



President-Elect Obama Transition Team

Wireless Industry Briefing

December 9, 2008

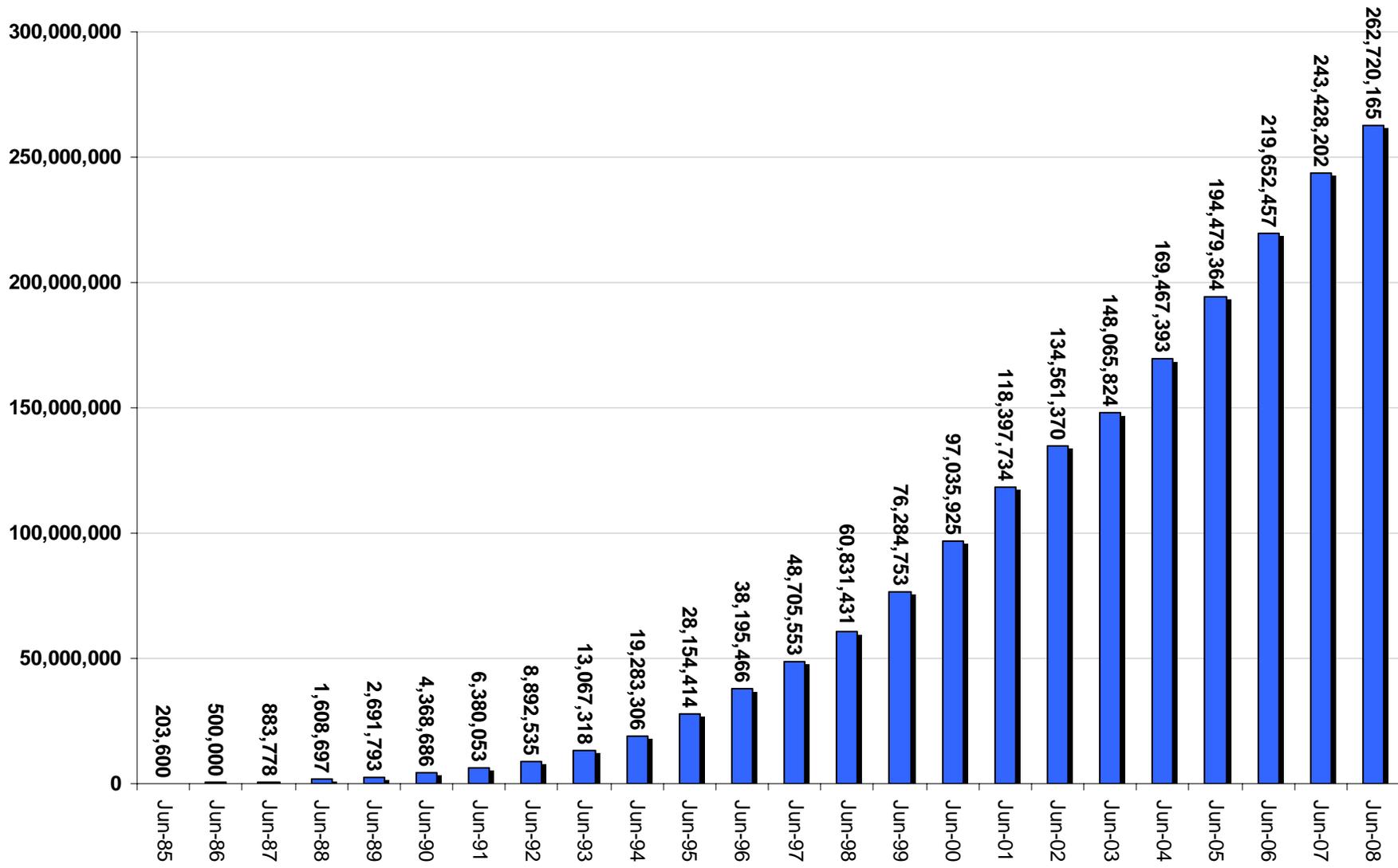


A Wireless Industry Snapshot

- At midyear 2008, more than 150 wireless companies served more than 262 million subscribers in the U.S., a figure that grew almost 20 million between June 2007 and June 2008.
- Wireless licensees together invested an average of \$24.5 billion a year in their networks from 2001 to 2006. In 2007, they reported investing more than \$21 billion in their operational networks (not including investments in pre-operational 3G and 4G systems).
- Wireless providers are constantly expanding and upgrading their networks, and over the past several years have deployed high-speed networks to reach 92 percent of the American people.



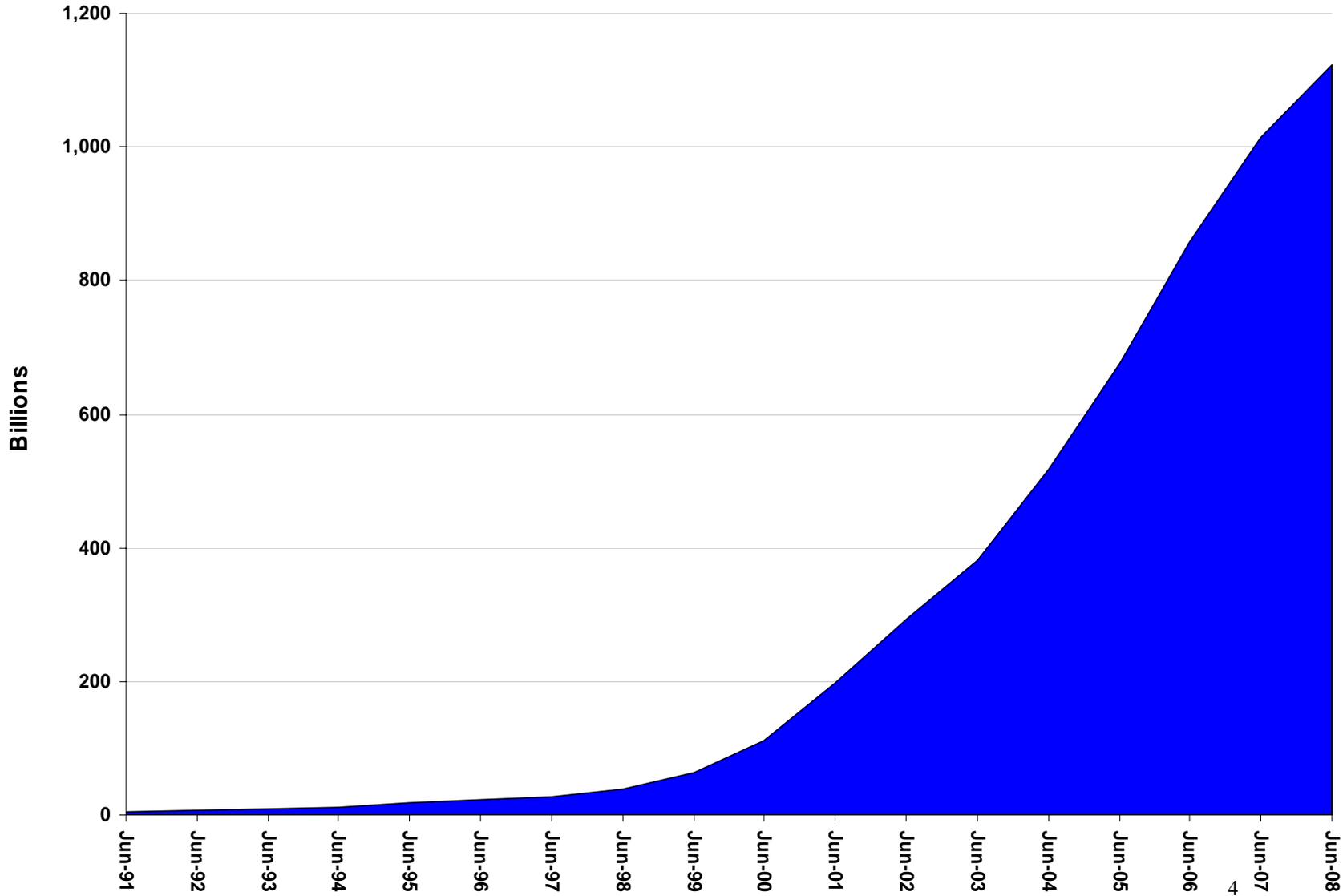
As of June 2008, There Were More Than 262 Million Wireless Subscribers in the U.S.



Source: CTIA Semi-Annual Survey



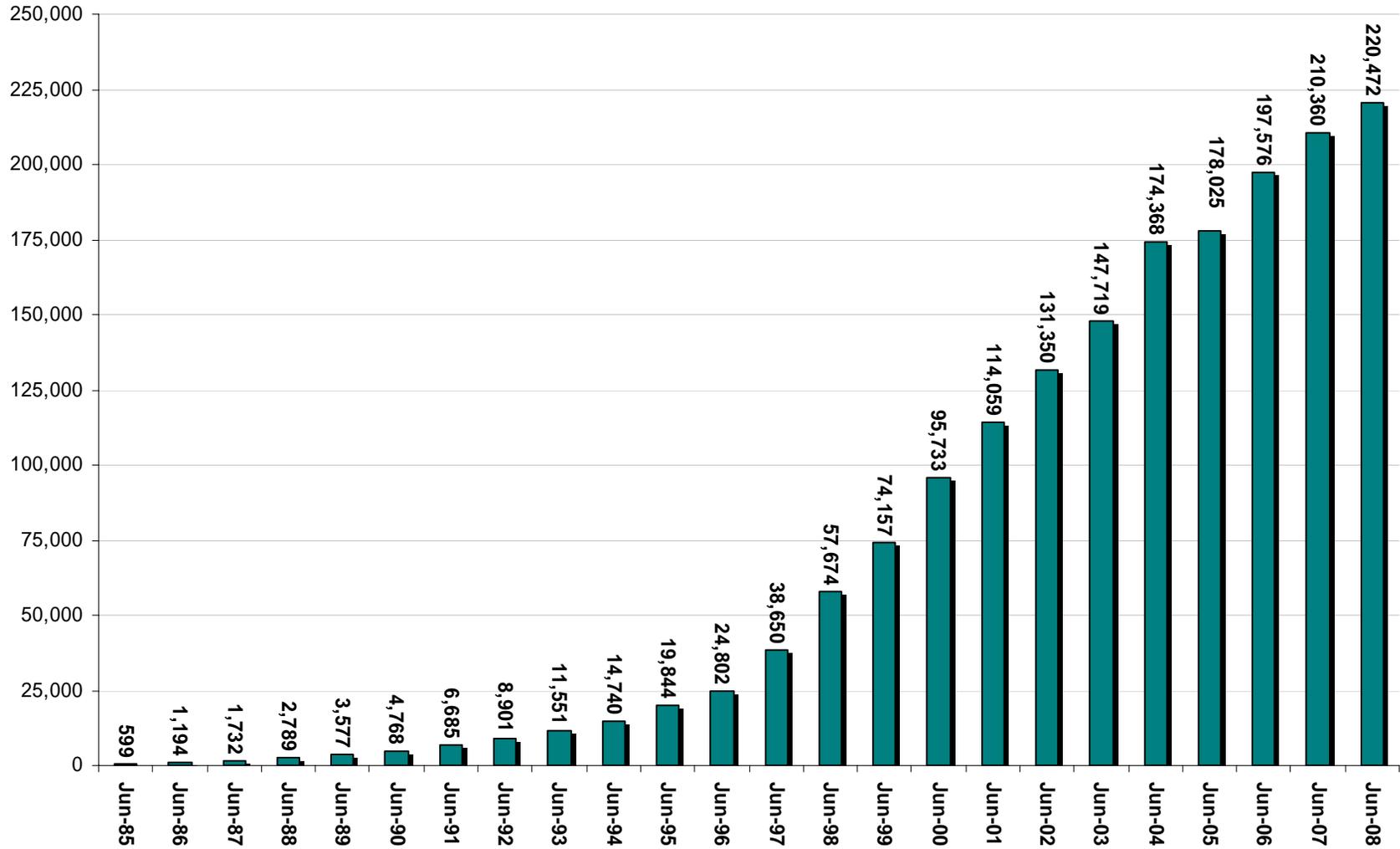
1H 2008 Wireless Consumers Used >1.1 Trillion Minutes - Annually Consumers Use >2.1 Trillion Minutes



Source: CTIA Semi-Annual Survey



Wireless Coverage and Service Depend on Cell Sites



Cell Sites in Service are Up 4.8 Percent Year-over-Year

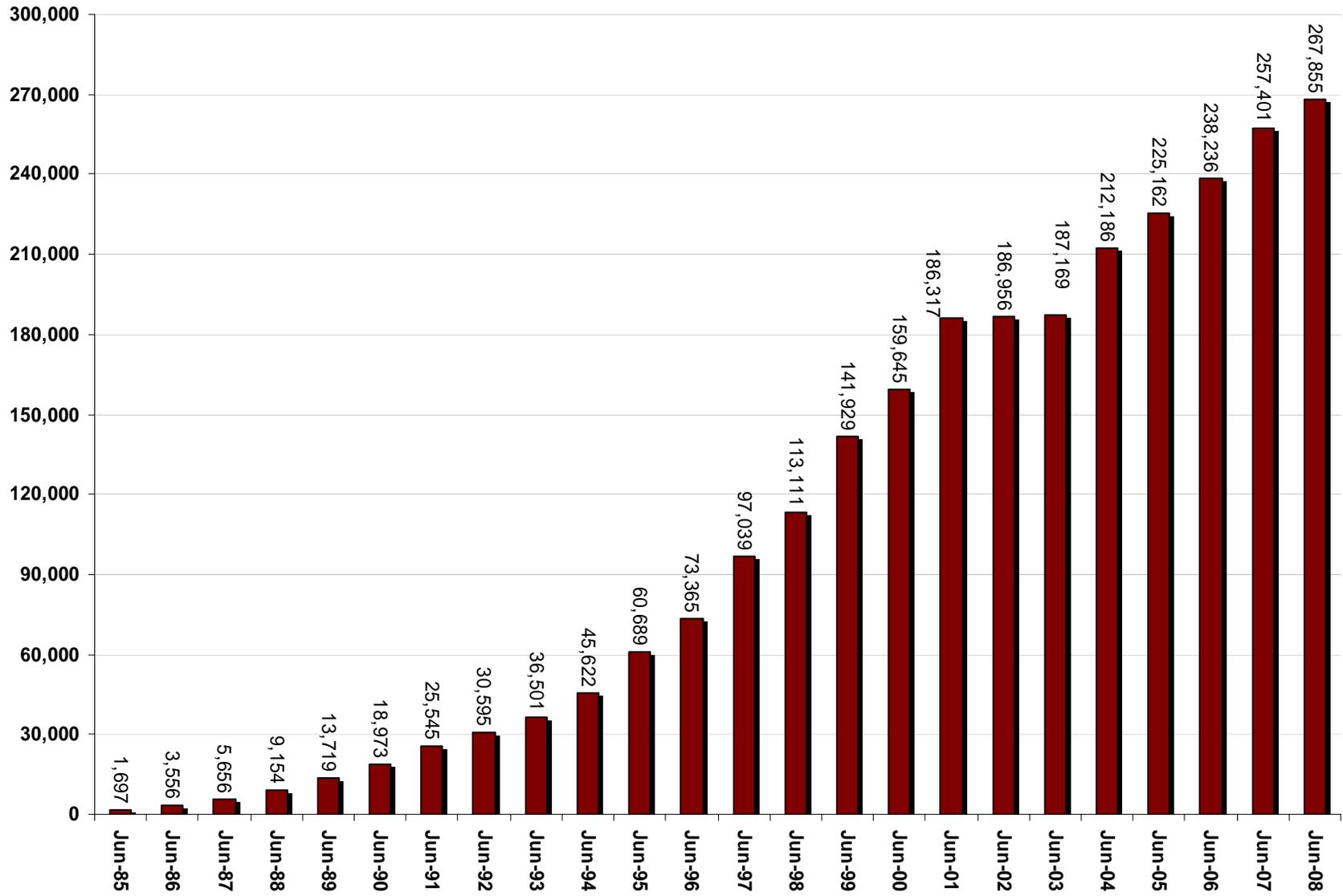


Deployment Doesn't Always Happen on Time – or Where It is Needed

- The ability to deploy wireless broadband systems and expand wireless service depends on the availability of sites for the construction and placement of towers and transmitters.
- CTIA has filed a petition with the FCC, asking the FCC to clarify the time period in which a state or local zoning authority must take action on a wireless facility siting request.
- Of 3,300 tower and antenna applications pending in the Spring of 2008 for 7 wireless carriers, 760 were pending for more than one year, and 180 were pending for more than three years. 135 of the 180 applications pending for more than three years are collocation applications, where towers already have been approved.



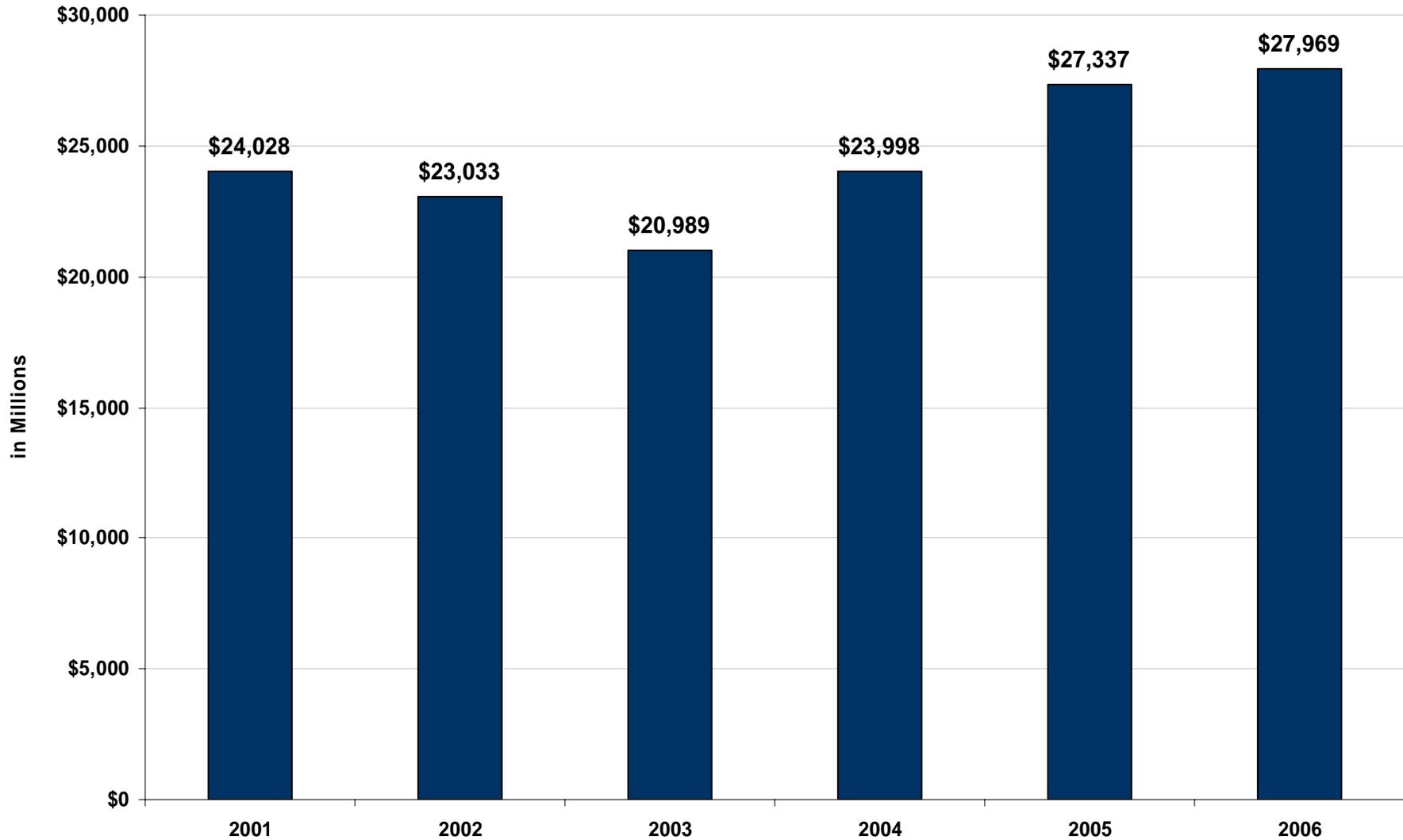
Wireless Carrier Employees Work to Deliver More Service



Direct Employment Exceeds 267,000 at Mid-Year



As Wireless Telecommunications Carriers Invest \$24.5 Billion Annually in Structures and Equipment

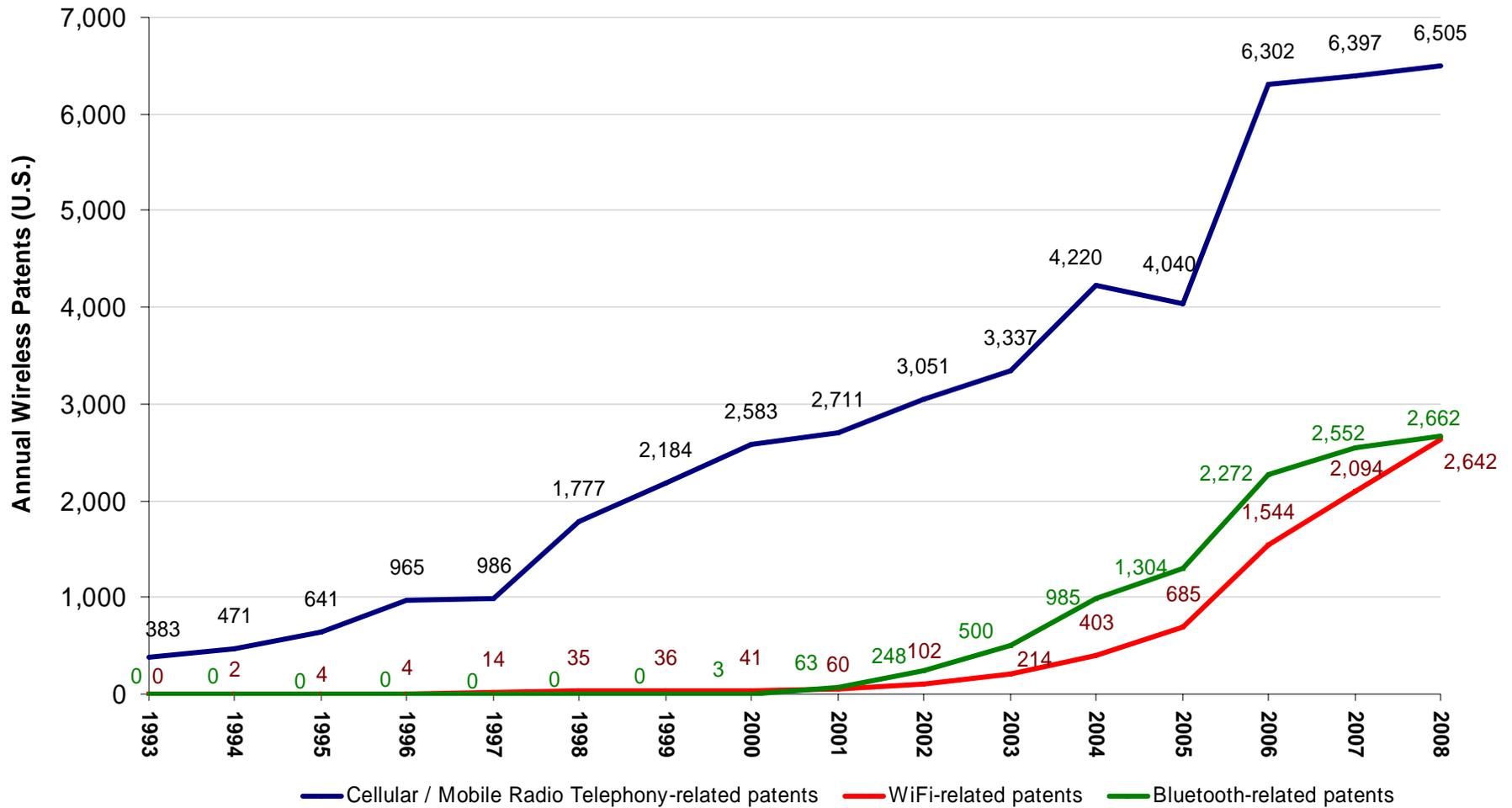


Source: U.S. Census "Annual Census of Expenditures"



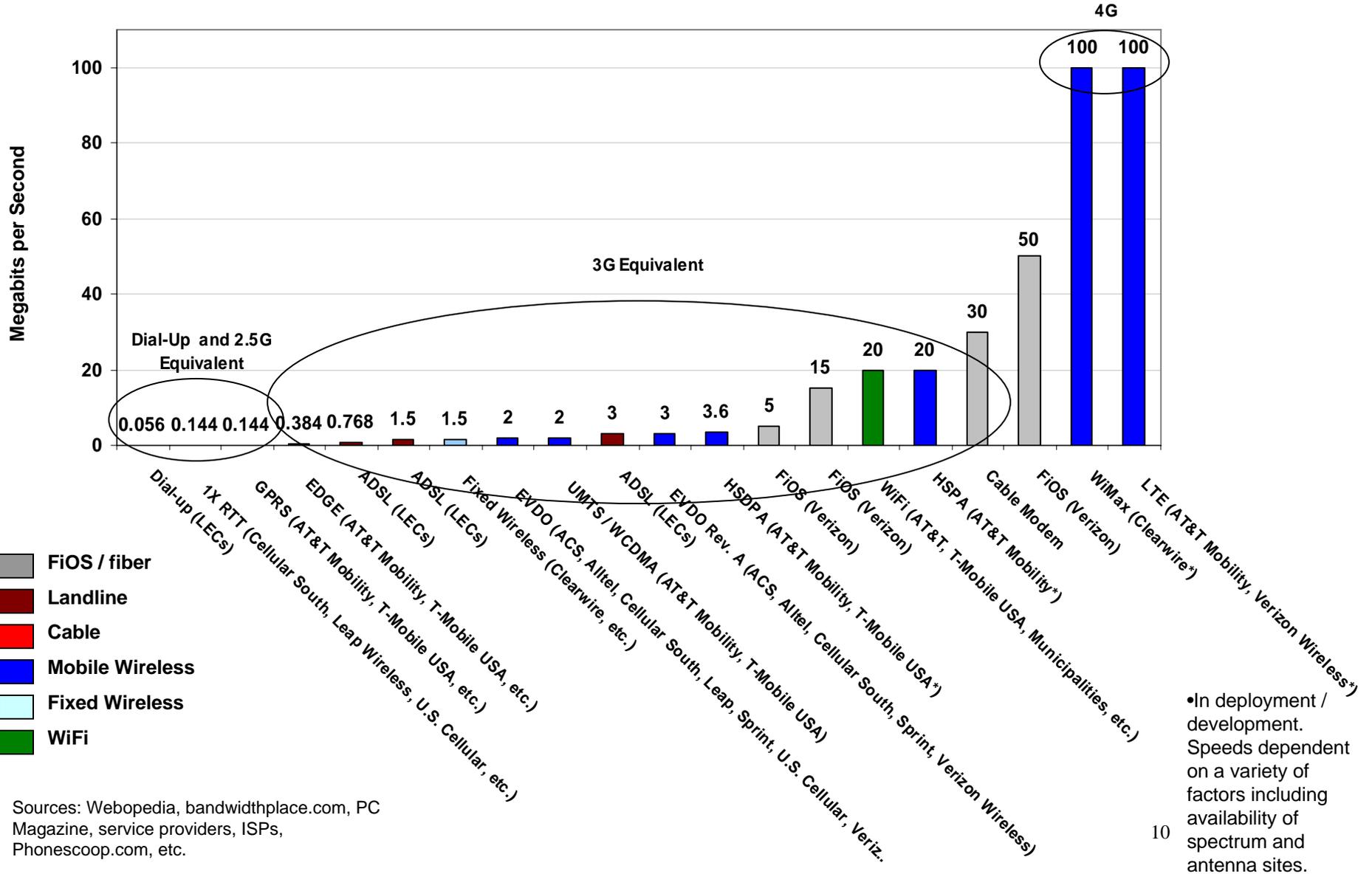
And Thousands of Wireless Patents Continue to Be Issued Every Year

Wireless-Related Patents in the US, 1993-2008
- Licensed CMRS and Other Wireless Patents



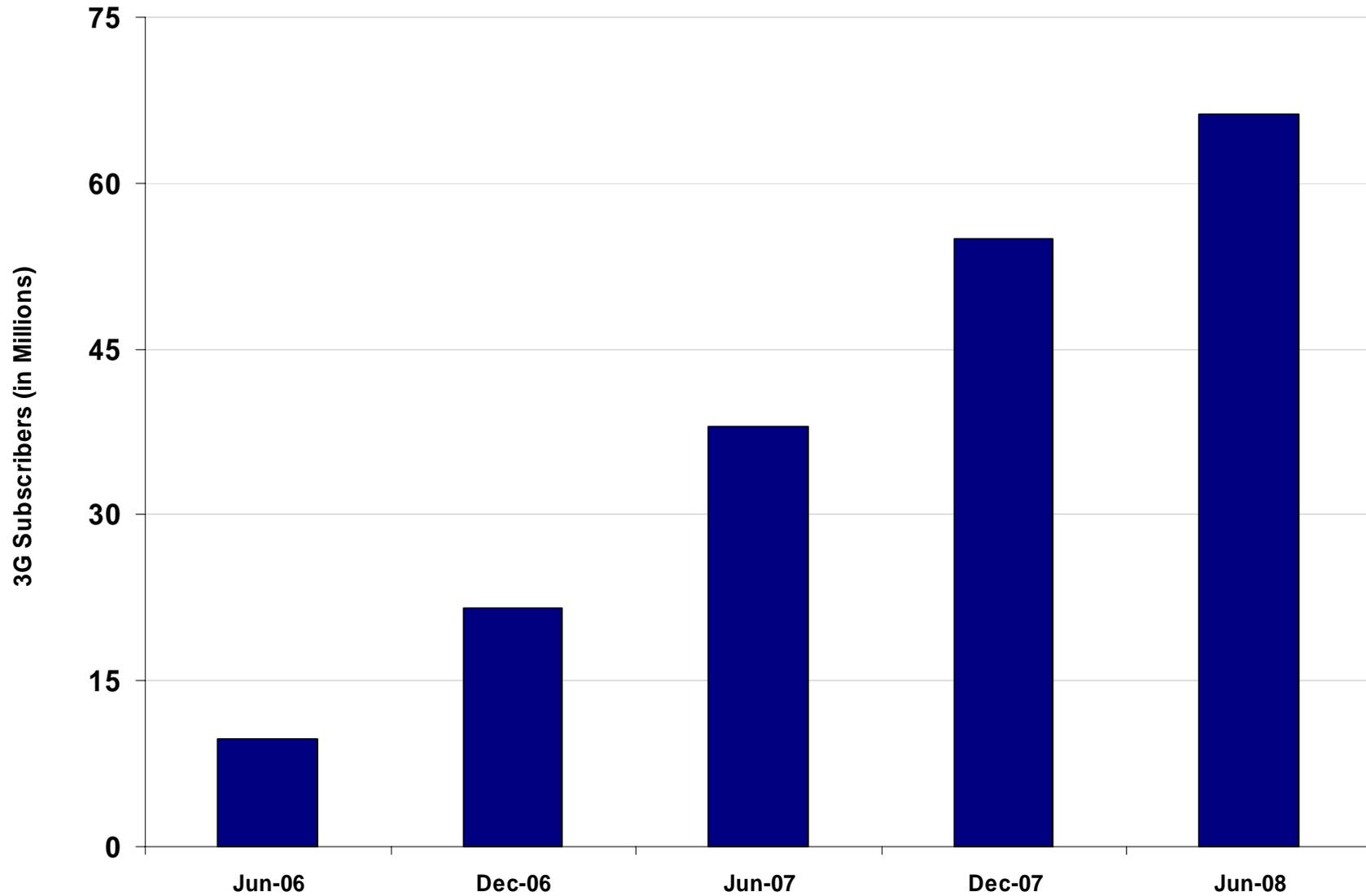


Maximum Theoretical Download Speeds Rise





As Does 3G Wireless Subscribership in the U.S.





How the U.S. Stacks Up Against Other Countries



USA



Japan



Germany



U.K.



France



Italy



Canada



Spain



S. Korea



Mexico

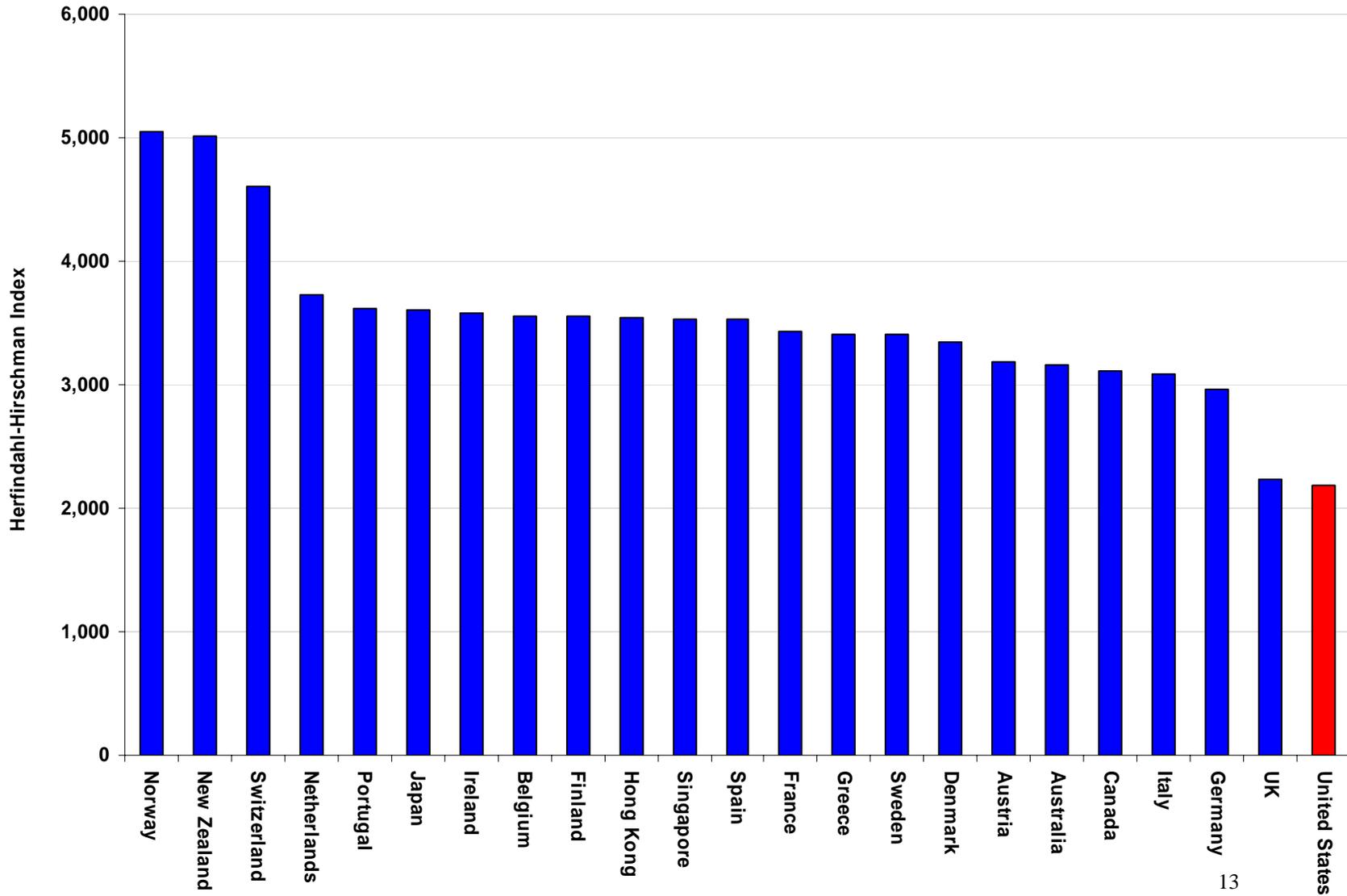
Subscribers**	262.7m	107.7m	103.4m	74.4m	55.4m	90.1m	20.6m	51.2m	45.0m	73.2m
Average Consumers' Minutes of Use per Month**	848	137	104	190	249	138	446	164	320	187
Average Revenue per Minute – A Measure of the Effective Price per Voice Minute**	\$0.05	\$0.25	\$0.21	\$0.16	\$0.17	\$0.18	\$0.11	\$0.24	\$0.11	\$0.09
Efficient Use of Spectrum -- Subscribers Served per MHz of Spectrum Allocated	742,147	310,374	339,016	210,884	147,772	289,338	100,487	143,016	193,133	612,500
Spectrum Assigned for Commercial Wireless Use	354 MHz*	347 MHz	305 MHz	352.8 MHz	374.9 MHz	311.4 MHz	205 MHz	358 MHz	233 MHz	120 MHz

*Figure includes AWS-1 and 700 MHz spectrum not yet in use.

** Glen Campbell, et al., "Global Wireless Matrix 2Q08," Merrill Lynch, Sept. 25, 2008, at Table 1.



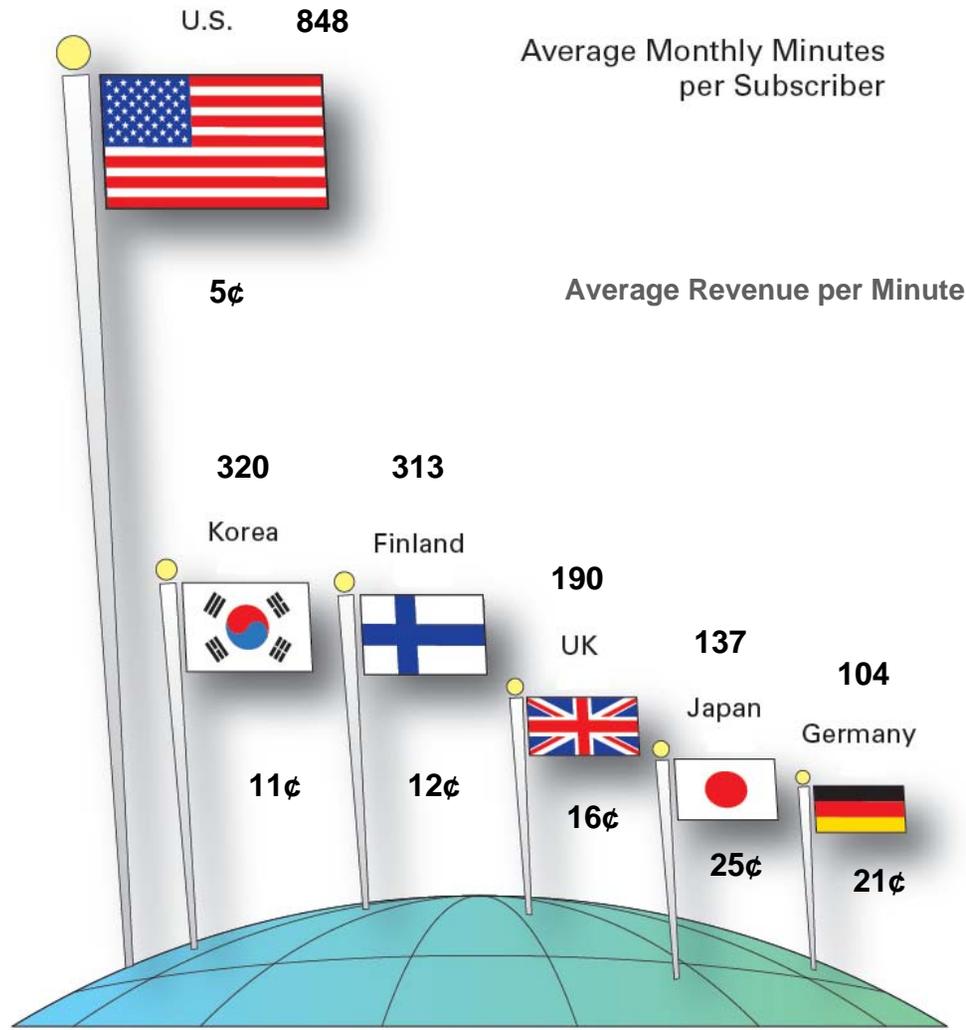
The Licensed Wireless Industry is Less Concentrated in the U.S. Than in Other Countries



Source: Merrill Lynch Global Wireless Matrix, 2Q 2008



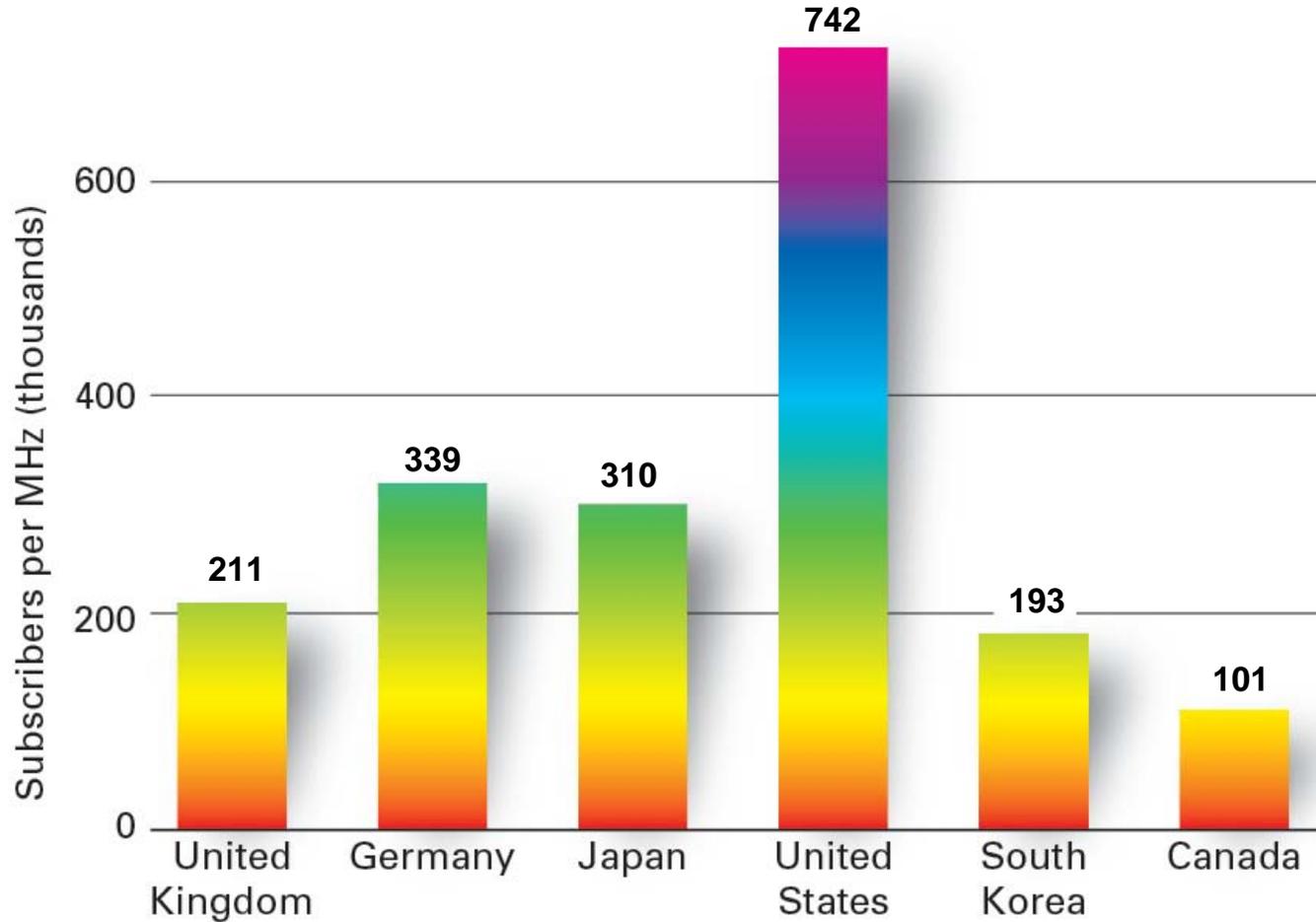
U.S. Consumers Use More Wireless Minutes, at a Lower Effective Rate, Than Consumers in Other Countries



Source: Merrill Lynch Global Wireless Matrix, 2Q 2008



The U.S. Makes More Efficient Use of Commercial Mobile Spectrum Than Other Countries





More Commercial Mobile Spectrum is in the Pipeline in Other Countries

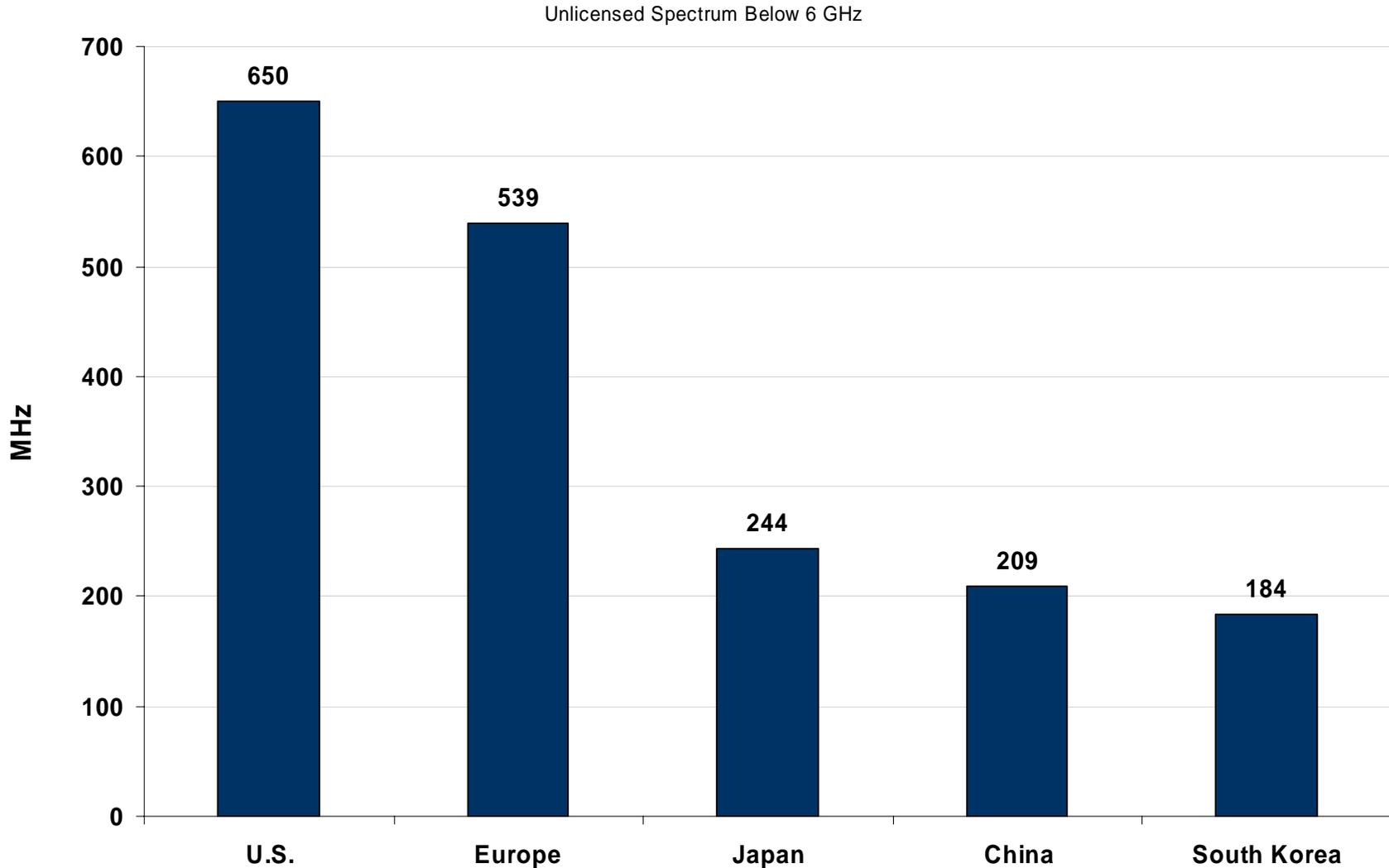
- After the 40 MHz of AWS-2 and AWS-3 spectrum, there is no additional licensed spectrum being actively considered for licensed mobile wireless broadband in the U.S.

By contrast:

- France will add 72 MHz to its existing commercial mobile spectrum.
- Germany has identified 270 MHz of spectrum in the 1.8, GHz, 2.0 GHz and 2.6 GHz bands for wireless network access.
- The UK has indicated it will allocate 400 MHz of spectrum to augment its existing commercial mobile spectrum.



The U.S. Already Has More Unlicensed Spectrum Than Other Countries



Source: CTIA Research

*U.S. figure does not include “white spaces” spectrum



Multiple Carriers Have Reported Network Upgrades in the Past Year

- **Nov. 29, 2007** – “Verizon Selects LTE As 4G Wireless Broadband Direction,” Press Release.
- **Feb. 6, 2008** – “AT&T Plans Major Expansion of 3G Wireless Broadband Service in 2008,” Press Release noting AT&T’s move to HSPA+ and LTE for 4G broadband services.
- **Feb. 8, 2008** – “Stelera Wireless Launches Inaugural Wireless Network,” Press Release announcing rural wireless broadband service on AWS-1 spectrum.
- **Aug. 5, 2008** – Leap Wireless 2Q08 Earnings Conference Call presentation notes markets with ~8 million “Advanced Wireless Service” (AWS) Pops have been launched as of 2Q 2008.



Multiple Carriers Have Reported Network Upgrades in 2008

- **Sept. 18, 2008** – “T-Mobile USA Announces Commercial 3G Network Availability in 21 Markets By Mid-October,” Press Release announcing UMTS/HSDPA high-speed data network is currently available across 13 major metropolitan markets: Austin, Baltimore, Boston, Dallas, Houston, Las Vegas, Miami, Minneapolis, New York (including northern New Jersey and Long Island), Phoenix, Portland, San Antonio and San Diego. The company plans to expand its service by mid-October to additional markets, including Atlanta, Chicago, Los Angeles, Orlando, Philadelphia, Sacramento, San Francisco and Seattle. An additional six markets — Birmingham, Denver, Detroit, Kansas City, Memphis and Tampa — are expected to have the network available before the end of the year, increasing the number of markets with T-Mobile’s 3G network to 27 markets).



Multiple Carriers Have Reported Network Upgrades in 2008

- **Sept. 29, 2008** – “XOHM WiMAX Broadband Service Debuts in Baltimore, New 4G wireless era dawns as unique business model revolutionizes mobile Internet access,” Sprint Press Release announcing launch of new high-speed 4G broadband network in Baltimore, with other markets to follow.
- **Oct. 17, 2008** – “T-Mobile USA Further Expands Commercial 3G Network Availability in 2008; Washington, D.C., and Surrounding Areas to Launch in November; More than 120 Major Cities with T-Mobile 3G Coverage by End of Year,” Press Release.
- **Oct. 28, 2008** – “U.S. Cellular Launches Mobile Broadband,” Press Release announcing EVDO service “launched in Chicago, Rockford, Ill., northwestern Indiana, Tulsa, Okla., Des Moines, Iowa and southern Wisconsin” with more markets to follow in 2009.
- **Nov. 4, 2008** – nTelos has upgraded 46% of its network to EVDO Rev. A, projects upgrading 70% of cell sites by year-end 2008. “Press Release announcing NTELOS Holdings Corp. Third Quarter 2008 Operating Results.



More is Possible, and Needed

- Approximately 23.2 million U.S. residents currently do not have access to 3G mobile broadband service at their primary place of residence.
- Approximately 42% of road miles in the U.S. do not have access to 3G mobile broadband service.
- The estimated investment needed to build-out infrastructure to facilitate ubiquitous mobile broadband service is approximately \$22 billion.
- In order to achieve full 3G mobile broadband coverage, approximately 16,000 new cell sites will need to be constructed, and 55,000 existing sites will need to be augmented with 3G technologies.



U.S. Demographics and U.S. Wireless Demographics

U.S. Demographics

- White – 228.6 million – 75.8% of total U.S. population
- Black or African American – 39.7 million – 13.1% of total U.S. population
- Hispanic or Latino (of any race) – 45.4 million – 15.1% of total U.S. population
- Asian, American Indian, Alaska Native, Native Hawaiian and other Pacific Islanders – 20.2 million – 6.8% of total population
 - Asian – 14.9 million – 5.0% of total U.S. population
 - American Indian, Alaska Native, Native Hawaiian and other Pacific Islanders – 5.3 million – 1.8% of total U.S. population

Note: Figures sum to more than 100% because census respondents were able to select one or more categories to indicate their racial identities as well as Hispanic or Latino origin.



Who is Doing What With Wireless Data?

The Pew Internet & American Life Project has found that:

- *84% of English-speaking Hispanics have cell phones, compared to 74% of white Americans, and 71% of African Americans.*
- *90% of Hispanics, 79% Blacks, And 73% of White Users Have ‘Done’ Mobile Data*
- *English-speaking Hispanics use mobile laptops to access the Internet at a much greater rate than the average Internet user, with African Americans also doing that at an above average clip.*
- *39% of internet users say they have used a handheld device to go online – the figure is 41% for home broadband users and 36% for home dial-up users.*



What are Users Doing When They Do Wireless Data?

Mobile data and communications activities (among those who have a cell phone or personal data assistant)		
	% of cell/PDA users who have <u>ever</u> done this	% of cell/PDA who do this <u>on typical day</u>
Send or receive text messages	58%	31%
Take a picture	58	15
Play a game	27	8
Send or receive email	19	8
Access the internet for news, weather, sports, or other information	19	7
Record a video	18	3
Play music	17	7
Send or receive instant messages	17	6
Get a map or directions to another location	14	3
Watch video	10	3

Source: Pew Internet & American Life Project Survey, December 2007, n =1,704 for those with cell phones or PDAs.. Margin of error is +/- 3 points.

- *77% of Americans who have cell phones or PDAs have done at least one of these 10 things.*
- *42% do at least one of these things on a typical day.*



Who is Doing What With Wireless Data?

Mobile data and communications activities: by race (Those who have a cell phone or personal data assistant who have <u>ever</u> done one of listed activities)			
	White	Black	Hispanic
Send or receive text messages	53%	68%	73%
Take a picture	56	57	71
Play a game	23	36	35
Send or receive email	17	19	25
Access the internet for news, weather, sports, or other information	18	27	22
Record a video	15	21	30
Play music	13	27	30
Send or receive instant messages	14	26	27
Get a map or directions to another location	12	12	20
Watch video	9	10	17
Percent who have done at least one of these activities	73%	79%	90%
Median number of activities <u>ever</u> done	2	2	3
Number of cases	1,304	158	129

Source: Pew Internet & American Life Project Survey, December 2007, n=1,704 for those with cell phones or PDAs. Margin of error is +/- 3 points. Survey conducted in English.



Who is Doing What With Wireless Data?

Mobile data and communications activities: by Age (Those who have a cell phone or personal data assistant who have <u>ever</u> done one of listed activities)				
	18-29	30-49	50-64	65+
Send or receive text messages	85	65	38	11
Take a picture	82	64	42	22
Play a game	47	29	13	6
Send or receive email	28	21	12	6
Access the internet for news, weather, sports, or other information	31	22	10	6
Record a video	34	19	8	3
Play music	38	16	5	2
Send or receive instant messages	26	18	11	7
Get a map or directions to another location	18	16	9	5
Watch video	19	11	4	2
Percent who have done at least one of these activities	96%	85%	63%	36%
Median number of activities <u>ever</u> done	4	2	1	0
Number of cases	311	616	456	310



Who is Doing What With Wireless Data?

Mobile data and communications activities: by Age (Those who have a cell phone or personal data assistant who have done one of listed activities on a <u>typical day</u>)				
	18-29	30-49	50-64	65+
Send or receive text messages	60	32	14	2
Take a picture	31	14	6	3
Play a game	16	8	3	1
Send or receive email	10	9	7	2
Access the internet for news, weather, sports, or other information	14	7	3	1
Record a video	6	2	1	**
Play music	16	6	2	*
Send or receive instant messages	9	7	3	2
Get a map or directions to another location	6	3	2	
Watch video	6	3	1	1
Percent who have done at least one of these activities	73%	57%	23%	9%
Median number of activities done on <u>typical day</u>	1	0	0	0
Number of cases	311	616	456	310



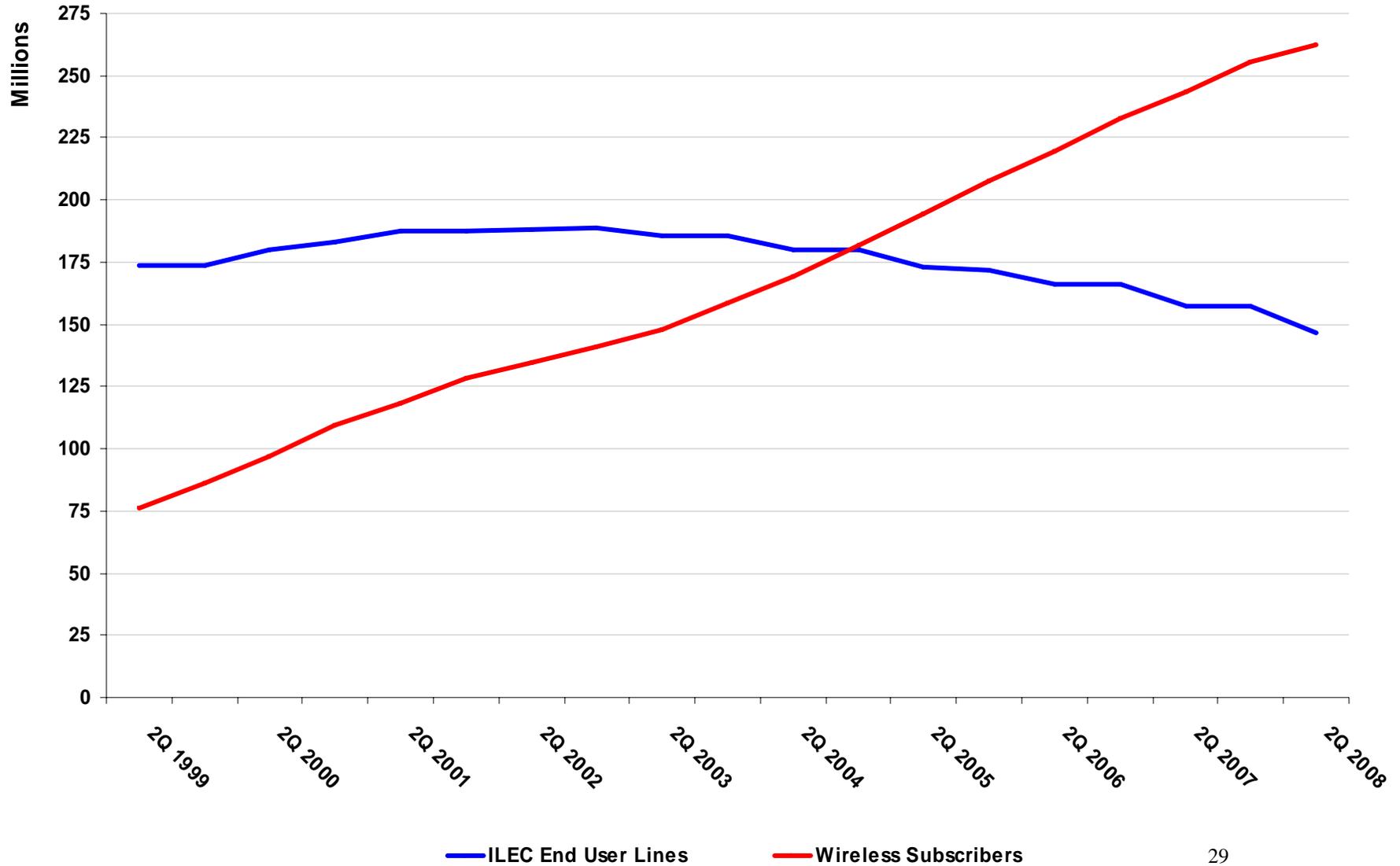
What Are Overall Internet Users Doing Wirelessly?

According to the Pew Internet & American Life Project:

- 52% of internet users have used a laptop or handheld to connect to the internet wirelessly away from home or work:
 - 65% of English-speaking Hispanic internet users have done this.
 - 54% of African American internet users have done this.
 - 49% of white internet users have done this.
- 41% of Americans overall have logged-on wirelessly when away from home (using a laptop, PDA or wireless phone)



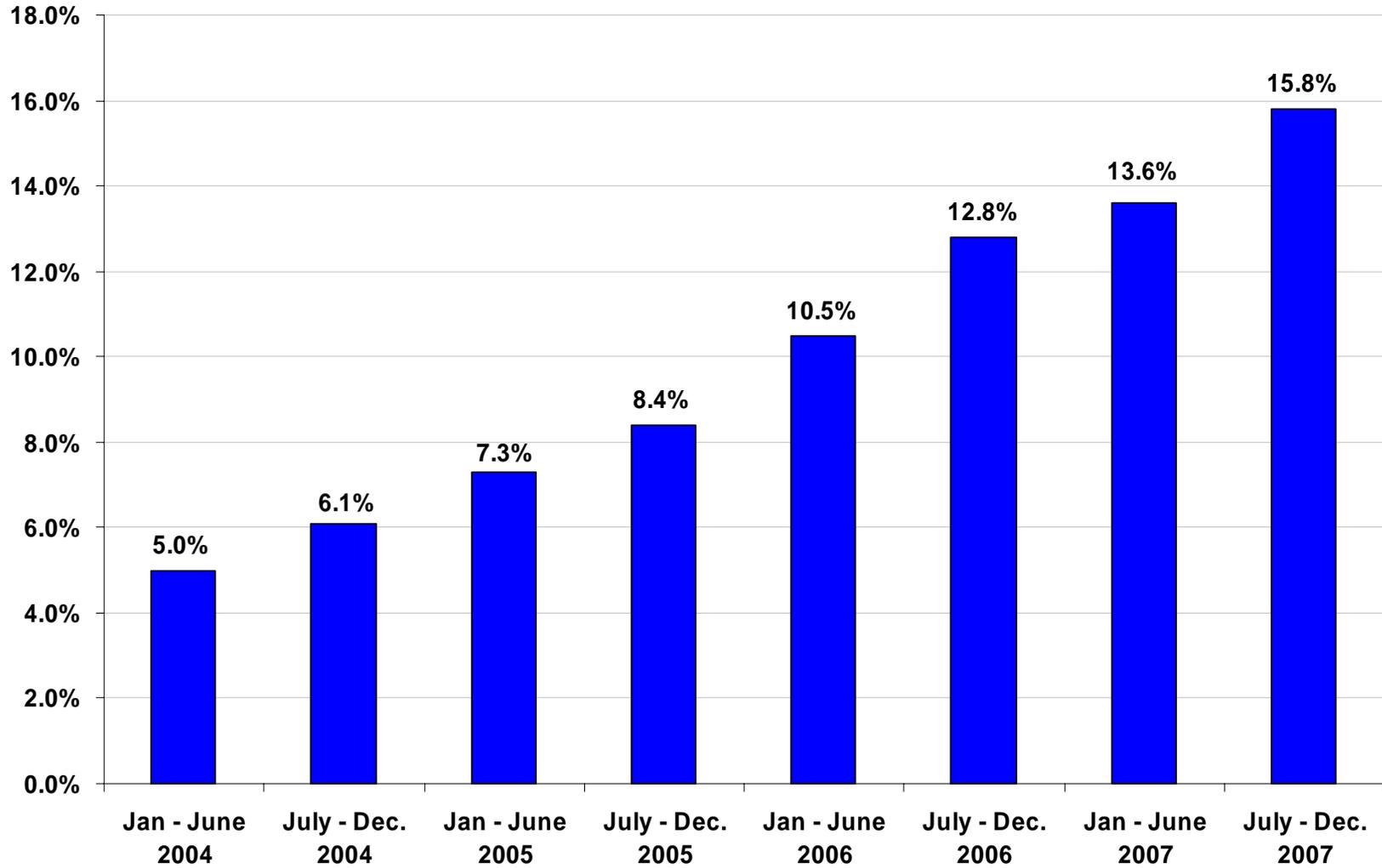
Wireless Subscribers Has Passed Reported ILEC Lines



Sources: CTIA Semi-Annual Survey and USAC Filings



Wireless-Only Household Numbers Continue to Climb



Source: NCHS "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July – Dec. 2007"

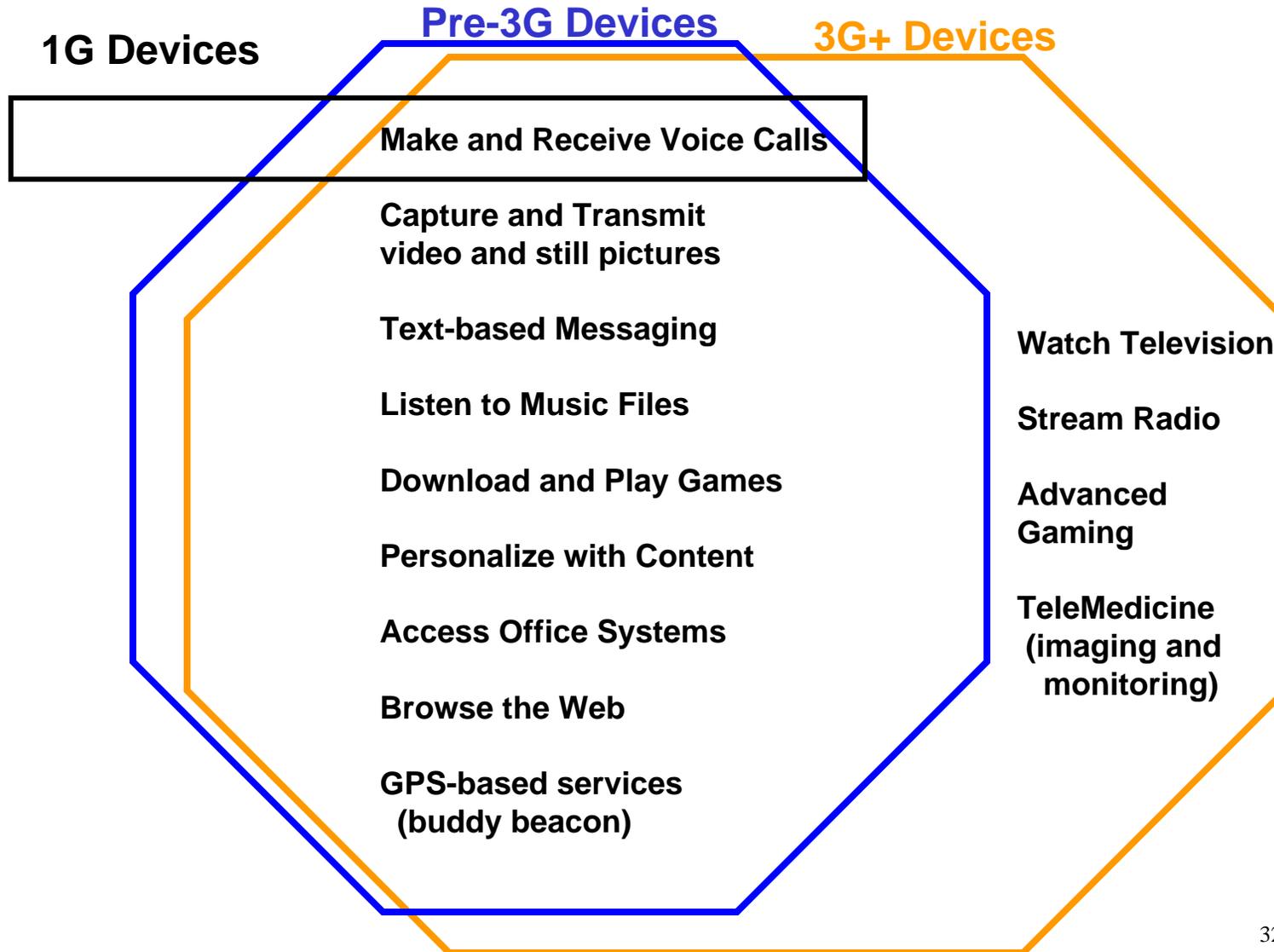


Wireless Technology Offers Political, Personal, and Business Applications to Benefit Users

- Wireless is revolutionizing how we think and how we use technology in campaigns – with Blackberries, and other wireless devices used to organize, inform, and motivate campaign workers and to get voters to the polls.
- Barack Obama’s campaign used text messages to promote events, coordinate volunteers, and – most notably – to notify 2.9 million people of his choice for Vice President.
- Wireless offers applications for personal users interested in mobile social networking; mapping programs and directions; different forms of mobile entertainment including games, music, and video.
- Wireless offers enterprise applications to increase workforce productivity, and applications such as medical telemetry, and location-based services to promote public benefits.

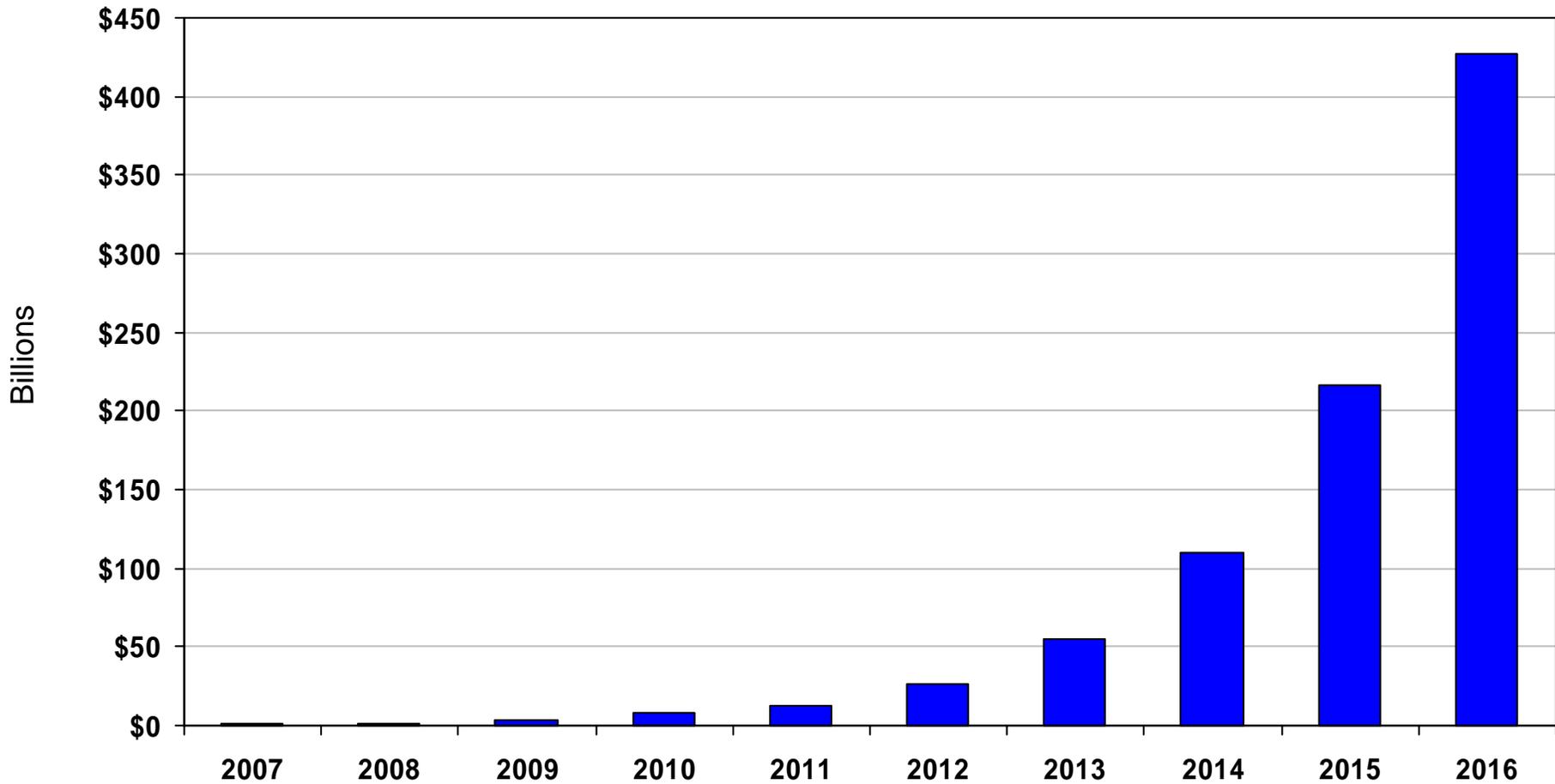


New Generations of Wireless Technology Make Possible New Applications While Preserving Older Capabilities





Wireless Use is Projected to Generate \$860 Billion in Productivity Gains Between 2007 and 2016





Thank You