Why Cloud Computing Is Gaining Strength in the IT Marketplace

by Stefan Stroh, Olaf Acker, and Aneesh Kumar

06/30/2009

a strategy+business exclusive

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Web-based computing services are already saving money for many large enterprises. It's time to jump on the bandwagon.

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Let the pundits, the hipsters, and the gurus continue to debate the virtues of cloud computing. While they do, more and more companies are quietly making the transition, and they are finding that Web-based computing services can provide the power, low costs, functionality, flexibility, and mobility that has long eluded traditional enterprise computing.

Cloud computing is nothing more than the collection of computing software and services that can be accessed via the Internet rather than residing on a desktop or internal servers. Such services include applications as simple as e-mail — Yahoo Mail and Google's Gmail, for example — or as complex as Salesforce.com, which helps manage customer relations and sales leads. They also include utility computing services that allow companies to add computing power when needed, as well as platforms for developing and testing new proprietary applications.

The signal virtue of cloud computing is its pay-as-you-go model, which lets companies pay for only the amount of services they actually use. Because cloud computing services are "always on," they can help cure the problem of intermittent availability of applications, a frequent complaint of companies. And because cloud computing services do not require software that sits on a PC or laptop, other than an Internet connection and a Web browser, workers can access their applications and data from multiple locations, such as offices, home computers, client sites, airports, and smartphones.

For John Kalka, the vice president of IT deployment at Ingersoll-Rand Company, a US$17 billion manufacturer of diversified products, taking advantage of cloud computing was primarily a business decision. His company had long used IBM's Lotus Notes as its e-mail and collaboration platform, in part because the cost of switching to Microsoft Exchange was just too high. But when the choice came up again two years ago, the terms of the deal were very different. "Microsoft was launching a new cloud computing service for Exchange," says Kalka. "That changed the cost structure entirely, from a fixed cost to a variable cost, and IBM could not match that."

Why did variable costs matter so much to Ingersoll-Rand? The company is structured around shared services, Kalka notes, and its IT department doesn't simply sell its services directly back to the business units. So IT is always trying to make its costs both variable and transparent. "The goal is to give the businesses the levers to control their own costs," he notes. "That's always good business."

The savings have been impressive. Since moving to the online version of Microsoft's Outlook e-mail, Kalka

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estimates, his company has reduced its IT costs by 25 percent, with the option of saving even more depending on the features used. "Not only do I now have a variable cost, but I've created a menu of options," says Kalka. "I've given the business units the ability to reduce costs even more — and with the current economic environment, many are willing to do that." Ingersoll-Rand has since signed on for several other Microsoft products based on cloud computing, including Live Meeting and Forefront antivirus software. Future plans include moving the company's SharePoint collaboration and social networking environment onto Microsoft's servers.

Kalka has found that moving to Web-based versions of Exchange has been a fairly straightforward process. But he has yet to move more complex, business-critical applications, such as warehouse management, to the Internet. Two factors have limited Ingersoll-Rand's willingness to begin a more widespread cloud computing transformation, he notes. The first is economic: Despite the attractive long-term savings, moving more complex applications to the Web requires a significant initial investment, one that will have to wait for better times. The second involves security, and specifically the organization's willingness to accept the risk of lost data, the potential for the commingling of data with that of other companies, and concerns about sharing infrastructure with other companies. Kalka likens the security issues surrounding cloud computing to those surrounding standard infrastructure outsourcing, but with less control over the details.

Despite these concerns, Kalka is planning to move more services to the Internet, and he is readying the company for the transition. Moving to the Web-based version of Exchange would never have been possible

back when Ingersoll-Rand was running five or more different e-mail systems across the enterprise; only because it had already standardized on Lotus Notes could it then make the switch to Outlook. Kalka's future investment plans center on creating similar environments for other, more strategic applications. "We will look at moving applications to the cloud that, first, are compartmentalized so that we can easily understand them, and second, have already been standardized across the company," he says.

Over the long term, as cloud computing becomes more sophisticated, companies like Ingersoll-Rand will likely move more strategic applications to the Web, including portals, personal productivity suites, and core packaged business applications such as customer relationship management, as well as significant portions of their IT infrastructure. Ultimately, by moving such applications as product life-cycle management and supply chain management to the Internet, companies will be able to connect more easily with partners and suppliers. And because IT departments won't need to spend so much time on administration, infrastructure, and commodity applications, they can focus more on differentiating the company strategically.

Still, cloud computing is relatively new, and like any other new technology, it brings with it risks. Security has been the primary concern. No CIO should be perfectly comfortable allowing sensitive data to reside outside the confines of the company's firewall. Yet, as with outsourcing, the risk can be mitigated by looking carefully at the track record of potential vendors, how they handle other customers' data, and the strength of their security infrastructure.

By the same token, how vendors price their cloud

computing services bears close examination: Subscription pricing models for Web-provided applications and services are generally simpler than licensed models. Some Web-based models are based on the amount of traffic and storage used, others are priced according to the number of users, and still others are priced according to actual computing time.

A further risk involves data ownership: What happens to your data when you decide to terminate a cloud computing agreement? Will all the data be made immediately available to you, and how difficult will it be to move the data to another vendor? Will the vendor keep any of it? Will there be a financial penalty? And what are the consequences if a vendor goes bankrupt or is acquired by another company? Vendors have yet to establish and agree on standards on how the transfer of data can be managed easily — yet such standards will be vital to the continued growth of cloud computing.

Despite these concerns, we believe that cloud computing — while not perfect, or the answer to every IT problem — is a viable option. CIOs owe it to all the stakeholders at their companies to perform a realistic assessment of the technology, its virtues and pitfalls, and to understand how it can benefit their companies now and in the future. And the time is ripe: The current economic downturn has put pressure on many corporations to cut costs and do more with less, and cloud computing's "on demand" model for applications offers clear financial advantages. Smart and aggressive CIOs will take advantage of cloud computing to lower costs and manage risk now, while getting ready to use it more strategically in the coming upturn. Those who choose to wait out the recession before venturing into the cloud will find that many of their competitors are already there. +

Resources

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