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Analysts: Apple to Use More NAND Flash Memory

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By Scott Ferguson

Apple will likely introduce more NAND flash memory in several of its future products, including a sub-notebook that should hit the market by the second half of this year, according to a March 7 report by American Technology Research.

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The report, which was written by analyst Shaw Wu, looked at Apple's supply chain and concluded that the company would use NAND flash memory as the primary source of [storage](#) when it unveils the new sub-notebook.

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While Apple has not commented on the reports that it is developing a sub-notebook, the Web site [Apple Insider](#) wrote on Feb. 16 that the new product is being developed now and is ahead of schedule.

In his report, Wu writes that Apple will launch the notebook by the second half of this year to help capitalize on the recent growth of its Macintosh desktops and notebooks.

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"Our sources indicate that [Apple] would like to introduce the product in [the second half of 2007] to further capitalize on its strong MacBook growth, but timing will be dependent on NAND vendors' ability to drive down pricing further, making it economically attractive for [Apple]," Wu wrote.

Wu writes that HDD (hard disk drive) storage remains much more affordable than NAND flash memory, although prices have dropped in recent months. Right now, Wu writes that 1GB of NAND storage costs about \$5, which makes 32GB of NAND flash memory about \$160. By comparison, 32GB of HDD storage costs about \$22.

This means that NAND storage will likely only be offered in high-end, ultraportable [laptops](#) through the rest of 2007.

Later, Apple will likely switch its video iPod music players to NAND flash memory, but this will not happen until later this year or early 2008. Wu writes that newer video iPods will not hit the market until after Apple brings the iPhone to market in June.

"In addition, we are picking up that a widescreen vPod won't likely ship until after iPhone ships in the June timeframe to not take away from iPhone's launch," Wu wrote.

"In the meantime, we anticipate the current vPod to see storage capacity increases (there are currently 30GB and 80GB models)."

When the new sub-notebook does hit the market, Wu suspects that Apple will use the same "mini" version of the Mac OS X found in the iPhone.

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In another American Technology Report, analyst Doug Freedman wrote on March 7 that Apple's adoption of NAND flash memory will help SanDisk, which has found itself struggling lately. According to Reuters, the company plans on trimming executive salaries, cutting some of its work force and reducing prices in order to maintain market share.

The good news is that Apple's adoption of NAND could help stop drops in the average selling price of flash memory.

"SanDisk is not a supplier of NAND to Apple (competitors in the MP3 market), but any new products from Apple will likely ease the current oversupply of NAND in the market, helping to put an end to recent rapid ASP erosion," Freedman wrote.

Since it controls its own operating system, Apple has an advantage over its competitors to be the first vendor to introduce the widespread adoption of SSDs (solid state drives) and other NAND-based products.

However, it may take until 2008 for software to catch up with this adoption and other vendors may wait for better price points, Freedman wrote.

"Apple has not made any official product announcements; however, we believe core-technology investors are already anticipating that Apple will move aggressively towards higher density NAND products as the cost curve improves and parity with other storage mediums moves nearer, potentially mitigating some of the impact to share prices upon official announcements," Freedman wrote.

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