

How cloud computing will change business

Steve Hamm

IBM, Qualcomm, Nokia, and other majors, along with startups, are preparing to cash in on new technology. Not that it will be easy.

In 1990, in a keynote speech at the Comdex computer conference, Microsoft's (MSFT) then-chief executive, Bill Gates, bolstered his bona fides as a tech visionary when he declared the PC industry would produce advances within a few years that would put information at people's fingertips. To get there, Gates said, the world needed three things: a more "personal" personal computer, more powerful communications networks, and easy access to a broad range of information. Sometimes visionaries are right on the vision but off on the timing.

Only now is Gates' grand vision finally becoming a reality for businesses. While pieces of what he had in mind have been available for years, they typically were expensive and difficult to set up and use. Now that more personal PC is here in the form of smartphones and mini-laptops, and broadband wireless networks make it possible for people to be connected almost anytime and anywhere. At the same time, we're seeing the rise of cloud computing, the vast array of interconnected machines managing the data and software that used to run on PCs. This combination of mobile and cloud technologies is shaping up to be one of most significant advances in the computing universe in decades. "The big vision: We're finally getting there," says Donagh Herlihy, chief information officer of Avon Products (AVP). "Today, wherever you are, you can connect to all the information you need."

A big step at Avon

Avon is embarking on a massive, multiyear overhaul of the way it manages its nearly 6 million sales representatives around the world. In the past, "sales leaders," who help manage reps but are not employees of the company, mainly checked in with the salespeople through face-to-face meetings and phone conversations. But next month, Avon will begin to equip 150,000 sales leaders with a cloud-based computing system accessible via smartphones and PCs. The technology will keep them much more up-to-date on the sales of each rep, and it will alert them when reps haven't placed orders recently or when they have payments overdue to the company. The idea is to increase the sales and efficiency of Avon's distribution system.

Avon's strategy shows how the relationship between individuals and their computers is undergoing a radical change. Up till now, people have used a variety of computing devices in their professional lives, including desktops, laptops, handhelds, and smartphones. Each device was essentially an island of capabilities—applications, communications, and content. Cloud computing means that information is not stranded on individual machines; it is combined into one digital "cloud" available at the touch of a finger from many different devices. "We're shifting to more of a people- and information-centric world," says Paul Maritz, CEO of software maker VMware (VMW).

For the \$3.4 trillion global tech industry, this shift offers a path out of the economic doldrums. In fact, it may be the largest growth opportunity since the Internet boom. While market researcher Gartner (IT) expects the global tech market to shrink by 3.8% this year, forecasters have high hopes for portables, wireless networks, and cloud computing over the next few years. Gartner predicts the market for cloud products and services will vault from \$46.4 billion last year to \$150.1 billion in 2013.

Many businesses are struggling to understand what this shift means for them. They're feeling their way forward, trying to figure out how best to take advantage of it. "In this area, we're a bit behind, so this is a huge step for us," says Dr. Leo Hartz, chief medical officer for Blue

Cross of Northeastern Pennsylvania, which has started using a cloud computing system to let its 300,000 members find medical histories and claims information with their mobile phones. "It's new, but I expect to see some big changes."

There are experiments popping up all over that offer lessons for other businesses. Serena Software has switched almost entirely to cloud services, even using Facebook as its main source of internal communications. Genentech (DNA) has made medical experts available to sales reps in the field with a couple of button clicks. Coca-Cola Enterprises (CCE) is equipping 40,000 mobile workers, including truck drivers, merchandisers, and sales staff, with portable devices so they're better connected to the home office while on the road. They can alert their bosses instantly about shifts in demand or problems they encounter. Such examples suggest the possibilities ahead for using these technologies to remake sales, distribution, and other parts of business.

It won't be easy for companies to make good on the opportunities. There is still a great deal of work to be done to get all these technologies functioning seamlessly and reliably. Tech companies have shifted a lot of the software applications that businesses typically handle for themselves over to the cloud, but many more have yet to be switched over.

Meanwhile, companies need increased reassurance that their data and communications will be secure and that the new services will be available whenever they need them. On May 14, an outage at Google left many customers unable to use its online applications. And while the tech industry has made it ever easier for information from different cloud services and devices to be fused together (personal profiles and calendars, for instance), a lot of the actual merging has yet to be done.

The shortcomings spell opportunity for plenty of companies in tech. Chipmakers such as Qualcomm (QCOM) and Intel (INTL) are creating products for portables that pack more capability on a single slice of silicon while reducing power consumption, making it easier to access information in the cloud from anywhere. Mobile-phone makers including Nokia (NOK) and Research in Motion (RIMM) are racing to come out with products aimed at business users that have all the ease-of-use of the iPhone (AAPL).

Hardware makers Hewlett-Packard (HPQ) and IBM (IBM), among others, are packing cloud technologies into their server computers. Software giants such as Microsoft and SAP (SAP) are developing cloud services. Salesforce.com (CRM) is providing mobile connections to its cloud software for corporate giants such as Avon and Genentech. And startups are coming out with technologies that reorganize our digital worlds. Silicon Valley's Xoopit, for instance, has built a specialized search engine capable of finding bits of information scattered among e-mail systems, sales management programs, blogs, and online news sites. An executive could use the technology to pull together information about customer complaints from a variety of sources.

Virtual personal assistants

This is one of those turning points where small companies can explode onto the scene while industry giants miss out. One factor that puts some tech giants at a disadvantage is that the shift to a more personalized approach to computing is being led by companies born and raised in the consumer world. Apple and Google understand in their bones that simplicity and ease of use are essential to broad adoption of products and services. That lesson doesn't come so naturally to Microsoft and IBM.

But they are trying. For IBM, the change begins with encouraging its 400,000 employees to use tools it has created based on consumer social-networking sites. After IBM tests new

consumer-like cloud computing capabilities internally, it launches them as services for customers. On Apr. 1, IBM unveiled LotusLive Engage, a cloud service for corporations that combines social networking and collaboration. IBM now is working to make it possible for Engage users to search the LinkedIn professional social networking site right from their Engage pages to find people outside their companies whose expertise they need.

One of the most promising aspects of cloud computing is that it enables the creation of so-called virtual personal assistants. These software confections know people's interests and needs and go off and do useful things for them on the Internet, like suggesting a restaurant for a client meeting or offering reminders of where you have taken the client before. With GPS in smartphones, computing systems know where we are. And with artificial intelligence software, computers can be taught what we expect of them and how to anticipate our needs.

Silicon Valley startup Siri last month introduced a service that puts sophisticated artificial intelligence in an easy-to-use form. The first applications are designed to help people arrange travel and entertainment, but the founders anticipate developing powerful tools specifically for business. Example: A salesperson asks her virtual assistant to help pull together the best pitch she can make to a particular customer. The assistant draws information from a variety of sources that the salesperson can use to create a proposal. "The goal is simple and practical: to help people perform tasks in their lives faster, easier, and in a more personalized way," says Adam Cheyer, Siri's vice-president for engineering.

Simple, yes. But it has taken nearly 20 years and a tremendous amount of innovation to get here. At last, though, the tech industry is beginning to make good on Gates' vision.

HAMM, Steve. How cloud computing will change business. **BusinessWeek**, New York, June 4, 2009. Disponível em: <www.businessweek.com>. Acesso em: 8 jun. 2009.

A utilização deste artigo é exclusiva para fins acadêmicos