Hurdles to Enterprise Cloud Adoption

By Jesse Cryderman, Associate Editor

It is important to separate the marketing buzz from the real-world data to get an accurate picture of cloud computing services. According to the sales pitch, enterprise cloud services offer significant cost savings, eliminate redundant hardware purchases, and support a distributed workforce. But while cloud services have been hailed as the wave of the future, they aren't being adopted quite as fast as some analysts predicted.

To summarize, the Yankee Group recently stated that "service providers should realize that cloud computing's shift from bleeding-edge to mainstream IT is nowhere near completion." The obvious question is why aren't more companies doing business in the clouds? What's the hold up?

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Security

One of the most often-cited challenges facing C-level technology executives when making purchase decisions is security; how can a company be sure that the data it's handing off is as secure as it would be in the room next door? This is further complicated by a lack of standardization, and the fact that different jurisdictions and countries have varying levels of assurance, regulatory or otherwise.

Cisco polled over 80 executives across 43 enterprises, and found security to be the most important barrier to cloud migration. Likewise, in a recent Yankee Group survey, security was listed as the highest ranking barrier to cloud adoption by C-level technology executives poised to make enterprise purchasing decisions.

There is a good reason for the concern—cloud computing faces threats on many levels. According to a report by the Cloud Security Alliance, the threats facing cloud computing are:

- Abuse and Nefarious Use of Cloud Computing
- Insecure Application Programming Interfaces
- Malicious Insiders
- Shared Technology Vulnerabilities
- Data Loss/Leakage
- Account, Service & Traffic Hijacking

(To read the entire report click here: http://www.cloudsecurityalliance.org/topthreats/csathreats.v1.0.pdf)

In fact, something as simple cloud printing could open a network to hacker vulnerability. A recent PC world article revealed that penetrating a network through cloud printers and all-in-one devices is relatively simple.

In addition, there are different types of cloud services: Software as a Service (SaaS, Infrastructure as a Service (IaaS), and Platform as a service (PaaS). The security, compliance, and data protection protocols for each type of service are not the same, and a general guideline has yet to be standardized.

While the security concern is very real, it's definitely not insurmountable, says Drew Rockwell, CEO of MDS. "Security management will create significant risk as more enterprise services move into the cloud. This however should not hinder the advance of moving more services into the cloud environment, just a greater degree of foresight."

Data Migration and Legacy Investment

Next to security, data migration is the second most cited barrier to cloud adoption. The fear is that migrating to a cloud-based platform could be difficult and costly. While cloud services themselves offer considerable savings, the time and cost of a move to the clouds is often times unclear, and for mission-

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critical network components, time is money.

An adjunct concern is the loss associated with moving from legacy systems that have not completed their lifecycle. For many companies, it's just too soon to move to the clouds, having recently invested in in-house policy control management programs, for instance.

A global study just released by the IT Governance Institute reveals that "thirty-five percent of C-level executives cite a significant investment in legacy infrastructure as the reason they are not adopting cloud computing."

Lock-In

Closely related to the hurdles of data migration is the fear of lock-in, or more appropriately how a move to the clouds will affect the portability of future

solutions. Again, this is compounded by a lack of standardization; unlike desktop native applications that run the same office suite, in the clouds there are many solutions that are all essentially proprietary.

The problem exists in pricing as well, and a general confusion in the marketplace over models. Among CIOs across 13 European countries, 47% noted that a lack of transparency over pricing models may be halting the adoption of cloud services (Portio Research).

If a company moves its billing service to the clouds and business gets messy with the vendor, or a better opportunity arises, how easy is it to move to a new vendor? Is the data interoperable with a new cloud service, or will the migration be costly and time consuming?

Reliability

Still, one of the simplest barriers to cloud computing boils down to reliability. Even the biggest providers of cloud services, like Microsoft, clearly don't have the bugs ironed out yet. On office collaboration sites (a relatively simplistic service vs. say an IaaS solution), documents routinely cannot be accessed or are improperly uploaded. (We here at Pipeline have experienced these challenges!)

Using the internet as the main pathway for cloud computing has the same inherent flaws that all internet-driven services (like streaming video) suffer from: latency, response time, and packet loss. For daily computing, this may not matter, but for mission critical applications, it's simply unacceptable.

Concerns over reliability affect decision makers all over the world. Yankee Group research pegs reliability as the number three barrier to cloud adoption in the United States. In India, 75% of executives say reliability is the chief deterrent to a cloud migration, according to a study by the non-profit IT Governance Institute. And in research conducted by Portio, 58% of Euorpean CIOs and senior IT professionals said reliability of cloud services was a concern.

Manageability

Once a service has been migrated to the cloud, the questions of performance management, monitoring and agility arise. Recent research by the TM Forum indicated that providers rate managing service quality as their biggest challenge. Will, say, a customer charging service be as easily manageable and customizable in the cloud as it is in the IT department on the second floor? If an unexpected explosion in new accounts occurs, will the cloud solution offer adequate scalability?

When Pipeline contacted regarding challenges to enterprise cloud adoption, Drew Rockwell, CEO of MDS, summed up the manageability question:

"Moving to cloud-based services from traditional in-house managed services is increasingly becoming an attractive proposition for enterprises. However, with this comes a greater degree of complexity and control of business processes. Whether its telecommunications services, or data and application hosting, the upsides are generally low capital investment, and the removal of day-to-day management overheads, however it is not uncommon to worry about losing control and management of such services."

Solutions are Opportunities

Each of the hurdles to cloud adoption also opens a door for a solution, better known as a business opportunity. It is incumbent upon cloud service vendors to educate the buyers about offerings, build trust and offer after-sales support. Vendors must be transparent in terms of their security and protocols to build trust; transparent in their cost structure and portability to create market knowledge and selling strategies; and offer and support real management solutions and reliability metrics.

There are certainly many hurdles facing enterprise cloud adoption, but they are not insurmountable. And despite the challenges, most CIOs see cloud computing as the operating method of the future— anywhere from 75-86%, depending on whose research you review. It's no longer "if," but "when." So the questions going forward are how quickly vendors will create solutions that address the

challenges listed above, and how quickly decision makers will understand and implement enterprise cloud services; the innovators in the market are already proffering answers.