

# Microsoft cloud computing gets down to earth

July 16 2009, By Sharon Pian Chan

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For the last year, the tech world has buzzed with talk of the next big thing: cloud computing. Hailed as a breakthrough that will allow companies to compute without much hardware, the technology has pushed companies such as Microsoft, Amazon.com and Google to stake their claim.

As U.S. companies start exploring doing some of this computing this year, a school system on the other side of the globe has already leapt into the cloud. Ethiopia is rolling out 250,000 laptops to its schoolteachers nationwide, all running on Microsoft's cloud platform, called Azure.

The laptops will allow teachers to download curriculum, keep track of academic records and securely transfer student data throughout the education system, without having to build a support system of hardware and software to connect them.

"They're going to be able to leapfrog ahead of most companies in the U.S.," said Danny Kim, chief technology officer of FullArmor, a Boston company working on the software deployment in the Ethiopian project.

"There's no way we could have built up a new data center" in Ethiopia, Kim said, given the local technology environment. Rolling blackouts and slow response times in the Internet backbone would have made it difficult to develop a data network from the ground up.

A data center -- the central element of [cloud computing](#) -- would have

taken months to build and required downtime to expand as each new batch of teachers joined the network.

By building in the [Microsoft](#) cloud, using data centers around the world that the company runs, Kim said FullArmor, working with partner SQLSoft, launched the project in weeks and can scale quickly from a pilot to tens of thousands of laptops by the end of the year.

"It extends reach of technology into the community that can take huge benefit from these services and yet may have not had access to it in the short term because of infrastructure requirements," said Doug Hauger, general manager of Windows Azure at Microsoft.

What's happening in Ethiopia captures the possibilities of the cloud, he said -- "the agility, decreasing time to market, keeping it out of your own data center and allowing you to reach a broad audience regardless of where they are in the world."

Microsoft says cloud computing has the potential to drastically reduce time and cost of developing applications accessible to massive numbers of users.

Many compare it to the rise of the electrical utility. Before utilities came to dominate the generation and distribution of electricity, businesses had to generate their own power, much the way companies now build their own networks by building data centers.

The establishment of electrical-utility companies freed businesses from generating their own electricity. By building massive data centers in towns such as Quincy, Grant County, Microsoft hopes to provide computing as a utility for businesses.

And just as the rise of electrical utilities set off an explosion of assembly-

line manufacturing, the cloud could seed a new wave of computing at a scale and speed that would be impossible now, advocates say.

The question is whether corporations will trust their core applications to Microsoft -- or [Google](#), [Salesforce.com](#), [Amazon.com](#) and other data-center providers.

For instance, would a bank feel secure having its entire repository of financial data hosted on a third party's equipment?

A Seattle data center caught fire over the Fourth of July and shut down the businesses of several Internet companies, including a Microsoft search engine, Bing Travel.

While Microsoft did not run that data center, the incident highlighted physical risks in an online world.

Education in Ethiopia has undergone dramatic changes over the past 20 years.

Decades of civil unrest eroded the school system, and when the current government came to power in the early 1990s, primary-school enrollment was about 30 percent of school-age children.

It has risen to more than 80 percent, according to some estimates.

"They're really focused on broad access, but the quality is still very lacking," said David Makonnen, executive director of the International Leadership Institute Academy of Ethiopia, a Seattle nonprofit raising money to build an academy there.

Students don't have enough textbooks, the student-teacher ratio is high, and teachers are poorly paid, he said.

A system of keeping track of academic performance, for instance, would allow his academy to spot talented students throughout the country, he said.

FullArmor's Kim estimates building a network for thousands of teachers would have cost hundreds of dollars per teacher, compared with a few dollars per month via the cloud.

Through the cloud, FullArmor can push software updates, clean out viruses and send curriculum software to each laptop.

To deter theft, the teacher's laptops are tracked by location, and if they leave an area the laptop's hard drive can be wiped clean remotely.

Makonnen said that although technology alone cannot improve the quality of education, the laptop program has potential.

"Any effort that includes education through technology capability is something we would support if it improves access and improves technology capability of teachers who today are constrained by resources," he said.

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