BusinessWeek

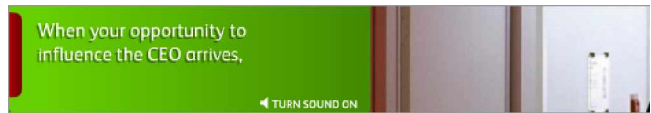## Apple's OS Edge Is a Threat to Microsoft

A recent upgrade to the Mac operating system moves Apple closer to challenging Microsoft for overall computing dominance, even in the corporate market

by Gary Morgenthaler

The 20-year death grip that Microsoft has held on the core of computing is finally weakening—pried loose with just two fingers. With one finger you press "Control" and with the other you press "right arrow." Instantly you switch from a Macintosh operating system (OS) to a Microsoft Windows OS. Then, with another two-finger press, you switch back again. So as you edit family pictures, you might use Mac's iPhoto. And when you want to access your corporate e-mail, you can switch back instantly to Microsoft Exchange.

This easy toggling on an Apple computer, enabled by a feature called Spaces, was but an interesting side note to last fall's upgrade of the Mac OS. But coupled with other recent developments, the stars are aligning in a very intriguing pattern. Apple's (AAPL) recent release of a tool kit for programmers to write applications for the iPhone will be followed by the June launch of iPhone 2.0, a software upgrade geared toward business users.

Taken together, these seemingly unrelated moves are taking the outline of a full-fledged strategy. Windows users, in the very near future, will be free to switch to Apple computers and mobile devices, drawn by a widening array of Mac software, without suffering the pain of giving up critical Windows-based applications right away. The easy virtualization of two radically different operating systems on a single desktop paves a classic migration path. Business users will be tempted. Apple is positioning itself to challenge Microsoft for overall computing dominance—even in the corporate realm.

KERNEL OF COMPUTING MIGHT

Such an idea rarely finds expression in public. Apple today is a "consumer-products company." Each new Apple product unveiled—from iPod to iPhone—comes with the excitement and glamour of Steve Jobs' "reality distortion field." Yet if you look at the larger picture, broader battle lines are forming. It's as if Jobs were a general from the 19th century, quietly massing troops out of view and under cover of trees. Mere "features" like Spaces look increasingly "strategic." On present course, an Apple assault on Microsoft's (MSFT) seemingly impregnable enterprise monopoly now appears quite possible by 2010.

It all started with Mac OS X, the multi-core, multi-processor platform officially released in 2001. Based on "Mach," a university UNIX research prototype, Mac OS X represented a clean break with the computer industry's uniprocessor past. The modular new OS allowed Apple to condense its core task management function into a tiny computing kernel.

That kernel has proved easily adaptable across the entire Apple product line, from highly complex servers all the way down to the relatively simple iPod Touch. Such modularity allows Apple to add whatever functions are necessary for each product environment—all while maintaining cross-product compatibility.

By contrast, Microsoft has held on to an OS tethered to the 1980s, piling additions upon additions with each upgrade to Windows. With last year's arrival of Vista, Windows has swollen to 1 billion bytes (a gigabyte) or more of software code. The "Mach" kernel of the Mac OS X, however, requires less than 1 million bytes (a megabyte) of data in its smallest configuration, expanding modestly with the sophistication of the application.

This bloating has saddled Vista users with increased costs and poor performance on average computers. Bloating has also led Microsoft to fragment its OS product line: one OS for the server, desktop, and laptop; one for cell phones and Zune music players; and a separate OS for its Xbox gaming console. Finally, through sheer complexity, bloating makes every subsequent "enhancement" of Windows buggier than the last. Thus, the current Vista product fiasco (BusinessWeek.com, 1/23/08).

TOWARD AN APPLE-FLAVORED OFFICE

The contrast between Microsoft's and Apple's product development strategies couldn't be starker. Where Microsoft is increasingly hamstrung by OS rigidities, Apple moves flexibly and swiftly. While Microsoft struggles to bring a kernel-based "Windows 7" to market in 2010, Steve Jobs has declared Mac OS X the right platform for the next decade of new products. Engineering improvements in one Apple product quickly find use at low cost in another. While Apple's "multi-touch" screen innovation made its debut with the iPhone, it appeared on the MacBook within 60 days. With this sort of flexibility, Apple is ever-free to target existing markets or invent whole new ones.

Given these advantages, how might an Apple assault on the corporate market play out?

• Despite Apple's relative scarcity on corporate desktops, Mac laptops are already well accepted within the enterprise, with a market share of more than 20% and growing. For business travelers, the new MacBook Air, some three pounds lighter than comparable Windows-based laptops, already offers one huge advantage. And now, with the ability to jump back and forth between Mac and Windows applications, more corporate users are bound to embrace Mac laptops.

• While Mac desktops offer a growing number of superior features over Windows desktops, it's still not enough to persuade corporate IT departments to make a switch. So for now, Apple will merely strive to hold the line on its current share of the business desktop market and apply greater marketing pressure elsewhere.

• Apple's recently introduced Leopard servers compete in a market of unhappy Vista server buyers where Microsoft's market share is only 40%. Leopard has a decent chance to expand from its small beachhead.

• Surprisingly, it's the 4.8-ounce iPhone that will sweep Apple decisively back into the enterprise. Even without any enterprise applications, the iPhone has seduced business users with the prospect of easy listening (iTunes), easy surfing (Safari), and easy compatability with a Mac computer. And with the impending business push, the device will soon provide corporate e-mail access and perform serious computing tasks such as setting calendars, checking inventory, figuring prices, and taking orders on the spot.

MORE MOBILE, MORE APPLE

As corporations become increasingly mobile, the pressure will build to make them Apple-centric from top to bottom. Rising sales of Apple laptops and iPhones will make the Mac OS only that much more mainstream and acceptable to corporate IT departments. By 2010, the number of iPhones in use could approach 100 million. It's possible that the iPhone's share of the U.S. smartphone market (28% in the fourth quarter) will soon approach the 70% share iPod now holds in the MP3 market.

The final piece to this puzzle would be the rebirth of the Apple applications development ecosystem. The new Software Development Kit (SDK) for the iPhone not only allows independent developers to create new applications for that device but also brings them back to the Macintosh platform. That means any program written for the iPhone can be easily adapted into a Mac computer version as well. The response has been huge: More than 100,000 developers downloaded the SDK in the first week of its availability. And iPhone's popularity for mobile business applications can only grow. (Put Vista on a cell phone? I don't think so.)

So, the battle ahead seems clear: It's Apple's seamlessly integrated software strategy, minimally sized and maximally efficient, competing against Microsoft's strategy of multiple incompatible, bloated, and fragmented operating systems. It's Apple's growing customer acceptance vs. Microsoft's rising customer pain. By failing to modernize its operating system in a timely way, Microsoft has left its flank wide open for an all-out assault from a once-vanquished rival.

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