RESEARCH BULLETIN

IC Insights

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Internet of Things Boosts Embedded Systems Growth

IC sales for IoT will climb by a CAGR of 24% in the next five years, says new report.

Since 2006, there have been more embedded systems, industrial equipment, sensor devices, instruments, meters, cameras, animals, and other objects connected to the Internet than humans using computers, smartphones, and other electronics for information technology. Until recently, steady increases in Internet-connected things have been overshadowed by major market battles in smartphones and the emergence of tablet computers, but with growth rates easing in those end-use systems segments, the enormous potential of the Internet of Things (IoT) has become the hottest topic in electronics and the IC industry.

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More than a half-dozen initiatives have been launched to create market standards for IoT and to put the Internet of Things on par with the Internet of Humans in terms of wide-scale availability, ease of connection, and compatibility across platforms in different industry sectors. Assuming that missing IoT standards are developed in the next several years, web-connected things are forecast to account for 85% of nearly 29.5 billion Internet connections worldwide by 2020, according to IC Insights' new 2015 edition of *IC Market Drivers—A Study of Emerging and Major End-Use Applications Fueling Demand for Integrated Circuits*. In 2010, about 74% of the 7.7 billion Internet connections were to things, based on market data in the new *IC Market Drivers* report.

IC Insights estimates that sales generated by the IoT portion of systems (meaning the functions for Internet communications and sensor subsystems) will total $48.3 billion in 2014 and grow 19% in 2015 to $57.7 billion. By 2018, the market value of IoT subsystems in equipment and Internet-connected things is projected to reach $103.6 billion worldwide, which represents a compound annual growth rate (CAGR) of 21.0% from $39.8 billion in 2013 (Figure 1). More importantly, IoT functionality designed into equipment and web-enabled objects will become a pivotal factor in the sale of nearly half of all end-use systems by the end of this decade as connections to the Internet of Things becomes more common and expected by consumers and businesses.

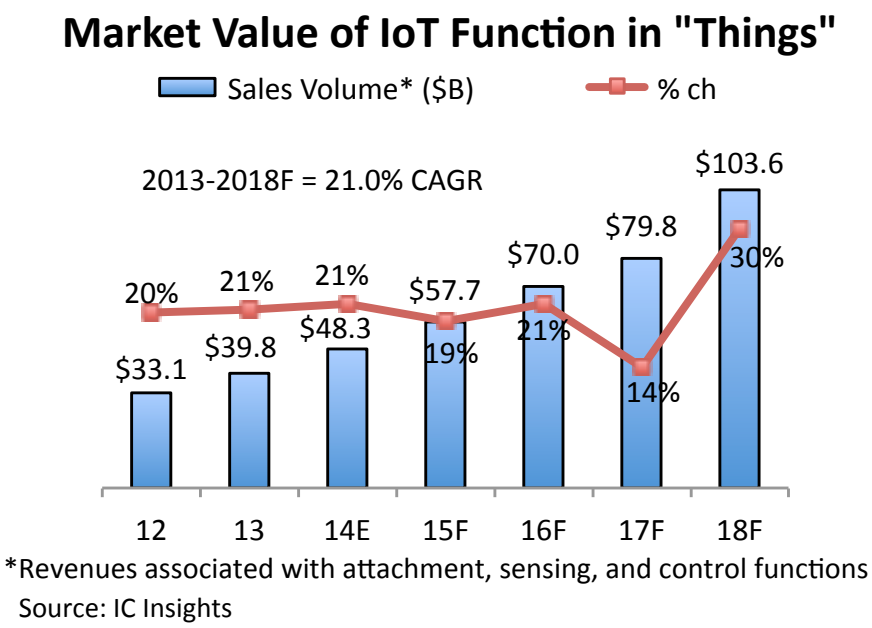

Figure 1

The new *IC Market Drivers* report shows IoT-related semiconductor sales growing 19% to $5.6 billion in 2015 and rising by a CAGR of 24.3% in the 2013-2018 period, reaching $11.5 billion in the final year of the forecast. About 65% of the projected 2018 IoT semiconductor revenues are expected to come from ICs and 35% from optical, sensors/actuators, and discretes (O-S-D). In 2013, about 71% of the $3.9 billion in IoT-related semiconductor sales were generated by ICs ($2.7 billion) vs. a little over 29% from O-S-D ($1.1 billion, most of which was for sensors).

According to the 2015 report, and seen in Figure 2, the largest IoT semiconductor market segment through the forecast period will continue to be connected cities (which includes "smart" electric grids, roads and streetlights, and other public infrastructure applications) with sales reaching $4.2 billion—a CAGR of 15.0% between 2013 and 2018. The second-largest semiconductor IoT category—the industrial Internet—will nearly catch up with the connected cities group, primarily due to high growth in factories, logistics, and medical systems applications. Semiconductor revenues for the connected homes category will push past the $1 billion mark in 2018 with a CAGR of 32.8% from just $275 million in 2013. Connected automotive systems—mainly in passenger cars—represent a high growth potential between 2013 and 2018 with annual semiconductor sales forecast to reach $1.5 billion worldwide, which represents a CAGR of 43.8% through 2018. Semiconductor sales for wearable systems that connect to the Internet are projected to climb by a CAGR of 46.9% to $528 million in 2018 from about $76 million in 2013.

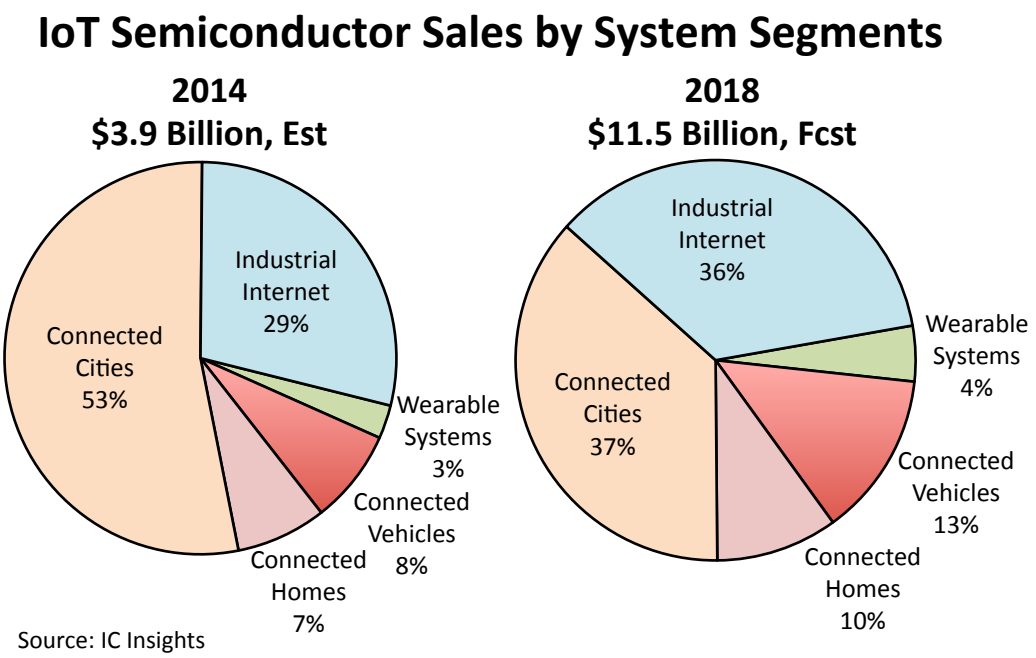

Figure 2

While IoT is expected to see strong growth in the next fives years, ICs used in connections to the Internet of Things represented only 1% of total integrated circuit sales in 2014. In 2018, IoT-related ICs are expected to account for about 3% of the total $348.1 billion IC market that year, according to the new report's forecast. Beyond embedded IoT subsystems in connected applications, the proliferation of the Internet of Things will expand the use of cloud computing and web servers as well as require upgrades to the overall Internet infrastructure in order to handle growing amounts of data coming from attached systems and things by 2020. The impact of IoT on servers and the Internet is also covered in the *IC Market Drivers 2015* report.

Report Details: *IC Market Drivers 2015*

IC Market Drivers 2015—A Study of Emerging and Major End-Use Applications Fueling Demand for Integrated Circuits examines the largest, existing system opportunities for ICs and evaluates the potential for new applications that are expected to help fuel the market for ICs.

Released in November 2014, *IC Market Drivers* is divided into two parts. Part 1 provides a detailed forecast of the IC industry by system type, by region, and by IC product type through 2018. In Part 2, *IC Market Drivers* examines and evaluates key existing and emerging end-use applications that will support and propel the IC industry through 2018. Some of these applications include the Internet of Things, automotive electronics, smartphones, personal/mobile computing (including tablets), wireless networks, digital imaging, and a review of many applications to watch—those that may potentially provide significant opportunity for IC suppliers later this decade. *IC Market Drivers 2015* is priced at $3,390 for an individual-user license and $6,490 for a multi-user corporate license.

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About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the semiconductor industry. Founded in 1997, IC Insights offers coverage of global economic trends, the semiconductor market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs.

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