



## Why Is Microsoft Afraid of Google?

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In the few short years of its existence, Google has come a long way, simultaneously striking fear in the hearts of major players in the computer industry and also arousing their curiosity.

Its search engine is so ubiquitous that "to Google" somebody or something is now part of the lexicon of hard-core knowledge workers and casual web users alike. Google also has become a gateway to the Internet and taken steps to develop desktop applications, such as Google Toolbar and Google Desktop, not to mention other products like Gmail and Google Earth. The company's initial public offering was a big success and its stock has risen ever since. What, everyone wonders, will Google be up to next?



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While Google, of Mountain View, Calif., is keeping all competitors on their toes, it poses a special threat to one particular company -- Microsoft. Why? Because Google's existing and potential products -- as well as those of other firms -- raise the specter that the behemoth of Redmond, Wash., may witness the erosion of its control over the platform for the next generation of software application development, according to Wharton faculty members who follow the technology sector.

"What Google wants to do is strategically decrease people's reliance on Microsoft. It's as simple as that," says Wharton management professor [Raphael Amit](#).

But being a threat -- even a formidable threat -- is one thing. Actually beating Microsoft would be a different accomplishment altogether, the Wharton experts agree, and only time will tell how this David-and-Goliath-style rivalry will fully shake out.

Microsoft's concern over Google has been evident recently on several fronts. Microsoft recently announced a major reorganization designed to streamline the company's huge bureaucracy and make the firm more nimble -- a move that the Wharton scholars say was in direct response to fear of continued inroads made by competitors, especially Google, on Microsoft's turf. Microsoft has also suffered the embarrassment of watching key employees defect to Google. Most recently, on Oct. 4, Sun Microsystems and Google announced a partnership to distribute each other's software, a deal that is viewed as another assault on Microsoft. Among other things, the Google Toolbar for web browsers will be a standard component of the software that computer users receive when they download Sun's Java software.

But the central challenge to Microsoft goes beyond corporate reorganizations, defecting employees or the popularity of Google's search engine as a gateway to the web, according to Kendall Whitehouse, senior director of information technology at Wharton. Microsoft's success has been due in large part to its realization two decades ago that control of the operating system on personal computers would give it a great amount of leverage over PCs, he says. Most companies in the 1980s saw the operating system as a pure commodity product, but Microsoft understood that it held the keys to the kingdom.

"It's because of the dominance of the Windows operating system that Microsoft has been able to become so strong," Whitehouse notes. "The dominance of Windows means that if you're a developer of a major software application, you need to deliver a product for Windows. This means software developers must

use the programming capabilities provided by Windows -- its application programming interface, or API."

But many in the computer business have long believed that the core platform could be moved to a higher level, that technology gurus could establish a web-based platform that runs in the browser and is written in the language of the browser rather than the language of the operating system.

"This was the dream of Marc Andreessen [co-founder of browser company Netscape Communications] and others back in the mid-1990s when Andreessen boasted that the web would reduce computer operating systems to nothing more than 'a poorly debugged set of device drivers,'" Whitehouse recalls. "And this is why Microsoft responded so aggressively to the threat of Netscape after [Microsoft Chairman] Bill Gates issued his famous memo warning of an Internet 'tidal wave' that threatened Windows. Netscape didn't succeed. Microsoft managed to thwart Netscape's attempt to establish a new platform on the web."

How, specifically, do innovations at Google threaten Microsoft? Whitehouse points, for example, to Google Maps. The API of Google Maps lets developers embed Google Maps in their own web pages using JavaScript. A visit to <http://www.googlemapsmania.blogspot.com/> -- which bills itself as an unofficial Google Maps blog tracking the websites, ideas and tools being influenced by Google Maps -- shows a long list of applications built using Google Maps as the underlying engine.

Google is not the only company offering products and services that run on a web platform. Feeling the heat, Microsoft has already announced products to compete with those of Adobe (developer of the PDF document format) and Macromedia (developer of Flash and ShockWave software for video and animation), which announced a merger earlier this year. "To the extent that PDF and the Flash SWF file format could be an emerging platform for web application development," Whitehouse notes, "Microsoft has to be worried."

### **A Commodity Product?**

It is important to note, Whitehouse adds, that "all the applications I have talked about are written in the web browser. They work equally well on Windows, Mac or Linux. Your computer still needs an operating system to run -- but it doesn't matter which one. The operating system may eventually become the commodity that people in the 1980s thought it would be, and that's bad news for Microsoft."

[Thomas Y. Lee](#), professor of operations and information management, sees Google's challenge to Microsoft in broader terms. "I don't know that I would say Google is a threat to the operating system, per se, but it is a threat to Microsoft's business model. Microsoft has software [such as Office] that they use to leverage the operating system."

Lee says Google benefits from two key strengths. The company gives free rein to talented people to innovate and it encourages program developers to use Google as the basis for products of their own. "Google has hired really, really smart people. Some of the smartest graduates coming out of the top computer science programs are going to Google. When you put that many smart people in one place, neat things happen. Google also has not been threatened by people working off their products. Look at all the product extensions that are tied to Google Maps."

[Balaji Padmanabhan](#), professor of operations and information management at Wharton, agrees with Whitehouse that "there is a move toward PCs that don't have a lot of software installed on them, where most applications can run off a network." Padmanabhan notes that Sun Microsystems and Oracle envisioned such a system, in which people using nothing more than a simple PC would wirelessly communicate with a central computer.

"But that idea never really took off, to a large extent because the network was not as large and as fast as it is today," says Padmanabhan. "Yet there are advantages to that concept -- less software to update for

users, for one thing, and that's exactly what Google would capitalize on. The second advantage is PC users get better security, since apps can be constantly updated on a server to fix errors and add patches. The big challenge is the reliability of the network. You don't want to get into a situation where users want to open a spreadsheet program but can't because the network isn't up right now. That is certainly an issue that will have to get resolved down the road."

Legal studies professor [Kevin Werbach](#) asserts that the competitive issues facing Microsoft go beyond Google. "At some level, any successful Internet and software company is a threat to Microsoft," he says. "Microsoft is in a uniquely dominant position in the computing ecosystem. Anything that attracts a significant amount of use or activity is potentially a threat to them. Microsoft is a threat to, in some ways, virtually everyone in the industry and likewise everyone is a threat to Microsoft."

Werbach says that Microsoft is in such a powerful position because the PC operating system is at the center of most users' experiences with computers. As the Internet becomes more of an essential part of the computing experience, if anything else from a network becomes a central link in the user's experience, that poses a challenge to Windows and software programs like Office, which has higher profit margins than Windows itself. "Google does not prevent people from using any particular operating system on a PC," he says, "but if the functionality that users engage with is driven through a Google experience rather than something controlled by Microsoft, that harms Microsoft."

### The Task Ahead

"The big challenge for Microsoft is the law of large numbers," Werbach notes. "It's harder and harder for the company, as it gets bigger, to keep growing as it historically did. The computer industry is a mature industry. In the developed world, virtually everyone has a computer. So Microsoft, to continue growing, needs to find new ways to expand its market, which is why they want to get into games, wireless and business-software markets. In these areas they're generating substantial losses. To the extent that Google becomes a dominant player in the Internet market, it blocks an opportunity for Microsoft to expand."

But Microsoft did not achieve the position it enjoys today by rolling over in the face of adversity. Microsoft executives "aren't sitting on their laurels; they see the threat," according to Lee. "They see a future revenue stream in web advertising and desktop search functions and in better knowing the consumer. So they are organizing their own formidable brainpower to attack the competition. And there are plenty of people who like Microsoft and its products just fine."

"If you ask me why I didn't buy Google shares at the IPO, I'd say Google at the time had one product -- its search engine," says Amit. "As it expands its base, it might harm Microsoft. But Microsoft has a much broader product line. It's sitting on 90% of all computers around the world and Google has a long way to catch up."

Marketing professor [Peter S. Fader](#) says Google's threat is a tune Microsoft has heard before. "It's history repeating itself over and over and over. Every time a new threat emerges to Microsoft, people think, 'Oh, this is it -- the one that's going to knock Microsoft off the block.' There's no reason to believe it will play out any differently this time. Google is a different kind of competitor, but Microsoft has dealt with a pretty wide range of competitors before. It's a tortoise-and-hare scenario. And Microsoft is a very good tortoise. What the company will do is figure out a way to replicate the features of competitors' products. The products won't necessarily be better, but they will be adequate."

Whitehouse suggests that Microsoft may have to change its philosophy if it truly wishes to compete with Google. "Microsoft has tremendous resources, and it performed a similar turnaround once before when it took on Netscape in the 'browser wars' of the late 1990s. Microsoft, however, tends to focus on stopping the onslaught of the web -- which it did very well with Internet Explorer in the late 90s -- but then falls back and refocuses on its core operating system and desktop application businesses. So, for example, in recent years we've seen a major push to develop Vista [the long-delayed operating system, once

code-named Longhorn, that is scheduled to replace Windows XP in 2006], but there have been no major new improvements in Internet Explorer in years.

"It's not clear how much Microsoft actually believes that the web is the platform of the future. After conquering its immediate adversary, the company tends to retrench and fall back on developing its core assets. That may work again this time. But, eventually, it may not be enough to forestall the Internet tidal wave that will eventually arrive."

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