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Smartphones, Tablet PCs, SSDs Propelling NAND Flash Sales in 2013

Content, connectivity, and mobility characterize end-use applications of NAND flash.

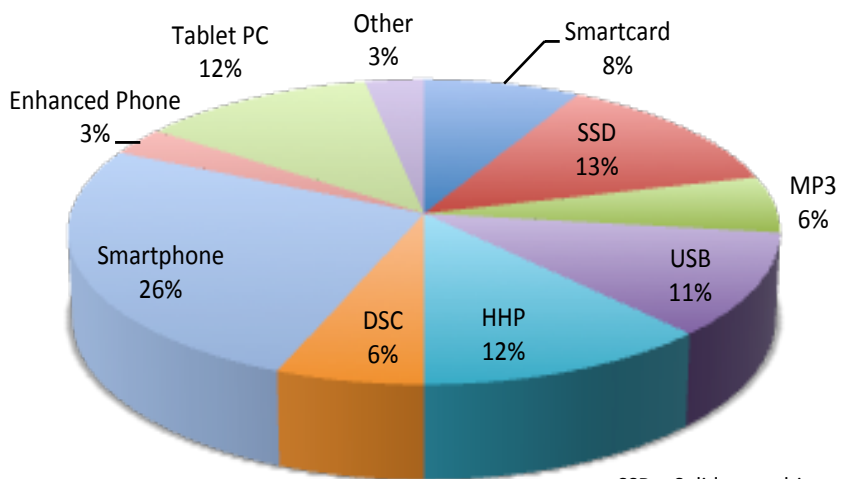
Increasing HD video content, social networking, shared data via the cloud, low power consumption, and "instant on" features continue to drive growth of consumer, communication, and computing devices that use NAND flash memory. While applications are many, smartphones, tablet computers, and solid-state drives (SSDs) are forecast to be among the biggest users of NAND flash memory in 2013 (see figure).

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Smartphones are forecast to account for 26% of the \$30.0 billion NAND flash memory market in 2013. (The NAND flash market is forecast to grow 12% in 2013 from \$26.8 billion in 2012). According to data from IC Insights' *2013 IC Market Drivers* report, approximately 56% of total cellphone shipments in 2013 (975 million of 1,745 total shipments) are forecast to be smartphones, up from 750 million or 42% in 2012 and 30% in 2011. This is significant because smartphones contain as much as 9x more NAND flash than a basic or enhanced cellphone.

2013F NAND Market by Application (\$30.0B)



Source: IC Insights

SSD = Solid-state drive
HHP = Handheld Player
DSC = Digital Still Camera

Another high-volume application for flash memory in 2013 is solid-state drives, which are built with high-density NAND flash chips and feature standard mass-storage interfaces that are found on hard-disk drives. SSDs are forecast to account for 13% of NAND flash memory sales this year.

SSDs are built in form-factor sizes that are identical to hard-disk drives (such as 1.8- and 2.5-inch modules) so they can be easily plugged into existing PC and notebook designs. In recent years, SSD-storage capacity has quadrupled annually, and now it appears that solid-state drives are becoming serious challengers to conventional hard-disk storage in portable computers. Recently, SSD-storage solutions have gained favor in large server computers, which stand to benefit from the faster read/write speeds of flash-memory-built drives as well as reduced power consumption. Notebook PCs, installed car navigation systems, industrial equipment, and digital video recorders (DVRs) are a few additional applications that are being targeted for SSDs.

Tablet PCs and HHP devices—handheld players such as music/video players and handheld game systems—are expected to be significant consumers of NAND flash in 2013 as well. Tablet PCs are the fastest growing segment of the PC market and represent one of the fastest-growing consumer devices of all time. Shipments of tablet PC devices like the iPad grew to 117 million units in 2012, almost double the 65 million shipped in 2011. Tablet PC shipments are forecast to reach 167 million units in 2013. Leading tablet PCs typically feature 16GB of NAND flash as a starting point.

Report Details: *IC Market Drivers 2013*

IC Market Drivers 2013—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.

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 2016. In Part 2, the *IC Market Drivers* report examines and evaluates key existing and emerging end-use applications that will support and propel the IC industry through 2016. Some of these applications include the automotive market, cellular phones (including smartphones), personal/mobile computing (including tablets and Ultrabooks), 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. The *2013 IC Market Drivers* report is priced at \$3,190 for an individual-user license and \$6,290 for a multi-user corporate license.

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