

Analyzing the Economic Benefits of Dell EMC SmartFabric Services

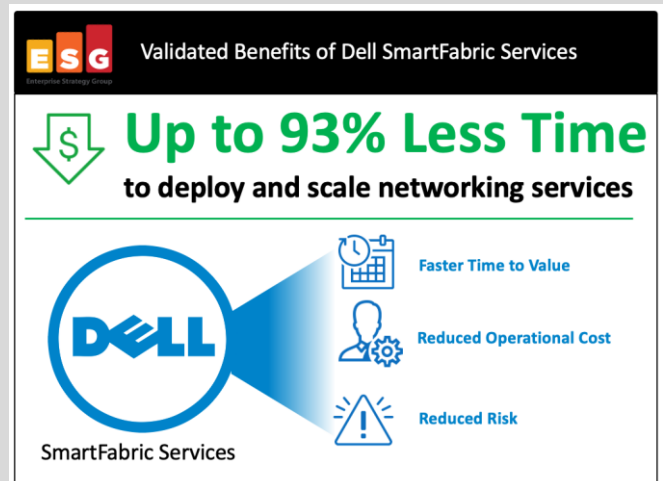
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Executive Summary

The digital transformation journey continues to accelerate, and operational efficiency continues to be a common objective on this journey. To address this, many organizations are focusing on modernizing their IT infrastructure to drive greater levels of operational efficiency to better support their businesses. Specifically, network infrastructure is critical to the access, delivery, and performance organizations need to stay competitive in today's business environment.

ESG research shows that organizations are looking to streamline network operations via cloud management and training. Many organizations are adopting cloud-based network management solutions to facilitate remote access and data collection. In addition, many organizations are providing additional training to networking staff on modern IT operations best practices.

ESG interviewed customers with Dell EMC SmartFabric Services experience to understand their use of SmartFabric Services and the strengths and weaknesses it has in their IT environment. ESG validated that SmartFabric Services delivers faster time to value, reduced operational cost, and reduced risk. ESG found that users were able to automate up to 99% of network configuration steps, providing quicker deployments, reduced operational cost, and reduced human error. Customers experienced high value with Dell EMC SmartFabric Services, specifically noting how fast and easy it was to deploy networking.



Introduction

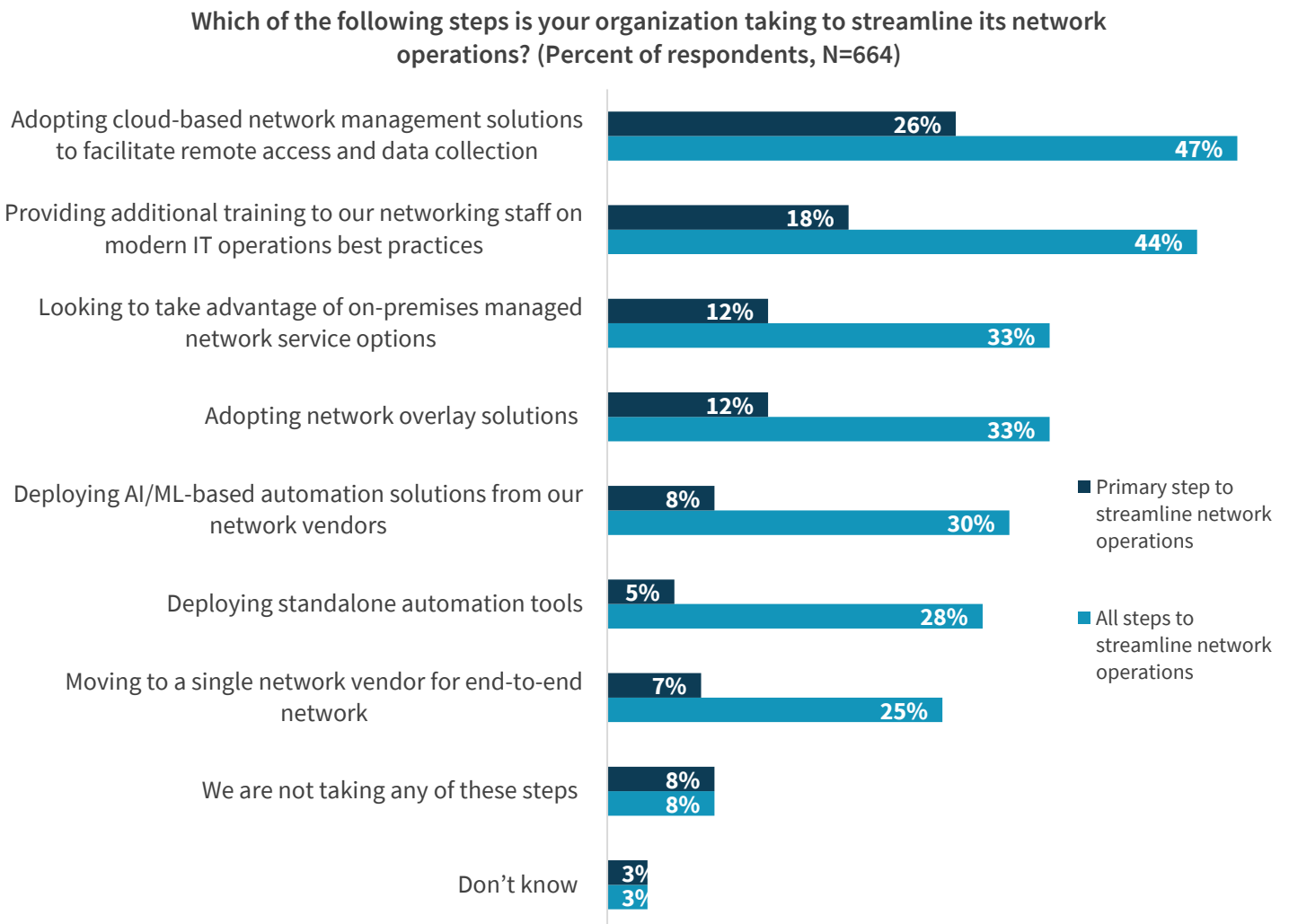
This ESG Economic Validation focuses on the quantitative and qualitative benefits organizations can expect from using Dell EMC SmartFabric Services. Insight for this paper was gathered from customer and partner interviews and combined with ESG’s expertise and knowledge of networking and HCI solutions. We evaluated overall usability, flexibility, and value.

Challenges

Digital transformation continues to be a common objective and to address this, many organizations are focusing on modernizing their IT infrastructure to achieve greater levels of operational efficiency to better support their businesses. Network infrastructure is critical to the access, delivery, and performance organizations need to stay competitive in today’s business environment.

According to ESG research, among organizations with existing or planned digital transformation initiatives, more than half (56%) cite operational efficiency as a top objective. When it comes to streamlining networking operations, more than one-quarter (26%) expect to adopt cloud-based network management solutions as their primary approach. Overall, businesses want to achieve faster time to value, reduced operational cost, and reduced risk when considering network solutions.¹

Figure 1. Organizations Are Looking to Streamline Network Operations



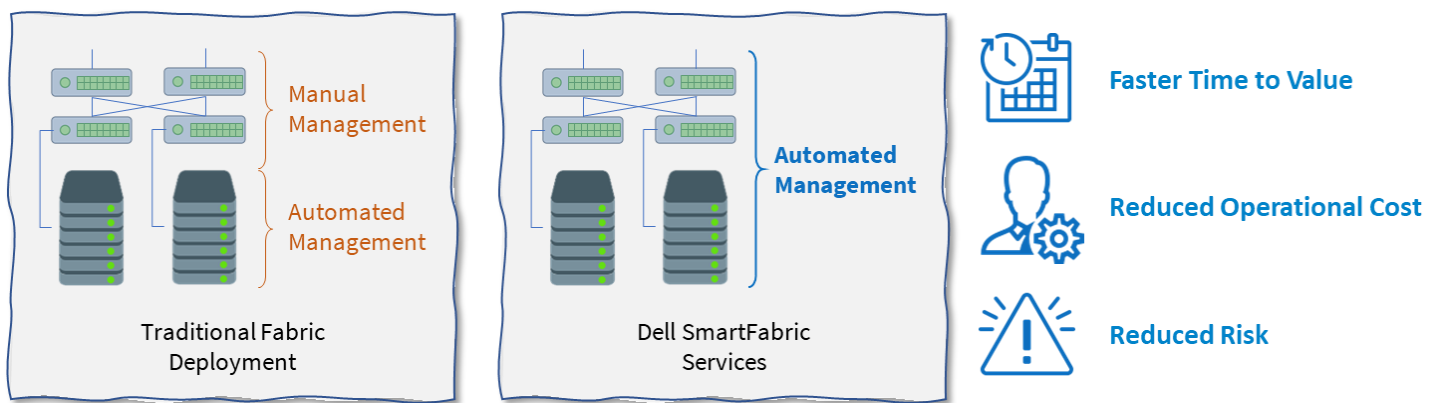
Source: Enterprise Strategy Group

¹ Source: ESG Master Survey Results, [2021 Technology Spending Intentions Survey](#), December 2020. All ESG research references in this Economic Validation are taken from this report.

The Solution: Dell EMC SmartFabric Services

Dell designed SmartFabric Services to provide unified and automated infrastructure management for administrators to manage Dell PowerEdge, PowerScale, PowerStore, and VxRail products. Dell EMC SmartFabric Services is part of the Dell EMC SmartFabric OS10 network operating system, which creates an integrated solution between the fabric and Dell compute and storage solutions. Dell EMC SmartFabric Services provides a simplified and flexible approach to single and multi-rack deployments, reducing the time and cost to deploy, scale, and adapt networks. The network management solution is easy to use via a single pane of glass integrated into VMware vCenter, resulting in reduced network configuration errors and enabling admins to leverage existing toolsets and expertise. Following a traditional networking approach can make deployment complex and error prone due to manual operations and negate the agility and operational efficiency inherent in deploying modern data-centric workloads. Often the infrastructure teams must rely on networking experts to preconfigure the networks correctly before the nodes can be deployed. This consumes a lot of networking expert time for simple tasks that can otherwise be automated. Figure 2 shows a comparison of a multi-rack deployment with and without Dell EMC SmartFabric Services.

Figure 2. Comparison of a Multi-rack Deployment, With and Without Dell EMC SmartFabric Services



Source: Enterprise Strategy Group

ESG Economic Validation

ESG completed an economic analysis of the impact of adopting Dell EMC SmartFabric Services with a focus on both the activities in fabric deployment and the impact on customers’ ability to meet business objectives.

ESG’s Economic Validation process is a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages ESG’s core competencies in market and industry analysis, forward-looking research, and technical/economic validation. ESG conducted in-depth interviews with end-users to better understand and quantify how using Dell EMC SmartFabric Services has impacted their organizations.

Dell EMC SmartFabric Services Economic Value Overview

ESG’s economic analysis revealed that customers who used Dell EMC SmartFabric Services were able to realize substantial benefits in faster time to value, reduced operational cost, and reduced risk when compared to manual deployment options.

- **Faster time to value**—Customers are able to automate 99% of network configuration steps for leaf and spine switches across multiple racks, enabling faster deployment of servers, networking, and services, leading to faster time to value.
- **Reduced operational cost**—Dell EMC SmartFabric Services provides automation of management tasks and integrates with VMware vCenter, enabling zero-touch day 0 deployment; day 1 day-to-day operations; and day 2 maintenance, updates, and expansions. This automation reduces operational costs.
- **Reduced risk**—Customers reported they can automate manual processes and maintenance, enabling them to reduce human errors, thereby reducing risk.



Faster Time to Value

ESG's economic analysis found that customers reported faster time to value due to quicker single and multi-rack deployments. In addition, faster network provisioning and faster scalability were also mentioned.

- **Quicker deployments** – Customers mentioned only needing to perform a single configuration step per switch, automating 99% of network configuration steps. For example, admins can configure a typical leaf-spine network with four leaves and two spines using just a few SmartFabric Services commands compared to manual configuration requiring more than 1,000 commands. SmartFabric Services automation can be achieved without the need to call the networking team to provision new services.
- **Network agility** – Dell EMC SmartFabric Services provides organizations with elastic network provisioning, the ability to adapt to workload changes by provisioning and de-provisioning resources in an autonomic manner, making it easy to adjust workloads as needed.
- **Faster scalability** – Users reported the ability to easily plug additional interconnects into an existing environment for faster scalability.

“With Dell SmartFabric Services, customers are now able to configure a VLAN in minutes versus hours or days.”

—Systems Engineer, European-based reseller



Reduced Operational Costs

By using Dell EMC SmartFabric Services, administrators expend less time and effort deploying and managing complex environments (day 0 & day 1). Dell EMC SmartFabric Services also simplifies scaling for growth (day 2), resulting in less time and effort invested in ongoing network management. By alleviating the need for highly skilled people to manage day 1 and day 2 network operations (according to ESG research, 21% of organizations suffer from a critical lack of network administration skills), Dell EMC SmartFabric Services allows them to invest their effort and time in more strategic operations.

- **Flexible integration**—Customers can easily create a fully integrated solution between the fabric and Dell PowerEdge, PowerStore, PowerScale/ISILON, and VxRail platforms, delivering an enhanced support experience.
- **Simplified management**—Dell EMC SmartFabric Services provides organizations network management via a single pane of glass, leveraging existing VMware tools that users already own versus using tools from multiple vendors.
- **Enhanced support**—By using Dell EMC SmartFabric Services, customers receive single vendor support with Dell EMC ProDeploy and ProSupport services with expertise in end-to-end infrastructure including full-service installation and configuration of both hardware and software. Dell also tests and validates all firmware and software before it goes into production to make sure patches can be applied without errors or interrupting operations.

“I use Dell SmartFabric Services to configure my virtualization environment, without having to call the networking team and wait for them to manually configure my switches.”

*—Storage and Virtualization Manager,
International airport*



Reduced Risk

Reducing risk has a big impact to the overall success of a business. Using Dell EMC SmartFabric Services allows companies to automate manual processes, thereby reducing human errors. Automation eliminates the need to manually configure the same parameters across multiple devices throughout the network. This becomes more important as organizations scale over time, and the likelihood of human error becomes greater. In complex leaf and spine configurations with multiple switches, a simple mistake can bring down the entire network and can be very hard to troubleshoot.

- **Reduced human error**—Customers stated Dell EMC SmartFabric Services provides an automated fabric that is deployed on end-to-end validated designs and best practices, which helps to eliminate human errors. This automation eliminated the need to configure the same parameters repetitively and manually across multiple devices throughout the network. This becomes more important as organizations scale over time and the likelihood of a human error becomes greater.
- **On-demand scalability**—Dell EMC SmartFabric Services provides an intelligent architecture that helps customers scale on-demand, up or down, which increases efficiency and performance of the data center, eliminating any bottlenecks.
- **Increased availability**—Dell EMC SmartFabric Services enables robust and redundant fabrics and storage, providing increased uptime for mission-critical applications. For small businesses or large enterprises alike, success or failure depends on how well the infrastructure can handle crisis situations that jeopardize customer or client access to critical applications and data.

“By automating configurations and deployments using Dell SmartFabric Services, you can help avoid issues that might be manually introduced.”

— Systems Engineer, US-based reseller

ESG Analysis

ESG leveraged the information collected through vendor-provided material, public and industry knowledge of economics and technologies, and the results of customer interviews to create a simple model that predicts the expected number of person-hours that can be saved by using Dell EMC SmartFabric Services to deploy and provision network services for newly deployed racks of VxRail hyperconverged infrastructure (HCI) and VMs. ESG's interviews with subject matter experts and customers with experience using Dell EMC SmartFabric Services and other network technologies, combined with our own experience performing technical validations of network solutions and expertise in modeling network management functions helped to form the basis for our calculations.

ESG assumed that both the Dell EMC SmartFabric Services and a traditional network deployment would require eight hours to configure and set up services for the initial rack of HCI. This time included the time for virtualization, network, and security teams to perform all tasks required to deploy, configure, and test network services for the leaf and spine switches and enforce security roles and policies. For subsequent racks deployed, ESG assumed that Dell EMC SmartFabric Services would automate these tasks once the switches were connected, requiring only 60 minutes of the virtualization admins' time to connect and test functionality.

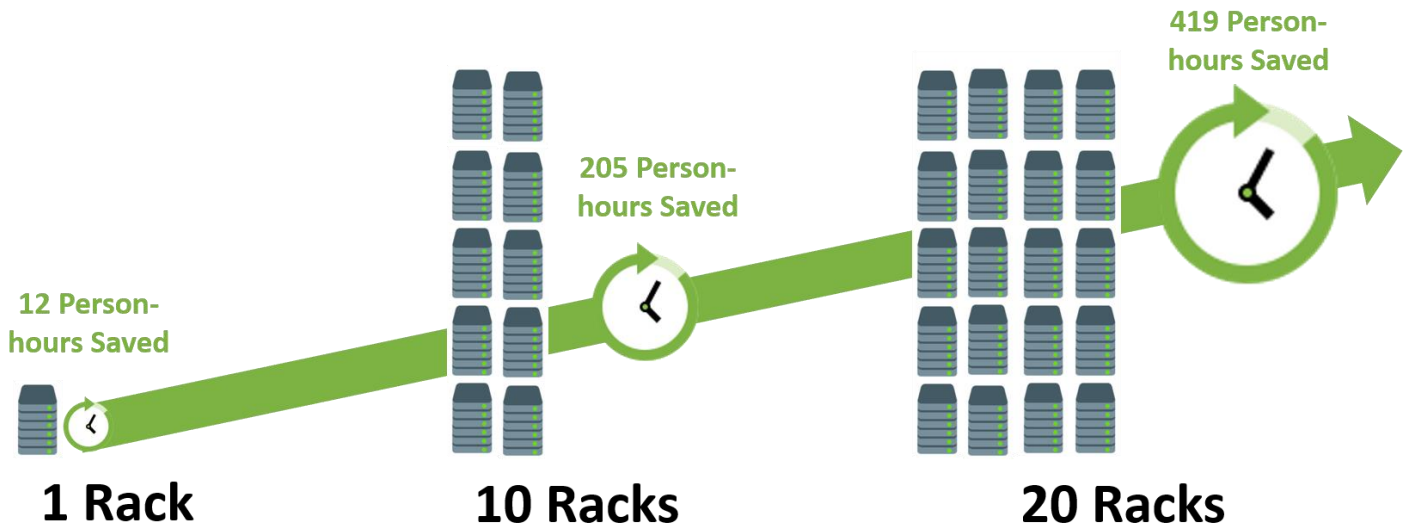
In addition, ESG assumed that an average of 150 VMs would be hosted in each rack, and VMS would be deployed in stages averaging 20 VMs at a time. ESG assumed that the initial deployment of VMs would require the network and security admins to set up VLANs and network and security policies to make sure future deployments were compliant. ESG assumed the initial configuration of VMs would take 3 hours for both the traditional and Dell EMC SmartFabric Services deployment. Once the policies had been set up and tested by the network and security teams, subsequent deployments of network and security services for VMs could be automated and performed by the virtualization admin in only 5 minutes, while the initial manual work had to be repeated for the traditional network configuration, requiring time from all three admins. Dell EMC SmartFabric Services supports up to eight racks with 20 switches in a single instance. ESG modeled and calculated the expected time to leverage multiple instances of Dell EMC SmartFabric Services to deploy racks of new hardware and VMs over time for 1 to 20 racks. The results are shown in Figure 3.

Why This Matters

Deploying network services for a growing organization generally involves tasks performed by virtualization, network, and security admins, and much time can be wasted waiting for tickets to be resolved.

ESG validated that once Dell SFS were deployed and utilized for a VxRail deployment, a single virtualization admin could automate most of the network deployment and provisioning tasks without involvement from network and security teams, while enforcing all the required policies. For larger deployments, this can result in hundreds of saved person-hours that can be invested in accomplishing other critical tasks.

Figure 3. Expected Person-hour Savings to Deploy and Configure HCI with Dell EMC SmartFabric Services



Source: Enterprise Strategy Group

ESG found that Dell EMC SmartFabric Services could speed the deployment and configuration of network services for new racks of HCI by up to 93%. More importantly once the initial rack of HCI was configured and policies were put into place by network and security teams, deployment of new racks of HCI and provisioning of services for VMs could be performed by the virtualization administrator, giving valuable time back to the network and security teams to focus on other areas. Dell EMC SmartFabric Services automation would also be expected to help minimize the risk of human error, help keep switches updated, and proactively alert on any conditions that might need attention.

Issues to Consider

The benefits of Dell EMC SmartFabric Services are greatest realized at scale. The initial deployment of Dell EMC SmartFabric Services takes time and requires collaboration between departments to learn and configure. Smaller, single rack deployments initially may not realize all of the benefits that can be provided by Dell EMC SmartFabric Services but are well positioned to take full advantage of the added agility as the infrastructure matures from initial deployment (day 0) to day-to-day operation (day 1), and scales over time (day 2).

The Bigger Truth

Technology has become too complex, and demands from the business have increased over the years. Indeed, ESG research shows that 75% of organizations report that their IT environment has become more complex in the past two years.

Organizations have invested in best-of-breed products that perform a single function and integrated them into an existing infrastructure, adding layers of complexity. Each technology requires separate management panes, manual workflows to set up and configure, and a set of dedicated administrative resources capable of maintaining each of the components. It is important for IT to become more agile and operationally efficient. On-premises servers and storage are becoming more automated and cloud-like, and the network needs to follow suit.

Dell EMC SmartFabric Services, which is included in the Dell EMC SmartFabric OS10 networking operating system, creates a fully integrated and automated solution between the fabric and Dell VxRail HCI, Dell PowerEdge Servers running ESXi, and Dell PowerStore storage appliances. This automation eliminates the need to configure the same parameters repetitively and manually across multiple devices throughout the network, therefore reducing human error.

Customers reported that earlier versions of Dell EMC SmartFabric Services were buggy and not user-friendly. Later versions of Dell EMC SmartFabric Services have become much more stable and user-friendly, enabling administrators to quickly and easily deploy and automate data center networking fabrics both within a single rack or between multiple on-site racks and multiple clusters. Dell EMC SmartFabric Services only require customers to perform a single configuration step per switch, automating over 99% of multiple leaf and spine configuration steps per rack. This automation eliminates manual configurations and processes, which helps reduce human errors and business risk.

ESG's economic analysis revealed that customers who used Dell EMC SmartFabric Services were able to realize substantial benefits in faster time to value, reduced operational cost, and reduced risk when compared to manual deployment options. If your organization is looking for an elastic network provisioning solution that is tightly integrated with the VMware ecosystem, then ESG believes you should consider how Dell EMC SmartFabric Services can improve your network operations while reducing your investment in time and effort.

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