



High performance. Delivered.

This article originally appeared
in the October 2010 issue of

Outlook

The journal of
high-performance business

On the Edge

Cloud computing: Where is the rain?

By Kishore S. Swaminathan

Chief Scientist
Accenture

Cloud computing makes traditional IT faster, better and cheaper—and it has the potential to change both the business and IT landscapes in fundamental ways.

• Consulting • Technology • Outsourcing

What's not to like about cloud computing? After all, among other things, it promises on-demand pricing, less IT overhead, lower cost and the ability to scale IT up and down quickly.

To be sure, all these are definitely nice-to-haves. But in fairness, they don't quite seem to add up to a proverbial paradigm shift. So is this just a passing cloud with no rain?

In fact, I think that anyone in the C-suite (not just CIOs) should pay close attention to cloud computing—not because it makes traditional IT faster, better and cheaper but rather it has the potential to change both the business and IT landscapes in some fundamental ways.

Three predictions

On a purely technical level, cloud computing blurs the line that separates the IT that's inside an organization from the IT that's outside an organization. I predict that this is likely to lead to three distinct classes of business and wealth-creation opportunities.

I think these impending developments are significant because the traditional data and process isolation between and among companies is about to break down, and in its wake, new business ecologies and value networks are about to emerge. Herein may lie the proverbial paradigm shift inherent in cloud computing.

Prediction 1: During the next five years, we are likely to see a dramatic increase in intercompany business processes that, in turn, will lead to the emergence of “business ecosystems”—that is, groups of companies with complementary strengths that work seamlessly with one another through intertwined business processes.

The moment a company's IT systems migrate outside the firewall,

they can much more easily communicate and exchange information with other IT systems from other companies to execute business processes that cross company boundaries.

Intercompany processes are not new. In the 1980s, Electronic Data Interchange was aimed at communication between companies looking to exchange information across a supply chain (most notably, within the automobile industry). The travel industry has integrated processes among airlines, car rental companies and hotels to create business ecosystems (the oneworld alliance, the Star Alliance, etc.) that offer passengers a single travel experience across multiple airlines, rental car companies and hotels.

Today, however, such processes are handcrafted and hardwired among systems involving a small number of business partners or managed by third-party “clearinghouses.”

Cloud computing in combination with integration standards like web services and service-oriented architecture has the potential to enable inter-enterprise processes at an industrial scale: complex business processes that snake through multiple companies and their IT systems and that can be configured and reconfigured on the fly.

But you may very well ask: “Even if this is technologically possible, what is the business driver for it?”

Practically any human experience you can think of—whether it's a vacation, a stint at the hospital or just living your average humdrum day—involves products and services provided by multiple companies. Today, companies provide discrete products and services that we, as individuals, manage and orchestrate. The ability to flexibly weave together

Cloud computing makes it considerably easier for companies to configure business processes that integrate internal components and many external components into complex yet fluid processes around *their* business needs.

a business process with services from multiple companies around an individual and his or her life (as the travel industry does today) seems like a strong driver in the business-to-consumer world.

Much as an individual's life involves touchpoints with multiple products and services, almost every process in organizations also involves interactions with multiple business partners. Today, each business partner sells a discrete product or provides a discrete service, and organizations manage and orchestrate these internally (procurement or supply chain management, for example).

Cloud computing makes it considerably easier for companies to configure business processes that integrate internal components and many external components into complex yet fluid processes around *their* business needs. This seems like a strong driver in the business-to-business world.

Prediction 2: Cloud computing provides an “exoskeleton” model for IT capabilities as opposed to the “endoskeleton” model we use today. As a result, fragmented industries (which are collectively underserved by IT today)—construction and education, to name a couple—will become attractive white spaces for technology and service companies to fill.

The current IT paradigm may be called an endoskeleton model of IT: Data centers and applications support a company from inside its firewalls. As such, to a large extent, only big companies have had the need and the ability to run complex data centers and applications. Consequently, large companies have been the traditional targets for large hardware, software and service companies.

Cloud computing provides an exoskeleton model of IT: Data centers

and applications can support a company from outside its firewalls. This simple change is significant for two reasons. Smaller companies can have access to sophisticated IT capabilities without incurring the overhead of running an IT shop; at the same time, enterprise IT companies—for which small companies were not attractive targets under the endoskeleton model—can now provide IT capabilities such as hardware, software and services to thousands of small companies from outside and thus achieve scale.

Interesting, but how important a development is this for businesses and the IT industry as a whole?

There are many fragmented industries and groups of public-sector entities—construction, education, health care, legal and small municipal governments, to name a few—where the industry as a whole is large but the companies that make up the industry are relatively small. They are large in the aggregate but fragmented to the point that they are not an economically viable market for large enterprise IT vendors.

Consider construction. In the United States, for example, it accounts for approximately 4 percent of GDP. But it is made up of architects, builders, workers, material suppliers, construction equipment makers, warehouse operators, building inspectors, and many other constituent parts, all with significant dependencies and a need for coordination. Cloud computing, with its exoskeleton model, can serve the entire ecosystem by consolidating their process and data flows. In other words, individual companies are too small to need ERP-like systems, but the industry as a whole does, and cloud computing makes that possible.

This means that there are lots of white spaces to be filled by IT and a lot of wealth to be created.

Prediction 3: Cloud computing will give rise to what could be called “business process utilities”—companies that provide simple and common business processes (say, sales tax calculation, collection and remission) but on a massive scale that will dwarf today’s software-as-a-service vendors.

Companies have many common business functions. While complex operations such as supply chain management typically require proprietary processes, simple business functions such as sales tax calculation, collection and remission are relatively standard and fixed. In today’s endoskeleton model of IT, these simple functions are replicated over and over in every enterprise.

Take sales tax, for example. While this may be simple as a business function, managing the IT to support it is anything but trivial. If your company does business internationally, your billing system needs to maintain a table—and people to update it regularly—of sales tax tariffs for every province in every country where you operate. The sales tax must then be remitted to the appropriate tax authority, on time and with the requisite documentation. Today, such functions are executed over and over again (in-house) by every large company.

As companies move to a cloud computing model, it will become

economical to source such business processes from the outside. Because of their simplicity, these processes will require no customization and can be taken for granted—essentially a business process utility that one’s IT systems can plug into. For providers, the simplicity of the processes means there’s no need for variations and customizations, so they can achieve scale by providing the same business process as a utility to thousands of customers.

Today, a few such examples exist. VeriSign provides credit-card authorization to millions of e-commerce vendors, and PayPal provides payment options to small vendors and for small transactions. Cloud computing is likely to give rise to hundreds of such utilities specializing by industry and geography. This, in turn, will make enterprise systems simpler by avoiding the replication and maintenance of common business processes.

In other words, cloud computing is much more than on-demand pricing or lower IT costs. It provides a new model for sourcing computing, which, in turn, will lead to significant changes in the business and IT landscape. To quote film producer Leonard L. Levinson, “A pessimist only sees the dark side of the clouds, and mopes; a philosopher sees both sides and shrugs; an optimist doesn’t see the clouds at all—he’s walking on them.”

Kishore S. Swaminathan is based in Chicago.

k.s.swaminathan@accenture.com

Outlook is published by Accenture.
© 2010 Accenture.
All rights reserved.

The views and opinions in this article should not be viewed as professional advice with respect to your business.

Accenture, its logo, and High Performance Delivered are trademarks of Accenture.

The use herein of trademarks that may be owned by others is not an assertion of ownership of such trademarks by Accenture nor intended to imply an association between Accenture and the lawful owners of such trademarks.

For more information about Accenture, please visit www.accenture.com