

The future of computing is cloudy

Computing undergoes a paradigm shift as cloud services are akin to taking a taxi instead of purchasing a whole automobile

BY ROBERTO ROCHA, THE GAZETTE JULY 14, 2009



"The idea of putting all your data on someone else's server that's out of your control is still a big block," says Robert Toth, IT director at iPerceptions.

Photograph by: Pierre Obendrauf, The Gazette

MONTREAL - Whether he's at home, at work, at the lake or at his in-laws, whenever Tommy Vallier needs to send an invoice to clients, he just goes to the nearest computer.

It doesn't matter which computer, because no one hard drive stores his files. It's all in the cloud. On the Internet. Forget Microsoft Office, Vallier, a freelance Web developer in Kingston, writes and saves his documents on Google Docs.

"I now use the Web to manage my email, calendar, contacts, to-do lists, quick notes to myself, news, podcasts, photos, videos and documents," he said. "It's all about access."

Hence the great promise of cloud computing, the idea of putting all computing needs on the Internet rather than a local machine. All your data and applications are accessible from anywhere, at any time. No need to invest in expensive servers without knowing if you'll use them to capacity. No need for multiple systems administrators in the IT back office. With cloud computing, you let someone else worry about the hardware and software and pay them only for what you use.

This has been the mantra of major cloud computing vendors scrambling for customers, companies like Google, Microsoft, Amazon, IBM, and myriad smaller providers. And it's starting to work. Cloud computing is slowly evolving from an industry buzzword to the business mainstream.

Research firm IDC predicts the global market for cloud services will reach \$42 billion U.S. by 2012.

The offerings are plenty: Amazon and Google offer their massive data centres for companies to store and run their own applications, and charge by the hour. Salesforce.com, an early proponent of the cloud, sells a customer relationship service that works entirely in the Web browser.

On the consumer side, Microsoft and Telus will soon let Canadians store their medical records online to share with doctors.

There's no shortage of analogies for cloud computing. It has been described as taking a taxi rather than buying a car. Or using the postal service instead of having a private delivery truck.

In his book *The Big Switch*, journalist Nicholas Carr compared it to the rise of the electricity grid, when factories stopped buying and running their own power generators and paid utilities.

The benefits are indeed tempting. In addition to the cost savings and the easy access, cloud computing is scalable. Users can increase or decrease resources in minutes by ordering more capacity. No need to buy and install additional servers.

One can also prototype ideas and applications on the Web with a limited number of test users, creating a low-cost virtual test lab. Files on office computers and mobile gadgets are automatically synchronized.

"It's about agility," said Chris Pratt, manager of strategic initiatives at IBM Canada. "It's doing something in less time, and meeting business needs faster."

Despite all the benefits, serious perils must be weighed. Once a company decides to move to the cloud, it's at the mercy of power outages, network failures, security attacks and plain old human error by the provider.

This is why cloud computing is mostly favoured by independent developers like Vallier and tech startups, not established firms, said James Staten, an analyst at Forrester Research in California.

In Canada, adoption has been especially dreary, mainly because most cloud providers are in the United States.

"Given some Homeland Security rules, most Canadian government agencies and businesses are reluctant to put Canadian data on U.S. data centres," Staten said.

In the last few weeks, several outages cast further doubts on whether the business world is ready to put its full trust in the Internet. A power failure at a major data centre in Dallas and a fire in a Toronto telecom hub left clients' websites down for as long as three hours. That's three hours of lost business and frustration to potential clients.

Back in March, a glitch in Google Docs opened some private documents to unauthorized parties. Google said the glitch affected only 0.05 per cent of documents in the system.

Another concern is what happens if a cloud provider goes out of business. It's one of many reasons Robert Toth, the IT director for Montreal customer experience analytics company iPerceptions, is holding off on moving to the cloud just yet.

"The idea of putting all your data on someone else's server that's out of your control is still a big block," he said. Any company going to the cloud, he advised, should make sure it backs up its data elsewhere. "You have to remember that the data that's on the cloud is yours and it's up to you to protect it," he said.

To others, security is the main concern. The Internet is still too young and too vulnerable to put that much trust in it, argues Michael Calce, the Montrealer who was once the world's most wanted hacker, the teenager known as Mafiaboy.

"We're putting too much of our lives online," he said. "Hackers will join forces more than ever before to try to take advantage of this. Someone will eventually find an exploit."

After spending eight months in juvenile detention for bringing down Internet giants like CNN, Yahoo and eBay, he's now a security consultant and speaker.

"We're going into this prematurely," he added. "We haven't fixed the Internet's predecessor technology."

Vendors are predictably doing heavy PR to minimize these dangers. Google, for instance, says that security is a top priority and that it often catches glitches before anyone has a chance to exploit them. The Docs privacy error made the news only because the company was upfront about it after the fact, said Rajen Sheth, senior product manager for Google Apps

"There will be security incidents. It's a fact of operating servers," he said. "The key thing is how we react to it, how we mitigate the damage and how we communicate with our customers."

In the end, the company that wins with cloud computing will be the one that can best decide what data and applications work best in a multi-tenant environment, Staten advised. "It's about deciding how cloud computing fits for applications that are okay to be hosted outside the company," he said. "Companies will have to learn to compartmentalize their data."

rrocha@thegazette.canwest.com

- - -

Some tips for the cloud

For those considering moving operations to the cloud, analysts and IT professionals surveyed by The Gazette offer the following advice:

Back up your data, either on a local drive or at another, bare-bones cloud storage service.

Demand control and transparency. Make sure a vendor lets you scale services up or down as needed, and lets you move your data wherever or whenever you want. Ensure errors are reported promptly and thoroughly.

Plan for downtime. Assume you'll be cut off from data and services on the cloud. Anticipate how this will affect business and have a backup strategy.

Consider cellular networks. The 3G technology offered by wireless carriers allows fast data transfers. This can be an alternative or a backup in case the main Internet connection goes down.

Make your own private cloud. If you already have a sizable IT infrastructure, consider virtualization, the idea of fooling a computer into thinking it is several machines. This gets more mileage out of less equipment.