



# Can Enterprise IT Survive the Meteor of Consumer Technology?

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Today's employees are increasingly abandoning enterprise IT—both hardware and software—in favor of consumer technologies that promise greater freedom and more fun. They're buying their own iPhones and Droids, and tapping into Facebook, YouTube, and Twitter to get information, both for business and pleasure. As consumer technologies become ever more powerful and useful, IT leaders face difficult questions about how to adapt. While definitive answers are elusive for now, they must be grappled with today if enterprise IT is not to be pushed completely to the sidelines in the next few years.

Look around you. If you're at home, you're probably surrounded by technology that has changed the way you communicate and get information. Your smart phone on the kitchen counter. Facebook on the PC in the den. An iPad in your living room.

And you probably aren't just using these technologies at home—increasingly you're encountering them at work. The signs of the infiltration are everywhere. It's in that Facebook update of a co-worker you just read, that email you just sent from Hotmail on your work PC, or that Google search you just did. It's in the smart phones that many of your colleagues are using to take work calls, check work e-mails, and do research—even if they bought the iPhones as personal devices with their own money. It's no wonder that consumer services (already at 79 percent) are expected to account for 87 percent of all global Internet traffic by 2014.<sup>1</sup>

Why is enterprise technology falling behind? To begin with, consumer Internet technologies are more fun, more intuitive—and better for what people actually want to do. Facebook and Twitter, for example, provide a broader form of connectedness than e-mail with an "opt-in" ethos. Microsoft and Google's mapping services keep adding higher resolutions and more relevant information—there is no theoretical limit to how far

these improvements can go. Another Google property, YouTube, has blasted a crater-sized hole in the bulwark of broadcast media by changing the content-creation and content-delivery paradigms. YouTube now streams more than two billion clips a day, and Internet users upload about 24 hours worth of videos to it every **minute**.<sup>2</sup>

When was the last time an enterprise application created so much excitement that its growth could be measured every 60 seconds?

The new consumer applications are enabled by massive amounts of computing power—a characteristic that gives them a huge advantage over enterprise applications. As a for-instance, consider what happens when a tourist visiting New York says the words "Thai food" into her Android phone. In milliseconds, Google's servers (the company is estimated to have more than a million of them) compare the tourist's speech patterns to thousands of others it already has in its system, perform complex computations and deliver suggestions of restaurants within a several-mile radius of her location.<sup>3</sup> The tourist gets the information she is looking for, and Google adds another unique voice signature to its database—improving its algorithms in the process. Nothing comparable can happen with an enterprise application because the computing power—the scale—isn't there.

Scale also gives new consumer applications a big advantage in terms of their network effects. To be sure, network effects—the automatic increase in the network's value as more and more people use it —aren't limited to consumer applications; they

have also contributed to the success of many enterprise applications. However, the consumer services that benefit most from network effects have such huge head starts that it's hard to imagine any current or future enterprise service competing with them. For workers, the switching costs are becoming too high.

People might not have enjoyed working with corporate applications in the past, but they didn't have many alternatives. They also didn't have much choice about how new technology reached them. Consumer Internet services have changed all that. With applications that originate in the cloud, new features simply appear, and become part of the system, without the user having to turn in his device, sit through training sessions or worry about data compatibilities. By comparison, the upgrade cycles in enterprise IT—with waits of 12 or 18 months for a new core application—seem hopelessly outmoded.

Nor is this just a swing of the pendulum—a temporary loss of stature until enterprise technology is again ascendant. Three trends suggest that consumer technology will extend its lead:

**Economics.** Between 2000 and 2008, the average consumer increased his spending on electronics devices by 7 percent a year.<sup>4</sup> During that same time, companies reduced their IT hardware spending per employee by 3 percent a year.<sup>5</sup> Not surprisingly, replacement cycles reflect these spending trends, with most consumers replacing their

smart phones every 20 months, versus every 28 months for the average enterprise. Purchases of operating systems follow the same trend, but more dramatically: Consumers replace their operating systems every three-and-a-half years, versus every eight years for the average enterprise.<sup>6</sup>

**Scale:** Within a year, 700 million people worldwide are expected to be on Facebook—some 10 percent of the world's population. If that happens, there will be more Facebook users than enterprise PCs. To take another example of in-the-cloud scale, Google is planning for its estimated million servers to increase by a factor of 10.<sup>7</sup> It (and the other leading search

engines) will need to make such capacity investments in order to keep up with a universe of data that is poised to double in size every two years. (By 2020, there will be 35 zettabytes of data in the digital universe—29 times today's count. Three quarters of that data will be generated by users.<sup>8</sup>)

Enterprises operate on a much smaller scale; even big ones usually have no more than a couple of hundred thousand employees and 5,000 to 10,000 servers.<sup>9</sup> So even if an enterprise tried to introduce some social networking features into its internal communications systems, or tried to enable Google-like computing power, for instance, in the area of business intelligence, the experience would

not match what people are used to (including half-second returns of search results) on the public Internet.

**Talent:** The scale and resource advantage that exists on the consumer side (not to mention the sheer excitement) is pushing the field's best minds toward cloud challenges and opportunities, not to the bread-and-butter problems of the enterprise. Computer science graduates these days don't spend their time on COBOL or C. They learn things like Hadoop, a framework for handling thousands of servers and petabytes of data.

## Whither enterprise IT?

As recently as 20 years ago, a college graduate entering the workforce didn't have any expectations about the sorts of technology he would use once he was, say, creating products, calling on customers, or managing a staff of people. It's very different for today's new workers. "Why isn't this as fast, cheap and easy to use as the tools I use outside work?" is the refrain. "If you can't match that, I'm just going to go ahead and use the tools that I already use in my personal life."

With all that's happening, it's easy to imagine a world, five years from now, where the ninth generation of Apple's iPhone is many employees' primary computer, and where the time that employees spend on enterprise systems is measured in minutes per day, not hours.

There is a hint of freedom in this view of the future—a secret thrill in having a way, finally, to escape the shackles of enterprise technology policy. However, from a business standpoint, the presence of consumer technologies in the enterprise, and the increasing inclination of workers to "go rogue," are not unqualified pluses—not by a long shot. These technologies create real risks around data security, scalability, cost management and data governance. They complicate operations for

the many big companies that still make extensive use of legacy systems.

Indeed, there are some critical new questions created by the shift to consumer technologies. Here are the questions—and the beginnings of some answers.

**Question:** How extensively are employees using consumer technologies while at work? What impact is this having on enterprise operations?

**Answer:** This is not something about which a management team should guess or hypothesize. You need real information—and to get it, you will probably need to do more than just ask your people. Make sure to distinguish between the use of consumer technology on company time and the use of consumer technology to do company work.

**Question:** Should rules restricting the use of consumer Internet technologies be lifted?

**Answer:** It is almost certainly time to end the blanket ban on Internet services like g-mail, Facebook and Twitter—employees are pretty much ignoring these bans anyway. Companies should look for ways to take advantage of these services, whether for pure work purposes or to support other programs (for instance, community-related programs) in which they have an interest.

**Question:** Will companies that embrace consumer technologies have an easier time attracting talent?

**Answer:** From a recruitment perspective, there is certainly an advantage to embracing cloud computing applications. Some enterprises already use their support for open systems and Apple products to impress their flexibility upon job candidates.

**Question:** Is the day coming when companies will no longer hand new employees technology, but will instead just give their new hires a budget to buy whatever technology they like?

**Answer:** Employees are already spending their own money on technology that benefits their employers, so this trend seems inevitable—and will arrive faster than most people expect. Why not get out in front of it? Pick a group, set some ground rules for a category of technology (smart phones, say), set a per-person budget and see how people do with it.

**Question:** Whatever enterprise IT does, is it inevitable that it will become irrelevant over time? For that matter, is it possible that the CIO has already lost the control he was fighting so hard to keep?

**Answer:** The meteor strike of consumer technology is changing just about everything—a lot will depend on how the CIO and his department respond.

**Bottom line:** The above are questions that every enterprise needs to start exploring. The timing and degree of the changes will differ between industries and among companies, but no enterprise is exempt from what's happening. The big strategic issue of the next decade will not be what employees can do with enterprise-provided resources. Rather, it will be how companies and IT departments adjust to a world that has gone in a new direction—that has gone a little rogue—and is not returning to the old ways of enterprise-controlled technology.

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## Notes

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