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I D C T E C H N O L O G Y S P O T L I G H T

Converging Datacenter Infrastructure for the 3rd Platform

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Adapted from *End-User Survey Report 2014*, by Jed Scaramella, Eric Sheppard, et al., IDC #251695, and *Integrated Systems: Executive Interview Report 2014*, by Jed Scaramella, Mary Johnston Turner, et al., IDC #254547

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Converged systems are playing an increasingly central part in helping information technology (IT) organizations keep up with the accelerating pace of 3rd-Platform-driven business. The 3rd Platform, where enterprises leverage mobile, social, cloud, and big data solutions to drive their businesses, requires IT to be more efficient and effective at delivering the value promised by these solutions. IDC sees a wide variety of businesses in the early stages of transformations that leverage applications and data in order to differentiate digitally in the market. This Technology Spotlight examines the operational drivers for and business benefits of using converged systems as a tool intended to improve datacenter economics and accelerate business transformation to become a future-ready enterprise, as defined by IDC's global Future-Ready Enterprise Study, The paper also discusses how to prepare organizationally for converged systems, and looks at the role of Dell's converged systems in this strategically important market.

Transforming the Datacenter for the 3rd Platform

In the 3rd-Platform era, IDC sees large and small enterprises working aggressively to understand what digital transformation means to both their businesses and their IT infrastructure. The continued emergence of cloud, mobile, advanced analytics and social technologies have created a business and technology platform that changes customer expectations while presenting new opportunities for businesses competing in essentially all industries. IDC continues to note that "fast" beats "slow," and organizational size is no longer a strategic competitive advantage — particularly for companies undergoing profound change. In short, the 3rd platform has created an environment where differentiation in the business will increasingly be achieved through applications and data, with legacy IT no longer up to the challenge.

As the information technology (IT) industry transitions to the 3rd Platform, the pace at which business operates seems to be continually quickening. This is requiring enterprises to engage seamlessly with customers, utilize real-time data analytics in decision making, and improve workforce mobility and productivity — regardless of where they operate. This places greater demands on IT to deliver new and enhanced services, yet most customers still face budget challenges and must figure out how to "do more with less."

To succeed in the new 3rd-Platform era, customers must simplify IT operations by reducing operating expense and increasing IT staff efficiency. This will enable enterprises to chase new business opportunities through IT-led initiatives. IDC research shows that many IT organizations are adopting converged systems as a means to simplify their IT environments while at the same time improving response times and service levels. Although the initial motivations are primarily datacenter resource

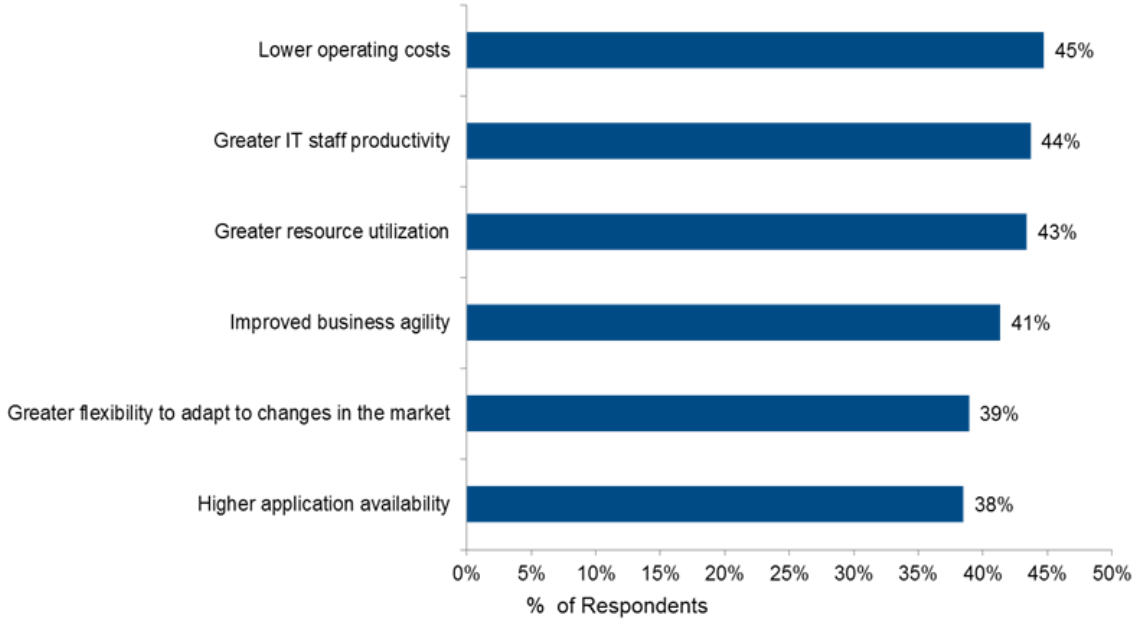
utilization and capex savings, IDC is also seeing more organizations value the IT agility resulting from faster provisioning and optimized application performance. This agility is critical to the success of all digital businesses.

Benefits of Convergence

Converged infrastructure provides an agile, scalable foundation for organizations looking to change business processes and launch new IT services. These infrastructures include integrated bundles of hardware and software components grouped into a single optimized package that allows organizations to better utilize their existing IT assets. Organizations in IDC"s global Future-Ready Enterprise Study cited a range of business benefits from their converged IT infrastructure strategies, including lower operating costs (45%), greater IT staff productivity (44%), and improved business agility (41%) (see Figure 1). Speed and agility are clearly important, and automating the management of compute, network, and storage resources into a single management pane is critical to improving availability and reducing costs via increased asset utilization across each datacenter resource.

Figure 1

Converged IT Infrastructure Benefits



N= 1,452

Source: IDC's Future-Readiness Enterprise Study, June 2015

Many organizations cite converged infrastructure benefits in terms of IT improvements, and a higher percentage of future-ready organizations are seeing business benefits from their converged infrastructure. IDC defines a “future-ready” organization as one that's always extending the abilities of its IT infrastructure and applications. In this context, converged infrastructure represents a critically important stepping stone for organizations undertaking digital transformation of their core businesses. Demand-side surveys from IDC's research show that the primary benefits expected of converged infrastructure can be characterized as tactical, while many of the remaining benefits are more strategic in nature:

- **Tactical.** Converged infrastructure is seen as a way to simplify the operations within the datacenter, including the following:
  - Increasing IT resource utilization
  - Lowering capital expenditures (capex)
  - Increasing efficiency of IT staff
- **Strategic.** The centralized management and ease of provisioning enable increased agility for IT and the business; converged infrastructure is also viewed as a critical part of cloud transformation for organizations looking for solutions which optimize application performance for the 3rd platform era.

Organizations that are future-proofing their IT services capabilities appear to get more value from their converged infrastructure. This starts by accurately measuring utilization rates for compute, storage, and network through the use of more sophisticated tools.

However, these firms also appear to measure infrastructure utilization more regularly when compared with other organizations, as they appear to see infrastructure as a strategic means to driving business value from their applications and data. These same forward-looking businesses use integrated tool suites to measure utilization rates and do not rely on ad-hoc or manual processes for this measurement. Also noteworthy, these same customers are most likely to have a predetermined upgrade path for their datacenter infrastructure, and are increasingly able to predict both where and when they will need infrastructure capacity, so that they are both agile and responsive to business needs.

Preparing Your Organization for Converged Systems

As is often the case, technology is only part of the solution — staffing aspects need to be addressed as well. Although converged systems can deliver tangible benefits, the organization also must evolve. This often entails breaking down the traditional compute, storage and networking silos spanning many IT organizations. Enterprises taking a future ready approach to their IT are making the organizational changes necessary to get the most benefits from their converged systems. They are actively looking to differentiate their business using applications, data, and infrastructure while deferring more responsibility for IT automation and configuration management to their development teams. This effort is often associated with the second aspect — cloud — of the future-ready enterprise. They are aggressive adopters of a “cloud first” model for application development and delivery.

Organizationally, IT needs to bring their compute, storage, networking and security teams closer together so that they can become more operationally efficient and agile. IDC continues to see most IT groups spending far too much time on rudimentary tasks such as provisioning, patching, monitoring, troubleshooting and vendor meetings. Taken together, the typical IT organization spends approximately 80% of their IT staff time and budget maintaining existing IT services. Leaving precious little resource for innovation. In the digital marketplace, siloed IT resources will quickly inhibit an organizations ability to compete effectively. In addition, application development teams and business units should be brought closer to the process to fully achieve a cohesive IT strategy.

IDC also believes that the core IT infrastructure will increasingly leverage software defined converged systems as standard building blocks. These converged systems are differentiated from traditional hardware platforms and architectures in that they are designed to be deployed quickly using a modular building-block approach to rapidly scale up resources and workloads. Because these converged technologies are pre-integrated and engineered to optimize internal east-west network traffic within the system, they are simpler to deploy and maintain while reducing processing and network overhead and latency. It is clear that many IT organizations are adopting converged systems

as a means of simplifying their IT environments while introducing provisioning speed, agility, and lowering opex and capex costs.

Finally, companies are striving to expand the reach of security by better controlling access to information and by utilizing threat intelligence in order to anticipate threats. IDC believes that enterprises will be looking for solutions that are closely aligned with the applications and data they are looking to protect in these highly virtualized hybrid environments.

Considering Dell Converged Systems

Converged infrastructure can be deployed in a number of ways, ranging from fully custom best-of-breed infrastructures to fully converged systems from a single vendor. In general, converged infrastructures speed time to deployment, improve service levels and lower costs through the delivery of significantly higher resource utilizations. Dell offers a tailored approach to converged infrastructures that leverages a compatibility matrix to provide guidance regarding the Dell enterprise system components that best suit each customer's needs.

The Dell Active Systems Manager (ASM) is an important part of this matrix as it provides the framework necessary to effectively manage the converged system elements using a single integrated tool. ASM is designed to automate workload delivery and automate a number of important datacenter operations while facilitating improved staffing and IT resource utilizations. The Active System Compatibility Matrix encompasses hypervisors from VMware and Microsoft, as well as multiple Dell bladed and racked compute, storage, and networking offerings. For example, the compute platforms include PowerEdge FX, PowerEdge VRTX, as well as the PowerEdge M1000e blade enclosure for PowerEdge blades. These platforms provide support for a wide variety of different-sized environments with diverse needs, versus a one-size-fits-all approach.

Dell utilizes its Active Systems Manager unified management control software to streamline converged infrastructure management by replacing a variety of enterprise-grade systems management tools with a single integrated management platform. That said, the software is constructed in a way that maintains the heterogeneous support needed to build and manage datacenters end to end. This is achieved through the use of Dell's agent-free integrated Remote Access Controller (iDRAC) with Lifecycle Controller, and Dell's Chassis Management Controller (CMC), which continues to support Dell's OpenManage software suite. Dell OpenManage is a systems management toolset that provides a graphical user interface (GUI) mobile device interface to systems administrators looking to manage infrastructure locally or remotely.

Dell's tailored approach to converged systems enable customers to deploy new datacenter platforms on a modular, just-in-time basis. They are engineered as balanced systems that include the entire infrastructure required for traditional workloads or for a private cloud. Dell's converged systems also offer the flexibility of different, scalable starting points, so that customers may retain their existing datacenter fabric

Challenges

Dell's converged system offerings need to continually evolve with the emerging market. As customers become more familiar with the technology, purchasing decisions are becoming more sophisticated. Although cost is still an important purchase criterion, customers are increasingly weighing other factors, including automated management capabilities and certified support for applications.

In addition, customers view their converged systems as distinct from traditional infrastructure. Therefore, Dell needs a distinct go-to-market effort for its product offerings. IDC recommends focusing on the business value derived from converged systems, and articulating a marketing

message that encompasses the full offering, including products, services, and financing across Dell's portfolio.

Recommendations and Conclusion

To succeed in the 3rd-Platform era, customers need to simplify IT operations by reducing operating expense and increasing IT staff efficiency. This will enable enterprises to chase new business opportunities through IT-led initiatives as all business becomes increasingly digital. This will place IT at the forefront of a number of decisions aimed at transforming business processes and operational efficiencies: transforming work and employee productivity; transforming customer relationships and increasing buyer loyalty; and transforming product and service revenue streams.

IDC believes that IT will assume a critical role in the forthcoming digital reinvention as IT positions itself as a business innovation platform. For this to happen, the IT group will require re-organization and the IT infrastructure will need to employ flexible converged building blocks with end-to-end management engineered-in from the beginning.

Organizations should take advantage of the immediate benefits realized from converged systems; easing budget constraints and increasing staff efficiency to enable the reallocation of staff and budget toward new opportunities. Longer term, organizations should consider how converged systems can be utilized to quicken time to market and increase business agility.

To make a proper purchase selection, prospective customers should inquire about all aspects of a vendor's product offering. This is particularly important as IT organizations are reconfigured to deploy and manage infrastructure horizontally across compute, storage and networking rather than in siloes of isolation. Converged systems are designed to lower both capex and opex costs for IT practitioners. Capital cost reductions are largely achieved through the delivery of higher resource utilization rates, which typically reduce the need for core compute, networking and storage resources by upwards of 25%. At the same time, by leveraging integrated management tools presented in a single management console, management overhead is also reduced, which is particularly important as datacenters look to manage their compute, storage, and networking resources not in isolation but instead as part of an integrated resource pool.

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