

U.S. Wireless Industry Overview

Robert F. Roche

Vice President, Research

August 4, 2010

Overview of Briefing

- The Shape of the Landscape
- The National Regulatory Framework
- Spectrum and What It Has Made Possible
- What Demand Demands (build-out and investment)
- Innovative Success and its Impacts
- Potential Issues

A Dynamic & Multi-Faceted Industry

Facilities-Based Providers

Wireless licensees, aka “carriers” – including National, Regional, and Local wireless service providers

Non-Facilities-Based Providers

Mobile Virtual Network Operators (MVNOs) reselling wireless service under their own brand identity

3rd Party Actors

Aggregators, Platform
Providers, Enablers

Manufacturers & Suppliers

Handset, Chip and Network Equipment
Manufacturers, Tower Companies

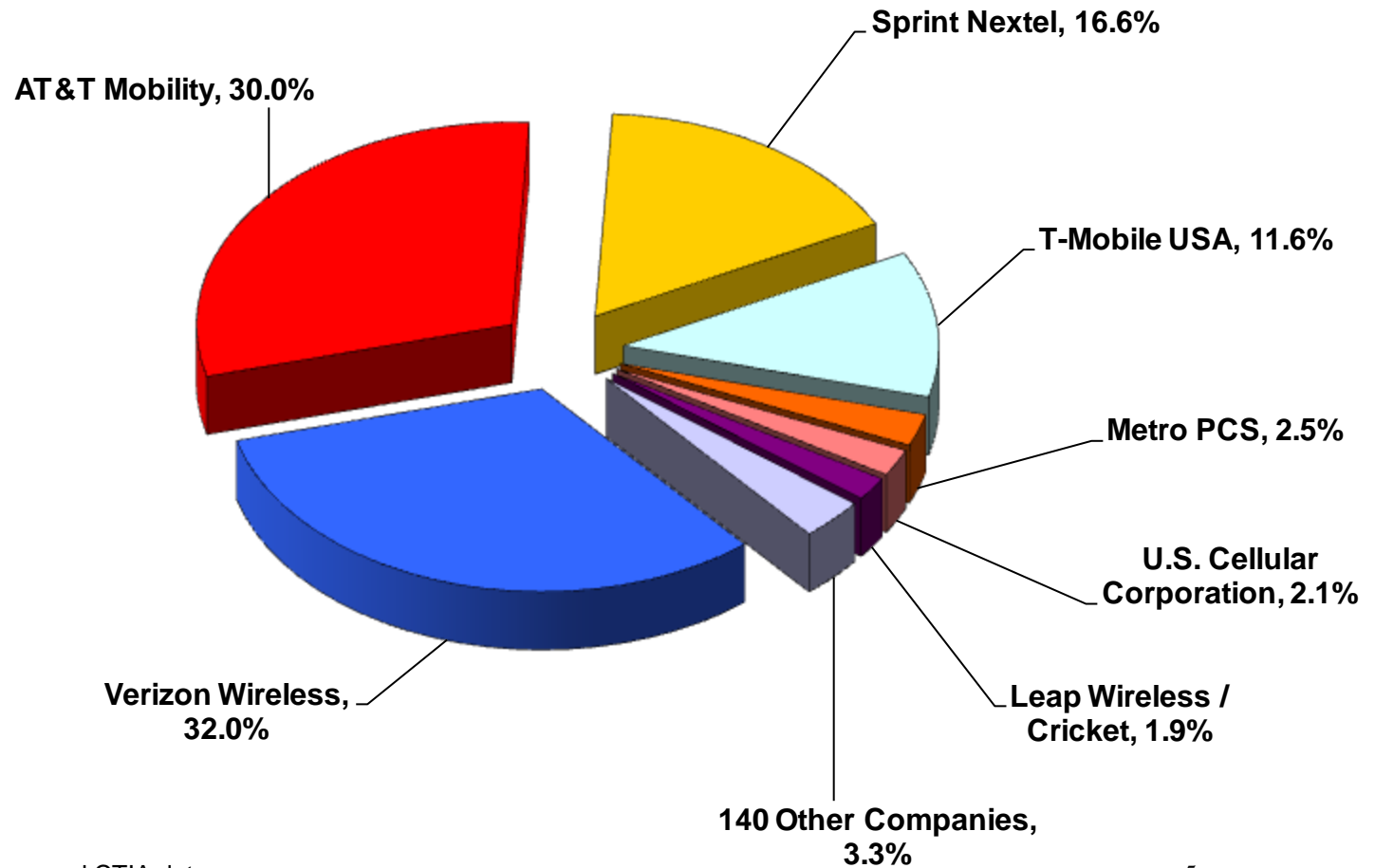
Application/Software Developers

Television/Entertainment, Mobile Gaming,
Mobile Video, Ringtones, and other
Application and Content Developers and
Providers

- Current wireless providers include:
 - 4 nationwide (Tier 1) licensed wireless service providers
 - 8 regional / “super-regional” (Tier 2) licensed wireless service providers
 - About 140 smaller (Tier 3) licensed wireless service providers
 - More than 50 Mobile Virtual Network Operators (MVNOs) serving about 8 percent of all subscribers

- New entry / expansion is occurring as a result of new licenses (AWS, 700 MHz) being issued

U.S. Carrier Market Shares: 1Q 2010



The MVNO Space

- MVNOs are not unique to the U.S., but they do play a different role in the U.S. compared to some other countries. In some countries, they act as the retailers of the underlying network operators' services. In the U.S., as resellers, they effectively arbitrage – or police – inefficiencies in the marketplace, competing with each other and with the underlying network operators.
- TracFone is the largest MVNO in the U.S., with more than 15.5 million customers, served by their TracFone, Net10, and Straight Talk brands.
- The second largest, Virgin Mobile, has now been bought by and is a brand of Sprint. Boost Mobile, another previously independent MVNO, has also become a brand of Sprint (which also offers prepaid services branded as Common Cents and Assurance Wireless).

The Contrast Between Imagination & Reality: “What Will 2000 Be Like in the US?”

- **Prediction by AT&T/McKinsey in the early 1980s**
- Cellular will be a nationwide monopoly and serve **900,000** customers

- **Reality in 2000**
- 200 wireless companies served **109 million** customers

- **Reality today**
- 140+ wireless companies serve more than **285 million** customers

- **Why the difference?**

Wireless in the U.S. = Competitive, Innovative, Affordable

- The U.S. wireless industry broke with telecom tradition by being created competitive, and has stayed that way
- Competition has driven investment and innovation in networks, devices, service plans, and applications
- Competition has driven down the cost of service to consumers
- Competition continues to drive wireless innovation

The U.S. Wireless Story Today

- By year-end 2009, more than 285.6 million subscriptions – equal to 91% of all Americans – to wireless service. That’s an increase of more than 170 million from year-end 2000.
- Wireless customers used more than 2.2 trillion minutes in the United States in 2009.
- 24.5% of U.S. households only have a wireless phone – no landline service.
- Contributes \$92 billion to the U.S. GDP (2004).
- 3.6 million direct and indirect jobs dependent on the wireless industry – about 2.5% of all jobs (2004).
- **How did we get here?**

National Regulatory Framework (per Omnibus Budget Reconciliation Act of 1993)

332(c)(1) and (3)

“A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such a person is so engaged, be treated as a common carrier for purposes of this Act”

“No State or local government shall have any authority to regulate the entry of or the rates charged by any commercial mobile service or any private mobile service, except that this paragraph shall not prohibit a State from regulating the other terms and conditions of commercial mobile services.”

Federal Policy: No Economic Regulation

- No technological determinations (no standards specified)
- Flexible spectrum use policies
- Equipment registration and certification
- No Tariff Requirements
- No Rate Regulation
- No Mandatory Unbundling or Resale Obligations
- Social Policy Related Regulatory Obligations
 - CALEA (Communications Assistance to Law Enforcement Act)
 - E-911
 - Disabilities Access

Spectrum Allocation: Auction Model

47 USC Section 309(j):

(1) General Authority

If . . . mutually exclusive applications are accepted for any initial license or construction permit, then, except as provided in paragraph (2), the Commission shall grant the license or permit to a qualified applicant through a system of competitive bidding that meets the requirements of this subsection.

(2) Exemptions

The competitive bidding authority granted by this subsection shall not apply to licenses or construction permits issued by the Commission – (A) for public safety radio services, including private internal radio services used by State and local governments and non-government entities and including emergency road services provided by not-for-profit organizations, that – (i) are used to protect the safety of life, health, or property; and (ii) are not made commercially available to the public; (B) for initial licenses or construction permits for digital television service given to existing terrestrial broadcast licensees to replace their analog television service licenses; or (C) for stations described in section 397(6) of this title [“noncommercial educational broadcast” and “public broadcast” stations].

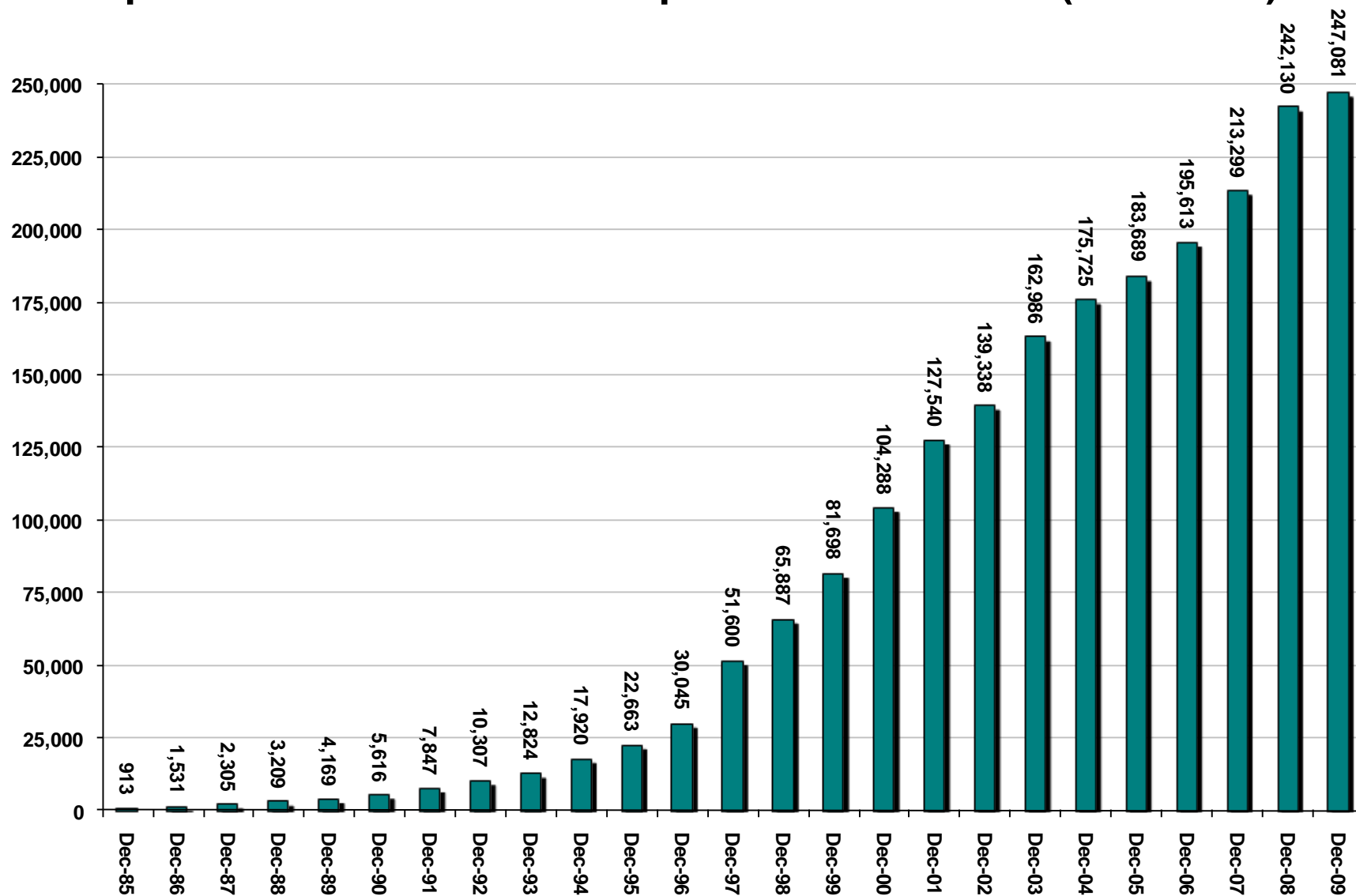
The Essence of the National Regulatory Framework

“The framework of our CMRS regulatory policy – moderate regulation, symmetrical regulation of all services as appropriate, and a preference for curing market imperfections by lowering entry barriers in order to encourage competition rather than by regulating existing licensees – aligns closely with the principal building blocks of OBRA. Indeed, that statute is in a very real sense a validation of our approach. As the legislative history of OBRA makes plain, Congress intended those building blocks to establish a national regulatory policy for CMRS, not a policy that is balkanized state-by-state.”

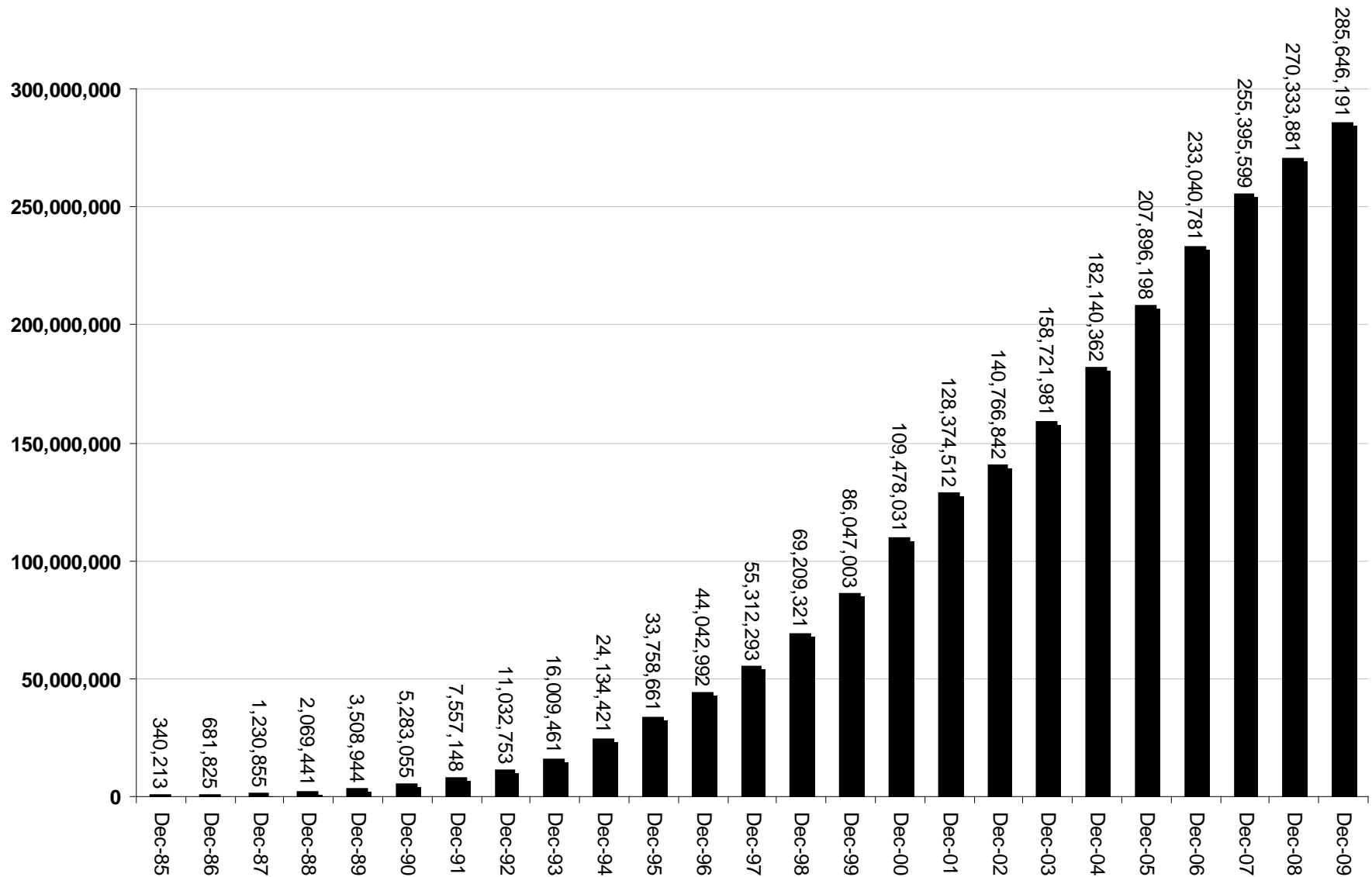
-- Federal Communications Commission, May 5, 1995

Source: Petition of the People of the State of California and the Public Utilities Commission of the State of California to Retain Regulatory Authority over Intrastate Cellular Service Rates, FCC Report and Order (FCC 95-195).

A Spectrum-Based Service Depends on Cell Sites (Antennas)

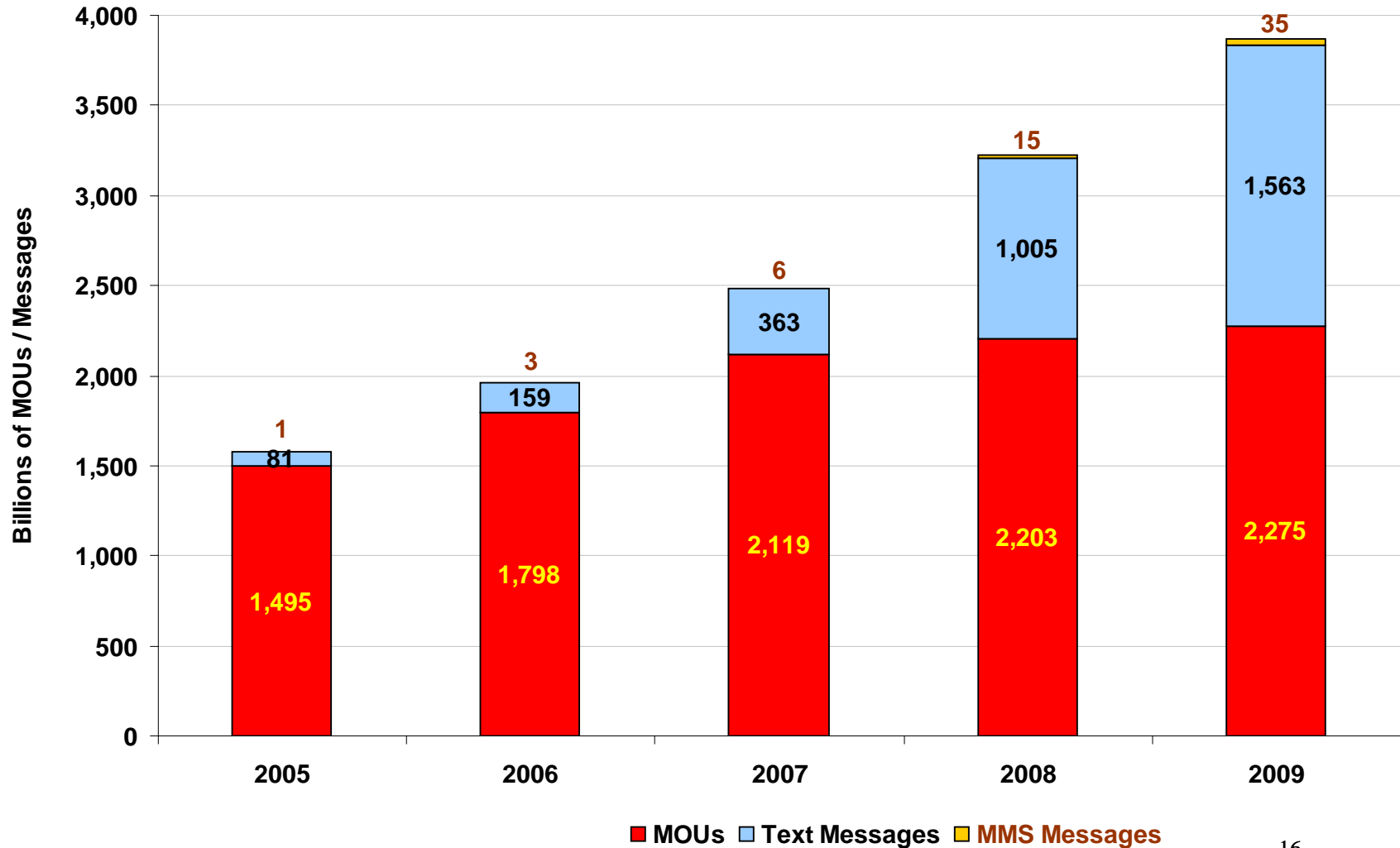


285.6 Million U.S. Wireless Subscribers at YE2009

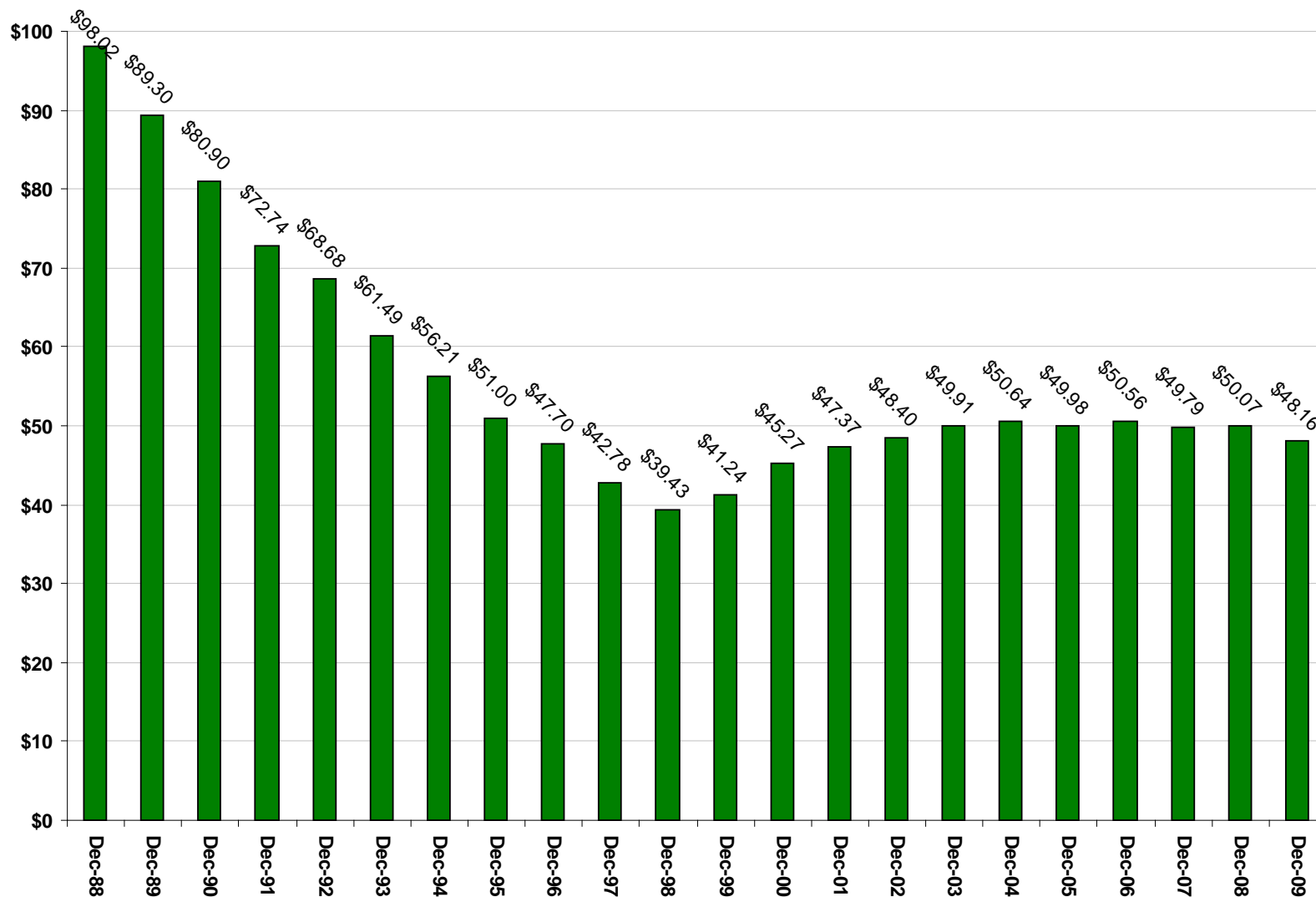


Using Trillions of MOUs and Text Messages, and Billions of MMS

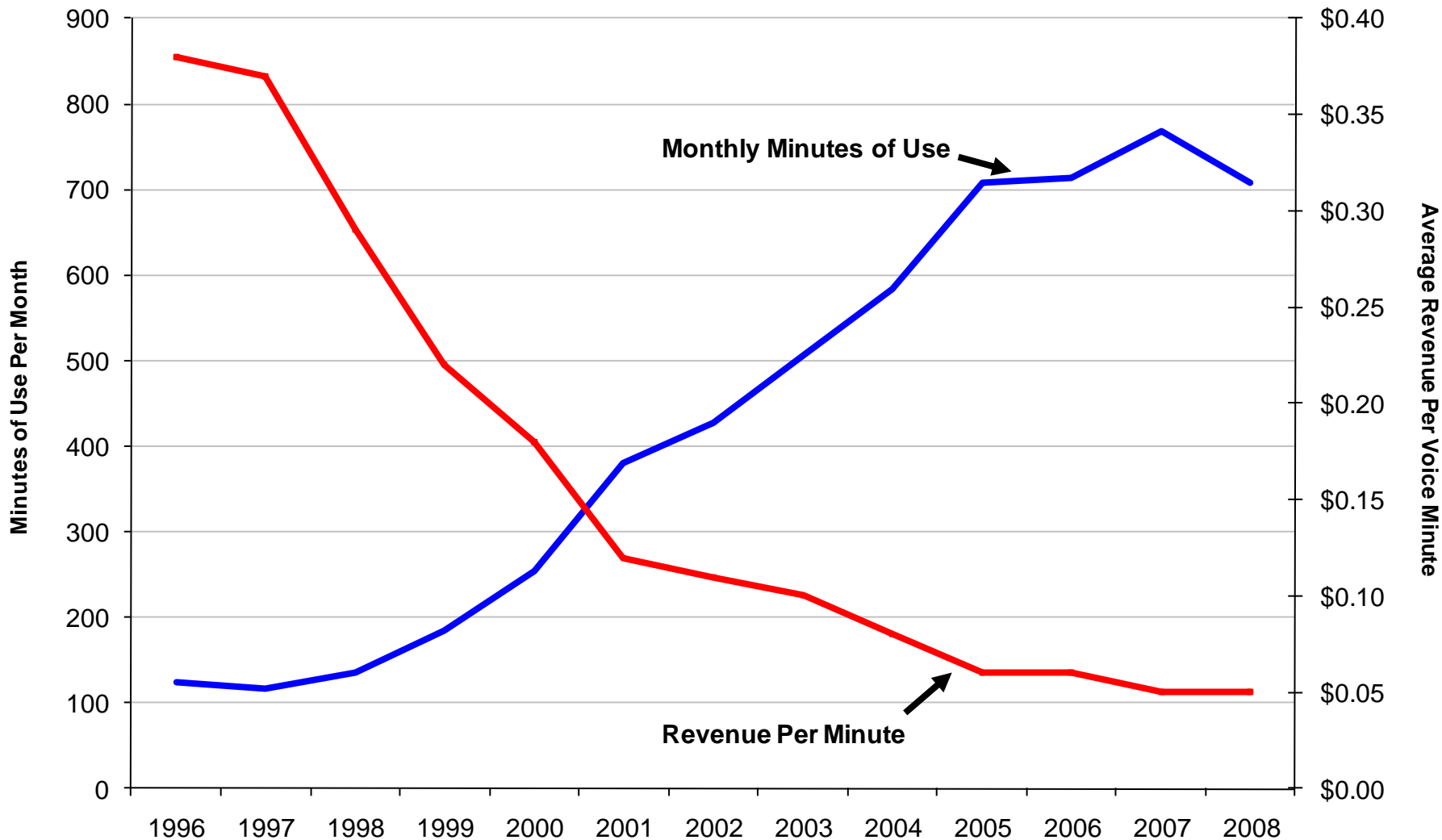
Minutes and Messages as a Measure of Wireless Usage



ARPU has Remained Relatively Stable Recently, While Individual Subscriber Usage Has Soared and Diversified



Numbers Don't Always Mean What We Think

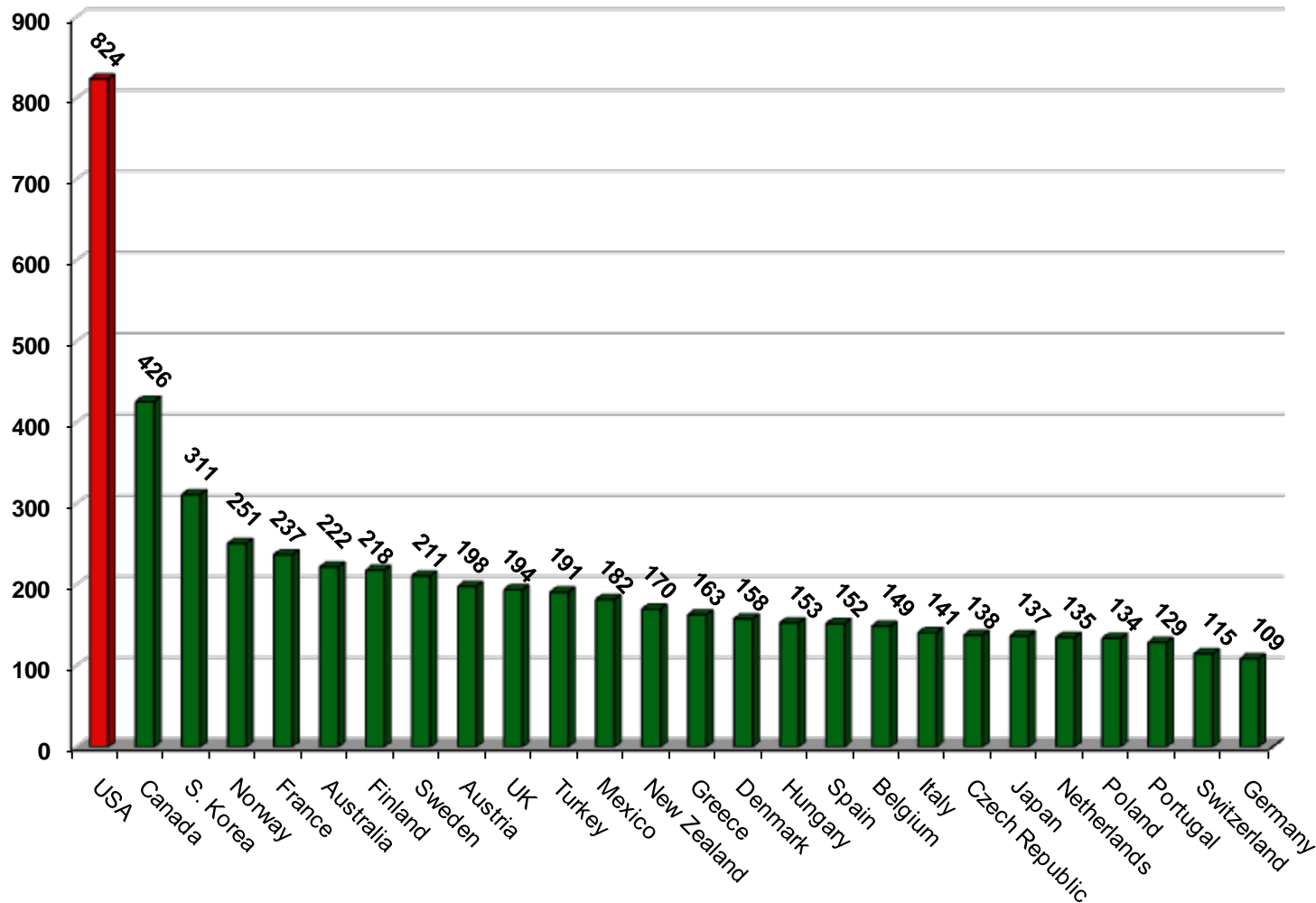


Source: FCC 14th CMRS Report

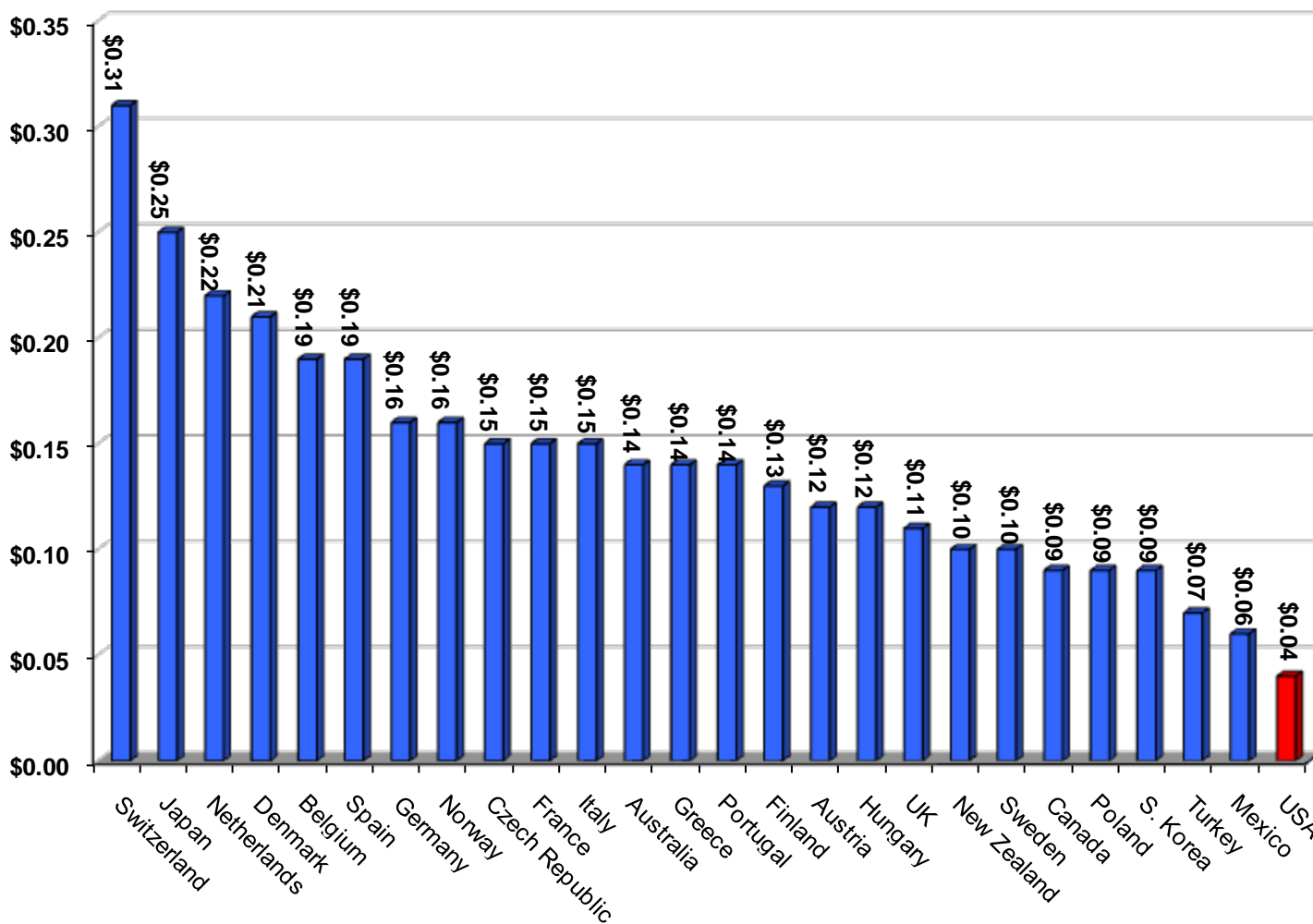
— Minutes of Use Per Month

— Average Revenue Per Voice Minute

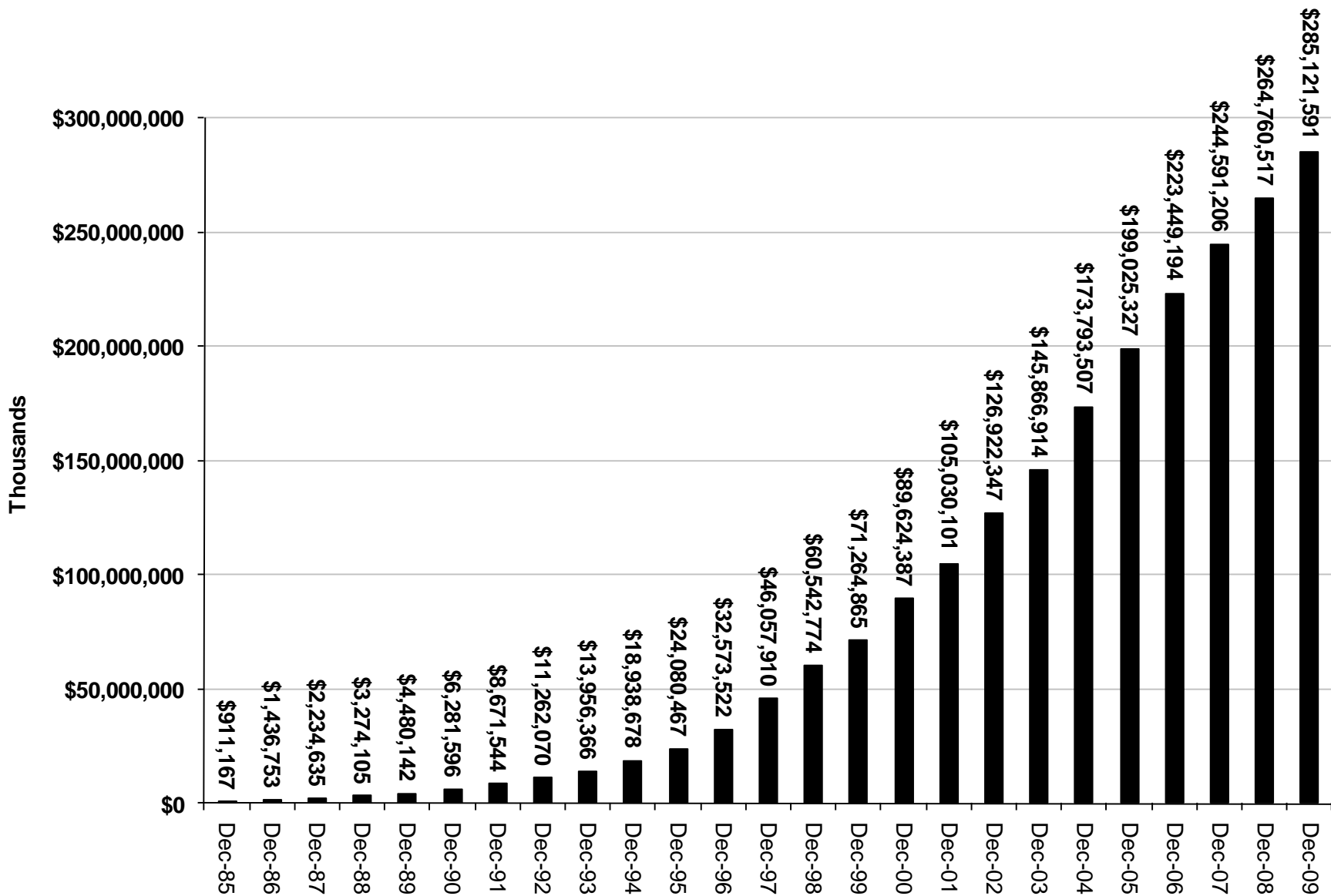
The U.S. Leads in Wireless Voice Service (Average Monthly Minutes of Use, YE2009)



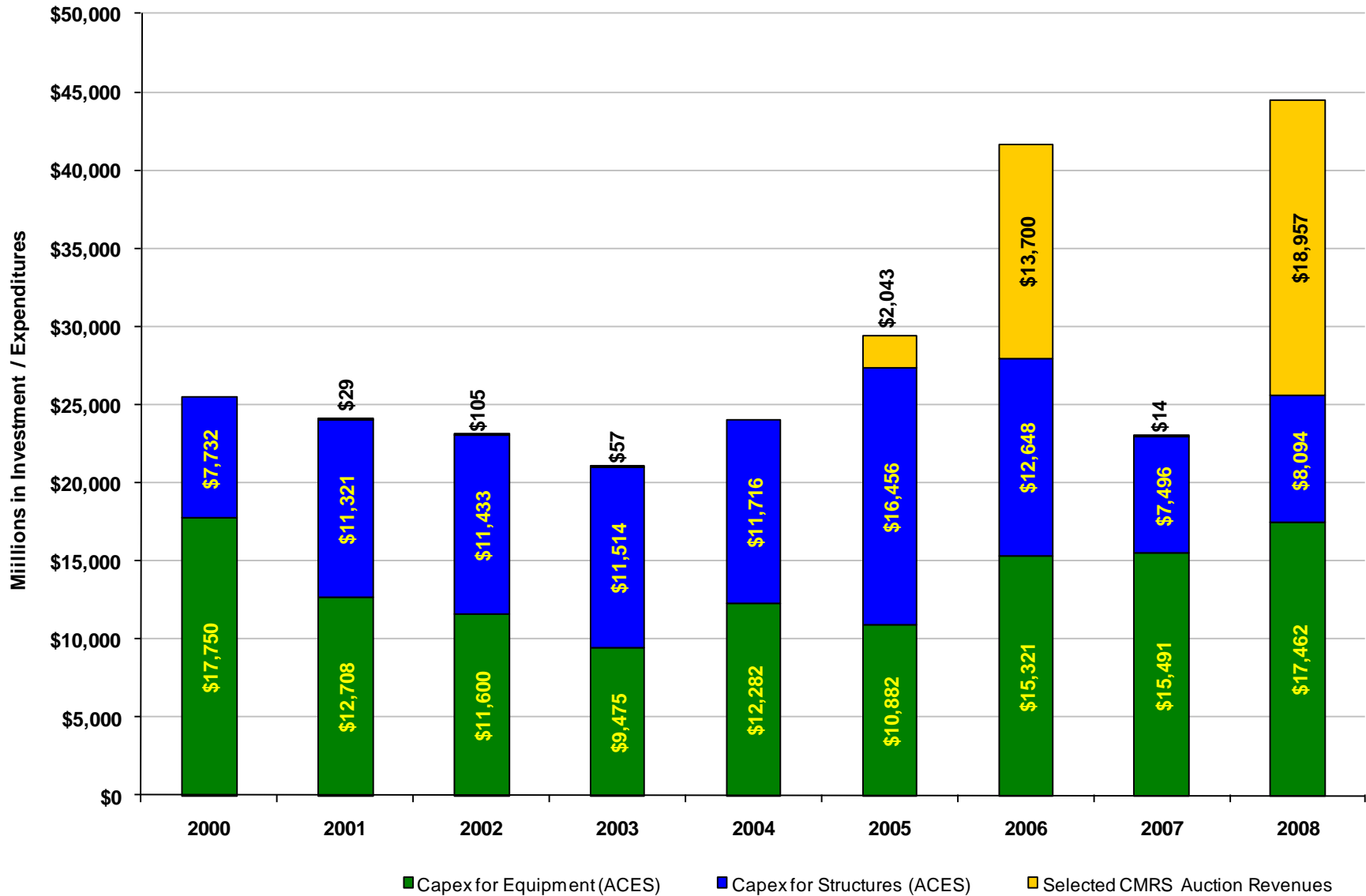
The U.S. Leads in Affordable Wireless Service (Average Revenue per Voice Minute, YE 2009)



Wireless Investment Amounts to Billions Annually



Spent on Structures & Equipment – not including Spectrum



Sources: U.S. Census Annual Capital Expenditures Survey, CTIA
Semi-Annual Wireless Survey, FCC

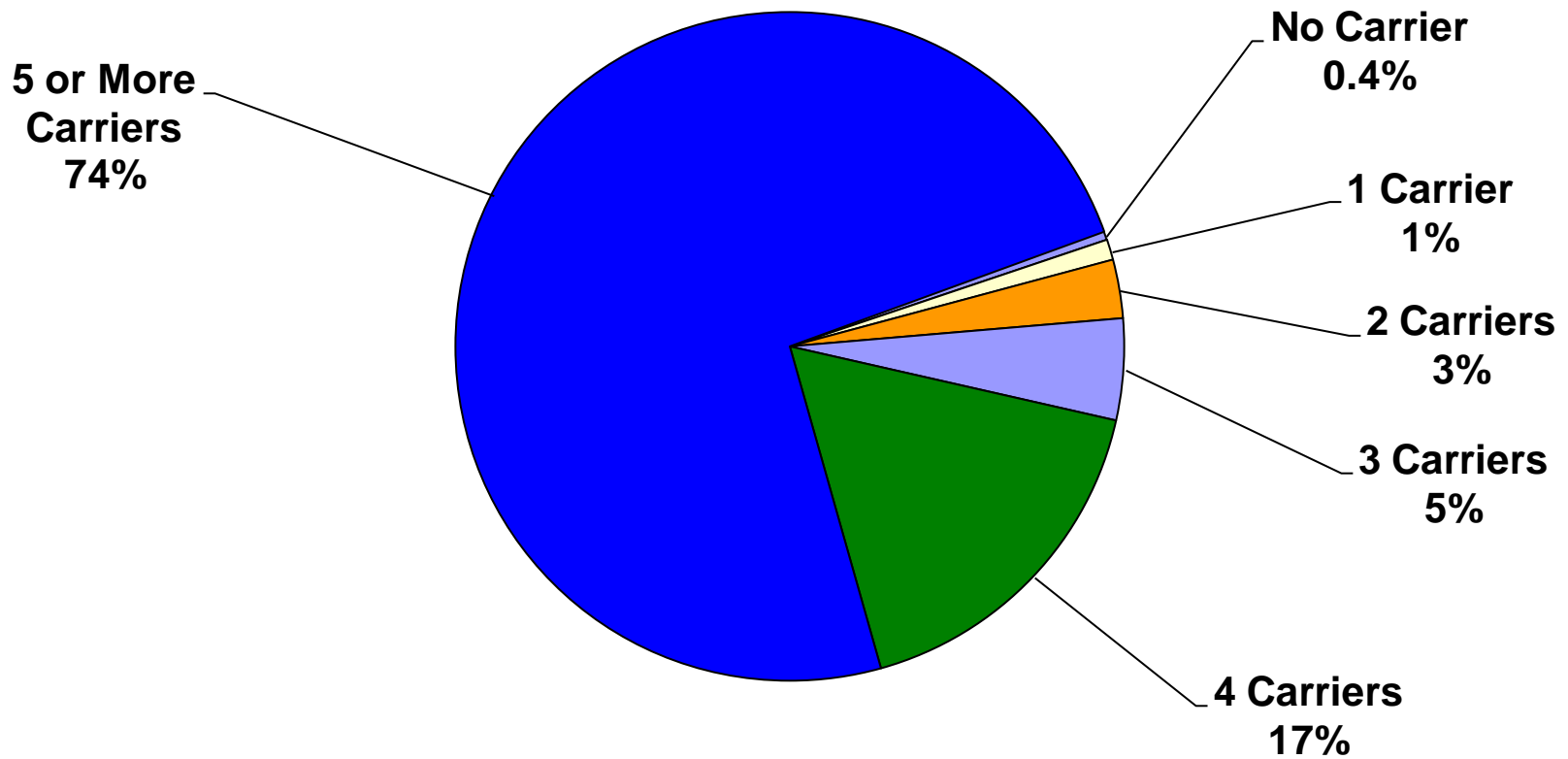
National Wireless Industry Statistics

- The FCC has found that:
 - *Nationwide 99.6% of the US Population lives in census blocks with one or more mobile operators*
 - 98.6% live in census blocks with two or more mobile operators,
 - 95.8% live in census blocks with three or more mobile operators, and
 - 90.8% live in blocks with four or more mobile operators.

 - 98.5% of the *rural population* (or 61 million people) lives in census blocks with one or more mobile operators,
 - 94.5% live in census blocks with two or more mobile operators,
 - 83.1% live in census blocks with three or more competing mobile operators, and
 - 65.5% live in census blocks with a choice of four or more competing mobile operators.

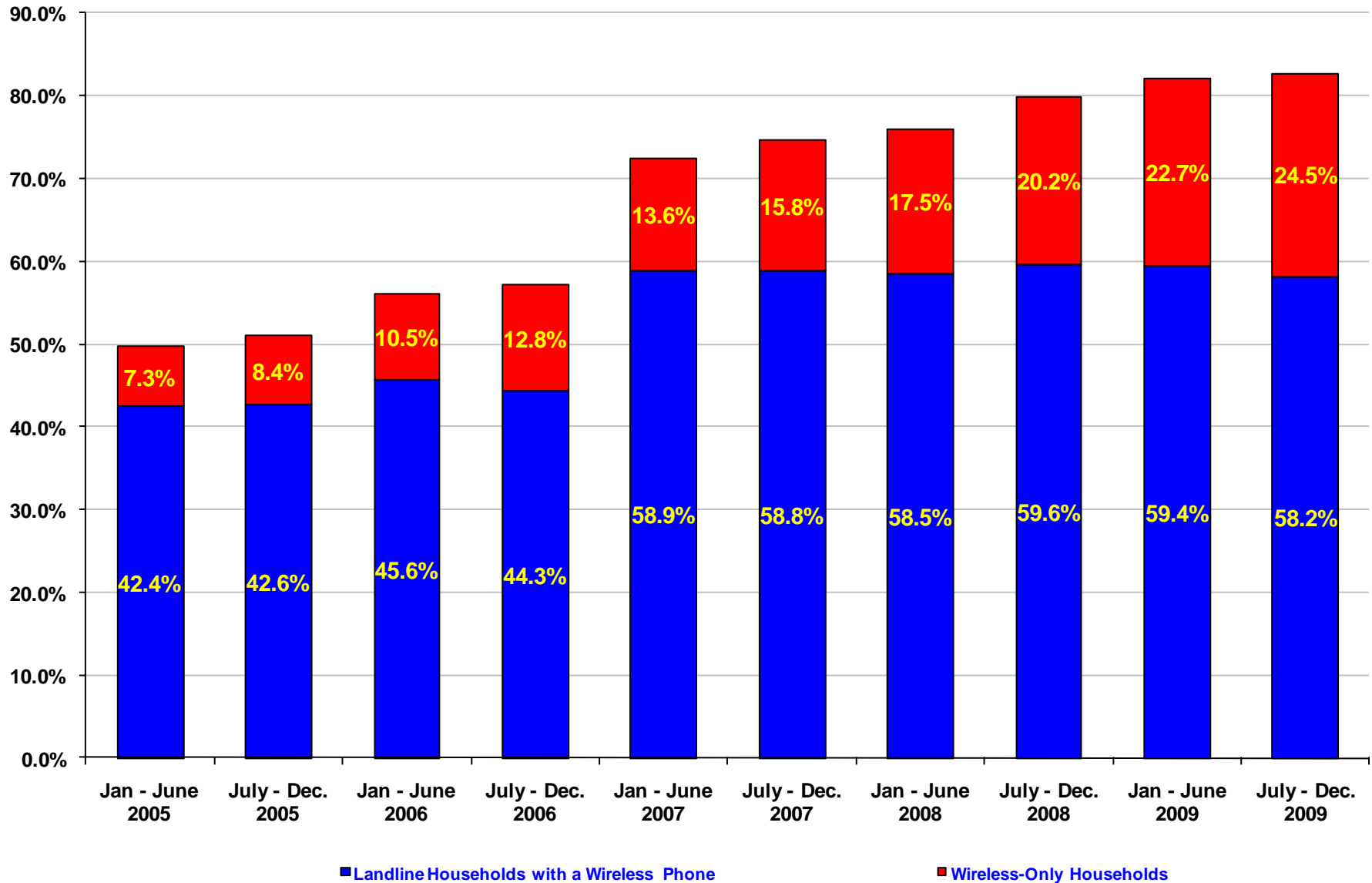
Wireless Has Delivered More Choices for More People

Nearly Three-Quarters of Consumers Have a Choice of Five or More Wireless Service Providers



Sources: FCC, American Roamer

82.7% of All Households Use Wireless



Source: NCHS "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July - Dec. 2009"

Wireless' On-Going Commitments

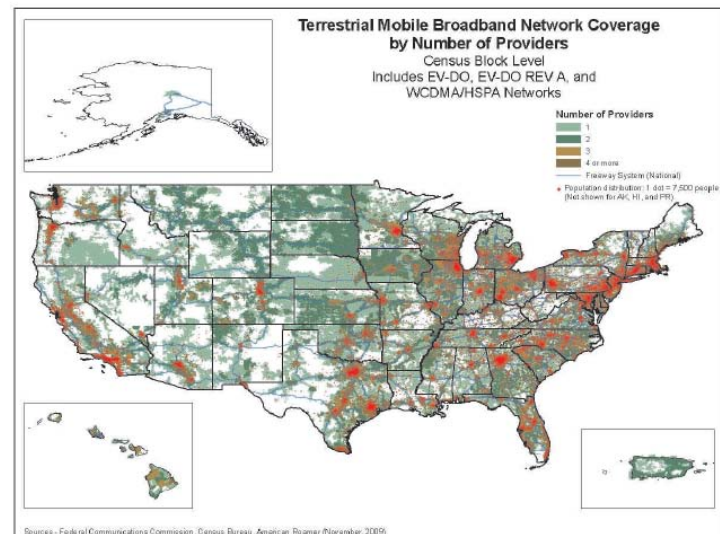
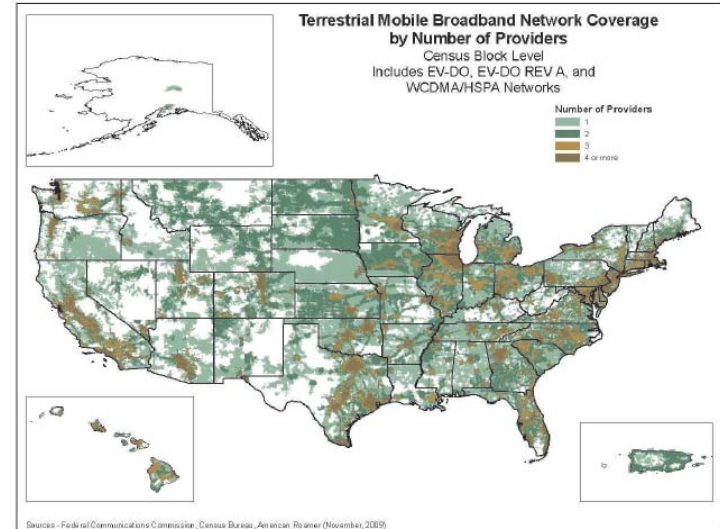
- Wireless licensees together invest more than \$20 billion a year. On a cumulative basis they have invested more than \$285 billion (not including billions more paid to the federal treasury for their spectrum licenses).
- Wireless providers are constantly working on expanding and upgrading their networks, and over the past several years have deployed high-speed networks to reach more than 280 million people with mobile broadband networks. More high-speed facilities are being deployed every day.

High-Speed Wireless Coverage

According to the FCC, as of November 2008:

- 98.1 percent of the U.S. population (>279.7 million) lived in census blocks with one or more mobile broadband providers.
- 89.5 percent of the U.S. population (>255.1 million) lived in census blocks with two or more mobile broadband providers.
- 76.1 percent of the U.S. population (>217.0 million) lived in census blocks with three or more mobile broadband providers.
- 58 percent of the U.S. population (>165.3 million) lived in census blocks with four or more mobile broadband providers.

Next Generation Network Rollout by County



High-Speed Wireless Coverage

- A variety of providers, including Alaska Communications Systems, Bluegrass Cellular, ClearWire, General Communication Inc., Nex-Tech Wireless, nTelos, and Stelera Wireless, have been deploying high-speed wireless broadband networks and solutions for customers in markets across the country.
- In early 2010, AT&T launched HSPA 7.2 throughout its network and by late 2010 will launch HSPA+ covering 250 million pops.
- Sprint has been clearing spectrum for broadband roll-out nationwide.
- T-Mobile has launched a test network for HSPA+, a 3.5G technology that not only can deliver peak download speeds of 21 Mbps, but is backward compatible with 3G devices currently on the market. T-Mobile plans to launch HSPA+ in major markets throughout 2010.
- Verizon's 3G data network serves nearly 93 million customers.

High-Speed Wireless Coverage

- Clearwire's 4G is available in 27 markets to 38 million consumers and expects its network to reach 120 million POPs by the end of 2010.
- Clearwire's WiMAX technology has allowed new entrants into the 4G wireless broadband market – Sprint, Comcast, and Time Warner have launched 4G WiMAX services.
- Verizon will have commercially viable 4G LTE service in 30 cities by the end of 2010, with AT&T launching its 4G LTE service in 2011.
- MetroPCS has chosen infrastructure and device manufacturers for its 2010 launch of LTE-based services.

3G/4G Coverage & Deployment Plans

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

Service Provider	3G Deployment	4G Deployment
AT&T Wireless	As of October 2009, HSPA network covered 230 million POPs in more than 350 metropolitan areas. ³⁰⁸	Plans LTE trials in 2010 and deployment in 2011. ³⁰⁹
Verizon Wireless	As of mid-2009, EV-DO network covered 284 million POPs. ³¹⁰	Expects to launch LTE in 25-30 markets in 2010 and to cover 285 million POPs by 2013. ³¹¹
Clearwire	NA	As of September 2009, WiMAX network covered over 10 million POPs, expected to cover 120 million POPs by end of 2010. ³¹²
Sprint Nextel	As of August 2009, EV-DO network covered 271 million POPs. ³¹³	Ownership interest in Clearwire and reselling Clearwire WiMAX service.
T-Mobile	As of August 2009, HSPA network covered 121 million POPs, expected to cover 200 million POPs by year-end 2009. ³¹⁴	No U.S.-specific plans.

Source: FCC 14th CMRS Competition Report

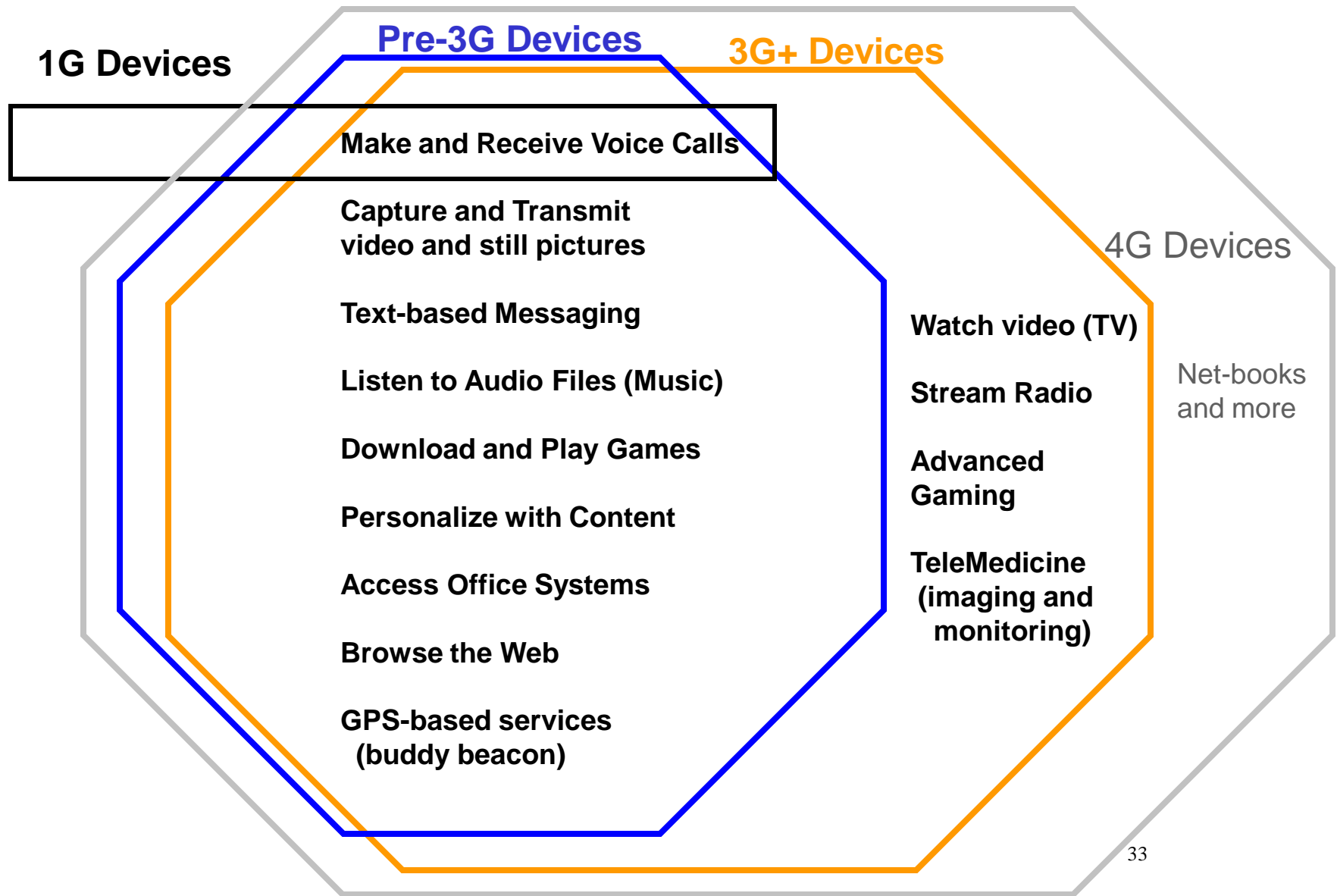
Wireless Offers Choices and Options

- Collectively, there are more than 630 handsets available to consumers in the U.S., compared to fewer than 180 in the U.K. These handsets range from simple, streamlined models like the Jitterbug (geared to consumers who want simple handsets that just do voice calling), to multi-function devices like the Apple iPhone, and Smartphones and other multimedia devices from manufacturers like LG, Motorola, Nokia, RIM, Samsung and Sony Ericsson.
- More than 87 percent of the handsets operating on wireless carriers' networks are capable of browsing the web. Each of the top five wireless providers in the U.S. offers Wi-Fi enabled handsets.
- About 20 percent of wireless customers in the U.S. use prepaid or pay-as-you-go plans, without signing contracts. They use service offered by licensees like AT&T Mobility, Sprint Nextel, Verizon Wireless, T-Mobile USA, Leap Wireless (Cricket) as well as by MVNOs like TracFone.

Consumer Have Access to More Capable Devices

- By year-end 2009, there were more than 285.6 million active wireless connections in the U.S., up from 270.3 million at year-end 2008, including:
 - Almost 50 million Smartphones and wireless-enabled PDAs.
 - More than 11.9 million wireless-enabled laptops, netbooks, and wireless broadband modems.
- More than 87.4% of devices reported on carriers' networks were web-capable devices at year-end 2009.
- More than 87.4% of devices reported on carriers' networks were SMS-capable at year-end 2009.
- More than 94% of devices reported on carriers' networks were data-capable at year-end 2009:
 - Accessing e-mail, weather and search sites
 - Downloading ringtones, music, games, and other information
 - Sending and receiving text messages
 - Sending and receiving MMS messages

New Generations of Wireless Technology Make Possible New Applications While Preserving Older Capabilities



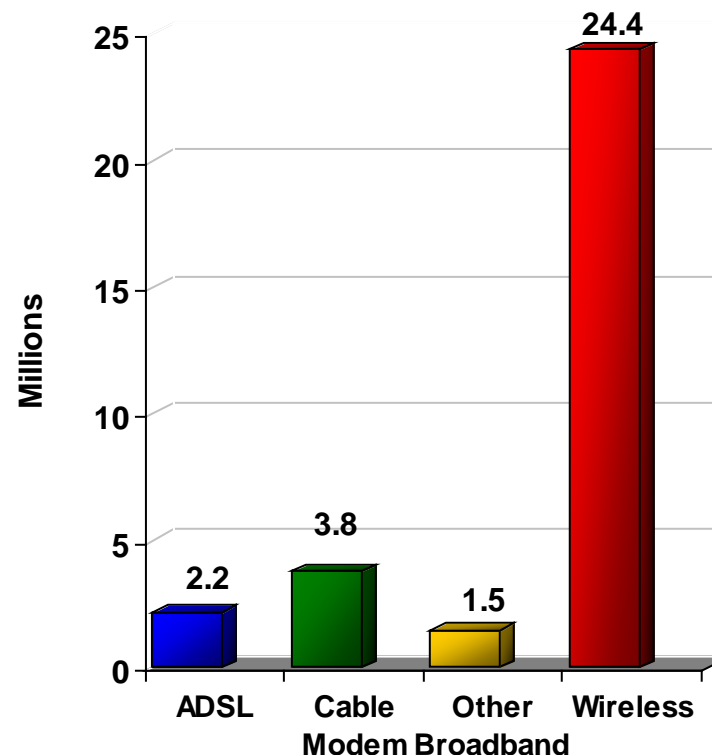
Consumers Can Access Applications from Multiple Sources

- In just over *one year*, the wireless industry launched:
 - Seven independent applications stores
 - Offering more than 240,000 applications
- To date, more than 4 billion applications have been downloaded by consumers.
- Wireless consumers downloaded more than 1.1 billions apps in the U.S. last year alone, amounting to 24 percent of global downloads according to Strategy Analytics.
- Wireless data use is expected to double every year through 2013.

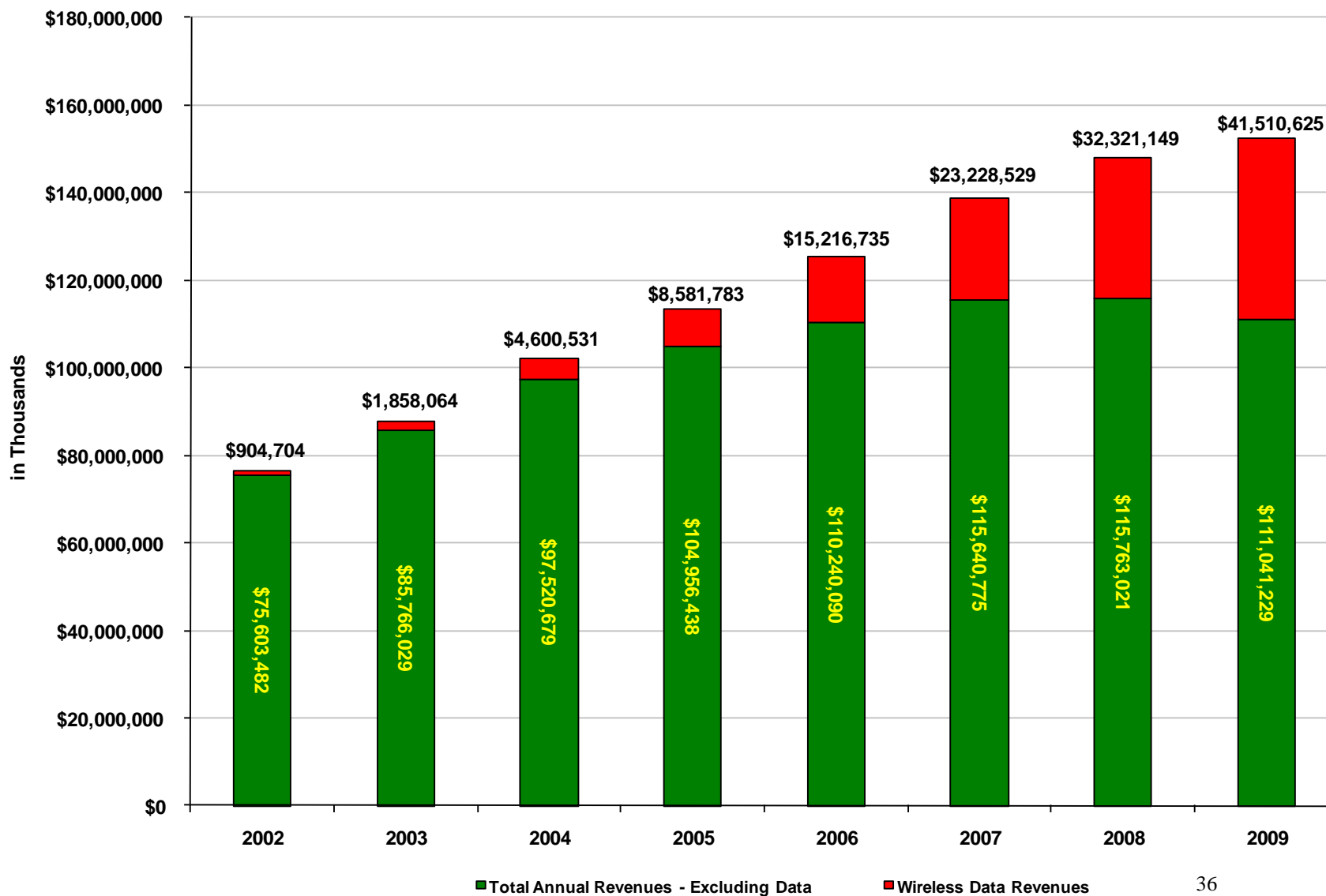
Wireless is a Growing Means of High-Speed Access

- From June 2007 to June 2008, total high-speed lines grew 32%, from 100.9 million to 132.8 million lines, and 77% of all adds were mobile wireless subscriptions.
- From June 2007 to June 2008:
 - ADSL’s share of total broadband lines fell from 27% to 23%,
 - Cable modem’s share fell from 34% to 29%.
 - Mobile wireless’ share of total broadband lines rose from 35% to 45% of total broadband lines.
 - The share of “other” forms of broadband (including fixed wireless, satellite, fiber, and broadband over power line) fell to 3% of total broadband lines – although their total line count grew from 2.5 to 4.0 million.

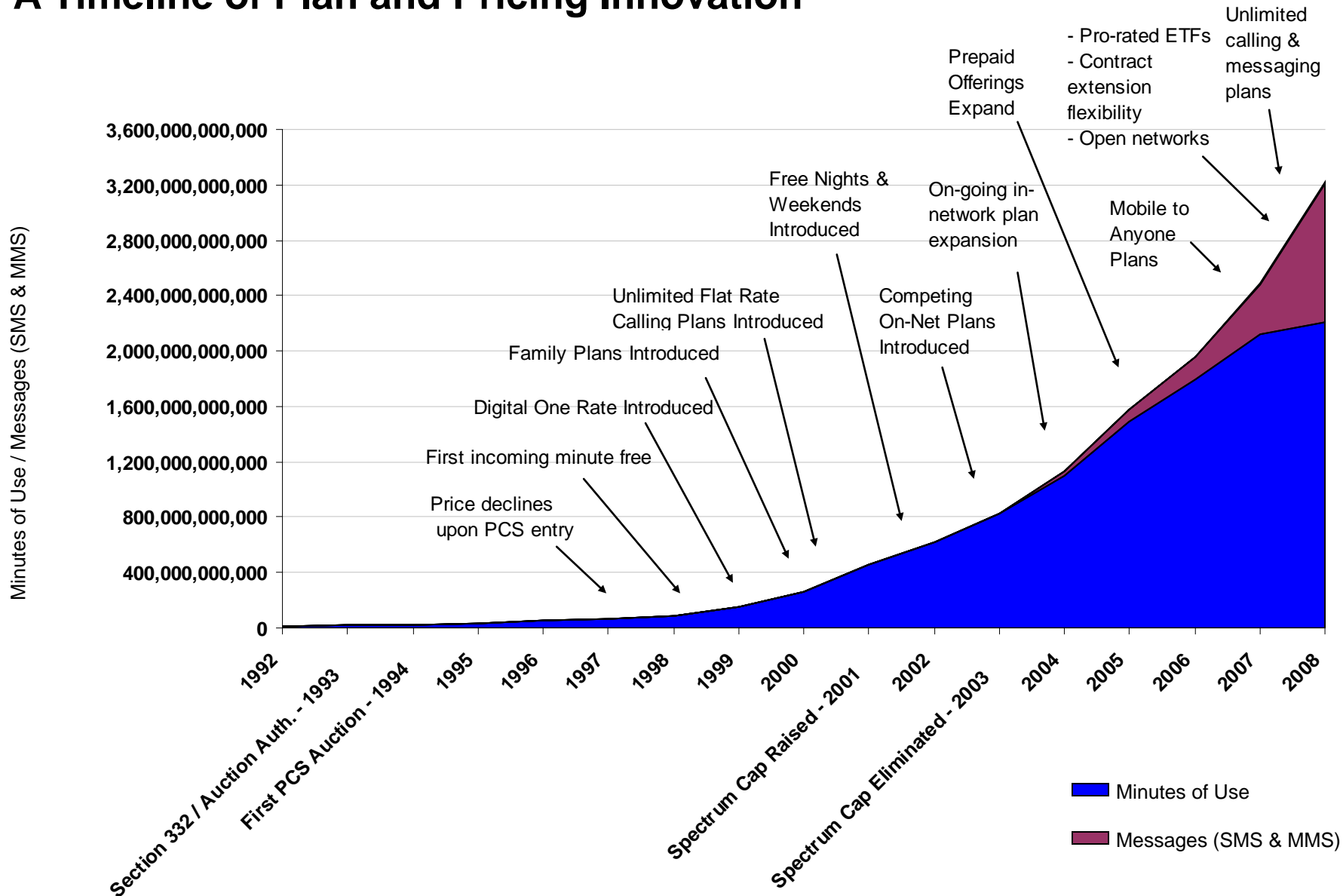
High Speed Net Adds by Type, June 2007 – June 2008



Data Now Accounts for 27% of All Wireless Service Revenues



A Timeline of Plan and Pricing Innovation



Wireless Has Had a Broad Economic Impact

- Ovum / Indepen reports have calculated past contributions of the wireless industry to the U.S. economy:
 - 3.6 million jobs were directly and indirectly dependent on the US wireless telecommunications industry in 2004
 - In total, the US wireless industry generated \$118 billion in revenues and contributed \$92 billion to the US Gross Domestic Product in 2004
 - if the average wireless consumer in America spends \$54 per month on wireless voice and data services, that same consumer would pay approximately \$125 US for the same services in the European Union
 - Ovum predicted in 2005 that over 10 years, the US wireless telecom industry would create an additional 2-3 million new jobs, adding a cumulative additional \$450 billion in GDP. This figure is based on the conservative assumption that no services are added beyond what were then available.

What is the state of broadband and Internet?

- Broadband availability is approximately 90% of U.S. households. [CRS]
- 74% of all U.S. households own home computers. [Connected Nation]
- 57% of adult Americans have broadband Internet connections at home. [Pew]
- “About 30% of households have access to some type of terrestrial (non-satellite) broadband service, but do not choose to subscribe.” [CRS]
- “About one-third of adults without broadband cite price and availability as the reasons why they don’t have broadband in their homes, while two-thirds cite reasons such as usability and relevance.” [Pew, cited by CRS]

What is the wireless side of the equation today?

- 59% of adult Americans go online wirelessly, using a laptop or cell phone .
- 40% of Americans have used a cell phone or Smartphone to access the internet for emailing, instant-messaging, or information-seeking.
- More than half of cell phone internet users go online daily – 43% several times a day, and 12% about once a day.

Inputs Necessary for Continued Success:

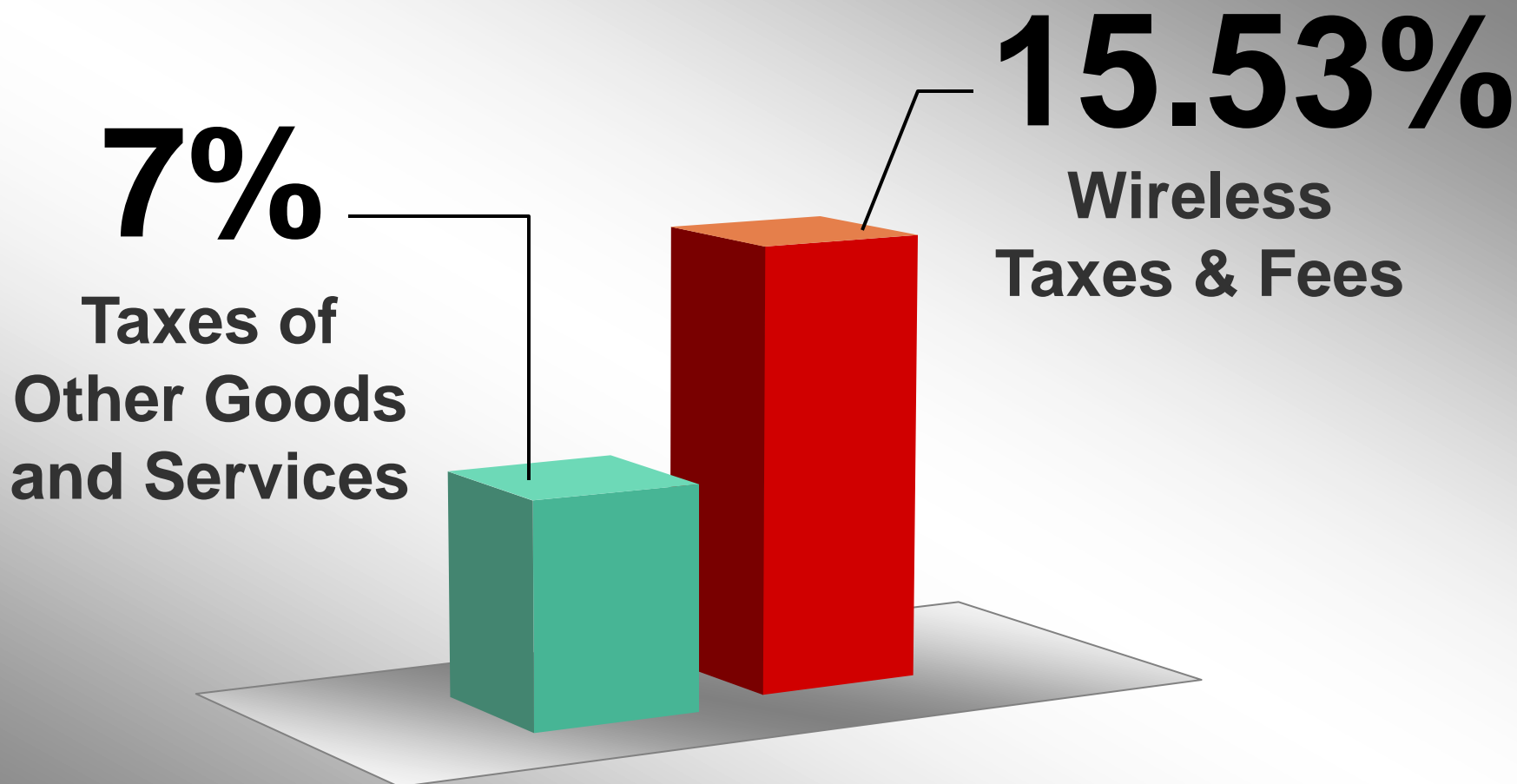
- Spectrum
 - A necessary infrastructure input
 - Government must focus on bringing more to market
 - Key comparative countries already ahead of U.S. in identifying new spectrum for auction
 - Focus needed in several areas:
 - AWS III - pairing with 1755-1780 MHz
 - Broadcast Spectrum - 294 MHz allocated, less used
 - MSS Spectrum - generally underutilized
 - Government Spectrum
 - Passage of Inventory Bills

- Tower and Antenna Siting
 - A necessary infrastructure input
 - Positive FCC Action:
 - Tower Siting Shot Clock
 - Work in Progress:
 - Pole Attachments FNRPM
 - Migratory Birds/Environmental Issues

Potential Risk Factors

- Title II Reclassification
 - Regulations Designed for Vertically Integrated Wireline Industry
 - No Such Thing as a Title II “Light Touch.”
 - Impact on Investment, Innovation, Competition
- Net Neutrality
 - No Harm Identified
 - U.S. Wireless Industry is Leading the World
 - Significant Potential To Do Harm, With No Identified Upside
 - Wireless Is Different
- Universal Service
 - FCC Action Doesn’t Match Goals
- Micromanaging of Competitive Service
 - Bill Shock, Late Fees, Termination Fees
- Additional Mandates
- Interference Issues
 - Repeaters, Jammers, Wireless Mics

One Further Risk: Cash-Strapped States May Look to Wireless Customers as the New Cash Cow



Thank you.

Questions?