



DATA CENTER

Gaining the Cloud Advantage

CIOs can elevate the role of IT in their organizations by enabling new business opportunities with innovative cloud technologies.

BROCADE

CIOs face a daily challenge: how to shift their focus away from technology maintenance and towards business strategy, adding value and innovation to the enterprise.

The cloud is emerging as a viable and powerful alternative to the complex challenges of managing on-premise IT systems—one that minimizes risk and maximizes business advantage, and finally allows the CIO to be at the center of strategic business decision-making.

THE CIO CHALLENGE

What restricts many senior IT strategists is not a lack of ambition or skills, but the fact that the IT department itself is often regarded as a service department whose primary role is patching legacy systems.

Indeed, some IT departments are perceived to be resistant to change: they regard internal pressure for new tools and faster, more nimble systems as an increase in their workload. In part, this is because of the disconnect between day-to-day technology management and business decision-making resulting from IT's status as a "service" rather than a "strategic unit."

The underlying reasons for IT departments being seen as obstacles are understandable: most on-premise network, data, and communication infrastructures are a mix of legacy systems, some components of which require their own tools, management regimes, and skill sets.

As a business grows, inefficiency often infiltrates the network, not by design but by a slow accumulation of assets. Cloud-based services, on the other hand, promise a new approach that allows legacy systems to be set aside with minimal risk to business continuity and budgets.

In some on-premise IT infrastructures, there are multiple disconnects between the data and communications networks, between processing and storage, and between edge components (such as desktop PCs) and the data center. These different parts of the infrastructure might have evolved at different speeds. Factor in mobile computing and telephony, and the end result is a fragmented network that can be difficult to quantify, let alone manage.

Today's business is no longer a single entity, but an extended enterprise of partners, suppliers, customers, and Web communities—and, where mergers and acquisitions have taken place, business units that might deploy different enterprise systems. All of these have to be integrated into—or at least talk to—the on-premise network. Some of those components of the extended enterprise might be based in regional or international offices.

Internal pressure on IT departments is certainly growing: on the one hand, economic constraints mean IT departments are expected to do more with less, while on the other, the pervasive influence of social networks in the consumer space means that staff are frustrated by any enterprise technology that is not as fast and intuitive to use as their own online Web presences.

CIOS ARE IN THE MIDDLE

At the center of all of these market forces are the CIOs, and often the only available option they see is to dig in their heels. Who can blame them? Legacy technology often means staffing fiefdoms, which makes it harder for IT strategists to separate business goals from technology maintenance and internal staff politics. That is not a recipe for an agile and competitive business, or a responsive IT department.

For CIOs or senior IT managers, this creates a vicious circle of cause and effect. Although they might not sit at the boardroom table with other C-level executives, they are still expected to understand and support business goals. And any perceived resistance to those goals becomes an obstacle to the strategically thinking CIO.

Part of the problem is rooted in finance. The rapid obsolescence of hardware and the upgrade paths associated with most enterprise applications and operating systems means that on-premise IT networks can be a constant drain on capital rather than something that can be accounted for within more predictable operational expenditures.

Some businesses are forced to provision their networks for unusual peaks in usage, which might only occur once (if at all) in a trading period, leaving their IT systems underused. CFOs will not typically support that. Other enterprises struggle to provision for spikes in usage, leaving systems vulnerable to sudden increases in demand—in other words, vulnerable to the very business success the enterprise is striving for.

ENTERING THE CLOUD

So how can enterprises step outside of this circle and find a new model for integrating technology with business goals? The luxury of being able to discard legacy on-premise networks and start again simply isn't feasible for most enterprises. Where that is possible, the end result of trying to design and build state-of-the-art networks from scratch is often a bureaucratic mess of competing suppliers, consultants, deadlines, and budgetary compromises—resulting in a network that is under-provisioned when it finally goes live.

“The cloud” is emerging as the alternative model to on-premise legacy systems. The cloud means on-demand hosted services, such as computing, network, and storage capacity, where all the time-consuming, complex, and expensive hardware management takes place at one layer removed from the buyer.

According to recent findings by research firm IDC, cloud-based IT services are currently worth \$16.1 billion globally, and that figure is estimated to grow to around \$43 billion by 2013. For example, a research commissioned by Brocade® in Europe shows that 60 percent of enterprises expect to complete their transition to the cloud computing model within the next two years. The key business drivers are to reduce cost (30 percent), improve business efficiency (21 percent), and enhance business agility (16 percent).

DEFINING THE CLOUD

How does this work? Typically, the cloud is a simple idea, but a more complex entity. It can be broken down into three broad areas:

- Software as a Service (SaaS)
- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)

These on-demand services can be delivered over public infrastructures (a “public cloud”) or be provided as customizable services to the enterprise over private networks (a “private cloud”), or as a combination of the two (a “hybrid cloud”). In other words, there are multiple clouds, and so the term “cloud” refers to the concept rather than the delivery system.

Such services offer multiple business and financial benefits, such as access to a highly scalable infrastructure, meaning the buyer incurs costs as operational expenditure. It also means that the upgrade path for the underlying technology becomes part of an on-demand service and is both seamless and invisible to the buyer.

And despite the entrenched belief within many businesses that security is best achieved in-house where on-premise assets can be directly managed and monitored, the truth is that security is usually not a core expertise of most enterprises. The cloud also means that security is also delivered as part of a service to the enterprise, by technology experts for whom security is their business.

For many enterprises, a private cloud might be the closest match to their goals and create the greatest business advantages because it presents a customized solution that better matches their internal processes.

What business users want is the ability to select systems on demand from a combination of local and remote providers. What the IT department wants is the ability to configure and monitor those systems via software. Building these systems is the key to stepping into the cloud.

THE CLOUD ADVANTAGE

The overall cloud advantage, whether public or private, means being able to select how and where an application runs based primarily on business, rather than technology, considerations (security, longevity, frequency, cost, performance, uniqueness) and to optimize those decisions in order to maximize competitive advantage to the business.

Skilled IT strategists are increasingly exploring these benefits. More and more enterprises recognize that software, infrastructure, and platforms delivered as on-demand services can offer strategic advantages in terms of scalability and cost-effectiveness. This is possible because systems can scale dynamically rather than be built for usage scenarios that might never arise.

The cloud model allows senior IT strategists to set aside maintenance and patchwork and manage the network at arm's length to specific service levels and standards. The cloud paradigm also means they become free to operate their department as a core business unit in greater alignment with enterprise goals.

In other words, the traditional computing model has been reversed: both information and the consumption of that information are distributed. And because users have distributed both the computing power and the information storage, they have essentially distributed the data center.

In such a network, smart end points contain lots of computing power and are remote, widely distributed, and mobile. Information and applications are virtualized and can reside anywhere within the infrastructure known as *the* cloud.

THE GREAT LEVELER

The cloud is also an enabler and a leveler for businesses of all sizes, surpassing the limits of on-premise IT systems by providing access to a world-class infrastructure that can scale with ambition. In smaller enterprises, the capacity of the network can only be increased by significant capital outlay, and that equals risk. With cloud-based services, capacity can be added (and removed) on demand, and paid for on a per-usage basis.

Moving mission-critical applications to a cloud provider begins with virtualization of servers, applications, desktops, storage, and other infrastructure components. To achieve this, the IT organization, culture, and skills must first evolve, particularly when relocating mission-critical applications and services in public or private clouds.

With the cloud, a CIO who sits at the boardroom table oversees external suppliers delivering IT services while managing technology provision compatible with business goals. This puts the CIO in a position of real power, because the CIO needs to lead both the expedition and the cultural change. Today, internal roles regarding technology use are already changing. For instance, the CFO's knowledge of IT is greater, executive staff are generally more familiar and at ease with IT, and frequently, the marketing department owns the online media channels used by the customer.

This is also an opportunity for realignment of the enterprise around strategic goals. As enterprises move deeper into cloud deployments, they can decide what is core to the business and what can be better run as a customized service based on business need.

THE REAL CIO EMERGES

With the cloud model, IT leaders can set aside the drudgery of systems maintenance, much of which might be rooted in legacy systems and legacy processes. The day-to-day management of IT then becomes a question of managing SLAs, raising the profile of the IT department within the organization and putting it at the heart of strategic change management and business decision-making.

In such a scenario, CIOs can finally focus on managing the information process throughout the organization. That information also needs to flow up to the CEOs so they can understand the impact of new technologies as well as manage the internal innovation that has been driven by the technology change.

With these business advantages come a variety of financial advantages: a shift from expensive, hard-to-justify capital expenditures to the predictability and liquidity of operational expenditures, plus lower staffing costs as the enterprise is unlikely to need specialists for each tool or component of a complex legacy network.

HOW TO START THE JOURNEY

Many existing networks are far too complex to reliably scale in order to handle the amount of data and applications being proliferated today. For networks to become as reliable and cost-effective as necessary to handle the expanded responsibility of tomorrow's virtualized data center, they must be simple. If the business is going to run on them, networks must be non-stop and optimized for all types of business applications.

While the vision of tomorrow is a radical shift from today, adoption of these models must be a gradual, evolutionary process. Economies and business continuity necessitate a migration strategy that simplifies operations, protects business assets, and establishes new standards for uptime.

Any organization should strive for its IT infrastructure to provide a competitive advantage. To successfully integrate the data center into the network and create a truly virtualized data center environment, organizations need to select a vendor that can enable this new ecosystem, establish new levels of reliability, and protect existing investments while radically simplifying the infrastructure.

To learn more about how a reliable networking infrastructure can enable the full benefits of cloud computing, visit www.brocade.com.

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