

Glut Is Expected in NAND Market

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HONG KONG -- Chip makers are hopeful that a computer operating system that [Microsoft](#) Corp. plans to launch next year will lead to wider use of NAND flash-memory chips in personal computers, but the system is unlikely to be a strong enough catalyst to prop up prices in the seasonally weak first half.

Prices of NAND flash-memory chips, used in music players and digital cameras, have been rising in recent weeks on expectations that new applications by big consumer-electronics makers will soak up excess supply in the market. Many analysts say the increase isn't sustainable.

As companies such as Samsung Electronics Co. and Hynix Semiconductor Inc. of South Korea and [Toshiba](#) Corp. of Japan boost capacity in their quest to gain more share of the NAND flash-memory market, many analysts are concerned about a potential glut in the first half of 2007, even though they remain upbeat about the rest of this year.

"Every chip maker is being aggressive in their capacity expansion plans," said Chang-Eyun Yu, an analyst at BNP Paribas in Seoul. "Unless there is a new killer application which could potentially absorb all the supply, seasonal downturn in the first half of 2007 is somewhat inevitable."

Flash-memory chips differ from dynamic random-access memory, or DRAM, chips, for their ability to store data even when power is off. DRAM chips are most widely used in PCs, while NAND flash-memory chips typically have been used in such devices as MP3 players and digital cameras.

Expectations

Average price for NAND flash-memory chips, in dollars

	AUG. 14	AUG. 28	SEPT. 13	SEPT. 28
8 Gb	\$12.41	\$12.10	\$14.68	\$16.40
4 Gb	7.34	7.17	7.79	8.03
2 Gb	4.73	4.66	4.94	5.21
1 Gb	2.91	2.74	2.80	2.82

Note: Gb denotes memory size in gigabytes
Source: DRAMeXchange

Microsoft plans to offer new features called Windows ReadyBoost and Windows ReadyDrive in its Vista PC operating system -- slated to launch in January -- that depend on flash-memory chips. The U.S. software maker said Windows ReadyBoost helps make PCs more responsive by using flash-memory devices such as USB thumb drives. ReadyDrive takes advantage of new hybrid hard disks -- hard disks with integrated flash memory -- to help improve battery life as well as performance.

"It will be meaningful in that 2007 will be the first year for NAND chips in PC platforms. However, NAND demand for PCs will still represent a very limited portion -- about 1% - - in overall NAND demand," said Nam Hyung Kim, an analyst at U.S. market research firm iSuppli.

Mr. Nam forecasts an oversupply of NAND flash-memory chips in the first half of 2007, noting that weak seasonal demand will lead to price declines.

Joseph Unsworth, an analyst at market-research firm Gartner Inc., said the impact of Vista will be small, especially in the first half of 2007. "Most companies and even consumers are going to wait for its release and not immediately adopt the new operating system until it is reviewed and validated," he said.

Expectations that [Apple Computer](#) Inc.'s new line of iPod music players will boost demand for NAND flash-memory chips have lifted both spot and contract prices for NAND chips in recent weeks. The California company revamped its popular line of iPod digital-media players in September to include a new iPod nano, with eight gigabytes of storage using NAND flash-memory chips.

"Apple's new products are not significant enough to drive that kind of growth that suppliers had hoped for," said Jim Handy, director of nonvolatile memory at U.S. market-research firm Semico Research Corp. "NAND makers were looking for a NAND-based iPod video, and that has not been announced."

Monday, Merrill Lynch downgraded its recommendation on U.S. flash-memory card maker [SanDisk](#) Corp. to neutral from buy. "We struggle to see how the market can absorb all the new supply over the next six to nine months," Merrill wrote in a note to clients.

That move came after Citigroup cut its recommendation on Hynix to hold from buy because of growing concerns about the supply glut. Citigroup also has cut its recommendation on Samsung, the world's largest memory-chip maker, to hold from buy.