Leveraging the Private Cloud for Competitive Advantage

Introduction

While it is universally accepted that organisations will leverage cloud solutions to service their IT needs, there is a lack of clarity around which type of cloud offers the best fit for their businesses. With this in mind, the onus is on every organisation to understand what cloud means - not easy in a competitive market where an increasing number of vendors have a cloud proposition.

We defer to the National Institute of Standards and Technology in the USA, which has come up with a widely accepted definition that identifies five key characteristics of cloud:

1. On-demand self-service
2. Broad network access
3. Resource pooling
4. Rapid elasticity
5. Measured service

Three cloud service models utilise these characteristics, Infrastructure-as-a-service (IaaS), Software-as-a-Service (SaaS), and Platform-as-a-service (PaaS).

With IaaS, an organisation's hardware infrastructure is hosted and managed by a third-party provider. SaaS is where organisations subscribe to a specific application hosted and delivered by a service provider. PaaS is where compute power and storage are turned into a utility service, often rented on an ad-hoc basis to facilitate fast builds or test and development.

SaaS and PaaS business models are predicated on cloud providers selling services that run on shared infrastructure. This gives them the economies of scale that make the model cost effective for themselves and their clients. IaaS provides dedicated infrastructure that gives client organisations more control, because the cloud-based IT estate operates as an extension or even a replacement of an organisation's existing environment.

Going into 2015, private cloud services will dominate the IT requirements of Irish businesses, according to IDC research. In this white paper we will examine the significance of private clouds by looking and at the benefits and the drivers for adoption.

Private and Public Clouds

There are three models for cloud deployment: public, private and hybrid. Hybrid is not simply a mix of public and private cloud. It also encompasses traditional data centres services, such as co-location and disaster recovery, as well as existing on-premise systems that are often too complex to move to the cloud.

Every organisation is heading into a hybrid world – some are there already – where IT services are consumed in multiple ways that are as varied as their business processes. Along the journey, difficult decisions have to be made about the type of services they are prepared to take from different types of cloud. Understanding the difference between private and public clouds becomes business critical.

Private cloud

Dedicated infrastructure with cloud characteristics provisioned for exclusive use by an organisation, accessed over the public Internet and/or an MPLS network, depending on the service provider. Using the IaaS model, it becomes an extension of the organisation's existing IT environment and is subject to the same level of governance and security. At the same time, it adds elasticity, scale and agility – all the benefits of the cloud with enterprise-class resilience.

A private cloud can be hosted on premise, in a third-party location or in the data centre of the cloud service provider.

Public cloud

Segregated services delivered from a shared infrastructure and accessed over the public Internet and/or an MPLS network, depending on the service provider. The host provides a compute/storage/network platform which can be accessed from anywhere as a simple pay-as-you-go service that eliminates IT complexity.

While public clouds are increasingly robust, the model makes businesses with sensitive data uncomfortable. Furthermore, revelations about surveillance operations carried out by the US National Security Agency have strengthened the commitment of European organisations to ensure that data resides in Europe at all times.

Private Cloud Benefits: Security, Control and Performance

Compute, storage and networks are the three infrastructure components that make up a private cloud. The way they converge and leverage virtualisation technology facilitates cloud characteristics like elasticity and self-service.

There are three key benefits of a private cloud, not just over public clouds but compared to traditional IT infrastructure:

More secure

Large cloud providers host private clouds in data centres with security solutions beyond the reach of most organisations, both in terms of cost and the resources needed to run them. And because private cloud infrastructure is for the dedicated use of client organisations, layers of security and governance can be wrapped around the technology that adhere to existing client policies and regulatory responsibilities. Private clouds give organisations the total control they demand and the assurances they need with regards to their data and its location at all times.

Though organisations hand over responsibility for the day-to-day management of IT when they put services into the cloud, their regulatory responsibilities remain exactly the same. In fact, there are greater requirements. Businesses must look for recognised accreditations and standards that demonstrate the cloud provider has the credentials to host sensitive data and business critical services.

The Information Security Management Standard ISO 270001 is a prerequisite. This demonstrates an approach to security that is process-driven and embedded. A series of external assessments ensures over 130 security controls are in place long with a high level of security governance around risk assessment and risk management.

Greater control

The private cloud provider runs the environment but the client organisation still controls it. With dedicated compute, storage and network, the organisation has a level of control over every component in an integrated IT environment because of inherent cloud characteristics.

Workloads can be distributed to make the most of compute resources; storage tiers expanded to provide more capacity; and networks optimised to ensure the demands of the business are always met.

Self-service portals give inhouse IT teams the tools to build, deploy, monitor and manage the cloud service. They can quickly provision new services to meet changing business needs while only paying for what is used.

With some cloud providers there is also the option of a managed service, where they will monitor and maintain the environment. Ultimate control, however, still resides with the client organisation. The provider handles the day-to-day issues and reports to the client; the client is able to concentrate on core business and align IT to strategy more easily.

Better performance

The single biggest benefit of the cloud is performance, a new agility that transforms the relationship between IT and the business. The long-standing mantra about "aligning IT to the business" has been a struggle because disparate on-premise systems create disconnected silos that are expensive and time consuming to manage. Responding quickly to market changes is hard if not impossible in these environments. The internal IT function becomes a cost base, fighting fires and "keeping the lights on", rather than driving the business forward.

The private cloud, properly executed, offers the chance to change this broken model, to leverage technology for competitive advantage and successfully achieve the goal of aligning IT to the business. How?

- Compute, storage, and networks become elastic resources that be can scaled up or down to meet changing business needs
- Dynamic virtual resources facilitate the fast provisioning of new services to take advantage of new business opportunities and growth
- Hardware and networks are upgraded and refreshed to keep operations optimised
- Security is automatically updated to address new and emerging threats
- Corporate governance is in place to meet changing regulatory requirements
- High availability ensures business continuity
- The cloud provider fills resource gaps and spares the client organisation from having to recruit new skills
- Client organisations can focus on the core business and let the cloud provider worry about the services

Addressing Cloud Concerns

Private clouds answer the concerns that many organisations have about the cloud. Research and surveys repeatedly highlight the same fears – executives and senior management are worried about security and a loss of control. These concerns might be justified for public clouds, where even the biggest providers struggle to give businesses the transparency they need, but a properly executed private cloud is able to address them.

Private clouds give organisations control and security. Public clouds are predicated on volume through multi-tenancy that drives down cost but reduces control. Their lack of transparency contravenes regulatory requirements so for the many businesses that collect and collate sensitive data the public cloud is out of bounds. Often accessed over the public Internet, with upgrades and refresh cycles that are entirely at the behest of the cloud provider, performance levels are not always guaranteed.

Private clouds, by contrast, are dedicated resources that offer many advantages, including:

- Single tenancy
- High performance
- Customisable components
- Layered security
- Full control and governance
- Detailed Service Level Agreements with guaranteed uptime
- Visibility of service performance metrics
- Data protection and security that meets the most stringent regulatory requirements

What a private cloud will ultimately deliver is evolution not revolution, a natural next step for IT services that introduces agility and removes bottlenecks without compromising governance.

Is a Private Cloud Right for You?

While every business will find some benefits from the cloud, the speed and ease with which they are realised will depend on their cloud migration strategy. Because every company has unique requirements, determined by existing infrastructure and business processes, you will need to undergo a consultation process to identify the most effective path to realising the benefits that a private cloud can deliver to your organisation.

Crucially, this is not just a technology discussion. Because the cloud is all about aligning IT to the business, a key priority is to ensure that the agility and flexibility of a private cloud is matched to strategic business goals.

The other challenge is finding the partner to take you on your cloud journey. The best fit is a provider that understands your strategy and the steps needed to realise your goals. There are two steps in the consultation process.

Step 1: Analyse what you have

- Database and IOPS (input/output operations per second) performance
- Maturity of virtualised infrastructure
- Legacy systems and applications (that may be unsuitable for the cloud)
- Network services, bandwidth and performance
- Security layers and regulatory requirements

Step 2: Plan what you need

- Capacity requirements for servers, storage and networks
- Security and governance that conforms to regulatory requirements
- Resource allocation to increase efficiency without compromising control
- Self-service automation and/or managed services
- Service Level Agreements to guarantee uptime
- Elasticity and agility to "flex" up and down with business needs
- Visibility to measure and optimise the cloud service

To work through these steps, you will need a provider that not only has the experience and technical capability to devise an appropriate cloud strategy, but one that has the end-to-end capability to deliver on all of the benefits of the private cloud.

BT Compute – The Ultimate Private Cloud

This white paper has explained how organisations can take advantage of the cloud as an enterprise-class service with private clouds. Not all private clouds, however, are the same. BT Compute is a portfolio of data centre services that includes a private cloud option that can be designed to suit your particular business needs.

It leverages BT's unique end-to-end capability to deliver on the three key benefits:
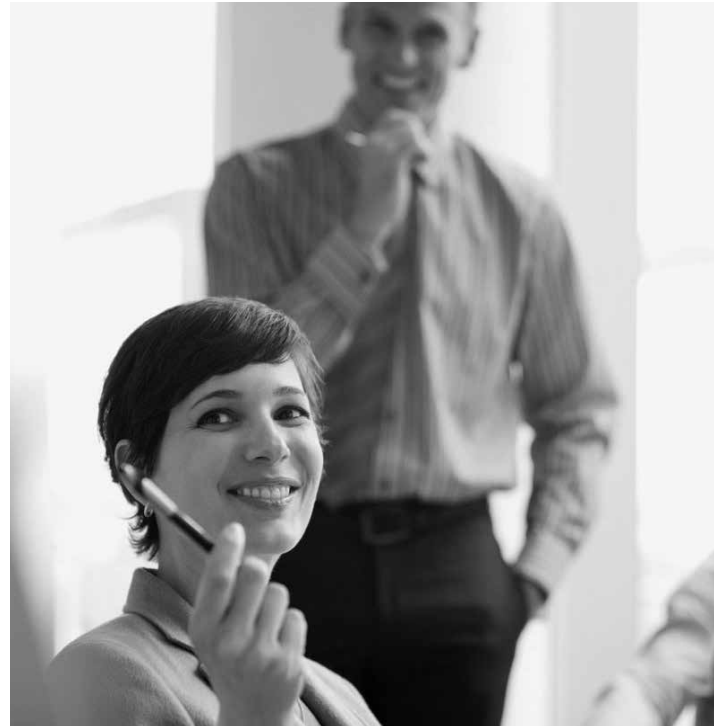
• Security
• Control
• Performance

There may be a paradigm shift in the way IT is delivered and consumed, but as far as BT is concerned there is no change in an organisations need to have a world-class service that adheres to the most stringent service levels.

The capital cost and resource requirements needed to emulate BT skills and resources internally is out of reach for most organisations. By going on the cloud journey with BT, organisations leverage internal knowledge and expertise built up over decades, and benefit from BT relationships with leading vendors that have been forged in deployments around the world.

BT approach

Building a private cloud with BT starts with capacity planning, storage profiling and network optimisation. The BT Private Cloud service draws on the breadth and depth of BT's technical expertise to optimise components of converged infrastructure that are fundamental to a private cloud.

BT will supply, install, configure, and maintain the BT Private Cloud infrastructure. The client has the option of a self-provisioning through a service portal, or BT can run it all as a fully managed service. The detail is in how much day-to-day involvement the client wants to allocate to its internal resources. BT will provide an SLA (Service Level Agreement) to meet any requirement.

Full accreditation

As well as having the right security accreditation, Information Security Management Standard ISO 270001, BT conforms to the IT Service Standard ISO 20000. This ensures the highest levels of service management are instilled in the culture of the provider.

Accredited service management capabilities from the service provider must, from a risk mitigation perspective, be used as a critical measure by organisations considering a private cloud implementation. With BT private cloud best-of-breed technologies are used throughout the stack and managed to best-practice guidelines provided by ITIL (Information Technology Infrastructure Library).

Service management skills, such as resource planning, are as important for the cloud as traditional IT. The ability to quickly scale up or down is one of the advantages of the cloud, while toolsets are available to provide visibility of performance and utilisation of services.

One-stop provider

With unique end-to-end capabilities - from global/ local networks and data centres to the desktop and mobile device - BT simplifies the customer engagement. With a one-stop service provider and single point of contact, businesses reduce the risk of multiple points of failure. Liberated from having to join up disparate services from multiple providers, they will reduce complexity and enjoy tangible cost savings, lowering the total cost of ownership by up to 40 per cent.

Local provider

Proposed amendments to the EU General Data Protection Regulation will put a greater onus on organisations to be accountable for their data and subject them to fines if they fail in their responsibilities.

As well as providing the highest level of operational security controls for protecting data in a physical location, The BT Compute portfolio allows you to address your data regulatory requirements and jurisdiction. A European organisation, for example, may require guarantees that the data will always reside in Europe. During collaboration and design of your private cloud solution, BT can address requirements such as disaster recovery and automatic failover which ensures that if one site goes down, another goes live without risk of compromising data sovereignty. Not all private clouds provide the same guarantee as BT.

Global footprint

Client companies also receive the benefits of BT's global footprint, facilitating fast access to overseas markets and a vast knowledge base that includes reference cases for multiple sectors and industries.

Market-leading technology

BT continually invests in research-and-development. It also enjoys deep-rooted partnerships with the world's biggest IT vendors. Businesses can concentrate on their core business and entrust BT to deliver on the technology.

Exploiting the latest technology is not just about business efficiency and cost saving. For many organisation it's also about being greener as part of their corporate social responsibility. The BT portfolio is green by design, delivering greater environmental efficiency and a lower carbon footprint.

Cloud Journey Checklist

BT Compute ticks the boxes that matter for organisations looking to put infrastructure in the cloud:

- ✔ Enterprise-class security
- ✔ Agile and elastic
- ✔ End-to-end service
- ✔ Full control and governance
- ✔ Guaranteed uptime
- ✔ Optimised performance
- ✔ Best-of-breed technologies

BT

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