Background on CTIA's Wireless Industry Survey

CTIA-The Wireless Association®'s wireless industry survey develops industry-wide information drawn from operational member and non-member wireless service providers. It has been conducted since January 1985, originally as a cellular-only survey instrument, and now including the community of CMRS licensees (*e.g.*, PCS, ESMR, AWS, BRS and 700 MHz license holders). No break-out of results specific to spectrum bands or licenses is performed. From January 1985 through December 2012, it was conducted as a semi-annual survey, and it is now being conducted on an annual basis.

The information determined based on the survey includes: direct employment, number of cell sites, total service revenues, the average revenue per unit (ARPU), and various measures of usage (*e.g.*, minutes and megabytes). The ARPU figure is not equal to the average monthly bill, which may reflect provision of service to multiple devices on a single account.

CTIA's survey develops information on the number of reported wireless service subscribers or "connections" for the responding systems, and an estimated total connections figure (taking into account non-responding systems). Because CTIA's survey is a voluntary survey, it cannot compel responses from wireless carriers. However, the survey has an excellent response rate. For the December 31, 2014, installment of the survey, CTIA aggregated data from companies serving 97.8 percent of all estimated wireless subscriber connections (excluding some machine-to-machine and other units not treated as "subscriber connections" for reporting purposes by some carriers).

Because not all systems do respond, CTIA develops an estimate of total wireless connections. The estimate is developed by determining the identity and character of non-respondents and their markets (*e.g.*, RSA/MSA or equivalent-market designation, age of system, market population), and using surrogate penetration and growth rates applicable to similar, known systems to derive probable subscribership. These numbers are then summed with the reported subscriber connection numbers to reach the total estimated figures. No carrier-specific or market-specific information is maintained as a result of the survey. All such information is aggregated by an independent accounting firm to a nationwide level. The underlying source material for the survey is then destroyed per confidentiality agreements.

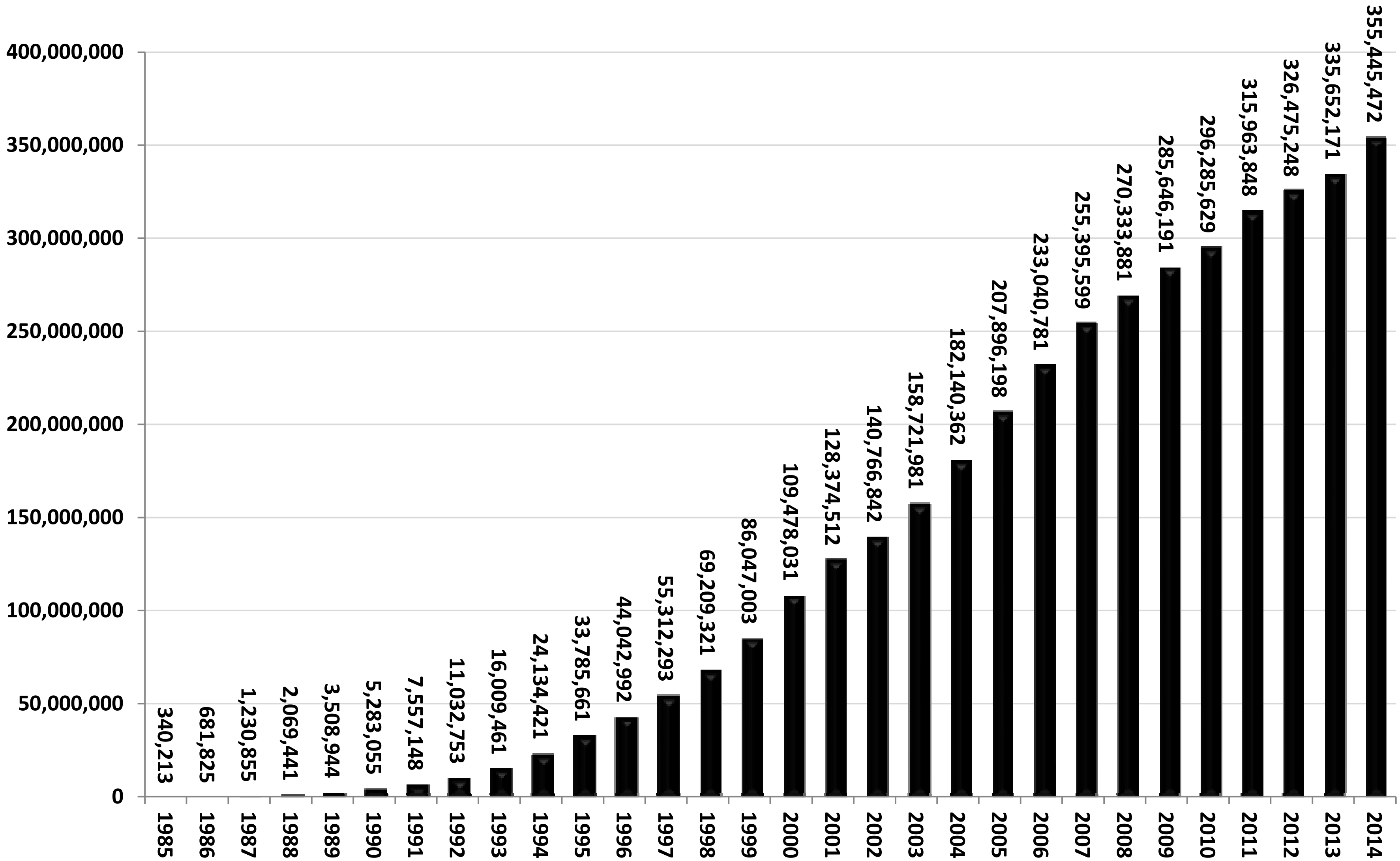
The following tables and charts reflect selected top-of-the-line data. Complete results of CTIA's survey will be available for purchase in the comprehensive report, *CTIA's Wireless Industry Indices: 1985 – 2014*, including data on revenues, subscriber usage, investment, and other operational indicators and ratios. The report is available for a member price of $850 and a non-member price of $1,075. Subsequent copies are available to members at $475 each and to non-members at $535 each. Annual subscriptions are available at a member price of $1,445 and non-member price of $1,825. The report may be ordered by contacting research@ctia.org or by ordering directly from CTIA's online Store at http://store.ctia.org/. Order forms are also available on CTIA's web site, at http://files.ctia.org/pdf/Indices_Order_Form1.pdf.

CTIA-THE WIRELESS ASSOCIATION®
ANNUALIZED WIRELESS INDUSTRY SURVEY RESULTS - DECEMBER 1985 TO DECEMBER 2014

Date	Estimated Total Subscriber Connections	Annual Service Revenues ($000s)	Cumulative CapEx ($000)	Cell Sites	Direct Carrier Employees	Monthly Average Revenue per Unit
1985	340,213	$482,428	$911,167	913	2,727	N/A
1986	681,825	$823,052	$1,436,753	1,531	4,334	N/A
1987	1,230,855	$1,151,519	$2,234,635	2,305	7,147	N/A
1988	2,069,441	$1,959,548	$3,274,105	3,209	11,400	N/A
1989	3,508,944	$3,340,595	$4,480,142	4,169	15,927	N/A
1990	5,283,055	$4,548,820	$6,281,596	5,616	21,382	N/A
1991	7,557,148	$5,708,522	$8,671,544	7,847	26,327	N/A
1992	11,032,753	$7,822,726	$11,262,070	10,307	34,348	N/A
1993	16,009,461	$10,892,175	$13,956,366	12,824	39,810	$76.55
1994	24,134,421	$14,229,922	$18,938,678	17,920	53,902	$64.80
1995	33,785,661	$19,081,239	$24,080,467	22,663	68,165	$59.43
1996	44,042,992	$23,634,971	$32,573,522	30,045	84,161	$55.40
1997	55,312,293	$27,485,633	$46,057,910	51,600	109,387	$49.39
1998	69,209,321	$33,133,175	$60,542,774	65,887	134,754	$47.23
1999	86,047,003	$40,018,489	$71,264,865	81,698	155,817	$46.39
2000	109,478,031	$52,466,020	$89,624,387	104,288	184,449	$48.55
2001	128,374,512	$65,316,235	$105,030,101	127,540	203,580	$49.79
2002	140,766,842	$76,508,187	$126,922,347	139,338	192,410	$51.00
2003	158,721,981	$87,624,093	$145,866,914	162,986	205,629	$51.55
2004	182,140,362	$102,121,210	$173,793,507	175,725	226,016	$52.54
2005	207,896,198	$113,538,221	$199,025,327	183,689	233,067	$50.65
2006	233,040,781	$125,456,825	$223,449,194	195,613	253,793	$49.07
2007	255,395,599	$138,869,304	$244,591,206	213,299	266,782	$49.26
2008	270,333,881	$148,084,170	$264,760,517	242,130	268,528	$48.87
2009	285,646,191*	$152,551,854	$285,121,591	247,081	249,247	$47.97
2010	296,285,629*	$159,929,648	$310,014,852	253,086	250,393	$47.53
2011	315,963,848*	$169,767,314	$335,331,968	283,385	238,071	$46.11
2012	326,475,248	$185,013,936	$365,426,327	301,779	230,101	$48.99
2013	335,652,171	$189,192,812	$398,567,671	304,360	230,409	$48.79
2014	355,445,472	$187,848,447	$430,642,374	298,055	232,169	$46.64

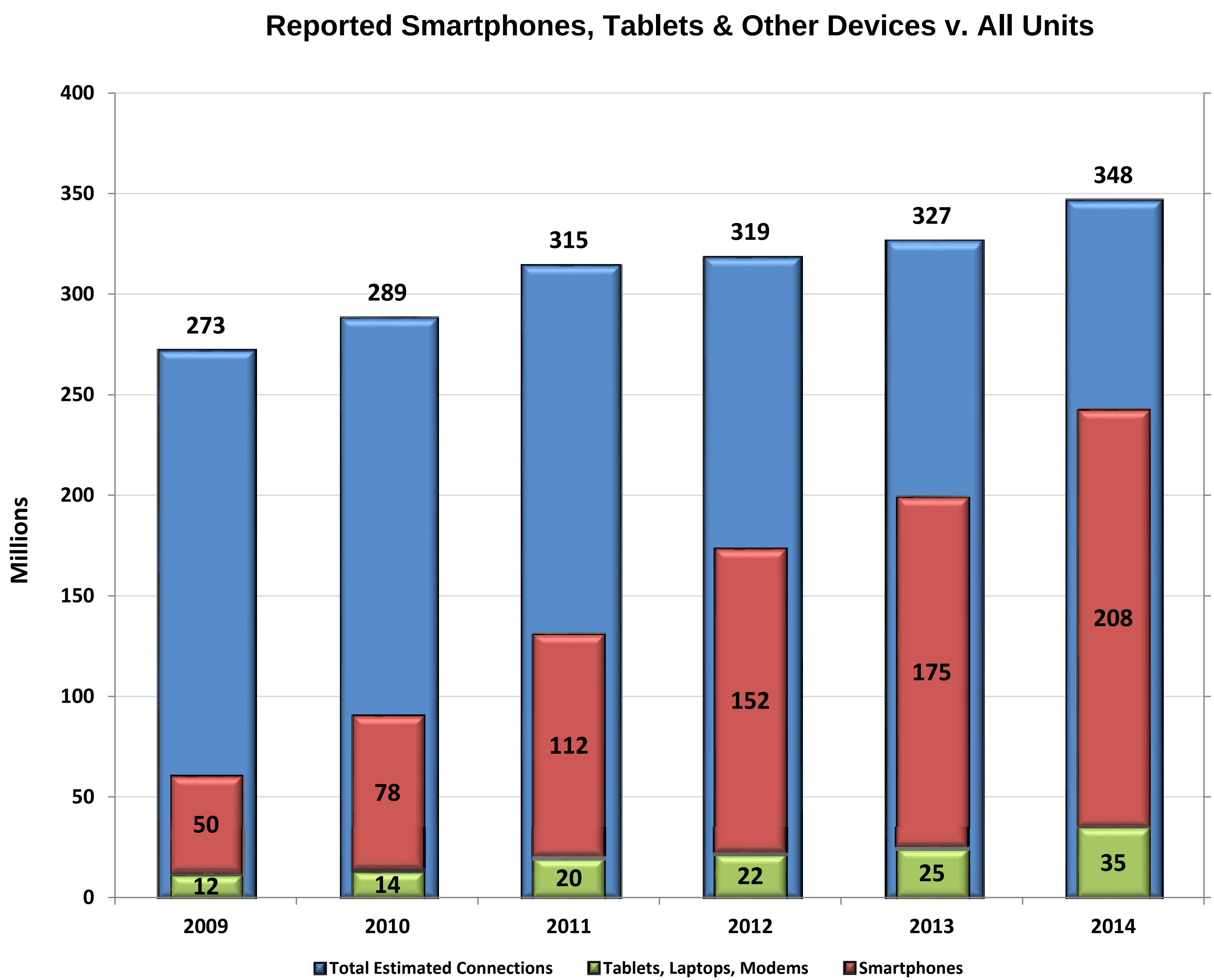
*Restated

Estimated Subscriber Connections

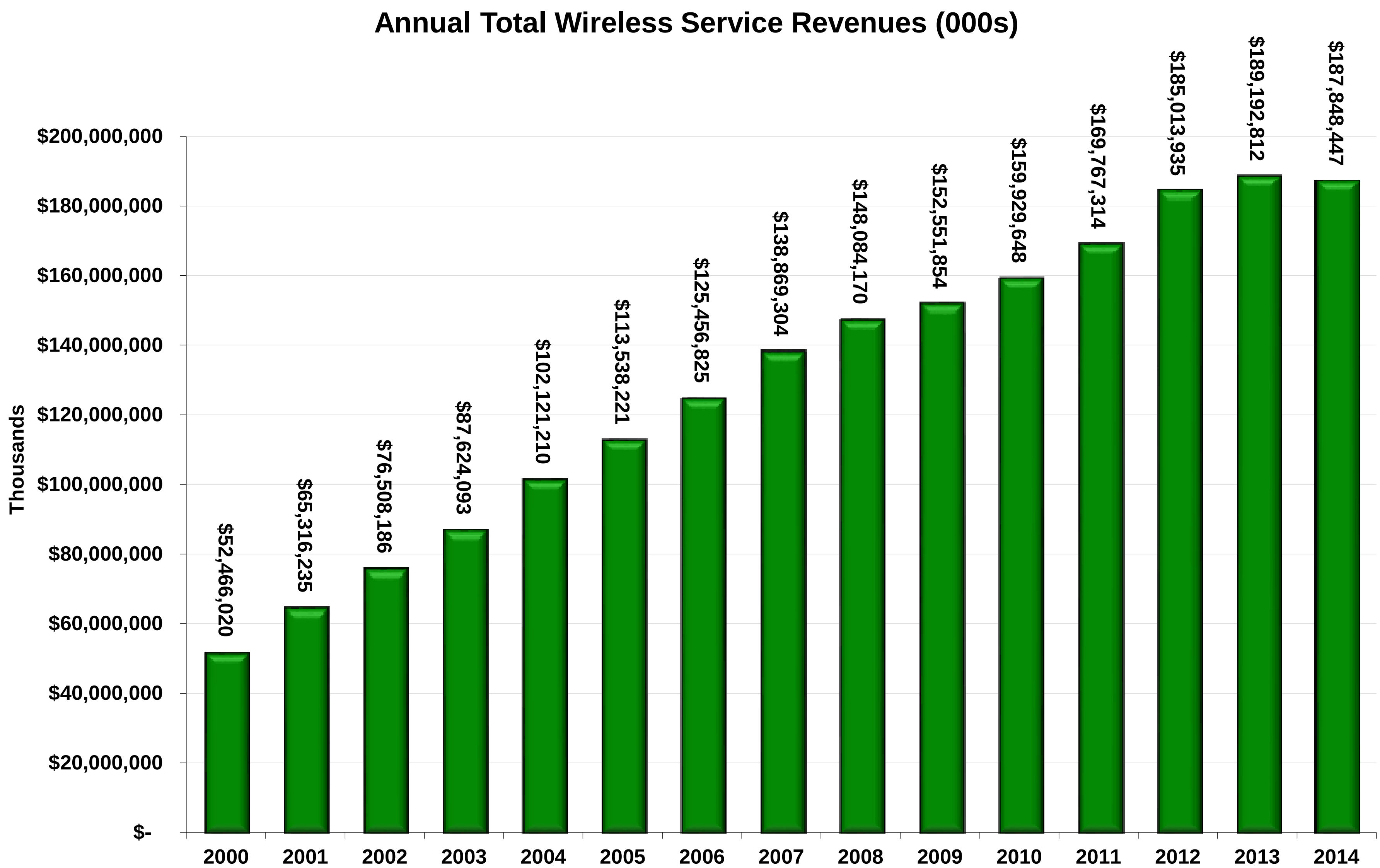


Year-End Estimated Connections Exceed 355 Million

Source: CTIA


Reported Smartphones, Tablets & Other Devices v. All Units
Millions
400
350
300
250
200
150
100
50
0
273
289
315
319
327
348
50
78
112
152
175
208
12
14
20
22
25
35
2009
2010
2011
2012
2013
2014
Total Estimated Connections
Tablets, Laptops, Modems
Smartphones

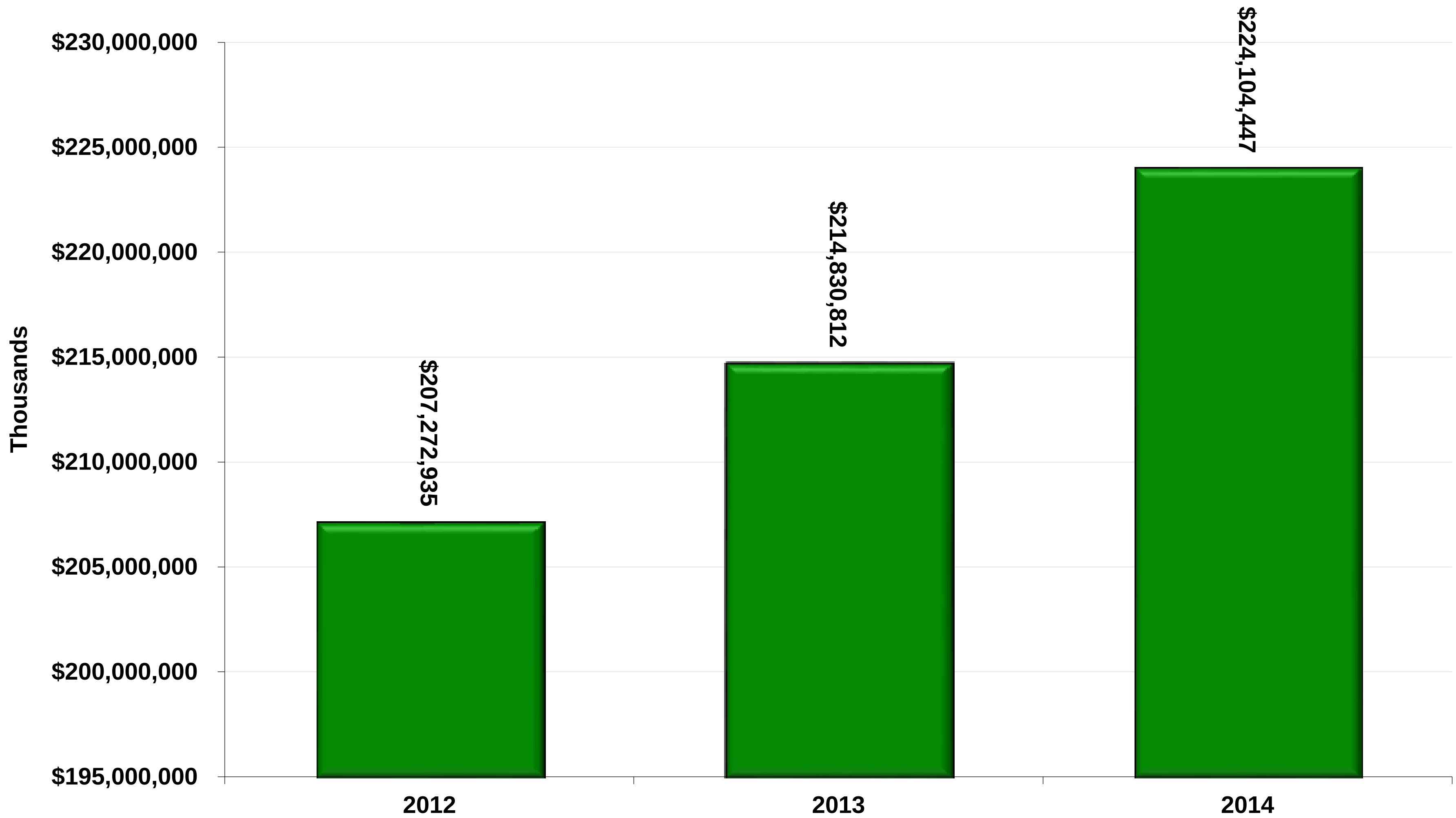
Source: CTIA



Source: CTIA

Total Reported Service Revenues Fall 0.7% Year-to-Year

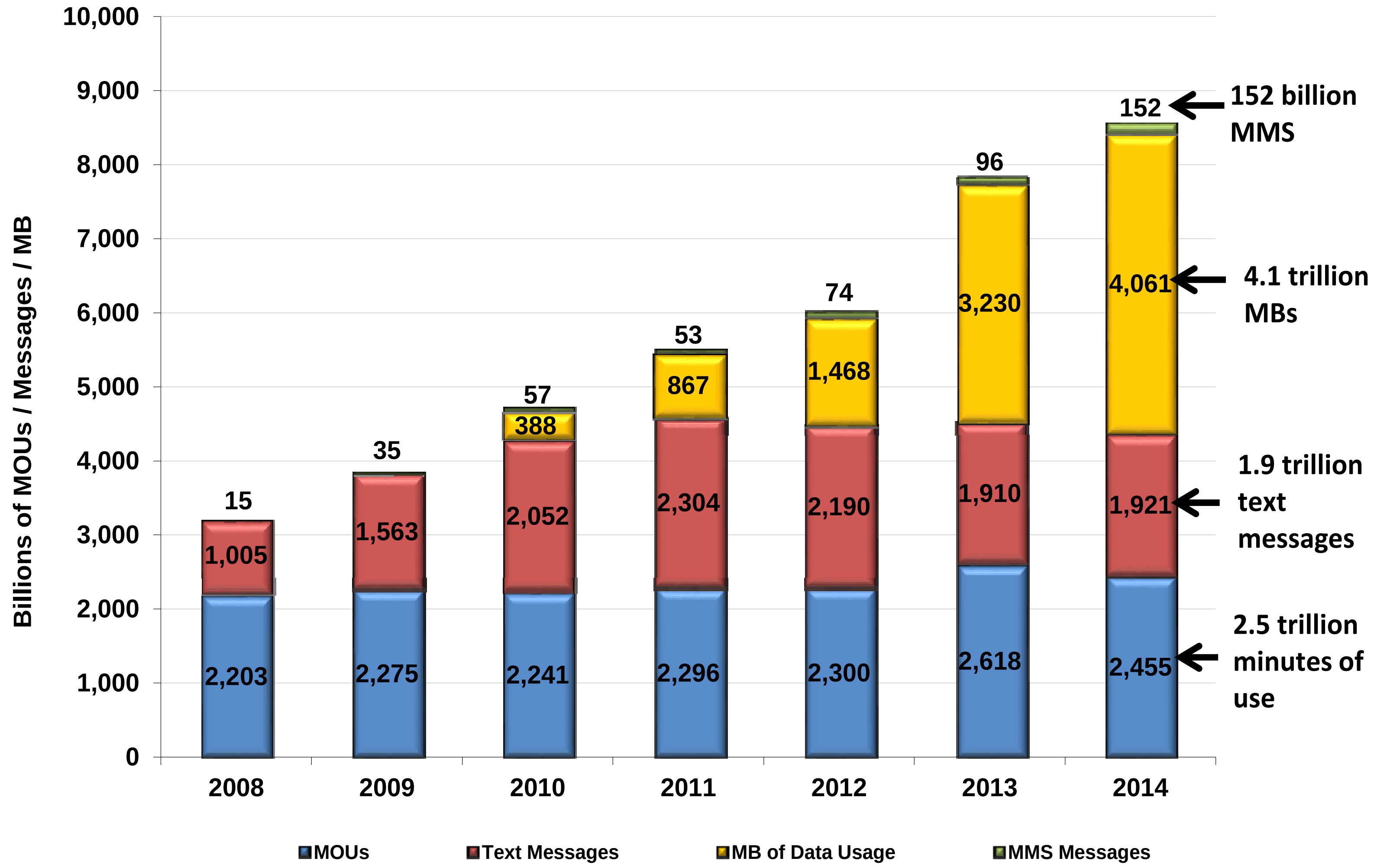
Combined Wireless Service and Equipment Revenues (000s)



Combined Service and Equipment Revenues Rose 4% Year-to-Year

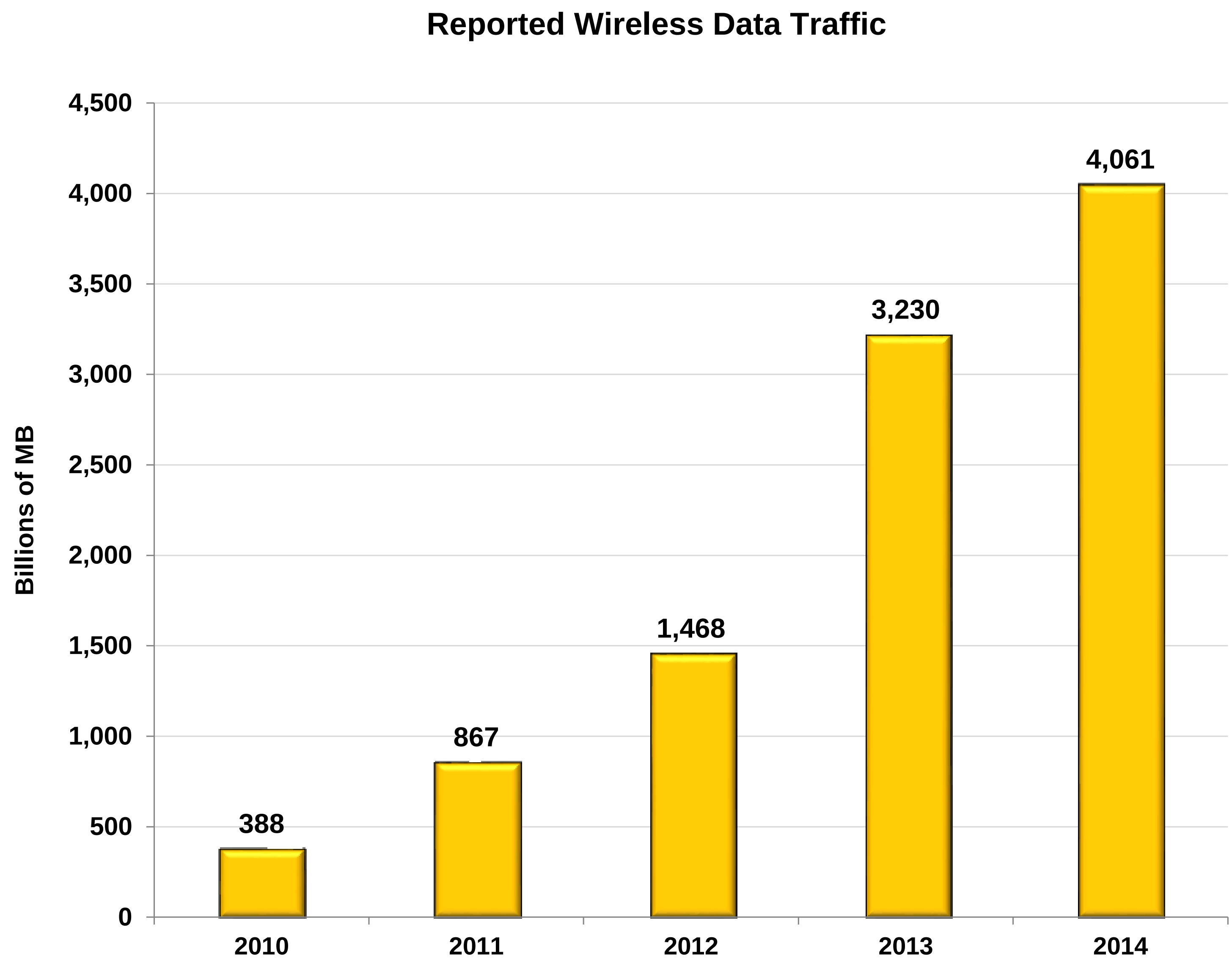
Source: CTIA

Annual Minutes, Messages and MB of Wireless Traffic



The Mix of Minutes, Messages and MBs Changes

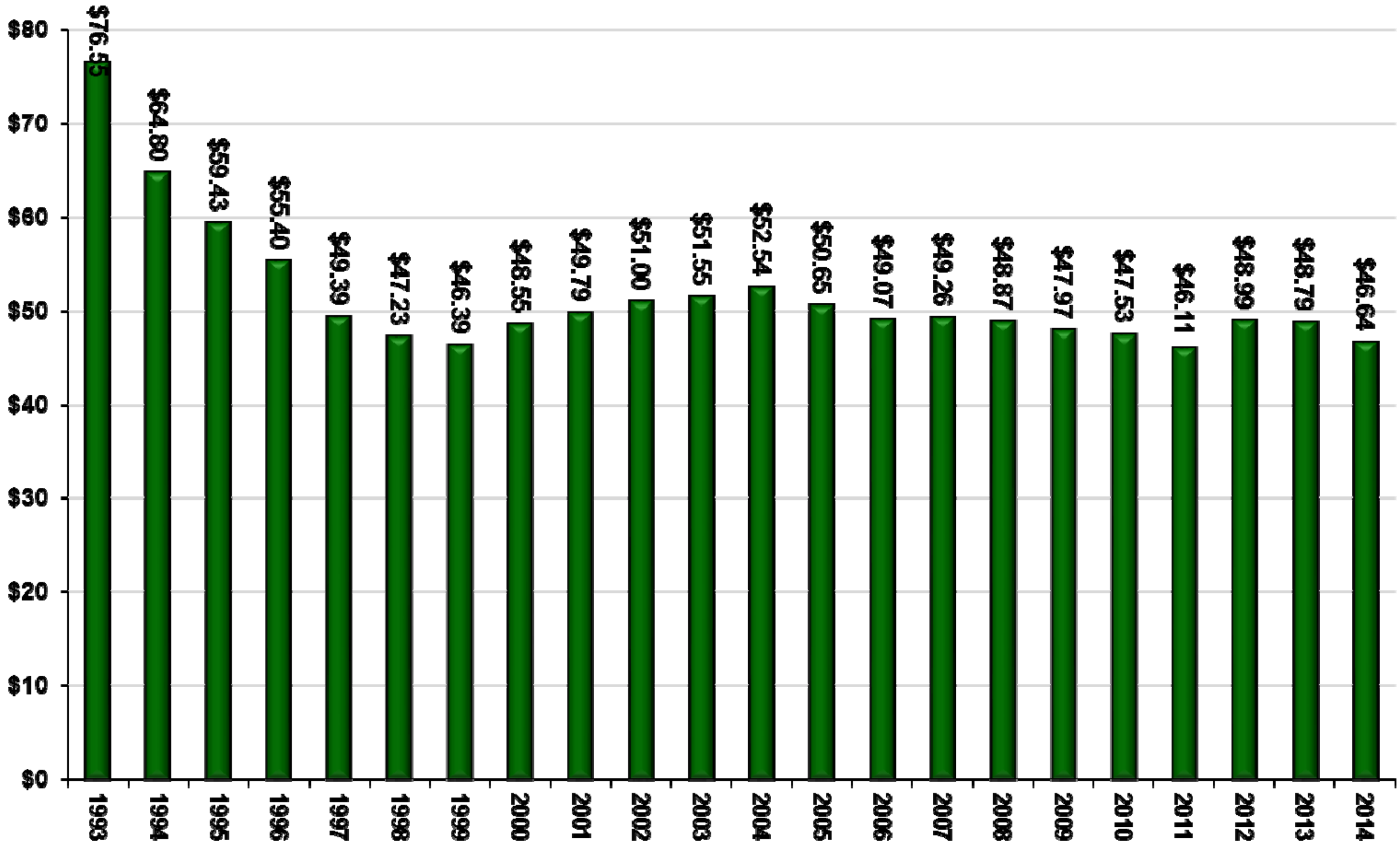
Source: CTIA



Reported Annual Data Traffic Grew 26% Year-Over-Year

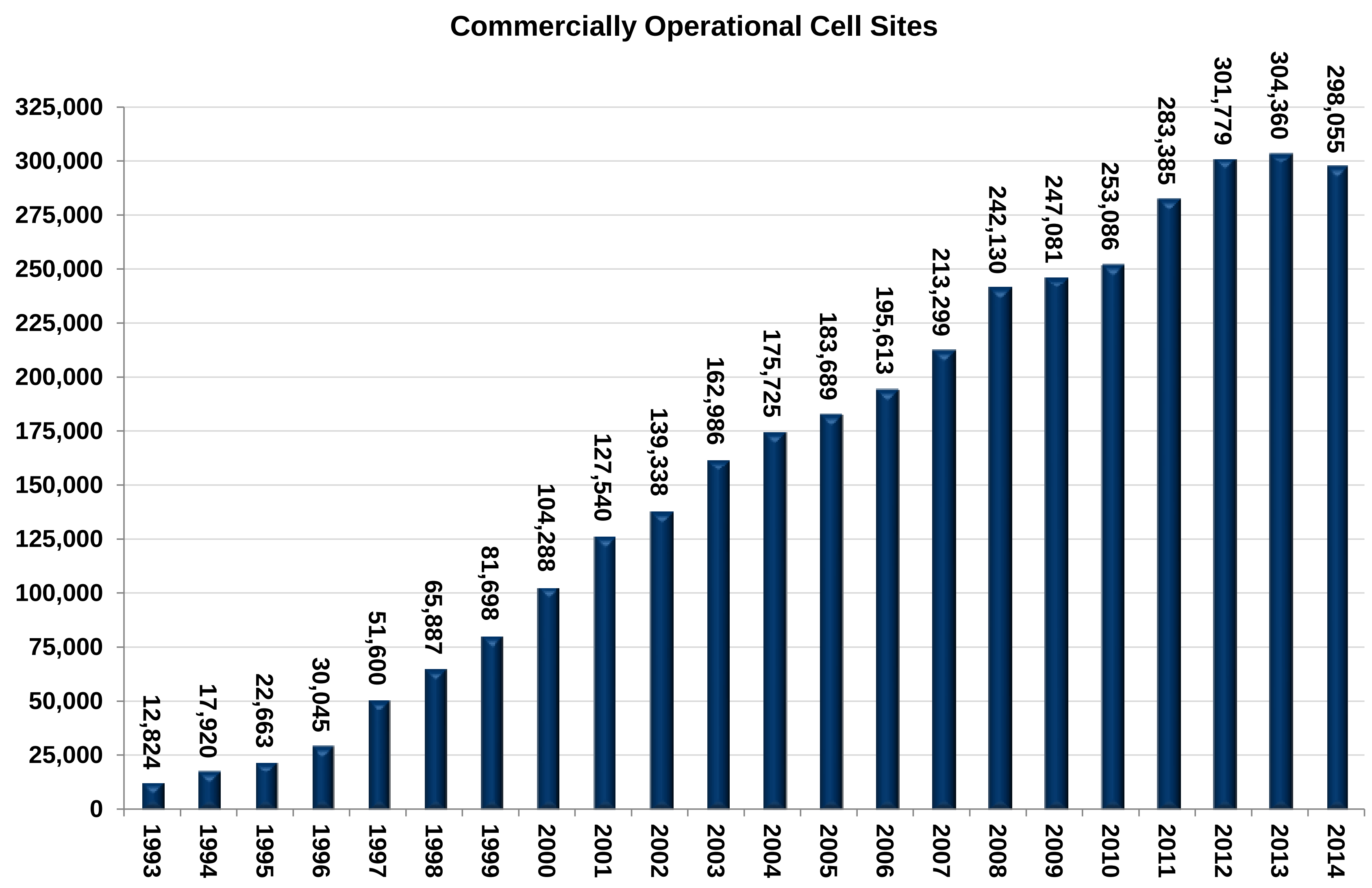
Source: CTIA

Monthly Service Average Revenue per Unit (ARPU)



Monthly Average Service Revenue per Unit Falls 4% Year-to-Year

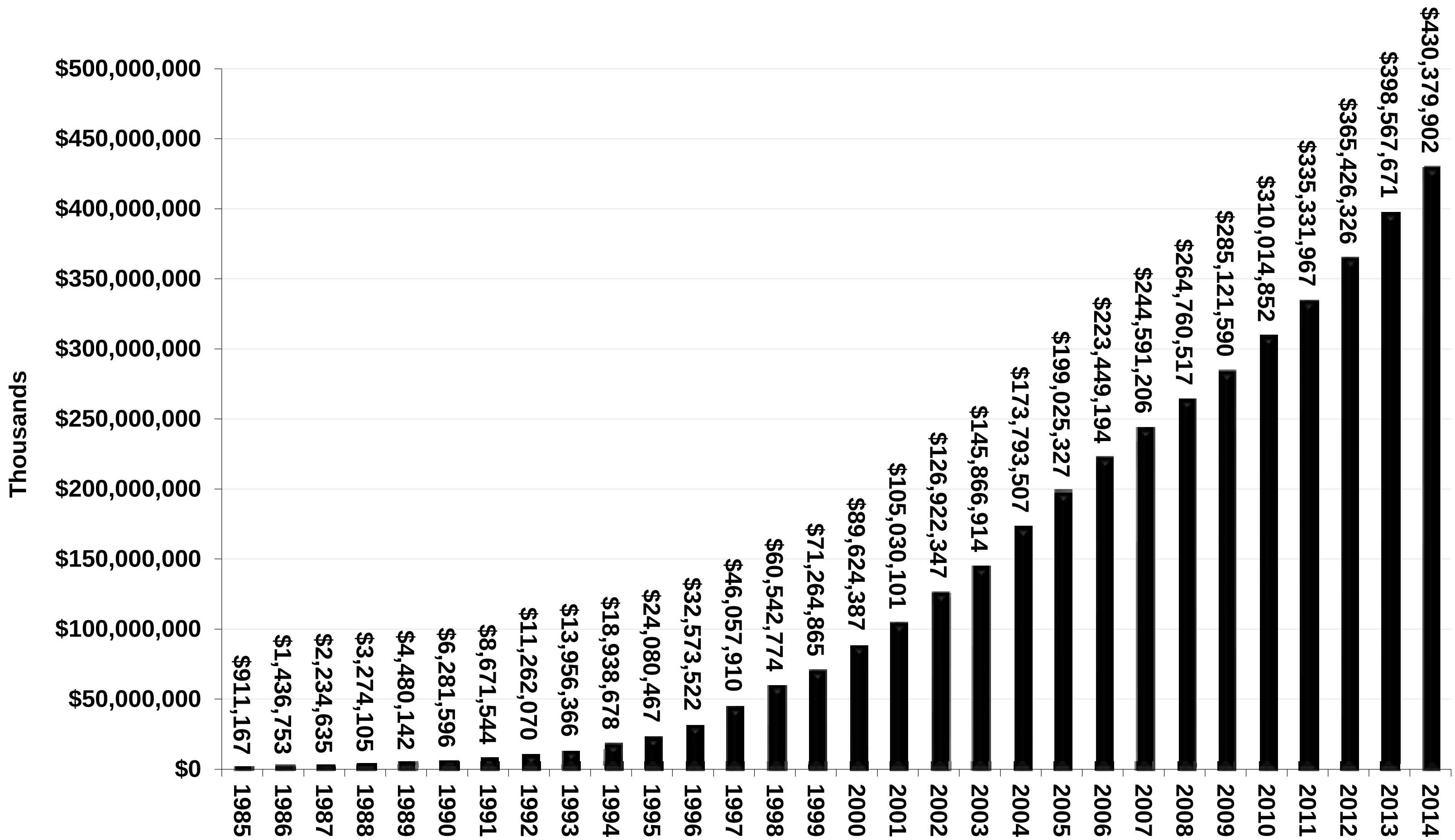
Source: CTIA



Cell Sites Fall 2% Year-to-Year as a Result of Consolidation and Retirement of Older Technologies

Source: CTIA

Reported Cumulative Capital Investment Exceeds $430 Billion



Reported Cumulative Capex Rises 8% Year-Over-Year, Incremental Capex Totals More Than $32 billion in 2014

Source: CTIA