**ESG SHOWCASE**

# Network Automation for Manufacturing:

## Dell Technologies SmartFabric Services

**Date:** February 2021  **Author:** Bob Laliberte, Sr. Analyst; and Leah Matuson, Research Analyst

**ABSTRACT:** Modernizing IT infrastructure across industries has become more prevalent as organizations digitally transform with the goal of becoming more operationally efficient. One of the keys to a successful transition is the ability to leverage automation to eliminate time-consuming manual tasks—which is even more important in the "new normal." For organizations in the manufacturing sector, creating a digital factory is critical, and the underlying IT infrastructure will play a significant role in enabling this transformation. More specifically, it will be imperative for the underlying network to provide the connectivity, agility, and automation to adequately support the rapidly changing needs of the business. That is where Dell Technologies Open Networking solutions and SmartFabric Services can play a significant role.

## Manufacturing is Transforming

As the fourth industrial revolution drives widespread use of automation and modern technologies, the manufacturing industry is undergoing a number of changes, transitioning from a legacy environment into a modern one. These changes include deploying robotics, IoT sensors, machine-to-machine (M2M) communication, and real-time analytics to create digital factories capable of quickly responding to customer demand and driving greater efficiencies. And this transition is challenging since it's occurring in the midst of a global pandemic and requires organizations to support vast numbers of remote staff working at home and at edge locations.

ESG research highlights that manufacturing organizations are actively embracing digital transformation initiatives to support these new environments, with nearly three-quarters (73%) of respondents reporting that their digital transformation initiatives are either mature (having implemented and optimized several digital transformation initiatives) or in process (currently implementing and executing various digital transformation initiatives).[1]

Among those in the manufacturing sector, the most common goals of these digital transformation initiatives are to become more operationally efficient; to adopt digital tools and processes enabling users to interact and collaborate in new ways; and to deliver a better, more differentiated customer experience.

However, achieving those goals is easier said than done because the supporting IT environments are becoming more complex. In fact, almost three-quarters (74%) of manufacturing organizations report their IT environment is either more complex or significantly more complex than just two years ago.

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[1]Source: ESG Master Survey Results, _2021 Technology Spending Intentions Survey_, December 2020. All ESG research references in this showcase have been taken from this master survey results set.

But what is driving this complexity? Top drivers include work-from-home mandates, higher data volumes, and the need to address data security and stringent privacy regulations. In addition, nearly one-third of manufacturing organizations (31%) report a problematic shortage of skills in IT orchestration and automation.

## IT Must Be Able to Support Modern Manufacturing Environments

Given the emphasis on creating digital factories, combined with the majority of manufacturing organizations embarking on digital transformation initiatives, it is important to understand how the underlying IT infrastructure acts as an enabler.

Organizations must look to create software-defined data centers (SDDCs) that enable IT to support digital transformations by leveraging automation and tight integration with other systems. ESG's research shows that 36% of manufacturing organizations report prioritizing SDDC investments over the next 12-18 month as part of strategies to modernize their data centers. For most organizations, implementing an SDDC entailed creating a highly virtualized environment, leveraging solutions such as those from VMware.

From an infrastructure perspective, manufacturers are keen on deploying hyperconverged infrastructure (HCI), with 36% of these organizations reporting that HCI will play a role in data center modernization. Moreover, ESG research indicates organizations are highly focused on driving greater operational efficiencies. In fact, a number of organizations in the manufacturing sector cite that increasing employee productivity is one of the most important considerations for justifying IT investments to an organization's business management team in 2021, only behind improving cybersecurity.

Thus, these data points highlight the need for solutions that drive greater efficiencies and allow manufacturers to rapidly scale their infrastructure to meet any and all demands placed on the business. Given that the network fabric is required to connect the compute and storage, it is imperative that organizations choose a network that is tightly integrated, automated, and able to scale on demand.

## Dell Technologies Smart Fabric Services Enables Digital Transformation

To maintain a competitive edge, organizations in the manufacturing sector must digitally transform their factories, creating a highly automated and responsive IT infrastructure to support these dynamic environments. To answer this pressing need, Dell Technologies developed SmartFabric Services, which greatly reduces the complexity associated with deploying and scaling network connectivity in highly dynamic software-defined data centers. More specifically, SmartFabric Services offers the following:
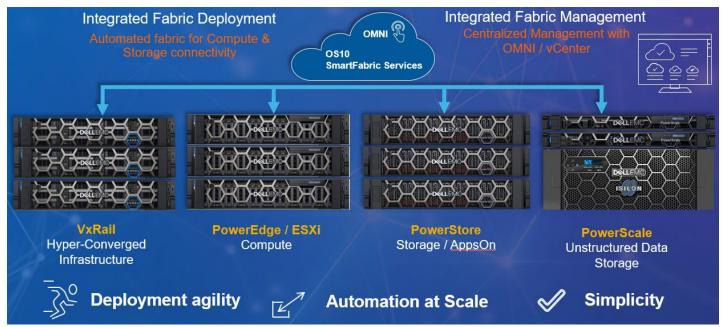
- **Rapid deployment and scale capabilities**. To accelerate both initial deployments and subsequent scaling, Dell Technologies created an intelligent fabric that is self-forming and automatically detects when new infrastructure is connected, expanding the fabric and extending the network services and bandwidth where needed. Compared to legacy technologies, Dell claims interconnects with SmartFabric Services can reduce the steps required to provision a new connection by as much as 99% and eliminate human errors that occur in manual processes.

- **Operational efficiencies.** Dell Technologies designed SmartFabric Services to be controllerless, able to deploy in environments with as few as two interconnects, and able to easily scale up.

  Smart Fabric Services is simple to use, and its ability to integrate with VMware solutions enables a high level of automation. Ease of use and automated capabilities drive operational efficiencies and ensure that highly skilled network resources are focused on transformation activities.

- **Integrated solution**. Tight integration with adjacent systems is critical in creating operational efficiencies, and increasing employee productivity, both of which are important to the manufacturing sector. Given that, Dell Technologies has integrated SmartFabric Services with VMware vCenter to ensure the network fabric can automatically accommodate changes made within vCenter across converged and hyperconverged infrastructures. This enables solution administrators to quickly deploy, scale, or upgrade the network fabric through vCenter, knowing that SmartFabric Services will automatically support an optimized network configuration (see Figure 1).

**Figure 1. Dell Technologies SmartFabric Services**



*Source: Dell Technologies*

## The Bigger Truth

The manufacturing industry is encountering enormous challenges as it undergoes digital transformation. The underlying IT infrastructure will be critical in enabling digital factories and must be agile and simple to operate. To drive greater operational efficiencies, organizations should look to solutions that are highly automated and easily integrate with existing solutions to optimize resources and time.

Dell Technologies SmartFabric Services can help meet these challenges, providing the automation and integration required to enable manufacturing organizations to quickly respond to the constantly changing demands of the business. Whether manufacturing operations are large or small, SmartFabric Services can assist organizations on the path to automation and better operational efficiencies and enable them to flexibly scale to accommodate rapidly growing environments.

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www.esg-global.com          contact@esg-global.com          508.482.0188