Invasion Of The Technophiles

Robert Lee Harris

Are your end-users getting ahead of you—and your IT infrastructure?

Although some consumers still have trouble setting up new home networking devices and services, most of them know a lot more than they did a decade or so ago when they downloaded their first dial-up version of AOL, Compuserve or Prodigy. In those days, customers had to be gently guided onto the 'Net; now, many of them host their own websites, surf, shop and exchange emails, instant messages and other files for information and entertainment.

The ongoing onslaught of consumer electronics—including high-definition televisions, home theaters with surround-sound, Wi-Fi and broadband Internet connections, and the latest video and gaming systems—is making technological life at home impressively complex. Tech-savvy consumers are rising to the challenge, as they have done so often in the past. They taught themselves to get online, send email, surf the Web, and to hook up wireless mice, keyboards and Wi-Fi routers. In fact, consumers adopted wireless LANs even faster than did large enterprises, although for the same reasons: less hassle with cabling and more flexibility in location.

Consumer electronics enthusiasts may help their less-technical friends and family members, but they don't usually reveal their skills at work if it's not part of their job, even to their friends in IT. Meanwhile, the IT managers, executives and consultants—who make their living predicting or planning for the next wave of applications—typically overlook the impact and importance of their end users' experience.

Ignoring or second-guessing what end users are already doing at home hasn't been a big deal in the past 10 years, mainly because hobbyist consumers eventually brought their tech talents and their demands to work. This spurred the adoption of PCs, local networks and Internet access.

The same thing is starting to happen with instant messaging, voice over IP (VOIP) and other nascent IP services, which many consumers are subscribing to at home over their DSL or cable modem Internet connections. Why do consumers accept the hassle with new services at home? Because home is where they have all the control, and where they personally realize the benefits and cost savings.

Do you want to stay a step ahead of your end users today? Then don't underestimate what they are already into outside the office. Instead, find out which products, services and applications they are using at home because, chances are, they'll soon be clamoring for the same innovations at work (Table 1).

SOCOM: Lessons From Early VOIP Networks

The first big, successful VOIP network (more than 10,000 users) that I ever encountered began in late 2001. That was when Sony Playstation released SOCOM, a combat game with an Ethernet connection, for interactive team play over broadband, along with a headset for the use of voice commands. Players also could speak to each other via VOIP while playing. I watched in amazement as these 14- to 18-year-old kids spoke to other players across the U.S., Europe and Asia.

Like most VOIP deployments, there were some network traffic issues. The teens soon discovered network latency—speaking while they were in combat could sometimes delay their moves and shots. Competitive players learned traffic prioritization—to limit their speaking to less critical game periods.

Four years later, VOIP is still a carefully considered option on many telephone systems, but it's old news to these video game players, who regard it as a standard feature. These young people—now age 18 and up—essentially grew up with video games, cell phones, chat rooms and email. In fact they, and their younger brothers and sisters, prefer instant messaging to email, according to a recent AOL study of 13- to 21-year olds.

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Users will demand what works for them—your job is to get ready to provide it

TABLE 1 Are Your End Users Into New Technologies?

End User Types	What They're Into	Technology They've Adopted
College Interns	Digital media, instant messaging	Peer-to-peer file applications, presence technology
Garage Salers and Crafty Ladies	Web sites with storefronts, Ebay	WYSIWYG editing tools, e-commerce, photo compression
Musicians	Multi-channel audio editing	Multiple audio and video codecs, audio latency management, mass storage and IEEE1394 Firewire devices.
Nervous Parents	Nanny cams	Video streaming, LAN networks
Old Hippies	Blogging, social networking sites	Collaboration tools, relational databases
Part-time Realtors	PDAs, Web-based email, websites, listing tools	Bluetooth, 802.11 Wi-Fi, SSL, search ranking tools, ODBC interface to office apps
Hikers and Adventurers	Mapping and navigation tools	GPS systems
Sports Fans	News feeds, fantasy sports	Predictive analysis tools, push technologies

Put these kids, who are now becoming interns and trainees, on an enterprise multimedia telephony and unified messaging platform and watch them run with it. Not only are they already comfortable with presence and IM, they have a high tolerance for the idiosyncrasies that accompany complex systems, and added features don't overwhelm them.

Convenience Trumps Quality

Another consumer trend that has yet to be fully developed and felt in the enterprise world is the advent of cheap and ubiquitous cell phone services. Wireless telephones have only recently begun to replace, and cost less than standard landline services. For most consumer and business users, cellular service became an affordable convenience in the late 1990s, even though cell phones were an additional cost.

I once heard an AT&T Wireless account executive describe cellular service as "the least reliable phone service in the last 30 years." With fading and dead spots, cellular was like the frozen food of telephone services; convenient but not nearly as good as the "real" stuff. And just like frozen food, it may get cheaper before it gets much better.

Two thirds of U.S. households now have mobile telephones. Cellular service is now a fully accepted form of business communication, and it still does not always work well, and still sometimes doesn't work at all. What does it mean that so many end users accept this, while telecom managers are still putting such care into making sure that office phones provide so-called "toll quality" and "five nines" reliability?

Again, the youth factor enters in: The workforce is welcoming a whole generation of cell phone users who apparently consider convenience and 97 percent availability far more important than perfect call quality and 99.999 percent availability. If users have learned to live with the down time, the sketchy quality and the additional cost, all in the name of convenience, will similar business practices necessarily follow?

Perhaps, although down time issues may need to be resolved if the service is to become the primary means of communication in business. On the other hand, if almost everyone is calling from and to cell phones, general tolerance of less than "toll quality" calls should rise. In fact, the trend seems to be that callers would rather reach you *now* on a cellular phone than *sometime later* on a perfect quality landline. The cellular phone proves that convenience trumps quality.

The lesson here for IP-telephony is two-fold. First, IP-telephony is beginning to go through its own "convenience" phase, as new VOIP service providers offer single-number availability and full-function mobility. And IT managers who obsess over toll quality may find themselves out of step with user demands. What are you going to tell users who prefer convenience to quality—that they should think differently?

Users will demand what works for them. Your job is to be ready to provide it.

Revenge Of The Rogues

IT managers will always face legitimate battles against potentially unwanted programs and unauthorized access, battles which must be fought in the name of security, decency and copyright protection. But look back 10 years or so at the applications and devices that IT—then the Management Information Services (MIS) department—carefully controlled: display telephones; access to the color printer; more than a single email account per company; even access to the Internet.

At the time, these applications and systems

were considered frivolous. Only in hindsight can we see that each had a legitimate business purpose, and that is why the technology prevailed over the IT managers' resistance.

A cautious IT manager today might say, "So what? Just because users adopt VOIP or IM or Wi-Fi on their home computers, doesn't mean I'm going to support these applications in the work environment." Think again—they might already be there.

Even the most pervasive unauthorized applications are usually designed to work through proxies or alternative ports. Here's a telling example: A friend who works for a major carrier told me that a large number of employees use a conferencing product that competes with their own brand because "they are just more familiar and comfortable with it."

Ignoring rogue applications or devices won't make them go away. In fact, network quality and security end up being compromised more when rogue processes creep into the enterprise than if a legitimate service is implemented to provide the same functionality. That's another important reason for IT to get ready to provide these new solutions, rather than planning only to limit user behavior.

When high-profile end users discover new technologies, IT must meet their new expectations

As long as there are mailroom clerks or department managers who play with technology at home, you will have an unofficial supplemental IT staff member. Every day, in any large organization, you can expect to discover network hubs, wireless access points and Web-based services creeping into the enterprise.

The managers are a lot harder to chastise than the mailroom clerks. I worked with one large company where the legal department began using streaming video, much to the dismay of IT management. By the time there was any thought of restrictions or policies for using the services, however, the legal department had a policy firmly in place of viewing regulatory proceedings over video instead of flying a representative to observe the actual event.

These high-profile end users had found legitimate value in the technology, which had become a critical component in their business process. There was no way to turn back; the new usage was accepted and supported by IT, although reluctantly, since the company WAN required a significant capacity upgrade.

In another client project, I recently fell prey to my own false assumptions about end-user readiness to embrace new services. While the project team was busy strategizing the implementation of VOIP services, a division of the company was already quietly using Skype for conference calls to several business partners in the Philippines.

Countries such as the Philippines that have used mobile telephones as one of their primary business communications methods don't get stressed over a little pop or fading. They just get happier as the service gets better.

Since Skype was saving money for both my client's company and the Philippine company, and since Skype is available on Windows, Linux or Pocket PC, replacing this setup with an enterprise-based VOIP application would be a tough sell. In fact, we concluded that the enterprise solutions could easily end up being perceived as a loss of functionality for a barely noticeable improvement in call quality.

Now the project team will have to catch up with the end-users, who already have a solution and have had it long enough that they have a new set of expectations built around it. One of those expectations is that they and the company's business partner in the Philippines will be able to use the same network, just as they have been able to do with Skype already.

The lesson here is to be on the lookout for rogue apps and devices, especially from performance-oriented departments, like sales and distribution. The rogues may be troublesome, but try to think of them in terms of demand for new technology. If you are not willing to provide new services like presence and mobility, the rogues will go and find them for themselves.

Outside Influences

Rogue applications may get your attention and force your hand from a technical standpoint, but what about the other influencers that can drive IT decisions? Your organization's top executives, consultants and equipment suppliers all have their own ideas about what it means for you to be on top of technology adoption.

Start with the big bosses. Many of them read the airline magazines and talk to their peers and they think that "VOIP saves money." In reality, of course, VOIP has saved many large companies money on their tie lines and long distance, but most of those projects were completed long ago.

Then there are the bragging rights that come when your company has the latest thing—a convergence initiative, storage area network, Web

services or grid computing. Everyone else has one, and it's a lot like a trip to Atlantic City or Vegas: People brag about the big wins, and the very worst they ever did was "break even."

Second, there are the consultants. Consultants are wonderful visionaries. They see beyond the additional work the initiative might represent for the operational staff, and they don't have to actually do that work. Good consultants want to improve the company's business, not just sell a new system, and they aren't fixated on a single platform. (Often this is why they are brought in.)

Finally there are the equipment vendors, who have a clear incentive to initiate change in your enterprise. They have something to sell and they are good at it. If IT isn't interested and makes angry protests to the right business unit leaders, the impression can be created that IT staff are "stuck in their ways."

To what extent do you want these people to influence your choices when it comes to building the enterprise infrastructure? CEOs, CFOs, CIOs, analysts, consultants, VARs and vendors all make better friends than enemies. You need to keep your voice heard in the overall strategy but also to listen well. Stay open to what each one is saying, and have some visionary ideas of your own.

Telling upper management that an experiment will cost money and might not work is risky—but innovation takes risk

Taking Back A Creative Role

Fifteen to 20 years ago, IT departments were one of the more creative parts of an organization. They had a greater degree of autonomy, as well as a requirement to manage and integrate all kinds of rapidly evolving, non-standard equipment. Since then, many of the systems these innovators pioneered—such as IVRs and LANs—have evolved into standardized commodities.

Meanwhile, corporate investment in IT continues, and dependence on IT grows. This makes today's IT departments both more important and more risk-averse than ever. But creativity has never been more valuable. Think about it: If IT processes are so critical to business, and if the stakes are so high, aren't those the very best reasons to take control of the evolution of your enterprise? The alternatives are letting others decide for you or just letting new things creep in.

Creative people almost always have something new in the works. A good starting place for ideas is looking at what end users are trying to sneak onto the network and determining if they are trying to meet a legitimate business need. Your credibility comes from having a robust alternative solution. Don't let the non-experts be the only ones who come up with good ideas.

You are also responsible for building and supporting the infrastructure that new technology requires. VOIP is a great example. For testing new VOIP applications, it probably won't be practical to enable your whole WAN with the capacity and QOS required to achieve five-nines. And it's a mistake to take the opposite approach—building a test and cost model on an existing, non-optimized network. Instead, test on a subset of the network that you expect will produce good results, so the test deployment can become part of the rollout.

Presence-based peer-to-peer applications present a very different challenge. Although the convergence that they represent is, by definition, about combining and utilizing existing resources, full-scale presence and P2P testing can be more expensive than system-wide deployment. Ironically, you could even be testing a concept that will save money, but setting up the test will be a net additional cost. The problem is that you cannot test and quantify the value of an enterprise-wide deployment by evaluating a few endpoints, because presence and P2P success depends on an enterprise-wide mandate to adopt the work process changes that they engender.

Conclusion

Any kind of innovation brings with it the possibility of failure. This should be communicated to management and understood by management. What if a company's research and development group were not allowed to make mistakes? You certainly would not see a lot of new ideas or ways to solve problems.

Telling upper management "Well boss, it's going to cost more than what we are doing right now, and it may not work" might take all your courage—but it is part of the formula of invention. Having the freedom and taking the risks to test and evaluate new systems and processes is, in the long term, a stronger approach than waiting for supposedly "mature" products, and encountering the same stumbling blocks you might have met earlier.

Can you be an IT visionary and keep your job? It's a delicate balance. Sometimes technology adoption happens too early, driven by enthusiastic company executives. At other times, it happens too late because the IT staff waited for a go-ahead from upper management. In both cases, someone else is driving the decision instead of you, the expert□