RESEARCH BULLETIN

IC Insights

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Market Dynamics, Technology Hurdles Reduce DRAM Bit Volume Growth

DRAM bit volume forecast to increase 24% in 2015.

Information in this Research Bulletin comes from The McClean Report 2015, IC Insights' flagship market analysis and forecast report on the IC industry. Details are provided at the end of this bulletin.

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IC Insights' recently released 2015 edition of *The McClean Report* shows that DRAM bit volume grew by an average of 67% per year from 1995-2005. In the 10 years since then, however, bit volume growth has averaged 43% per year (Figure 1).

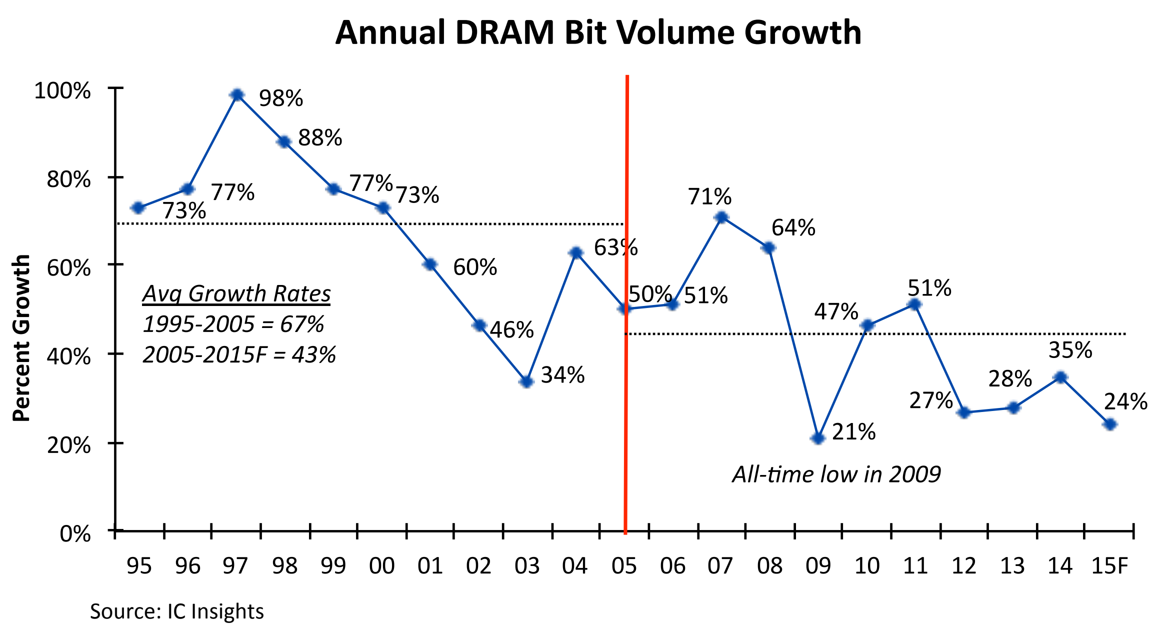

Figure 1

A worldwide economy mired in recession reduced bit volume growth to an all-time low of 21% in 2009—quite a contrast to the 1990s to 2000 when annual DRAM bit volume growth remained above 70%. With recovery from the recession in full swing in 2010 and DRAM suppliers transitioning to ≥1Gb DRAMs, bit volume increased 47% and another 51% in 2011. But with fewer shipments of desktop and notebook PCs (the primary application for DRAM) and no significant increase in the average DRAM memory content in these systems, fairly strong bit volume growth came to an end in 2012.

DRAM bit volume has rapidly migrated to mobile and server applications at the expense of PCs (desktops and notebooks), which have long been the largest application for DRAM bits. Bit volume for desktop/notebook computers shrank to less than 50% share in 2012 yet still remained the largest end-use application. In 2014, mobile applications became the largest end-use application for DRAM bits.

Main system memory in PCs has been trending downward for several years and, in 2014, grew by its smallest percentage since the 1990s. This low growth rate was partially due to changing dynamics within the computer market and the fact that new versions of Microsoft Windows operating systems do not require more system memory, as was the case in the previous two decades. By 2016, IC Insights forecasts that portable personal computing systems (i.e., tablet PCs) will surpass shipments of desktop and notebook PCs, which are often sold with 6GB or more of DRAM today.

IC Insights estimates that it now takes the sale of 2.8 tablets to roughly equal the IC revenues generated from the sale of one notebook PC. Consequently, high unit growth in tablets and the slowdown in notebook PC shipments present a major challenge for major IC suppliers—particularly DRAM manufacturers—and the prospect for long-term DRAM bit volume growth.

Report Details: *The 2015 McClean Report*

Additional details on the DRAM market and other top product segments within the IC industry are provided in *The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry* (released in January 2015), which features more than 400 tables and graphs in the main report alone. A subscription to *The McClean Report* includes **free** monthly updates from March through November (including a 250+ page *Mid-Year Update*), and **free** access to subscriber-only webinars throughout the year. An individual-user license to the 2015 edition of *The McClean Report* is priced at $3,590 and includes an Internet access password. A multi-user worldwide corporate license is available for $6,590.

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