Impact of Cloud Computing on IT Organization Structure within Business

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Cloud computing is fast becoming a mainstream reality from the buzzword it was a couple of years ago. Given the current rate, five years from now, cloud computing would have firmly embedded itself into the corporate neurosystem. This will fundamentally revolutionize corporate IT function, orchestrating changes paralleled only by milestones such as advent of the Internet, and outsourcing. An extreme fallout may even be the demise of corporate IT. This article will discuss the top reasons and implications of this shift.

What is Cloud?

Cloud computing,' which refers to the concepts of SaaS (software as a service), IaaS (infrastructure as a service), and PaaS (platform as a service), fast gaining prominence in the enterprise- 2009 Aberdeen predicts that three in four large organizations have already begun deploying some element of cloud computing within their enterprise. This percentage will only rise, and it is not without reason. Analysts estimate that cloud computing delivers 20% cost savings as compared to non-adopters.

Cloud Benefits

It is not just cost savings, implementing a cloud can yield significant operational benefits too. For one, the cloud is always available on-demand; it can be accessed over the internet and consumed as the need arises. Secondly, the cloud is flexible-infrastructure expands and contract depending on usage. This has huge benefit of quick scaling. Third, you only pay for what you consume- subscription based model ensures you are not paying for capacity that you did not consume. Fourth, cloud software, platforms and infrastructures require and allow a low degree of customization, which reduces the complexity of modification and troubleshooting. But above all, cloud services are built around a self-service model, meaning that a business user with limited tech knowledge can deploy cloud services with minimal involvement of IT. It is not surprising then that cloud computing is leveling the corporate playing field between SMEs and big players, at least in terms of IT advantage. For example, a $5M start-up can obtain the same level of IT features and scale as a $5B monolith almost instantaneously through cloud.

Cloud Inhibitors

Despite all the benefits, this shift to cloud computing would have been significantly faster if not for some key shortcomings and risks associated with the technology as of today. The most significant shortcoming is the lack of customization. Each company has many corporate processes that are highly unique and not scalable, and which thus cannot be served by clouds as of now. Security is another big pain-point in adoption – your company's critical data is not owned by you but on a common cloud owned by an external vendor. Volatility in vendor space (with many cloud computing space being subject to many M&As) and immaturity of technology is another big inhibitor to large-scale move to the cloud. We believe however, that as cloud technologies stabilize and more companies make the shift to cloud, these shortcomings will be largely overcome. If they are, there is little reason why companies would want to retain their legacy systems and not move to the next generation of corporate computing. In fact, some companies may even leapfrog a generation of corporate computing all together.

Cloudy Start

Virtualization has facilitated the evolution of in-house infrastructure clouds within the enterprise. At the same time, large companies are experimenting with public infrastructure cloud services, offered by big players like Google, Amazon, and Oracle. On the software-side, SaaS is now being offered beyond non-core applications to the core applications such as ERP and CRM. The adoption of cloud has not been easy for the CIOs. Successful cloud adopters seem to have figured out the answers to the following key questions before they took the leap of faith with cloud:

- ***Governance and Support Implication***: Moving to public clouds is a step forward from the traditional managed sourced services model. What would be IT's role in managing and supporting these services?
- ***Skills Implication***: Do companies have the internal technical and business skills to support advanced virtualization and cloud technologies?
- ***Interoperability Implication***: How will cloud services interact with the in-house applications and between each other?
- ***Security Implication***: Who owns the data on the cloud?

The Long-Term Scenario: Up in the Clouds

In the long term, cloud will be instrumental in changing the way corporate IT is structured and managed. While it is clear that technology will play an extremely crucial in company's strategic success, cloud computing may even make the role of the corporate IT function almost defunct. In fact, the trend has already started: Gartner predicts that by 2012, 20 percent of businesses will own no IT assets. We see two big drivers behind this shift:

First, infrastructure is moving primarily to the cloud, or an 'on-demand' state. On the applications side, it will become not make sense to develop applications in-house: those that require less customization will be replaced by cloud alternatives, and most customized applications will be outsourced to low-cost destinations. In essence, the only applications that will be retained in-house are going to a very small set of applications that are core to the competitive advantage of the firm, or the 'crown-jewels' of the firm.

Second, business demand for rapid and flexible delivery will only rise. At the same time, business partner's will become increasingly comfortable with technology and associated decision-making. Both these factors, coupled with maturity and pervasiveness of cloud offerings, will make it easier for the business partner to take technology decisions on his own without the involvement of the office of CIO.

The 2015 CIO

In a primarily 'cloud'-based company, the IT function may well be left with only three responsibilities: advising businesses on which cloud services to purchase, ensuring interoperability between various clouds deployed in the company, and managing the few remaining 'crown jewels' that cannot be cloud-sourced or outsourced.

It will not be a surprise then to find IT reduced to a fraction of its current size as most of technology needs are sourced from outside the enterprise. Concomitantly, the CIO will break into two roles, first of which will be, 'Chief Technology Procurement Officer' whose main responsibility would be to inform business purchase decisions of cloud services. IT will no longer be able to take technology purchase decisions independently, these will now be taken by the business partner, and IT will only be in an advisory role. Second role will be that of a 'Chief Services Officer' who will be primary responsibility will

be to architect the corporate service strategy and manage integrations between cloud services sourced from outside.

In this enterprise of the future, the skills demanded from IT executives will also undergo a fundamental shift. Client relationship and vendor management skills will become critical, as IT will be called upon to advise on and manage a portfolio of external sourcing partners. Technical skills associated with interoperability and integration between various clouds will be much in demand. The most important technical skill, however, will be ones related to the management of the 'crown jewels'; i.e. knowledge of developing and operating the core IT assets that cannot be cloud-sourced or outsourced.

Vendor Landscape

Currently the fast changing vendor landscape and technology immaturity is slowing down cloud computing adoption in the enterprise. Cloud computing space is seeing and is likely to continue seeing large number of acquisitions of smaller firms that entered the space early, by IT giants who want a slice of cloud pie. The threat of vendor lock-in and lack of interoperability standards are inhibiting the cloud shift. However, once the industry stabilizes and technology matures, companies will find it much easier to move to the cloud. Cloud may also allow companies who have traditionally been the laggards to leapfrog one whole generation of computing and come directly on the cloud. This may shake things up in their respective industries.

As cloud services become the gold standard for applications and infrastructure, providers of traditional IT services will no longer be able to rely on their current revenue streams. IT vendors will have to either offer cloud versions of their key applications, or create entirely new cloud applications and infrastructures. If they choose not to venture into cloud space, their only alternative will be to serve the niche but premium 'crown jewel' segment.

We also expect cloud vendors to remain large in size, but offer clear and precise interoperability standards. While customized technology development allows today's vendors to charge a premium for dedicated services, tomorrow's cloud vendors will likely have higher profitability because of the comparatively lower cost structure of the cloud.