

<http://www.news.com/>

Small gadgets to spark flash memory surge

By Michael Singer

http://news.com.com/Small+gadgets+to+spark+flash+memory+surge/2100-1041_3-5965603.html

Story last modified Mon Nov 21 16:00:00 PST 2005

Soaring demand for consumer gadgets like the iPod and digital cameras has pushed Intel and Micron Technology into an unlikely partnership to produce the flash memory that makes storing lots of data in a small space possible.

On Monday, the tech duo announced a \$5.2 billion joint venture that will produce NAND flash memory for Apple Computer. Apple's Nano and Shuffle iPods both rely on NAND flash memory. It's also widely used in cell phones and USB (universal serial bus) flash drives.

"Already the NAND Flash in USB drives has displaced floppy disk drives in PCs for transferring data, especially as density in NAND flash devices increases," said Jim Handy, an analyst at Semico Research.

"Higher density and higher capacity components will mean cheaper and more available NAND in the long run."

--Alan Niebel, analyst, Web-Foot Research
Camcorders, which use various storage formats such as magnetic tape and mini-DVDs to store video, also are expected to migrate to NAND flash, Handy said. Already, a handful of manufacturers are making the transition. Panasonic, with its SDR-S100, which stores data on SD cards, is the latest to make such a move.

NAND flash memory is becoming so popular that it's already outpaced its cousin NOR flash memory in manufacturing sales circles. NAND sales in 2005 are expected to top \$10.2 billion this year, according to Semico. NOR flash is expected to pull in \$7.6 billion in the same time frame, Semico said.

NOR flash memory is used for code storage in applications, most notably for cell phones and networking equipment.

The Semiconductor Industry Association, which follows sales trends, recently predicted that sales of NAND flash memory will grow 15.9 percent to \$21 billion in 2006. That number is expected to rise to an estimated \$35 billion in 2009, according to Semico. The entire market for NAND and NOR flash memory is expected to blossom into a \$47 billion market in 2009.

Currently, NAND flash sells for about \$45 per gigabyte, except that from Samsung, which has a contract to sell its NAND flash to Apple at about \$35 per gigabyte. The pricing discrepancy set off an investigation by the Korean government after officials became concerned that Samsung was selling its products at a lower price to a non-Korean company.

Increased NAND manufacturing, especially with the addition of Intel to the NAND flash market, should help drive down the price of consumer electronics devices, said Alan Niebel, an analyst at Web-Foot Research.

"Higher density and higher capacity components will mean cheaper and more available NAND in the long run, at very good prices," Niebel said, noting that Samsung has already developed a 16-gigabit NAND flash device and plans to launch it in 2006. Companies such as Toshiba, Hitachi and Micron have 8-gigabit NAND flash products on the market. (Eight gigabits make up one gigabyte of capacity.)

Beyond Apple, other consumer electronics manufacturers that use NAND flash, such as Sony, SanDisk and Lexar Media, are expected to consume any potential oversupply in high-density Flash now that Intel is joining the fray, Niebel said.

"We're playing with an unknown demand next year and possibly causing a price war with those consumers who are buying cameras, cell phones and MP3 players," Niebel said. "As Intel begins to realize that these partnerships with Apple and others are integrated in the delivery of digital content, the greater success they will have in building their NAND business."

However, all that demand has created a supply problem for computer electronics manufacturers.

"Right now we have a shortage of NAND on the market, and that will carry over to early 2006. We're expecting the rest of the market to be very competitive in their pricing structure to deal with this new joint venture," Niebel said.

NAND availability has been reduced since Apple debuted its flash-based iPod Nano in September and entered a deal to buy as much as 40 percent of Samsung's NAND output in the second half of 2005. Apple's share of global NAND sales in 2006 could reach as high as 25 percent, according to component research firm iSuppli.

Previous Next "This deal is particularly positive for small and midsize NAND buyers, which are finding it extremely difficult to source sufficient quantities of NAND chips at this time," iSuppli said in a newsletter Monday.

Building NAND flash memory marks a change for Intel, which previously made only NOR flash memory and DRAM--Dynamic random access memory. The joint venture will also help Intel with its Multilevel Cell technology, which boosts flash memory density.

As for Micron, the company gains the capital investment needed to increase its NAND market share, a strategy in line with its effort to diversify from its core DRAM business.

Intel and Micron executives said they're confident they can produce more than enough NAND flash because they will use and expand plants in Boise, Idaho; Manassas, Va.; and Lehi, Utah.

"We've been competing with Samsung in the memory space for years. Supply issues are not expected to be a problem," said Micron Chief Executive Steve Appleton.

Micron, which sold \$70 million dollars worth of NAND last quarter, said its first collaborative products with Intel should be available in early 2006.

"Overall, it is very positive for Intel, Micron and Apple because of (Intel's capacity to) bring multilevel cell technologies to NAND memory, Niebel said.

Copyright ©1995-2005 CNET Networks, Inc. All rights reserved.