

opinion piece

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Cloud Computing

The journey begins



Many CIOs view cloud computing as their salvation in the current economic downturn, as it promises to deliver IT services to subscribers at a lower cost. Before signing up for 'services in the cloud', organisations should distinguish the hype from reality.

Ask a pool of IT professionals for a definition of cloud computing and you are more than likely to get several different answers. Some define it narrowly as 'accessing virtual servers over the Internet.' Others see it as a broader, encompassing term like Gary Middleton, Business Development Manager at Dimension Data, who defines it as 'a highly scalable method of delivering computing and application resources as a service over a network, which may be the Internet and infrastructure not owned by the organisation'.

The concept of cloud computing is not new. A variation of cloud computing, software as a service (SaaS), has been around for more than eight years. SaaS utilises cloud computing in its architecture and is essentially a single application delivered and licensed remotely by a cloud provider to subscribers for use as a service on demand.

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Salesforce.com is a well known example of an enterprise application sold as a service. Other variations of cloud computing include platform as a service (PaaS), such as the SAP suite, and infrastructure as a service (IaaS), for example, Akami Video Network.

What's the hype all about?

The hype in the industry currently focuses mostly around PaaS and IaaS, which are key cloud platform offerings. Organisations can outsource their enterprise application processing to cloud providers without having to concern themselves any longer with idle CPUs or unused drive space. The cloud service provider charges only for services utilised on a 'pay per usage' basis.

The reality is that many vendors are selling themselves as cloud providers, especially PaaS and IaaS providers, but few are able to deliver on their promises. Service levels between providers and subscribers are for the most part non-existent. Also, issues around data security, vendor lock-in and privacy have not yet been answered.

Middleton believes that there is a lot of knowledge to be gained and education that needs to take place before cloud computing revolutionises and reaches a level of maturity.

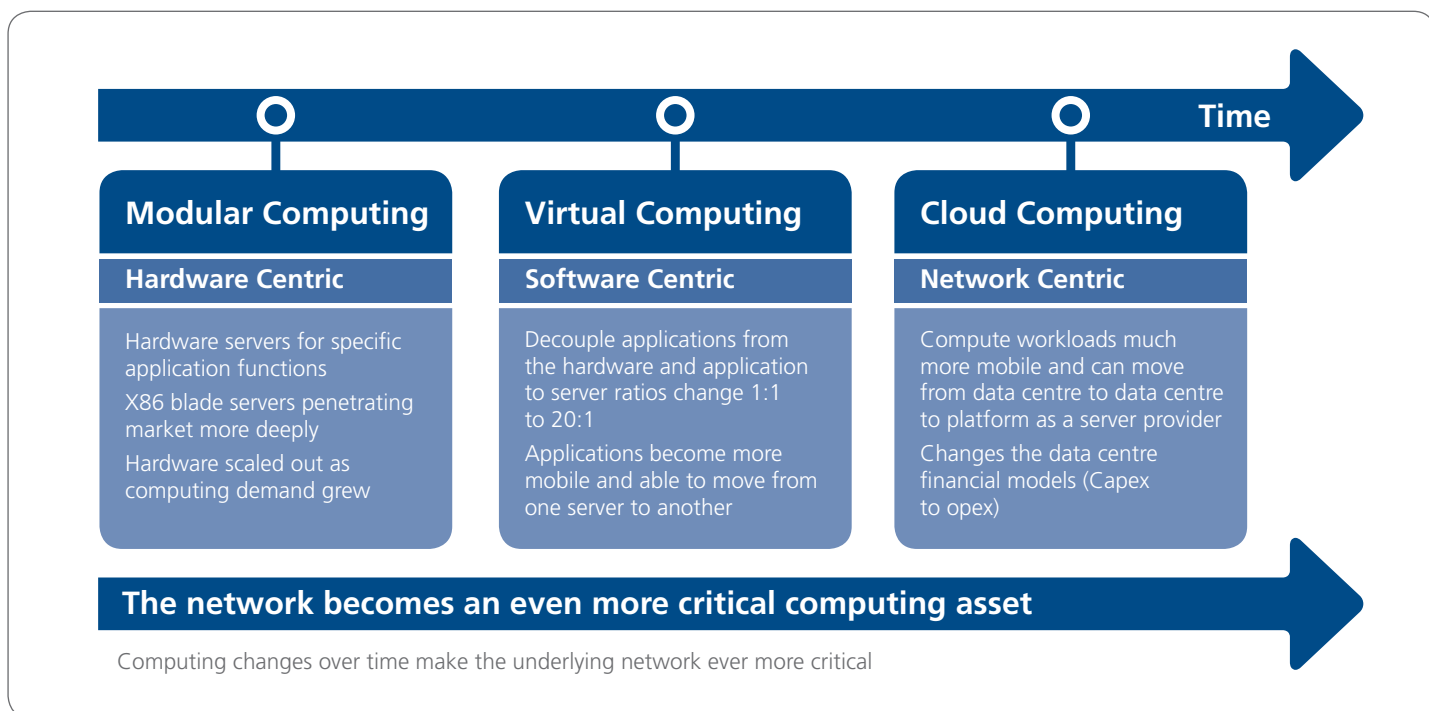
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He says,

“Computing and networking are merging into seamless 'computing fabrics' where the network is critical to successful delivery of application services. Network traffic patterns have changed more in the last five years than in the last twenty-five, but computing fabrics will place even more demand onto networks that are probably not ready to cope with the current traffic loads. Networks and network clouds will need ongoing investment to ensure that they are robust enough to handle cloud computing.”

Get ready to fly in the sky

The nirvana of true cloud computing is not a reality yet, but that doesn't mean that potential cloud users cannot start with their preparations. Rather than jumping



onto the bandwagon, consider the various stages of evolution of cloud computing and align your organisation's strategy to it. For example, start by migrating basic services to SaaS.

Also, ensure that the basic building blocks in your infrastructure are in place to support cloud computing. The data centre is the focus area for this 'cloud' evolution. In the data centre, data is stored and processed and it is the hub from where applications are run and delivered. Data centres are already undergoing the next evolutionary step to deliver improved performance at lower monetary and environmental cost via server and storage virtualisation projects.

Most importantly, the network in the data centre is the foundation and it is critical to enable cloud computing.

"10 Gigabit Ethernet is the answer to delivering increased performance. We are also already starting to see unified fabrics or the converging of networks within data centres to support data and storage traffic,"

explains Middleton.

With a solid network in the data centre, organisations can then start building an internal cloud where applications move in a largely automated infrastructure. Moreover, with a true cloud-based business application architecture, organisations can

begin to outsource less critical applications with low expectations on service quality to cloud providers.

Cloud heaven

The value proposition of true cloud computing is compelling. The efficiencies of a centralised computing infrastructure that can easily be accessed via the Internet, will enable organisations, for example, to scale up or down applications on demand, to handle a higher or lower number of users.

This will change the data centre's financial model from Capex to Opex as cloud computing users can avoid investments in hardware, software and services, and rather pay a cloud provider only for what they use.

IT operations will be agile and mostly outsourced, which will lower costs and increase performance. Applications will be delivered to end users much faster than they are today and information workers will be able to connect to their applications over any infrastructure, using any device, whether it be a phone, a PDA or netbooks.

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Always wear a raincoat

Middleton warns that organisations that sign up for true cloud computing will be giving cloud providers the keys to their kingdom to run parts of their infrastructure.

Assess the ability of the cloud provider to deliver on their promises and fulfil your business requirements. The chosen cloud provider must also be able to meet your pricing and operational requirement SLAs. Assess their terms and conditions for risks. Determine whether your organisation will be able to continue working during outages, as well as how the cloud provider mitigates outages.

Carefully evaluate service providers from a technical, commercial and service level point of view, and keep options open for the possibility of using multiple cloud providers. Outsource computing to multiple clouds to avoid vendor lock-in and to optimise specific clouds for certain types of computing tasks, such as mission-critical financial applications.

Finally, cloud computing is more than a buzzword and it is set to transform the business landscape in the next decade. As with any new technology, organisations need to approach it with caution. So, while the industry is maturing, do not get caught in the rain. Start preparing the building blocks to ensure that you can plug into the clouds when cloud computing reaches mainstream status.

Cloud computing models defined

Traditional CPE (Customer Premise Equipment) model:

Applications and servers are owned and managed by the organisation and are hosted at their own data centre premises.

Hosted model (co-location):

Applications and servers move from an organisation's premises to a third party owned data centre. The assets are owned and managed by the organisation.

Fully hosted model: An organisation buys a license and runs applications on a service provider's hardware. Note that the hardware is still "dedicated" to the organisation.

Private cloud models: Large enterprises build a 'corporate cloud' and run a shared service model across their business units with a more dynamic allocation of resources to optimise usage.

Public cloud models: Organisations utilise third party cloud platforms that deliver dynamically provisioned software and servers computing resources and are billed on a utility basis.



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