DELL EMC DELIVERS A BROAD PORTFOLIO OF CONVERGED SYSTEMS FOR ENTERPRISE IT

SOLUTIONS ALONG THE "BUILD" TO "BUY" CONTINUUM FOR A WIDE RANGE OF CUSTOMER NEEDS

EXECUTIVE SUMMARY

The converged systems market is growing rapidly as IT organizations look to improve efficiency and simplify their operations. A growing number of converged systems solutions are now available from leading vendors that range from flexible building blocks to turnkey solution stacks. Dell's acquisition of EMC in September 2016 gave the two companies the opportunity to bring together a strong portfolio of products, expertise, and scale for customers of converged systems. Just six weeks after the acquisition was completed, Dell EMC introduced the "build" to "buy" continuum to position each of the converged systems offerings in the combined portfolio. "Build" solutions are optimized for flexibility, while "buy" solutions are designed to deliver turnkey outcomes.

Moor Insights & Strategy (MI&S) sees an opportunity for Dell EMC to use its supply chain leverage points, global reach, and broad IP portfolio to deliver a strong solutions roadmap for converged systems over the coming years. IT organizations looking to evaluate and deploy converged systems should add Dell EMC to their list of vendors for consideration.

MARKET TRENDS

IT must move faster than ever before to keep up with changing business needs. Many IT organizations are moving away from traditional virtualized infrastructure to a "cloud-first" strategy to achieve the flexibility, time-to-market, and cost savings required to be a competitive differentiator for the business. While there is much debate about which cloud is best, MI&S expects most IT organizations will embrace a multi-cloud strategy to service the requirements of their business users and applications most effectively. Multi-cloud may encompass multiple private cloud platforms alongside one or more public cloud service provider offerings.

For on-premises private or hybrid clouds, IT organizations of all sizes have turned to **converged systems**—pre-integrated configurations combining server, storage, and networking with unified systems management—to improve efficiency, scale easily, and get to market quickly. The converged systems space continues to grow faster than the

market, with an estimated run rate of more than $10B annually. Vendor competition is heating up in the converged systems space, with a range of solutions from both incumbent infrastructure providers and new entrants.

Converged systems provide IT with a simpler deployment and management experience for on-premises private or hybrid clouds. However, the public cloud has permanently modified the IT experience expectations for customers of all sizes. Traditional datacenter challenges of "keeping the lights on" are things IT no longer has to worry about when choosing public cloud. To ensure the private or hybrid cloud remains a compelling choice for IT, on-premises private or hybrid cloud infrastructure must enable organizations to focus on solving business problems and making money versus managing infrastructure. Competing with public cloud consumption models means that converged systems vendors need to respond with a range of choices to meet customers where they are and provide an IT consumption experience that aligns with their needs.

"BUILD" VS. "BUY": ONE SIZE DOES NOT FIT ALL

Early adopters of converged systems deployed infrastructure at rack or multi-rack scale that included pre-defined configurations coupled with white glove service. The cost of the early converged systems was relatively high, but the ROI made sense for those with the budgets to deploy at large scale. Converged systems also made sense for IT organizations whose primary focus was on value-added services and applications rather than ongoing management of hardware infrastructure.

As more companies of all sizes look to deploy converged systems, a multitude of vendor approaches has emerged to meet customers' varying needs. Customers can now choose across a size spectrum from small-scale single-node appliances to modular datacenters. Customers can opt for prescribed configurations or configurable, flexible solutions. Customers also have a range of choices to meet their specific workloads from traditional applications to leading edge cloud-native workloads and everything in between. Customers can also choose a solution that aligns with their own standards or one that is based on prescriptive standards from vendors.

One way to classify the available choices for converged systems is along a continuum of "build" to "buy". Table 1 defines the key attributes of each end of this spectrum.

TABLE 1: "BUILD" VS. "BUY" COMPARISON FOR CONVERGED SYSTEMS

	"Build"	"Buy"
Primary Goal	Flexibility	Turnkey Business Results
Solution Attributes	• Configuration choice & customization • Heterogeneity • Varying levels of vendor validation • DIY deployment & lifecycle services options • May include automation tools to assist in deployment & lifecycle management	• Prescribed / turnkey configurations • May include optimized software stacks • White glove deployment & lifecycle services

"BUY" SOLUTION ATTRIBUTES

Customers interested in "buy" deployment models want their IT resources focused on driving business outcomes rather than infrastructure management. "Buy" solutions include white glove service capabilities for both deployment and ongoing lifecycle management by a single vendor, making infrastructure essentially invisible to the IT organization. In some cases, a "buy" solution consists of an integrated hardware solution (compute, storage, network), and in other cases, the integrated hardware solution also includes an optimized software stack.

Some vendors now offer "buy" solutions that include flexible business models for consuming applications and services, similar to those found in the public cloud. MI&S expects to see even more application-level capabilities available with "buy" solutions in areas like analytics, IoT, and hybrid cloud-optimized provisioning / optimization.

"BUILD" SOLUTION ATTRIBUTES

Many IT organizations want to experience the benefits of converged systems. However, not everyone is ready for, desires, or can afford solutions that are at the "buy" end of the spectrum. Converged systems in the "build" category consist of configurations that have been validated by the vendor but are flexible enough to meet the customer's workload requirements. This level of flexibility may be a good fit for applications that require some level of customization, specific components, or heterogeneous infrastructure.

"Build" solutions generally do not come with white glove services from vendors for both deployment and ongoing lifecycle management. This makes "build" solutions a good fit for cost-conscious or smaller organizations who are not in a position to engage in long-term services engagements. These organizations want help with guidance and automation that drive the complexity out of their solution, but they prefer to control ongoing service and support. In addition, customers who have expertise and teams to do it themselves may prefer a "build" model that includes minimal vendor services.

DELL EMC OFFERS A BROAD PORTFOLIO

Dell's acquisition of EMC brings together a converged systems portfolio that spans the spectrum of "build" to "buy". The legacy EMC business was built on a foundation of enterprise customer expertise, white glove service and support capabilities, and converged systems leadership via the VCE brand. EMC has historically specialized in solutions for customers on the "buy" side of the spectrum with fully integrated, prescribed solutions at both the infrastructure and solution stack level.

The legacy Dell business includes strengths such as midmarket leadership (along with success in enterprise), global supply chain reach, and a history of build-to-order capabilities that stem from the company's roots of build-to-order PCs. The majority of Dell's converged solutions were focused on the "build" segment of the market with a long-term vision to offer service-defined infrastructure for heterogeneous environments. To help complement the converged systems portfolio, Dell System Builder and Dell Active System Manager were developed to provide deployment and heterogeneous unified systems management capability for both Dell-built and third-party solutions.

Just six weeks after the acquisition was completed, Dell EMC showcased new product positioning of the combined converged systems portfolio at Dell EMC World. Figure 1 is an overview of the Dell EMC product categories that span the "build" to "buy" spectrum.

FIGURE 1: DELL EMC CONVERGED SYSTEMS PORTFOLIO

(Source: Dell EMC)

DELL EMC'S "BUILD" SOLUTIONS

On the "build" end of the continuum, Dell EMC offers reference architectures, ready bundles / nodes, and validated systems. Dell EMC acknowledges that a "build" approach is still the majority of the converged systems market, as many customers

desire the flexibility to configure and choose the right solution to meet their needs. Dell has shifted its **reference architecture** portfolio away from many traditional options to a smaller portfolio of prescriptive and repeatable options designed for key market and customer driven use cases. Dell claims these reference architectures are orderable, trackable, and backed by programs that allow Dell channel teams to deliver them to the market. Ready **bundles and nodes** are designed to make acquisition easier by simplifying and standardizing the procurement process. Bundles have reduced flexibility over reference architectures but increased capabilities in terms of deployment, management, and serviceability. **Validated systems** include fewer configuration options than bundles but add enhancements to the build processes (*e.g.*, loading software, rack / stack) and include some on-site automation.

For "build" customers, Dell EMC uses intelligent automation techniques to make it easier for customers to buy, deploy, and manage these solutions. The "build" portfolio includes varying levels of Dell services for infrastructure deployment and purchase, but ongoing lifecycle management is generally the customer's responsibility. However, Dell's automation capabilities can make lifecycle management easier, even though the customer owns the act of making the updates.

Examples of Dell EMC solutions in the build category include the Dell EMC Proven Solution for Oracle (reference architecture), Dell EMC Ready Node for Virtual SAN (node), Dell EMC Ready Bundle for SAP HANA Scale-out (bundle), and Dell EMC Validated System for Virtualization (validated system).

DELL EMC'S "BUY" SOLUTIONS

Moving to the right toward the "buy" end of the continuum, Dell EMC **engineered systems** are turnkey systems with white glove support and lifecycle management. For these solutions, Dell EMC owns the lifecycle management for its customers, so IT organizations can focus on innovation and application optimization rather than ongoing infrastructure management. Examples of Dell EMC solutions in the engineered systems category include VxBlock/ V block, VxRack, VxRail, and the Dell XC Series.

On the far right of the continuum, Dell EMC **hybrid cloud platforms** are engineered, turnkey hybrid cloud software stacks built on top of the Dell EMC Engineered Systems portfolio. Dell EMC owns the lifecycle management for not only the infrastructure, but also the full solution stack. Dell EMC Hybrid Cloud Platforms also provide access points to the public cloud. Examples of Dell EMC solutions in the hybrid cloud platform category include Enterprise Hybrid Cloud and Native Hybrid Cloud.

Dell EMC is innovating in the hybrid cloud platform area by providing value-added services on top of the platform. For example, Dell EMC recently announced the Analytics Insight Module, a self-service portal designed for data scientists and business users to use available data for big data analytics more effectively. In addition, Native Hybrid Cloud integrates with Pivotal Cloud Foundry for a turnkey platform-as-a service offering. We expect Dell EMC to continue to innovate with turnkey application experiences for other cloud-native applications. We also expect to see additional enhancements in cloud automation based on user roles and specific use cases.

DELL EMC'S "BETTER TOGETHER" OPPORTUNITY

Dell EMC has an opportunity to continue the company's momentum in the converged systems space by bringing together a strong set of assets and capabilities. Below are some of the key ways we expect the company to leverage a "better together" approach to strengthen the product portfolio along the "build" to "buy" continuum.

- **Supply chain leverage**: Dell EMC converged systems leadership is bullish about the importance of a strong x86 server supply chain for long-term success in the converged systems space. For converged and hyperconverged systems, a large portion of the cost of goods sold (COGS) is x86 hardware, so cutting out the middleman for some of the VCE branded products can reduce costs and / or increase margins. At Dell EMC World, the company demonstrated the first leverage points between the Dell and EMC product families by announcing the addition of Dell PowerEdge server configurations in VxRack and VxRail.
- **Global services and support reach**: Dell EMC plans to expand penetration of converged systems into new countries and with new channels. The global support, sparing, and services capabilities in place via the legacy Dell business allow the combined company to expand more effectively than EMC was able to do on its own.
- **Software stack assets**: Converged systems hardware infrastructure is becoming a relative commodity, and the software stacks will be the key to differentiation. The legacy Dell business has taken a partner-centric solution development strategy through large ecosystem partners like Microsoft, Red Hat, Cloudera, SAP, and others. Microsoft recently announced Dell as one of three infrastructure partners for the Azure Stack private cloud platform that will be released in 2017. Dell System Builder and Dell Active System Manager offer deployment and heterogeneous unified systems management capability for both Dell-built and third-party developed solutions. The EMC Federation brings a rich

set of software assets to the portfolio including VMware, Pivotal, Virtustream, open source software via EMC{code}, and other efforts. The combination of these assets may help Dell EMC deliver on an enhanced portfolio of converged and hyperconverged systems platforms moving forward.

CALL TO ACTION

The demand for converged systems is growing rapidly, with a wide range of needs from IT organizations of all sizes. MI&S expects “build” and “buy” converged solutions to co-exist for years to come in the modern datacenter. IT organizations looking to deploy converged systems should assess how their priorities and strategies affect their solution decision making criteria and where their requirements may fall on the “build” to “buy” continuum for each of their workloads.

Dell’s acquisition of EMC in September 2016 allowed the two companies to combine forces with a strong portfolio of products, expertise, and scale for customers of converged systems. The two entities are now executing as one under the Dell EMC brand, with a combined portfolio that spans the “build” to “buy” continuum. IT organizations looking to deploy converged systems should add Dell EMC to their list of vendors for consideration.

IMPORTANT INFORMATION ABOUT THIS PAPER

AUTHOR
Gina Longoria, Senior Analyst at Moor Insights & Strategy

PUBLISHER
Patrick Moorhead, President & Principal Analyst at Moor Insights & Strategy

EDITOR / DESIGN
Scott McCutcheon, Director of Research at Moor Insights & Strategy

INQUIRIES
Please contact us to discuss this report, and Moor Insights & Strategy will respond promptly.

CITATIONS
This note or paper can be cited by accredited press and analysts, but must be cited in-context, displaying author's name, author's title, and "Moor Insights & Strategy". Non-press and non-analysts must receive prior written permission by Moor Insights & Strategy for any citations.

LICENSING

DISCLOSURES
This paper was commissioned by Dell EMC. Moor Insights & Strategy provides research, analysis, advising, and consulting to many high-tech companies mentioned in this paper. No employees at the firm hold any equity positions with any companies cited in this document.

DISCLAIMER
The information presented in this document is for informational purposes only and may contain technical inaccuracies, omissions, and typographical errors. Moor Insights & Strategy disclaims all warranties as to the accuracy, completeness, or adequacy of such information and shall have no liability for errors, omissions, or inadequacies in such information. This document consists of the opinions of Moor Insights & Strategy and should not be construed as statements of fact. The opinions expressed herein are subject to change without notice.

Moor Insights & Strategy provides forecasts and forward-looking statements as directional indicators and not as precise predictions of future events. While our forecasts and forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could cause actual results to differ materially. You are cautioned not to place undue reliance on these forecasts and forward-looking statements, which reflect our opinions only as of the date of publication for this document. Please keep in mind that we are not obligating ourselves to revise or publicly release the results of any revision to these forecasts and forward-looking statements in light of new information or future events.