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Spend More Time Using and Less Time Building Your Cloud

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By Richard L. Villars

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The Role of Cloud in Digital Transformation

In today's digital economy, enterprises depend on the effective use of technology to drive new sources of competitive differentiation, not just to support improvements in ongoing business processes. Success or failure ties directly to the effectiveness of enterprises' IT service delivery environments.

IT organizations and the datacenters they run today must continue to be optimized to support mission-critical systems of record for processes like supply chain management (SCM), enterprise resource planning (ERP), and online transaction processing (OLTP). With the advent of the internet, then the mobile explosion and, now, the analytics/AI revolution, however, 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 ensure that existing applications and these new digital services are consistently managed in terms of security, availability, reliability, and scalability.
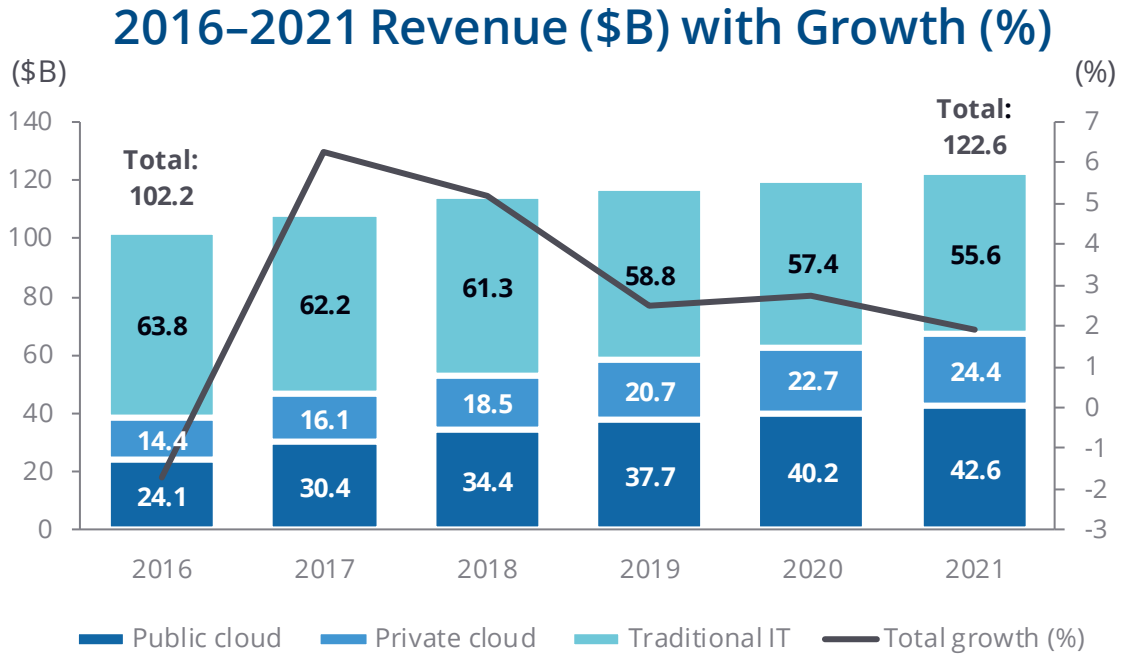
Cloud-enabled IT is the foundation for this new agile business world. Cloud-based infrastructure is key to delivering flexible, on-demand access to the resources underpinning modernized versions of existing applications while also serving as the platform for enabling agile application development of 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 can inhibit needed investments in new digital services.

Cloud Deployment Challenges

According to IDC, annual spending by enterprises and managed service providers to build and maintain private clouds will rise from $16.1 billion in 2017 to $24.4 billion in 2021, an 11.1% compound annual growth rate (CAGR). Add in spending on business transformation 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 IT Infrastructure Hardware Spending Revenue Snapshot

2016–2021 Revenue ($B) with Growth (%)

Selected Segment Growth Rate	Total Market CAGR
▼ Traditional IT CAGR -2.7%	
▲ Private cloud CAGR 11.1%	**3.7%**
▲ Public cloud CAGR 12.1%	

Note: Chart legend should be read from left to right.

Source: IDC, 2018

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. Enterprise private cloud (EPC) reflects an approach to application design, deployment, and delivery that allows organizations to get more effective use out of their compute and data assets, as well as the open source ecosystems available for cloud-native development.

To ensure that the money and resources allocated to enterprise private clouds and the management of all resources across hybrid cloud/multicloud environments 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 enterprise private clouds in their datacenters.

Why Do Enterprise Private Clouds Fail?

- **The IT teams built the wrong cloud for the wrong people.** Many enterprise private clouds fail when they are built without fully considering the needs of the applications and app owners. You need your cloud to be application centric. Your cloud should leverage preset profiles and models for core applications to simplify and lower the cost of management.

- **IT teams built an enterprise private cloud too limited in vision, preventing secure and consistent use of a broader range of complementary cloud resources.** Enterprise 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 diversified cloud model to extend business reach. Deploying an enterprise private 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.

- **Many well-defined enterprise 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 to growth or success of the service, so funding this growth becomes a blocker. Your enterprise private cloud should be turnkey, so that you can deploy it faster and expand it more quickly and move on to using your cloud rather than continually rebuilding your cloud. Enterprise 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 enterprise private cloud needs to exist inside a wider hybrid cloud/multicloud ecosystem, not just in isolation.

The root cause of all these failures is the limitation that companies face when they attempt to build enterprise 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 enterprise cloud platform that reduces setup 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 enterprise cloud platform must adapt to changing demands and conditions. You also need a partner that 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 — enterprise, hosted, and public. Finally, you need a partner that provides insights into rapidly changing requirements and flexibility in the acquisition and payment of enterprise 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-based technologies.

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

A critical element in this skills challenge is the need to build a road map, create a foundation, and start the transition to deliver technology that 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 services and microservices right.

Hitachi Vantara's Approach – Hitachi Enterprise Cloud

Hitachi Vantara, a global supplier of IT offerings 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 of each customer.

Hitachi Vantara's goal is to 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 today's increasingly hybrid cloud environment with on-premise and off-premise cloud resources from private clouds and public clouds in a way that protects against public cloud lock-in.

Currently there are two offerings within the portfolio:

- Hitachi Enterprise Cloud with VMware vRealize is designed for existing traditional and VMware virtualized applications and workloads. It provides an integrated self-service, pre-engineered service catalog, consumption-based pricing, and a cloud-optimized infrastructure delivered as a service.
- Hitachi Enterprise Cloud Container Platform is designed to provide enterprise private and hosted cloud for cloud-native application development. It provides a fully integrated set of DevOps and data services with a self-service, pre-engineered service catalog, consumption-based pricing, and a cloud-optimized infrastructure delivered as a service.

Storage as a service from Hitachi Vantara comes in four managed service options with multiple levels of service either for your existing storage or as a fully managed service that includes storage from Hitachi. Both end-to-end service offerings provision the resources in minutes, all the way from application down to infrastructure, placing the right workload on the right enterprise

(private or public) cloud resource. 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-premise hosted private cloud.

The turnkey approach marries a tightly integrated pre-engineered hardware and software 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 on application development. Hitachi Enterprise Cloud with VMware vRealize supports traditional virtualized application development environments, while Hitachi Enterprise Cloud supports cloud-native container, DevOps, and advanced data services environments. Hitachi's pre-engineered offerings with an application-centric approach is based on our fully managed storage-as-a-service offering and includes three linked elements:

- A pre-engineered and predesigned set of compute, storage, and network components orchestrated using Hitachi's UCP that provides maximum flexibility, availability, and security while minimizing operational burdens
- Support for leading cloud system and orchestration software offerings for both traditional and cloud-native development environments along predefined cloud service catalogs and management processes that speed time to deployment and ensure optimal performance
- All of the advantages of the public cloud experience (including utility pricing, SLAs, self-service, pre-engineered catalogs) with the security and control of private cloud

Hitachi Vantara also recognizes that two key reasons companies want to adopt cloud operating models are to increase business agility while more closely aligning IT expenditures with actual use and to dramatically reduce the costs associated with hardware and software updates and migrations. In response, Hitachi Vantara is providing a fully managed private/hybrid cloud delivered as a service with a pre-engineered service catalog, transparent consumption-based pricing, and SLAs to remove the traditional capex burden that many enterprise clients find a challenge. These flexible financing and long-term support options reduce the risk to build, maintain, and operate a private or hybrid cloud while improving governance, control, and service delivery, as well as providing full cost transparency and control.

Challenges

The key challenge for the Hitachi Enterprise Cloud portfolio of offerings will be to ensure it continues to deliver solutions that support all the preferred cloud software platforms that customers may want to leverage. Successful enterprise private cloud offerings 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 all its forms 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 an enterprise private cloud architecture by providing 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:

- A pre-engineered solution to reduce time to being cloud ready
- Transparent, predictable pricing for improved cost management
- 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

The Hitachi Enterprise Cloud offerings, which deliver a portfolio of fully managed, outcome-based service levels and flexible acquisition models, will play a critical role in driving organizations' rapid shift to cloud-based application development in leading-edge areas such as advanced data services, the Internet of Things (IoT), and AI/analytics systems.