



I D C A N A L Y S T C O N N E C T I O N



Benjamin S. Woo

Program Vice President, Worldwide Storage Systems

Datacenter Transformation: New Directions for IT

September 2010

In today's fast-paced business environment, organizations increasingly require solutions and services that are delivered by a responsive IT department. In order to deliver such services, IT can no longer rely on the traditional datacenter model in which hardware and software assets are provisioned for the business in a process that is often lengthy, inefficient, and expensive and ultimately fails to deliver required service levels. To meet dynamic business services needs, IT must change the model of its datacenters by incorporating flexible and agile infrastructure and processes that support the cost-effective and timely delivery of services.

The following questions were posed by Hitachi Data Systems to Benjamin S. Woo, program vice president of IDC's Worldwide Storage Systems research, on behalf of Hitachi Data Systems' customers.

Q. What is datacenter transformation, and where does transforming the datacenter lead to?

A. Datacenter transformations essentially are about turning traditional datacenters into a service provider of agile and flexible IT resources for organizations. Increasingly, organizations of all sizes are relying on IT to provide services that support business unit objectives. This is difficult given the traditional datacenter model that often requires days or even weeks to provision the resources to support the business. One response to a long provision time is to overprovision in the datacenter. However, this approach is not cost-effective in terms of both capital and operational budgets.

When organizations transform their datacenters, they will be able to draw upon IT and other technical resources, just like plugging an appliance into a power socket. In effect, IT will be turned into a utility that enables organizations to have a better handle on the cost of IT as it relates to business processes rather than just technology processes.

Q. What are the pressing challenges regarding transforming the datacenter?

A. The architectures of traditional datacenters are typically very capital intensive in terms of both the infrastructure and the staffing. With the new datacenter of the future, there will be a lot more automation, a lot more self-service, and the ability to quickly change and provision technology resources as required by an organization. As a result, virtualization becomes a critical part of the IT infrastructure. Virtualization will be pervasive across storage, the network, and compute resources. Adding virtualization to all these areas continues to be a major change and challenge for the datacenter.

There are also challenges in terms of staffing. Currently, there are many specializations within the IT industry. As we evolve through this data transformation, the IT staff in one area such as storage will need to be familiar with adjacent technologies such as the network. There has to be an understanding of how technologies within the new datacenter relate to, depend on, and interconnect with each other. The new datacenter will require many IT staffers to have a much broader knowledge of technologies and a much broader understanding of how data moves from one resource to another. One way to facilitate this need for broader knowledge is to take advantage of management software that can improve operational efficiency.

It is also critical that the next generation of IT staff have a much better understanding of the business itself. Increasingly, business unit leaders are making technology decisions independent of their IT department. Therefore, having an understanding of that business; the service levels it requires; the way it conducts transactions; and the way it needs to store, compute, find, search, and query data will be very critical.

Finally, users today recognize the need to leverage more sustainable technology. Selecting products that can reduce energy consumption and therefore reduce the overall carbon footprint will result in achieving cost savings by lowering the total cost of ownership (TCO).

Q. What are the most important steps organizations should take when transitioning to the new datacenter model?

- A. The most important place to begin is to understand the resources that are in use for specific business services and then build in the policies and the automation that are required to reach and then sustain the agility that the organization requires. To enable agility, IT needs to deploy hardware that is flexible with easy-to-provision capabilities.

The underlying resource for many datacenter business services is the data, so looking at the way data and storage can be provisioned and protected is very key. In addition, IT needs to be able to virtualize servers so that utilization of the existing compute power is maximized and at the same time minimize the capital investments made in the compute layer. IT needs to deploy the appropriate storage and compute resources and then build a set of pipes that link all these things together. This is where the networking component comes into play. By linking the various components together, IT will have a flexible architecture that will enable the delivery of IT as a service and at the same time eliminate data silos.

Q. How can organizations ensure success?

- A. There are three major elements to ensure success when transforming the datacenter. The first element is to understand the performance needs; the second is to understand the capacity needs; and the third is to understand the scaling needs of the organization. Understanding each of these needs transcends the three technologies mentioned earlier — storage, compute, and network.

In terms of performance, IT needs to know the performance requirements of each application. Then IT needs to know the amount of IT resources required for that application, accompanied by an understanding of how resource needs might grow. Finally, there has to be the ability to provision to accommodate that growth on an ad hoc, as-needed basis. Understanding these three elements is very critical for success.

It really comes down to knowing how to apply technologies that are consistent with the efficiency desires of modern-day IT. There needs to be knowledge of how to use virtualization in the server platform to minimize the actual number of computers needed to provide the appropriate business services at the required performance levels. IT needs to

leverage concepts such as thin provisioning in order to minimize investments in storage capacities. And then IT needs to deploy the right types of networking technologies, whether more legacy Fibre Channel or more contemporary technologies such as 10 Gigabit Ethernet, and apply each of them in the right manner.

Services therefore become a critical component to the process of transformation. The point of this transformation is to shift the focus of IT away from the infrastructure and make IT a business-focused function. End users should consider leveraging the experience of professional services organizations in order to make this transformation, which can aid in the effort.

Q. How can organizations maintain existing assets even as they transform their datacenters?

A. One of the key elements to datacenter transformation is to be able to take what already exists and leverage it into this new model. A number of technologies in the market can be implemented to virtualize existing storage platforms, allowing IT to maintain and sustain investments, particularly in storage technology.

ABOUT THIS ANALYST

Benjamin S. Woo, program vice president of IDC's Worldwide Storage Systems research, leads a team of analysts responsible for advising clients on the evolution and trends related to data storage systems; the impact storage systems have on adjacent technologies, including servers, software, cloud, and virtualization; and best practices in go-to-market strategies related to the storage industry.

ABOUT THIS PUBLICATION

This publication was produced by IDC Go-to-Market Services. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis independently conducted and published by IDC, unless specific vendor sponsorship is noted. IDC Go-to-Market Services makes IDC content available in a wide range of formats for distribution by various companies. A license to distribute IDC content does not imply endorsement of or opinion about the licensee.

COPYRIGHT AND RESTRICTIONS

Any IDC information or reference to IDC that is to be used in advertising, press releases, or promotional materials requires prior written approval from IDC. For permission requests, contact the GMS information line at 508-988-7610 or gms@idc.com. Translation and/or localization of this document requires an additional license from IDC.

For more information on IDC, visit www.idc.com. For more information on IDC GMS, visit www.idc.com/gms.

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 www.idc.com