CLOUD COMPUTING: PUBLIC, PRIVATE OR HYBRID

By now you've heard of cloud computing, the shared computing resources available over the "cloud," or the Internet, and the potential benefits of cloud computing are well documented. Cloud computing can deliver increases in flexibility, scalability, reliability, and performance. "Gartner predicts that 80% of Fortune 1000 enterprises will be using some level of cloud computing services by 2012," so all IT professionals and the people who manage IT spending must understand the various cloud computing options.

When most people talk about the cloud, they mean a public cloud – big server farms maintained by companies like Amazon.com available to and shared by a wide range of customers. They typically sell storage, bandwidth, and computing power at rates cheaper than most businesses could obtain on their own by maintaining their own computing infrastructure.

Though the cost savings may be attractive, cloud computing requires a shift in the design and development of applications, which presents additional economic challenges for large and small businesses. In addition to concerns over security and availability, it's easy to understand why businesses are hesitant to jump into public cloud computing.

Security concerns with the public cloud are a stumbling block for most major companies. Many businesses cannot afford the risk of placing sensitive information on public cloud servers, especially if they're in regulated industries like finance or healthcare. Additionally for time-sensitive tasks such as programmatic trading, it's not practical for firms to give up the edge they get from running their own servers.

Reliability is another major issue. There have been several high profile outages at data centers that host video sites, VOIP providers, social sharing sites

and credit card authorization services. Public cloud providers say they offer reliable environments in which replacement instances can be created, but is that good enough? What about data and transactions in flight? Do partially completed transactions get backed out? Despite claims of reliability, few cloud vendors have SLAs (service level agreements) that promise controlled downtime or offer rebates for excess downtime. Enterprise IT typically has disaster-recovery sites to take over operations if there is an event at their primary site, and significant effort is expended to ensure the integrity of transactions.

Some businesses set up their own cloud computing resources, called private clouds. Using the same kind of over-the-Internet architecture as public clouds, these private clouds are reserved specifically for the use of the organization and can be firewalled off from the public Internet for a higher level of security and performance.

For some businesses a mix of public and private cloud infrastructure, referred to as hybrid clouds, is the best-of-both-worlds. Hybrid clouds use private clouds for their most important and security sensitive computing tasks, and public clouds for occasional peaks of demand or less-sensitive tasks, like serving up video on a website.

A Path to Follow

In their report, Part the Clouds: Take Next Steps on the Journey, Dell, Inc., recommends a three step approach to moving an organization into the cloud.

1. Investigation – fully understand all of the options

2. Experimentation – try a pilot project before you move the entire back office into the cloud

3. Adoption – choosing between evolving existing infrastructure into the cloud or starting from scratch

CLOUD COMPUTING

Should you invest in your own private cloud data center? Should you outsource the cloud environment to a service provider? Are you willing to share space on a public cloud for some functions, but keep other functions separate? Should you move to an all-cloud infrastructure, or should you maintain some functions in your legacy technology? How do you ensure the security of your data? Which functions should be accessible anywhere, and which should be held within your four walls? What new business opportunities could a cloud environment enable? These are just of few of the business – not technology – decisions that have to be made before you can adopt a cloud environment. The technology comes into play only after the critical business decisions are made.

Considering Outsourcing?

According to Gartner research some of the key things to consider when considering an outsourced facility for a cloud environment include:
1. Data security, location, and privacy
2. Scalability and usage-based pricing
3. Cost and ease of integration
4. Avoid or reduction of capital expenditures
5. Meeting Service Level Agreements or support requirements
6. Supplier credentials

Benefits of the Service Provider Model

Dealing with a provider whose sole focus is providing world-class cloud computing services has many benefits versus creating the same levels of flexibility, scalability, reliability, and performance through an in-house, model. The benefits include:

1. Risk mitigation – your project isn't the service provider's first rodeo, as the saying goes. Working with a highly skilled, experienced and dedicated team helps to mitigate the risks of any project.

2. Learning curve – instead of retraining in-house staff and/or recruiting new personnel, the service provider model allows you to take advantage of a specialized and experienced team.

3. Accurate forecasting – a service provider can take your unique requirements for performance and service levels and estimate how much capacity you will need with some confidence, helping to avoid under or overspending on capacity.

4. Policies and procedures – your service provider will have policies and procedures for security, privacy, and reliability in place versus having to develop these on your own.

When looking for a cloud computing service provider it is also important to choose a partner that will work with you to identify your specific requirements and create a custom solution, provide excellent support, one that has a proven track record with an established customer base. You'll also want to look at the SLA of the vendor as well as the reliability of the underlying technology. Make sure your needs for uptime, security and overall reliability do not exceed that which the vendors and their technology can offer.

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