



Microsoft's "Longhorn" Operating System: Sure Hit or Longshot?

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When Microsoft chairman Bill Gates touts his company's next Windows operating system, code named "Longhorn," he can barely contain his enthusiasm, adding "it will be super to get that out in the hands of our customers." The big question is whether customers will share Gates' enthusiasm more than a year from now.



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Speaking at the Windows Hardware Engineering Conference in Seattle on April 25, Gates gave a preview of Longhorn, to be released in late 2006. The preview, demonstrated in a keynote speech by Gates and other executives, showed off security enhancements, a computer "flight data recorder" that can diagnose the reasons for crashes, "rich indexing" that will allow easy searches and previews of the contents of a hard drive, and visual effects such as transparent file folders. "You have to go back, certainly, to Windows 95 to see something where we did a broad set of things that really enabled more types of applications," Gates said at the preview.

While enabling the next generation is one thing, getting corporate customers and consumers on the Longhorn bandwagon may take some doing, say professors at Wharton. Is enhanced security going to spark the upgrades to grow Microsoft's revenue? Will consumers be lured by visual effects? Is Longhorn enough to touch off a buying frenzy for related technology such as semiconductors, personal computers and networking equipment?

"It's tough because Microsoft has to play to two markets -- the consumer and the corporate enterprise," says Wharton legal studies professor [Kevin Werbach](#). "Microsoft has to balance new features with the calculated decisions of corporations." Another challenge is inertia. "Yes, Longhorn is a big deal for the technology industry, but it is hard to get excited about," Werbach adds, especially when Longhorn won't be completed until late next year. On the bright side, Gates has plenty of time to build up anticipation for Longhorn. A "beta," or test version, will be released in the summer of 2005.

To be sure, a new operating system from Microsoft isn't the big event it was when the company launched Windows 95 and people lined up around the block to get an early copy of the software. It's unlikely those lines will form for Longhorn. "People will hold back," predicts Wharton legal studies professor [Dan Hunter](#). "The challenge for Microsoft is to make a profound difference [compared to its predecessors] and do enough cool stuff to move product."

But Microsoft can still have a big impact on technology sales. According to a Merrill Lynch survey, 48% of chief information officers say Longhorn will likely lead them to upgrade personal computers too -- a trend that should help companies such as Hewlett-Packard and Dell Computer.

Meanwhile, new software applications need to be built for the operating system. Add in the fact that more memory is likely to be required and Longhorn could usher in a number of technology upgrades that benefit a wide range of suppliers. Merrill Lynch analyst Steven Milunovich speculated that Longhorn may require a gigabyte of memory and could tax older semiconductors from Intel and Advanced Micro Devices. Put it all together and Milunovich surmises that "the PC market could be ready for an upturn by mid-2007."

According to Wharton operations and information management professor [Eric Clemons](#), whether the

computer industry gets a large boost from Longhorn remains to be seen. A lot will depend on Microsoft's ability to end ongoing security problems and convince its customers that an upgrade is worth the trouble. "If security issues provide sufficient motivation and Microsoft has really made enhancements, then that could lead to rapid adoption," says Clemons. But "if most users feel that they can read their e-mail, process their word documents, and run their spreadsheets with adequate speed, and if Microsoft does a substandard job with protecting security, then migration will be very slow indeed."

"Security Isn't Sexy"

In the early going, some experts predict, Microsoft won't see a rush to upgrade to Longhorn. "An operating system upgrade is not a trivial act for consumers or businesses," says Kendall Whitehouse, senior director of information technology at Wharton. According to Whitehouse, Microsoft's corporate customers will weigh security enhancements and compatibility with existing applications against the cost of upgrading to Longhorn and most likely the PCs it will run on. "On the corporate side there has to be some kind of return," says Whitehouse. "But if there is better security, that's a big selling point when you have to manage thousands of PCs."

On the consumer side, Longhorn's features -- translucent boxes, integration with home entertainment and the ability to find any file easily on a hard drive -- will carry the day. However, many users probably won't try Longhorn until they buy a new PC. "I would bet a lot of people just wait," says Whitehouse. "It's easier." Another issue will be Microsoft's sales pitch for Longhorn, which largely rests on enhanced security. "Let's face it," adds Hunter. "Security isn't sexy."

Meanwhile, recent history indicates that upgrade cycles have become increasingly gradual. Windows XP, Microsoft's latest operating system, was launched in 2001. "The upgrade cycle is slowing, and the product cycle is also getting slower," says Werbach. That fact translates into a lot of customers taking their time when it comes to installing a new Microsoft product. It's customary to wait for Microsoft to release an incremental update to a new operating system -- mainly to fix initial flaws -- before upgrading. "The rule with Microsoft is that you always wait for that next release," Werbach notes.

The Power of Search

According to [Thomas Y. Lee](#), a professor in Wharton's department of operations and information management, one factor that could drive sales of Longhorn is search, a tool that is understated. Gates has said that search will be a critical component of Longhorn. Depending on how well Microsoft integrates searching capability, Lee estimates that Longhorn could change the way people interact with their computers.

"Search is what makes computers more accessible to the layman," says Lee. "The problem right now with the directory system and file folders is that it's painful to find things. Most users are not skilled at maintaining folders. Search allows you to build organization structures and find three or four paths to information." With better search capabilities embedded in Longhorn, computer users can organize and find files based on their preference. Want to find all documents related to Wharton? A search can organize those documents.

Whitehouse says the ability to locate and organize files is becoming an increasingly critical aspect of operating systems. Why? Disk space on your hard drive is plentiful and it's easy to save nearly every document you create. The issue is finding and organizing those documents, which range from photos to video to text documents to PowerPoint presentations. "There's always a question of whether Microsoft customers really need to upgrade" says Lee. "If Longhorn is search-enabled, I think people will be willing to."

According to Hunter, good search fundamentally changes the way you organize files. He cites Google's Gmail web email program as an example. Gmail contains no folders to keep email messages because you

use search to find items. "I just keep everything because I know I can find it," says Hunter. "It's a radical transformation."

At the preview, Gates said Longhorn will make search a part of the operating system and ideally make it "easy and natural to organize things." But the big question is whether Longhorn's data organization capabilities will be too little, too late. After all, Google has free software that can search Windows files and the content inside them. Meanwhile, Apple Computer's "Tiger" operating system, released on April 29, contains a feature called "Spotlight," which can search every piece of data on an Apple and organize content in "Smart Folders" that update themselves based on search criteria you set.

Given the head start of Apple's operating system and Google's desktop search, Microsoft has to embed search to remain competitive. "Microsoft has always been good at identifying the demands of the marketplace," says Lee. "But you could argue that enabling smart search in Longhorn is defensive."

Werbach says Microsoft is somewhat hamstrung when it comes to keeping up with rivals such as Apple. Indeed, Microsoft has to keep its new operating system compatible with its older software because of its large base of customers, he notes. On the other hand, Apple chose to build its latest generation of operating system, known as OS X, from scratch. Reverse compatibility with older applications is provided by running two operating systems on an Apple. "Apple threw out the old stuff and started over," says Werbach. "Microsoft can't do that. It has to create something new while keeping some of the old. Aside from the Apollo mission to the moon, Microsoft is facing the greatest software engineering feat in history."

Preventing Brain Drain

While being defensive may preserve Microsoft's ability to milk cash from its operating system, Longhorn has to show that the software giant can be innovative, suggests Werbach. "Longhorn is financially important to Microsoft and the growth of the industry, but it's also important to maintain Microsoft's position as an innovative company. The consensus is that Apple has lapped Microsoft many times on innovation."

Why be innovative? Werbach says that, in the short run, being innovative doesn't matter much. Over several years, however, a failure to innovate translates into a brain drain. The best and brightest programmers and developers want to work for the most innovative companies like Google. If Microsoft isn't viewed as innovative it loses out on talent, which may focus on rival products such as Linux.

"Psychologically, Longhorn is very important," says Werbach. "If it succeeds, Microsoft continues to grow and attract the best talent. If Longhorn only maintains Microsoft's past glory, it may affect the company over the next five years."

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