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The Road to Better Visibility: Virtualization, the Cloud and Managed Services

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The Road to Better Visibility: Virtualization, the Cloud and Managed Services

It's true that virtualization can slash hardware costs, save energy in the data center and thus save money. But the technology also introduces new sets of technological worries to keep information technology (IT) shops busy. For instance, virtual machines have a way of sprouting like weeds. That adds complexity for system administrators charged with keeping mission-critical systems available. Enter the managed services sector, an industry outsourcing offshoot whose job it is to relieve clients' IT headaches by handling all or parts of the IT function for them.

For all the utility they can offer, not all managed service providers are made equal. Even those that can achieve near six sigma uptime are not immune to issues that can affect clients negatively. That said, many organizations have found this outsourcing of IT – making it a virtual business function – frees them to focus more resources on revenue-generating activity.

Managing the risk of an increasingly virtualized computing environment requires executives to be up to speed on the latest developments in managed services. In this article, experts from Wipro and Wharton explain how one of these developments in particular will shape the work of modern IT organizations.

Specialized Tools

Expect to see a growing number of tools specifically geared toward virtual computing environments. According to Deepak Satya, head of data center services for Wipro Technologies, these tools are proliferating, and they can remove much of the grunt work typically associated with servers – monitoring, administration, provisioning, availability enhancement and capacity planning. Virtualization, the management of computing resources not represented by actual, physical hardware, adds several twists to each of these tasks.

It's no mystery why organizations are moving to virtualized environments, despite a challenging learning curve. The potential to save money is huge. In one series of case studies presented by VMWare, for example, companies using virtualization achieved a 67% reduction in total cost of ownership for IT operations after implementation.

One of the major operating costs of IT infrastructure is, of course, labor. But new tools in the hands of managed services providers can automate many labor-intensive processes that would otherwise be performed in-house. Satya cites examples of how managed service providers have used some of these newer tools to generate savings, as follows:

- Automation of alert monitoring has led to reduction of monitoring efforts by as much as 80%.
- Automated documenting of service/help desk requests, or ticketing, has led to reduction of ticketing efforts by as much as 30%.
- Dynamic dashboards and service-level management tools have led to complete automation of reporting and business-as-usual communications efforts.
- "These cost savings really depend on the delivery model (dedicated or shared), delivery locations (onsite or offshore) and the baseline automation that has already been implemented in an environment," Satya says.

Companies considering such services have several expense models from which to choose as follows:

- pay per user;
- pay per IT resource;
- flat rate; and
- mandatory or optional flat rate plus pay-per-resource.

Such tools have come to the market in response to needs expressed by IT workers themselves, who sometimes struggle with making the reality of virtualization match the promises often made by vendors. In a 2009 Network Instruments poll, 27% of the network managers, engineers and IT executives who responded cited "lack of visibility" (inability to view critical data) and lack of "tools to troubleshoot performance problems in virtual environments" among their top frustrations.

Outsourcing to the Cloud

One of the higher-profile examples of this virtualized, managed services model has been Amazon.com's Amazon Web Services division. This pay-as-you-go, "platform-agnostic" collection of services is typical of the sector in that it provides massive quantities of raw computing power, data storage and data center support services, while giving users the flexibility of an outsourced solution. Providers use the metaphor of a cloud, as in "cloud computing," to describe these services, since they are often web-based, and in diagrams of IT networks the image of a cloud is often used to symbolize the Internet.

Michael Tomczyk, managing director of the Mack Center for Technological Innovation at Wharton, compares the evolution of the cloud business model to a previous type of outsourcing. "The emergence of proprietary clouds is analogous to how business outsourcing evolved into off-shoring," said Tomczyk, who hosted Wharton's Emerging Technologies Update Day conference, "The Future of Computing: Beyond Clouds, Ubiquitous Networks and Smarter-Than-Ever Devices."

"When companies began outsourcing software development, customer service and other functions to India and other countries, they initially subscribed to outsourcing services," Tomczyk explains. "Over time, companies that needed tighter control of facilities, personnel, costs, etc., set up or licensed their own 'off-shore' facilities, and companies began offering this as an alternative to outsourcing. I see the same evolution occurring in cloud computing, as companies that are large enough and technologically proficient move from cloud computing on the Internet to proprietary clouds."

However, "Nothing is a panacea," says Deirdre Woods, associate dean and chief information officer at Wharton. "You're transferring costs."

And just because a company hires someone "in the cloud" to handle the hard work of IT systems management doesn't mean its responsibility goes completely away. Adopters of third-party providers are also managing their risk – though not eliminating it. Despite built-in risk management mechanisms, such as service level agreements, there's always a chance that the managed service provider will run into problems that block the access of staff or customers to the data: In other words, outages.

"You are basically running hardware, but on top of that you're running multiple versions of operating systems, then you have your applications running on top of that," says Woods.

Virtualization – which is what's happening when a company moves its IT operations into "the cloud" – can enable some interesting technological tricks. Woods brought up the example of a subordinate who managed to run the virtualization software Citrix on top of an iPad, giving him the ability to monitor the entire network of several hundred Wharton computers – including the virtual ones.

But such flexibility comes with a price, according to Woods: When a problem crops up, "teasing out all these layers [to locate problems] makes it more difficult."

Such challenges require problem-solving skills greater than those that would suffice in a physical machine-only environment. "The complexity of the environments will increase with increased virtualization and adoption of the Cloud, etcetera," says Wipro's Satya. "I wouldn't want to call

these downsides, but certainly the skill sets and mentality of the people who manage IT environments will have to go through significant changes."

What's more, according to Satya, the silos within information technology that have segregated different functions, such as infrastructure versus applications, are becoming less distinct.

"There will be blurring of lines between IT Infrastructure and IT Applications and Process. And the world will certainly move from 'system integration' to 'service amalgamation.'"

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