



## Gadgets at Work: The Blurring Boundary between Consumer and Corporate Technologies

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Apple CEO Steve Jobs says the iPhone's latest software tweaks due in June will make the device more palatable to corporate America. Oracle on March 11 launched an on-demand customer relationship management application that mimics popular consumer sites like Facebook and integrates with a worker's personalized Google or Yahoo page. IBM on April 8 touted a portfolio of "mashups" that can combine corporate software with consumer web favorites like Google Maps. The common thread: The boundaries between corporate and consumer technologies are beginning to disappear.

This blurring of business and consumer focused applications is called "consumerization" by technology research firms such as Gartner and executives at companies such as Microsoft. Consumerization posits that consumer technologies -- including social networking tools, user generated content and wikis (web-based software that allows people to create content collaboratively) -- are being increasingly adopted by corporate America.

These consumer applications are being used to develop software faster, share knowledge within a company, track projects and make corporate information systems more accessible to employees. According to Gartner analyst Steve Prentice, innovation is now coming from consumers and their favorite technologies. "Consumers are increasingly in charge. They are driving the specifications of technology. They are driving disruption and changing the balance of power," he notes.

Experts at Wharton agree that consumer technology has been going corporate in recent years. Underlying this emerging trend are young and tech-savvy workers -- called "digital natives"-- entering the workplace, lower technology costs and the need to innovate quickly using web applications. However, consumerization presents a conundrum to the traditional corporate technology department. Previously, companies dictated what software and hardware were used for work purposes. Today, choosing technology is becoming increasingly democratic as workers get more of a say. Technology can't be defined as just corporate or consumer, says [David Hsu](#), a management professor at Wharton. "There [is] a convergence in consumer and business applications. The boundaries are gone."

What's unclear is whether this consumer technology invasion of corporate America is a long-term trend. Some technologies, such as Research in Motion's BlackBerry device, started in the corporate world and then became consumer hits. Small and "ultralight" laptops similarly started out in corporations and then became popular with consumers. "There's an ebb and flow back and forth. Innovation was happening in corporations, but in the mid-1990s, consumer technology became dominant," says [Andrea Matwyszyn](#), a legal studies and business ethics professor at Wharton.

For now, technology executives say the consumer is in charge. "The ways in which people want to interact with each other inside corporations is changing," said Microsoft CEO Steve Ballmer, speaking at the company's MIX08 conference in Las Vegas on March 6. "We see more use of IM [instant messaging]. At one time, e-mail was exotic for the corporation." This adoption of consumer technology for corporate use is in an "early stage," Ballmer added, noting that Microsoft has been building consumer-friendly tools into the software giant's products such as its SharePoint server software, which enables companies to share information and documents inside a company.

"We have observed a convergence of technologies between these two segments [consumer and corporate] because the user needs have been converging," says [Christian Terwiesch](#), a professor of operations and



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information management at Wharton. For instance, workers are demanding that corporate technology -- say a search tool within a company -- be as user friendly as Google's popular search site.

## Making a Positive Impression

Spurring this convergence of corporate and consumer technology is the fact that the line between personal lives and work has blurred.

Kendall Whitehouse, senior director of IT at Wharton, notes that employees often perform personal tasks -- like watching the latest popular video on YouTube or shopping at Amazon.com -- at work and they frequently complete corporate tasks at home on their own time. Because those work-home lines have blurred, employees have an increasing say over what technologies they use. "The enterprise is no longer the only provider of technology services. People quickly adopt what's easiest and most convenient," says Whitehouse. And that often means using free online services such as Google Maps, Yahoo Finance or Microsoft's Windows Live email.

Marketing professor [Peter Fader](#) agrees. "The IBMs and Oracles are just reacting to changes in consumer behavior," he notes. "Social media -- sharing information like a consumer does on Facebook or MySpace -- has become an important feature. It's part of the evolution."

For technology companies, this emerging consumerization trend represents an opportunity. On March 6, Jobs announced plans to make its iPhone more corporate friendly. A new software update will allow the iPhone to more seamlessly connect to Microsoft Exchange corporate email systems and give Apple's popular device more security features to prevent data from being lost or stolen.

Apple's strategy: Hope consumers bring iPhones to work and request that their companies support the devices. Once the iPhone is established, the company may be more inclined to adopt a few of Apple's Mac computers, too. Andy Hargreaves, an analyst at Pacific Crest Securities, said in a research note that the "iPhone will likely be the first Apple device for millions of corporate users, and positive impressions could drive stronger demand for Macs."

Fader calls Apple's approach a "skim and penetrate strategy" in which Apple "skims" a group of early consumer adopters -- say CEOs enamored of a new gadget -- and later hopes that these adopters will evangelize the product and help it reach broader adoption.

## Management Challenges

These developments, however, present management challenges. Do companies allow employees to use any device they want? Should web tools be limited? Are there benefits to blurring the traditional technology boundaries? What impact does this have on productivity?

Companies are just beginning to work through these issues. According to Terwiesch, the pricing of technology means that the corporate world will be increasingly dealing with employee-driven adoption. "I think this convergence is largely an outcome of technological progress and rapid price decay. Technology has become so cheap that it is really hard to have different price points for consumer models versus corporate models." As the corporate/consumer technology distinction fades, he adds companies should experiment with new ways of operating.

Indeed, Gartner predicts that by 2011, 10% of all information technology spending will reside with employees. In other words, employees will pay for and bring their own technology -- laptops, iPhones and the like -- to work as their primary tools. By 2015, employees will customize 90% of the technology they use at work, according to Gartner.

Hsu is already one of those employees. He chose an iPhone over the more prevalent BlackBerry. This type of independent choice presents a conundrum for many corporations: How fast should a company adopt a consumer technology? "For some applications, businesses will have to be relatively fast in adoption," says Hsu, noting that ideally any new consumer technology will deliver some business benefit.

For example, global positioning systems (GPS) are popular as a consumer technology, but certain sectors -- emergency workers and sales and marketing companies -- also find it highly useful to get directions to

locations. "There's a productivity benefit," Hsu says. However, not all companies should adopt GPS technology. "There's a spectrum of adoption. You have to monitor productivity."

The challenge for companies is to figure out how to manage consumer technologies in a way that doesn't limit their usefulness but doesn't result in lost time and money. A November Gartner survey found that 80% of companies said that social networking was important to their business, but 36% of them banned access to Facebook at work.

Most Wharton experts say that good management practices -- educating employees about company violations and monitoring productivity -- are better than technology bans. "If [employees] want a handheld device with a real web browser, it might make them more productive. These new technologies can be tools of empowerment for both work and play," says Whitehouse.

Fader cites another fringe benefit: Employees who bring in technology can help find innovative ways to operate. "Companies are getting employees to go out and do the detective work [on technologies]. There's a lot to be said for that."

### **A Question of Security**

While there may be productivity gains for corporations that experiment with new consumer technologies, security remains the deal breaker, say experts at Wharton.

According to Matwyshyn, there are security issues that prevent companies from adopting new consumer technologies. What if a device a consumer brings to work isn't secure enough to protect intellectual property? Meanwhile, consumers themselves generally don't pay attention to potential security lapses. "Consumers are part of the equation that is complicating the security issue [with adopting new technologies]," she says. "The average consumer isn't knowledgeable. Getting consumers up to speed to protect themselves is critical."

All network-connected technologies -- whether web applications or wireless devices -- need to be built securely from the ground up. "One of the increasingly important features of products is that they need to be secure by default," says Matwyshyn, who noted that Apple's move to beef up security on the iPhone was an important step.

Whitehouse agrees that the security concerns are significant as corporate technology gives way to a consumer-led revolution. "While it is in corporate IT's best interest to embrace emerging consumer technologies as much as possible for the efficiency and productivity benefits they provide," says Whitehouse, "IT departments need to make sure that the things employees are doing don't jeopardize security. Corporate IT needs to carefully balance consumer-driven innovation with enterprise integrity."

Ultimately, the combination of corporate and consumer technology makes sense, adds Matwyshyn. "There is a constant breaking down of the workplace-personal life divide. Once you mix those two worlds, there's no going back."

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