CTIA’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 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, 2018, installment of the survey, CTIA aggregated data from companies serving 97.9 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 subscriptionship. 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 are available for purchase in the comprehensive report, *CTIA’s Wireless Industry Indices: 1985 – 2018*, 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. Two year subscriptions are available at a member price of $1,445 and non-member price of $1,825.

To order this report contact research@ctia.org or order online at store.ctia.org
Cumulative Capital Investment Exceeded **$542 Billion** at Year-end 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Estimated Total Subscriber Connections</th>
<th>Annual Services Revenues (000s)</th>
<th>Cumulative CapEx (000s)</th>
<th>Cell Sites</th>
<th>Direct Carrier Employees</th>
<th>Monthly Average Revenue Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>128,374,512</td>
<td>$65,316,235</td>
<td>$105,030,101</td>
<td>127,540</td>
<td>203,580</td>
<td>$49.79</td>
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<td>2002</td>
<td>140,766,842</td>
<td>$76,508,186</td>
<td>$126,922,347</td>
<td>139,338</td>
<td>192,410</td>
<td>$51.00</td>
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<tr>
<td>2003</td>
<td>158,721,981</td>
<td>$87,624,093</td>
<td>$145,866,914</td>
<td>162,986</td>
<td>205,629</td>
<td>$51.55</td>
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<td>2004</td>
<td>182,140,362</td>
<td>$102,121,210</td>
<td>$173,793,507</td>
<td>175,725</td>
<td>226,016</td>
<td>$52.54</td>
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<td>2005</td>
<td>207,896,198</td>
<td>$113,538,220</td>
<td>$199,025,327</td>
<td>183,689</td>
<td>233,067</td>
<td>$50.65</td>
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<td>2006</td>
<td>233,040,781</td>
<td>$125,456,825</td>
<td>$223,158,248</td>
<td>195,613</td>
<td>253,893</td>
<td>$49.07</td>
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<td>2007</td>
<td>255,395,599</td>
<td>$138,869,304</td>
<td>$244,591,206</td>
<td>213,299</td>
<td>266,782</td>
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<td>2008</td>
<td>270,333,881</td>
<td>$148,084,170</td>
<td>$264,760,517</td>
<td>242,130</td>
<td>268,528</td>
<td>$48.87</td>
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<td>2009</td>
<td>285,646,191</td>
<td>$152,551,854</td>
<td>$285,121,591</td>
<td>247,081</td>
<td>249,247</td>
<td>$47.97</td>
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<td>2010</td>
<td>296,285,629</td>
<td>$159,929,649</td>
<td>$310,014,851</td>
<td>253,086</td>
<td>250,393</td>
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<tr>
<td>2011</td>
<td>315,963,848</td>
<td>$169,767,314</td>
<td>$335,331,967</td>
<td>283,385</td>
<td>238,071</td>
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<td>2013</td>
<td>335,652,171</td>
<td>$189,192,812</td>
<td>$398,567,671</td>
<td>304,360</td>
<td>230,409</td>
<td>$48.79</td>
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<td>2014</td>
<td>355,445,472</td>
<td>$187,848,447</td>
<td>$430,642,374</td>
<td>298,055</td>
<td>232,169</td>
<td>$46.64</td>
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<td>2015</td>
<td>377,921,241</td>
<td>$191,949,025</td>
<td>$462,605,007</td>
<td>307,626</td>
<td>235,818</td>
<td>$44.65</td>
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<tr>
<td>2016</td>
<td>395,881,497</td>
<td>$188,524,256</td>
<td>$488,996,535</td>
<td>308,334</td>
<td>216,537</td>
<td>$41.50</td>
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<tr>
<td>2017</td>
<td>400,205,829</td>
<td>$179,091,135</td>
<td>$514,625,256</td>
<td>323,448</td>
<td>207,324</td>
<td>$38.66</td>
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<td>2018</td>
<td>421,793,010</td>
<td>$182,779,484</td>
<td>$542,033,353</td>
<td>349,344</td>
<td>206,855</td>
<td>$37.85</td>
</tr>
</tbody>
</table>
Data-Only Devices (Millions)

Data-Only Devices Grew **173%** Since 2013

Reported Annual Wireless Data Traffic Grew **73** Times Since 2010, Up **7x** from 2014
Annual minutes, messages and megabytes of wireless traffic (Billions of MOUs/Messages/MB)

The Mix of Minutes, Messages and MBs Changes – Data Dominates

Estimated Wireless Subscriber Connections

Estimated Connections Equal 126.6% of U.S. Population
Smartphones in Active Use

Reported Smartphones Grew \textbf{5.7x} from 2009

Cell Sites in Service

A Record \textbf{349,344} Cells Sites Were in Operation in 2018, Representing \textbf{44\% Growth} Over the Last Decade