



I D C I V I E W

Spend More Time Using and Less Time Building Your Cloud

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The Role of Cloud in Digital Transformation

In today's digital economy, enterprises depend on the effective use of technology not just to support ongoing business processes, but also to drive new sources of competitive differentiation. For many enterprises, success or failure ties directly to the effectiveness of their IT service delivery environments. Most IT organizations and the datacenters they run are optimized to support their companies' mission-critical systems of record for supply chain management (SCM), enterprise resource planning (ERP), and on-line transaction processing (OLTP).

With the advent of the Internet, then the mobile explosion, and, now, the big data analytics revolution, companies must dedicate more IT resources and staff to the creation and continual development of systems of engagement, insight, and action that improve the customer experience. They must also make sure that existing applications and these new digital services are consistently managed in terms of security, reliability, and scalability.

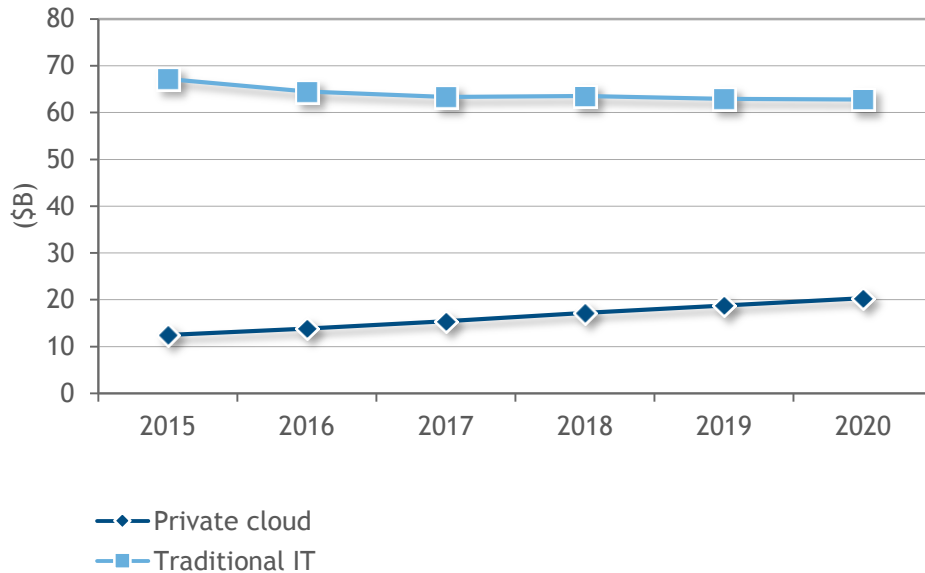
Cloud is the foundation for this new agile business world. It's the platform for enabling agile application development. Cloud-based infrastructure is key to delivering flexible, on-demand access to the resources underpinning these new digital business offerings. It allows organizations to scale infrastructure as needed to support changing business priorities, while reducing the risks of wasted IT resources that inhibited past investments in new digital services.

Cloud Deployment Challenges

According to IDC, annual spending by enterprises on IT infrastructure hardware (server, storage, and network) to build and maintain private clouds in their own datacenters will rise from \$12.5 billion in 2015 to \$20.3 billion in 2020. Add in spending on cloud and application software, as well as on the IT staff resources required to maintain and extend these clouds, and spending levels are considerably higher (see Figure 1).

Figure 1

Worldwide Cloud and Traditional IT Infrastructure Hardware Spending, 2015–2020 (\$B)



Notes:

IT infrastructure hardware includes server, storage, and datacenter network hardware.

Private cloud and traditional IT includes spending for on-premise and off-premise (hosted private cloud, managed service, and outsourced) hardware.

Source: IDC's Worldwide Quarterly Cloud IT Infrastructure Tracker, 4Q15

In today's datacenter, cloud isn't just about a specific product portfolio or service delivery model, however. Developers and business leaders expect their IT teams to automate the provisioning of IT resources for mobile and analytic workloads while also achieving maximum reuse of assets as applications evolve. Cloud reflects an approach to application design, deployment, and delivery that allows organizations to get more effective use out of their compute and data assets.

To ensure that the money and resources allocated to private cloud are well spent, addressing the requirements of business leaders and their teams is the most important challenge that IT organizations face today. Unfortunately, limitations in existing infrastructure solutions and IT operations processes make it very hard for enterprises to build and run sustainable clouds in their datacenters.

Why Do Enterprise Clouds Fail?

1. The IT teams built the wrong cloud for the wrong people.

Many private clouds fail when they are built without fully considering needs of the applications and app owners. You need your cloud to be application-centric. Your cloud should leverage pre-set profiles and models for core applications to simplify and lower the cost of management.

2. IT teams built the right private cloud, but became a victim of their own success from lack of agility in adding and reallocating capacity and resources.

Many well-defined private clouds fail when they become a quest to build the perfect cloud from pieces that don't naturally go together, making upgrades and expansion time-consuming and risky.

In addition, the cost recovery model is not often aligned aligned to growth or success of the service, so funding this growth becomes a blocker.

Your cloud should be turnkey, so that you can deploy faster and expand more quickly and move on to using your cloud rather than continually rebuilding your cloud. Private clouds will seldom exist as the sole cloud platform for serving workloads. The public cloud usually has a role to play, and a successful private cloud needs to exist inside a wider hybrid cloud ecosystem, not just in isolation.

3. IT teams built a private cloud too limited in vision, preventing them from leveraging a broader range of complementary cloud resources securely and consistently.

Private clouds fail when they lack key cloud capabilities that enable coordinated use of hosted and SaaS cloud services as complements and extensions to internal services. Your cloud should have native integration with clouds from leading SaaS and IaaS cloud providers, so that you can adopt a hybrid cloud model to extend business reach. Deploying a cloud that leverages partitioning technologies to enable isolation of key workloads via bare-metal provisioning of resources ensures that you will be able to take advantage of new technologies like microservices and containers without disruption or risk.

The root cause of all of these failures is the limitation that companies face when they attempt to build private cloud solutions based upon disjointed sets of hardware and software components. Such an approach, which is different from traditional virtualized environments, forces compromises in features, flexibility, and operational efficiency that run counter to the basic purpose of adopting a cloud approach. You need a partner that provides a well-defined cloud platform that reduces set-up and configuration complexity, while also boosting agility and operational efficiency – all without sacrificing reliability and security. Such a cloud platform will dramatically reduce the time and effort required to add/rebalance infrastructure resources in one datacenter and across multiple datacenters around the world.

Even the best designed cloud platform must adapt to changing demands and conditions. You also need a partner who can who has the right set of technical, financial, professional and managed services offerings to facilitate the transition to a cloud model in weeks or months and for the foreseeable future. This partner should also provide solutions that enable control over the movement, protection, and use of data across all cloud environments. Finally, you need a partner who provides insights into rapidly changing requirements and flexibility in the acquisition and payment for cloud resources.

Cloud Skills Challenges

Enterprises face a range of challenges when it comes to shifting to a more cloud-centric IT model. Those that previously outsourced IT processes often lack the in-house skills to drive transformation to IT-as-a-Service. Those that retain management of their IT systems and process also face challenges when it comes to acquiring skills in new technologies and service delivery management as well as the modification of legacy internal processes to be able to benefit from the agility offered by Cloud technology.

Enterprises need a partner that has a wide range of capabilities and skills around cloud consulting to help drive a development and transition to a cloud strategy, including integration with existing systems (ITSM, CMP, etc.) automation, and organization process, application and workload migration, etc.

A critical element in this skills challenge is the need to build a roadmap, create a foundation, and start the transition to deliver technology which enables a full DevOps operating model and development tooling. Organizations need more than a virtualized and automated IT environment – and partners need to recognize that this isn't primarily about infrastructure services. Organizations need help in adopting an application-centric, turnkey approach. It's so important that enterprises get the infrastructure and data right (data protection, data management, etc.), get the middleware right, and get emerging services like container and micro-services right.

Hitachi Data Systems' Approach – Enterprise Cloud

Hitachi Data Systems (HDS), a global supplier of IT solutions for enterprises, provides a full portfolio of integrated hardware, cloud software, and cloud enablement services designed to bring a pre-engineered level of efficiency and predictability to creating a tuned cloud platform that meets the unique needs each customer.

HDS' goal: Reduce the time spent "building and maintaining your cloud," and increase the time spent "using and exploiting your cloud." End users and application owners/developers simply go to the cloud service portal, and based on the application characteristics, they select or have the system select the right set of services based on Service-Level Agreement (SLA) price and performance. The portal also includes support for off-premises cloud resources required in today's increasingly hybrid cloud environment.

The platform provisions the resources in minutes, all the way from application down to infrastructure, placing the right workload in the private cloud. Or, if the resources are only required temporarily for a one-time need, the same system enables placement of the workload into the other types of cloud such as a companion off-premises hosted private cloud.

Their turnkey approach marries a tightly integrated pre-engineered hardware and SW infrastructure platform with the professional and managed services needed to build, maintain, and grow a cloud platform in less time. It enables agile deployment through an automated application and workload provisioning of current legacy applications – both bare-metal and virtualized applications – as well as supporting new container-based and cloud native scale-out applications built via a DevOps approach for IoT like workloads, enabling customers to concentrate of application development.

HDS's pre-engineered solution with an application-centric approach is based on three linked elements:

- A pre-engineered set of market leading compute, storage and network components orchestrated using HDS's UCP/UCP Director that provides maximum flexibility, availability and security while minimizing operational burdens
- Support for leading cloud system and orchestration software solutions (starting with VMware's VCenter and VRealize suites) along pre-defined cloud service catalogs and management processes that speed time to deployment and ensure optimal performance
- A well-developed set of complimentary cloud assessment, planning, design, deployment, and compatible hosted cloud managed services that ensures faster and more effective set up and sustained delivery of cloud services that meet the right requirements

HDS also recognizes that two key reasons companies want to adopt cloud operating models are: 1) to more closely align IT expenditures with actual use, and 2) to dramatically reduce the

costs associated with hardware and software updates and migrations. In response, HDS is providing flexible commercial models that include; traditional CAPEX, an on-demand utility, as well as a set of fully managed private/hybrid cloud managed services with a service catalog and SLA which removes the traditional CAPEX burden which many Enterprise clients find a challenge. These flexible financing and long-term support options reduce the risk to build, maintain, and operate a private cloud while improving governance, control, and service delivery, as well as providing full cost transparency and control.

Challenges

The key challenge for HDS as it rolls out its Enterprise Cloud portfolio of solutions will be to ensure that it delivers solutions which support all the preferred cloud software platforms that customers may want to leverage. Successful private cloud solutions are all about flexibility, but they must also be compatible with the growing range of hosted private cloud and public cloud services that companies will be using as well.

Future Outlook

To fully exploit cloud in the coming years, organizations need a strategic cloud partner, not merely a supplier of "cloud-ready" hardware or software. This partner should facilitate the transition to a cloud architecture by providing a pre-engineered hardware/software optimized for fast deployment and low cost operations. This partner must also provide the complementary services to support rapid transition to a cloud-optimized IT operations model. The key capabilities to look for from your partner include:

- Pre-engineered solution to reduce time to being cloud-ready
- Flexible acquisition and financing options for systems, software, and managed services
- Assistance in service creation, rationalization, and automation
- Insight into the new capabilities available in leading hosted private and public cloud environments
- Continuous resource usage monitoring and optimization
- Advanced data protection, data security and control systems

Solutions like HDS's Enterprise Cloud, its portfolio of complimentary cloud assessment, design, deployment, and managed services, and its flexible acquisition models will play a critical role in driving organizations' rapid shift to cloud-based application development in leading-edge areas such as the Internet of Things (IoT) and cognitive systems.

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