

ESG SHOWCASE

Evaluating Modern Enterprise Storage

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ABSTRACT: The digital economy is transforming organizations of nearly every size, and these businesses need to rethink how to evaluate their IT infrastructure. Having the right storage technology is still vital—but now, the way that technology interacts with its surrounding ecosystem is arguably more important than ever. Dell Technologies is a leader in the storage landscape, and its Dell EMC PowerStore is modern enterprise storage designed to address the needs of our new era.

Overview

Rapid data growth and proliferating strategic digital business initiatives have been transforming organizations. According to ESG research, 98% of surveyed organizations report they are in some phase of digital transformation, and midmarket organizations are nearly as likely as their enterprise counterparts to identify as being mature in their digital transformation efforts (21% for midmarket organizations versus 22% for enterprises). And the percentage of organizations that say they are in process with their digital transformation efforts jumped from 39% to 50% in the past year.¹

The macroeconomic challenges of 2020 created a catalyst that significantly accelerated those digital business initiatives. Sixty-two percent of surveyed IT executives working in midmarket organizations agreed that the COVID-19 pandemic has made their businesses more reliant on technology.² Additionally, overall uncertainty—leading to difficulty in predicting future needs—has become a major challenge in recent months.

Rapid adoption and integration of digital initiatives clearly increases pressure on IT organizations. In the context of budget limitations and skill shortages, that means it is going to be up to the *infrastructure itself* to transform sufficiently to meet the increased demands. Simpler management and smoother operation are urgently needed now.

Additionally, modern enterprise storage must expand on its traditional enterprise-level capabilities (i.e., advanced reliability, availability, and performance). Specifically, it needs to possess new layers of intelligence, automation, cloud-native application support/consolidation, and the kind of flexibility that will allow IT to scale compute and storage independently.

In general, few organizations today tolerate being tied to any current technology. As they digitally mature, they want a way to smoothly transition to the next generation—to “adapt with time.” It is fortunate that [Dell Technologies](#) and its [PowerStore](#) all-flash storage exists. It is an excellent example of a system designed specifically to meet the requirements of this new digital era.

¹ Source: ESG Research Report, [2021 Technology Spending Intentions Survey](#), January 2021. All ESG research references and charts in this showcase have been taken from this research report, unless otherwise noted.

² Source: ESG Research Report, [The Impact of the COVID-19 Pandemic on Remote Work, 2020 IT Spending, and Future Tech Strategies](#), June 2020.

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Data Storage Requirements for Modern Businesses Are Evolving

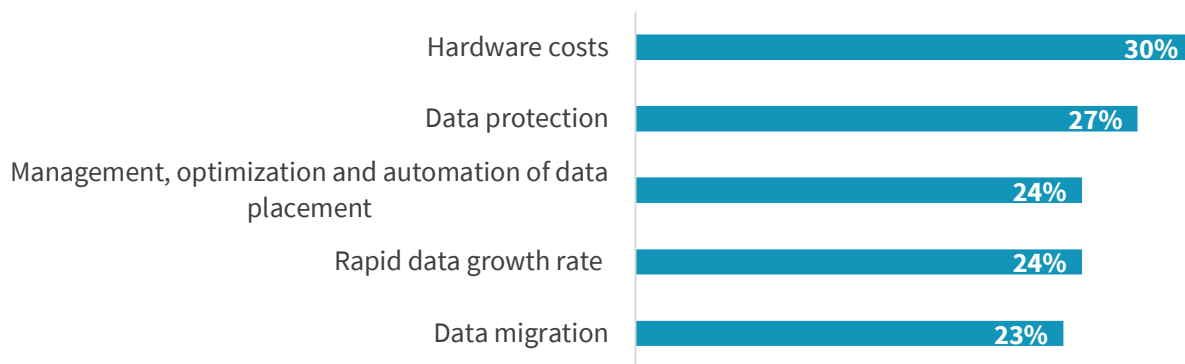
ESG research findings offer a good look at the impact the rise of digital business initiatives is having on IT organizations and the storage infrastructures they manage. An increase in IT complexity is a big concern: 75% of IT decision makers say that IT is more complex than it was just two years ago. Thirty-eight percent of organizations identify higher data volumes as a top driver of that increased complexity, while 29% say the complexity has risen due to a major digital transformation initiative requiring them to leverage technology that alters how they operate. Additionally, 28% cite complexity stemming from increases in applications that leverage new modern architectures (such as Kubernetes).

The complexity issue is made worse because of the aforementioned skill shortages—34% of IT organizations report problematic skill shortages in IT architecture and planning.³

Overall IT complexity affects storage in particular. As Figure 1 shows, IT organizations feel pressured to keep costs under control and reduce the time associated with operations.⁴ They regularly deal with lengthy provisioning times, and device management in general is time-consuming. In addition, the complexity associated with lengthy data migrations and continuous technology refresh cycles is hindering their ability to operate efficiently.

Figure 1. Top Five Block Storage Challenges

In general, what would you say are your organization’s biggest challenges in terms of its on-premises storage environment, for block environments? (Percent of respondents, N=372, five responses accepted)



Source: Enterprise Strategy Group

Organizations clearly need better management and automation of data placement, easier data migration, and simpler integration of storage into existing management and orchestration frameworks. Having a “programmable infrastructure” is becoming more important, as many organizations have a variety of existing IT and DevOps tools they want to leverage for management and automation. Modern enterprise storage infrastructure needs to plug into those environments and processes.

Containers

In an ESG research survey, 41% of storage decision makers indicated that their organizations were using containers for production applications.⁵ And 54% of those respondents reported that their container-based applications were or would be deployed in a combination of public clouds and private data centers. However:

- 32% of the respondents identified that scaling up and down with container demands was problematic.

³ Source: ESG Master Survey Results, [2021 Technology Spending Intentions](#), December 2021.

⁴ Source: ESG Master Survey Results, [2019 Data Storage Trends](#), November 2019.

⁵ Source: ESG Master Survey Results, [2019 Data Storage Trends](#), November 2019.

- 31% identified supporting container portability and mobility as a challenge for them. Forty-two percent of the cloud users had processes that required moving data back and forth from the cloud to on-premises data centers regularly.⁶

The takeaway from these stats is that demand is increasing for scale and flexibility in regard to data and application movement, especially with the increase and adoption of microservices.

Flexibility Defines Modern Enterprise Storage Selection Criteria

ESG has identified capabilities that IT infrastructure and data storage decision makers should look for to address the needs of their modern enterprise storage environments. First, they should continue to demand the “enterprise storage essentials”—all the staple capabilities of traditional storage systems, such as high performance, efficiency, scalability, high availability, data protection, and data reduction. The needs of modern businesses have evolved, but those requirements have not diminished.

The flexibility-related capabilities that organizations should prioritize include:

- **Flexibility of scale**—Application environments are more dynamic and diverse than ever before. The manual effort behind accurately predicting needed performance and capacity is often a high-effort, low-value activity. They should invest in technology that supports multiple degrees of scalability, with the ability to scale up and/or scale out performance or capacity quickly to maintain efficiency as their environments evolve.
- **Flexibility of data and application mobility**—To support their evolving application environments, organizations should look for a storage solution that allows for data and applications to shift to the proper infrastructure, one optimized for the specific needs at the time. Applications are no longer stagnant. Modern enterprise storage needs to be intelligent enough to understand and embrace that fact.
- **Workload flexibility**—Application environments are also becoming more diverse across bare-metal, virtual machines, and containers. Application environments today support a mix of all three, with the percentage of container-based workloads poised to increase. Modern enterprise storage infrastructure needs to provide enough flexibility to support any application environment while offering sufficient performance and capability to ensure that the “application experience” remains predictable, even as demands shift and evolve.
- **Flexibility to modernize** —Modern enterprise storage needs to provide flexibility to upgrade across multiple generations. Organizations need to continuously modernize their infrastructure as business requirements change without disrupting their application environments or incurring downtime. This is the only way to eliminate future cost uncertainties and plan predictably for the future.

These flexibility-related capabilities must be essential selection criteria for modern organizations. But the value they offer is driven by how easily they can be deployed. Integrated intelligence and automation can also increase value.

In other words, organizations need to adapt to change, but a giant bag of knobs and dials provides little value without the integrated insight and intelligence to effectively manage and leverage that flexibility.

⁶ *ibid.*

Dell EMC PowerStore—Delivering on the Definition of Modern Enterprise Storage

PowerStore has been built from the ground up by Dell Technologies, a leader in storage technology, to combine the essentials of enterprise storage (tied to performance, availability, and data protection) with the flexibility-centric capabilities modern organizations require. With its data-centric, intelligent, and adaptable design, PowerStore is a game-changer that helps businesses innovate and thrive in an unpredictable and rapidly changing world.

Here are how specific features of PowerStore provide flexibility:

- **Flexibility of scale**—PowerStore offers support for high-performance storage with NVMe flash and SCM, and it can easily scale either up and/or out to allow for granular, efficient additions of performance and/or capacity independently and as needed.
- **Flexibility for data mobility**—PowerStore’s AppsON functionality allows applications to run directly on the appliance, while simultaneously enabling seamless application mobility across multiple infrastructure components, including servers, the HCI environment, and the PowerStore systems. It also provides the innovative flexibility to provide storage capacity for applications running throughout the enterprise, while also offering a VMware-based environment for hosting applications locally. Thanks to this capability, PowerStore greatly reduces infrastructure storage costs and risks by allowing an organization to quickly adapt to changes in applications’ needs.
- **Workload flexibility**—PowerStore’s single architecture supports multiple storage protocols, including file and block, and also integrates with virtualization environments (using vVols) as well as container environments such as Kubernetes. The helps IT simplify and consolidate their infrastructure while supporting a wide variety of traditional and modern workloads.
- **Flexibility to modernize**—PowerStore is built to evolve as new storage technologies emerge. Its architecture, along with the unique Anytime Upgrade program, supports data-in-place upgrades through seamless controller swaps. The system also utilizes advanced clustering to support mixed system configurations, which enables IT organizations to add compute or storage resources as needed and easily retire older systems without a forklift migration. As a result, IT should see reduced storage costs and reduced risk, while ensuring that the storage is always optimized for the specific requirements of the application environment.

With these flexibility features, PowerStore simplifies the burden on stretched-thin IT organizations that are adopting new application frameworks. The result is expedited operations, reduced need for training, and less cost and risk associated with supporting a diverse application environment.

Dell EMC PowerStore Customers Describe the Value of Modern Storage

ESG was given an opportunity to speak to a couple PowerStore users to provide perspective on the drivers behind their decisions to select PowerStore as well as insights on the specific benefits that PowerStore offers.

User Environment #1 - Senior Systems Administrator in Higher Education

In this user’s environment, PowerStore serves as the primary production storage for the organization’s application environment. “We use PowerStore as our primary production SAN, we run SQL, we do everything on it,” said the senior systems administrator.” When asked to describe the decision process that led to PowerStore, the discussion centered on its benefits to workload flexibility for the organization’s immediate needs as well as the system’s flexibility for future scale.

He added, “It gives us the ability to grow. That was one of the big things. We can just add a drive. And keep growing as we need...For growth, we can double it in size... With PowerStore, we have room for growth over the next five years.”

Beyond workload flexibility though, this user went on with effusive praise for the Dell EMC support experience, highlighting the important role that trust plays in their infrastructure purchase decisions. “A lot of things have to do with trust, our Dell EMC engineer is very capable, our sales and support team are tremendous, the professionalism they exhibit is great. They actually understand the importance of a production SAN.” When asked what he would say to a colleague about PowerStore, the administrator complemented the ease of the PowerStore interface and the performance of the system, summing up his thoughts by saying, “I would highly recommend PowerStore.”

“I would highly recommend PowerStore.”

Senior Systems Administrator in Higher Education

User Environment #2 - CIO in the Rental Housing Industry

For this retail housing company, PowerStore not only also provided production SAN storage for the business, but also played a key role in revenue generation, supporting the firm’s software as-a-service offering for its customers. When asked to provide insight on why the organization selected PowerStore, the conversation focused on the need for superior workload flexibility, while controlling costs. The CIO identified rising maintenance costs for the reason to jettison the older, prior system, then highlighted the benefits of PowerStore by saying, “We needed IOPs and scale and we wanted it to be easy for our admins. The storage team was super excited about the machine. And the ability to work with CloudIQ and the rest of the portfolio was a huge plus.”

“It’s hard not to like something that goes faster and has a lower cost to operate than you budgeted.”

CIO in the Rental Housing Industry

Expanding further on the importance of PowerStore’s workload flexibility, the CIO continued, “We are a collector of acquisitions, so we have an extreme eclectic tech stack. Nothing is ever the same. We use Kubernetes, VMware, Linux, Windows, so it was very important that PowerStore support all those environments seamlessly.”

As for the economic benefits of PowerStore, the CIO said, “We got more performance and more capacity than we expected to. It’s hard not to like something that goes faster and has a lower cost to operate than you budgeted.” PowerStore offered more than just lowered costs, however, as internal operations became even more efficient. “We have reduced the cycle time of being able to produce the database clones because of the performance of the machine, and we have been able to put more on it, providing productivity gains across our entire organization,” said the CIO.

When asked to put PowerStore in context relative to its competitive landscape, the CIO felt strongly that they made the right choice in terms of price/performance, highlighting PowerStore’s ability to expand by simply adding another shelf, instead of requiring the addition of another system. The CIO culminated his thoughts saying, “We have looked at the Infinidats, we have looked at the HPEs, we have looked at the Pures, and it is hard to hit the price/performance point that the Dell PowerStore operates at.”

The Bigger Truth

Dell Technologies has spent a lot of time studying the criteria needed for modern enterprise storage that is built for not just today, but for the future. The vendor designed this architecture from the ground up to be extremely flexible—able to continually be enhanced and improved non-disruptively from both a software design standpoint and a hardware point of

view. PowerStore meets the new criteria of modern business, rather than being something “new” stapled onto an older architecture.

IT organizations today face serious challenges. They need good technology to help them overcome those challenges. No one can predict the future; therefore, businesses need storage that is going to be flexible enough to grow and evolve with them. Dell offers a modern enterprise storage architecture that will do just that.

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