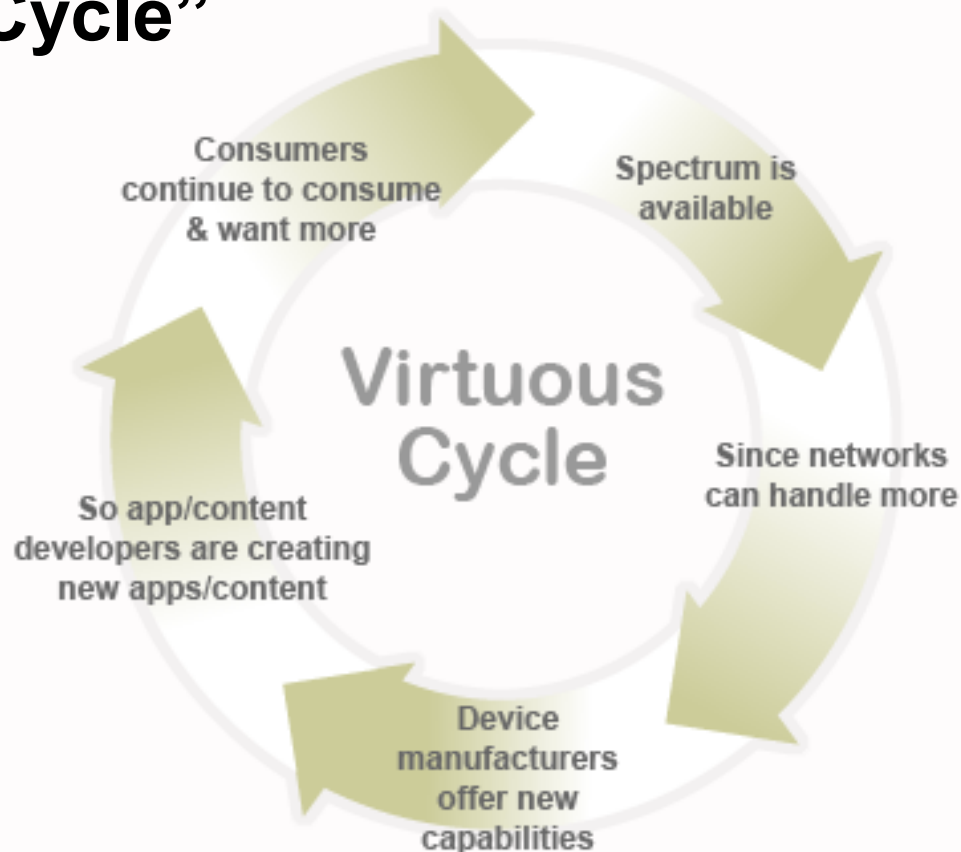
Key Regulatory Issues

- Spectrum
- Universal Service
- Intercarrier Compensation
- Other Issues

Spectrum

- Spectrum is A Critical Input for U.S. Wireless Industry
- Spectrum is Needed to Fuel the Wireless “Virtuous Cycle”
- A Crisis is Brewing
 - Surging use of smart phones, netbooks, and other devices
 - Development of new data-intensive applications
- Other Countries Have Made Major Commitments To Mobile Wireless Broadband.

“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

- National Broadband Plan:
 - 500 MHz within 10 years
 - 300 MHz within 5 years
- Broadcast Spectrum
 - 294 MHz allocated, less used
 - Changes to broadcast architecture
 - Incentive auctions
- MSS Spectrum
 - generally underutilized
- AWS III
 - Pairing with 1755-1780 MHz
- Federal Government Spectrum
 - 1675-1710 MHz, 3500-3650 MHz, and 4200-4220 & 4380-4400 MHz
 - 1755-1850 MHz under review

Universal Service

- Reform Should Focus On Consumers
 - Reform Should Focus on the Services that Consumers Demand
 - Program Should Minimize Distortion of Consumer Choice.
- Reform Should Reflect Market Reality
 - Program Should Not Provide Support Where There is an Unsubsidized Competitor.
 - Reform Should Avoid Marketplace Distortions
- Reform Should Encourage Efficiency and Innovation.
 - Reform Should Ensure Limited Public Resources Are Used Efficiently.
 - Minimize Administrative Complexity
 - Require Accountability
- CTIA Supports High-Cost Funding For Deployment And Ongoing Operation Of Advanced Mobile Wireless Services.

Intercarrier Compensation

- ICC reform is necessary and overdue.
- The current framework:
 - Applies different charges to traffic that very depending on circumstances that bear little or no relationship to cost.
 - Many rates are above cost.
 - Treats similarly-situated providers differently.
- This framework has given rise to multiple arbitrage issues:
 - Traffic pumping and phantom traffic.
 - Distort the marketplace.
 - Drain resources
 - Divert attention from other priorities

Intercarrier Compensation

- Reforms Should Accommodate And Foster A Highly Competitive Telecommunications Marketplace.
- Reform Should Unify the Intercarrier Compensation System at a Low Cost-Based Rate.
- Carriers Should Ultimately Recover Internal Network Costs From Their Own End-user Customers, With Access to Appropriate Levels of Support.
- The FCC Should Encourage Carriers To Negotiate Alternative Compensation Arrangements For The Transport And Termination Of Traffic.
- Any New Access Replacement Mechanisms Should Be Transitional and Should Not Be Premised on Revenue Neutrality

Other Active FCC Issues

- Other USF
 - Low Income
 - E-Rate
 - Contribution
- Interference Mitigation
 - Wireless Repeaters/Jammers
- License Renewal Harmonization
- Public Safety/Homeland Security
 - Network Reliability and Continuity NOI
 - Cybersecurity NOI
- Consumer Issues
 - “Bill Shock” and Early Termination Fees
 - Network Performance Disclosure
 - Privacy
- Accessibility Issues
 - Implementation of the 21st Century Communications & Video Accessibility Act

Thanks for listening. Questions...?

CTIA-The Wireless Association®