

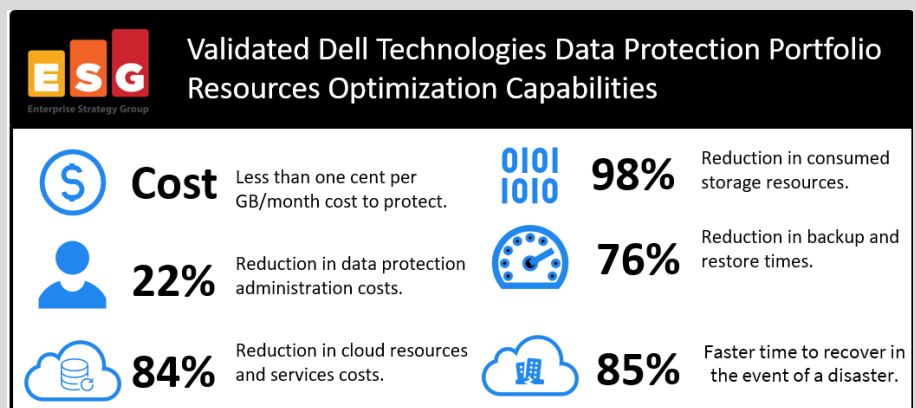
ESG Economic Validation

Analyzing the Economic and Operational Benefits of the Dell EMC PowerProtect Data Protection Portfolio

By Vinny Choinski, Senior ESG Lab Analyst; and Christophe Bertrand, Senior Analyst
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Executive Summary

We live in an intensely data-driven world, where data loss is unacceptable and quick access to information with real-time analytics driven by machine learning and artificial intelligence is at the core of decision making. Effective data protection is a critical component of every successful business. Now more than ever, organizations are looking at their data protection strategies through a new lens. They are evaluating old practices with a focus on making data protection a hands-off, efficient solution they can rely on without applying extensive IT resources. This can be accomplished through standardizing on a vendor with a comprehensive data protection offering, single management capabilities, support across a diverse network of systems on-premises, in public and private data centers, multiple clouds, as well as ROBO and edge environments.



ESG has modeled the Dell EMC PowerProtect data protection offerings as a single vendor option for enterprises of all sizes. We have found significant efficiencies and cost savings, with a level of increased benefits enabled as a single vendor solution including centralized management, operations efficiency, and optimized performance.

Introduction

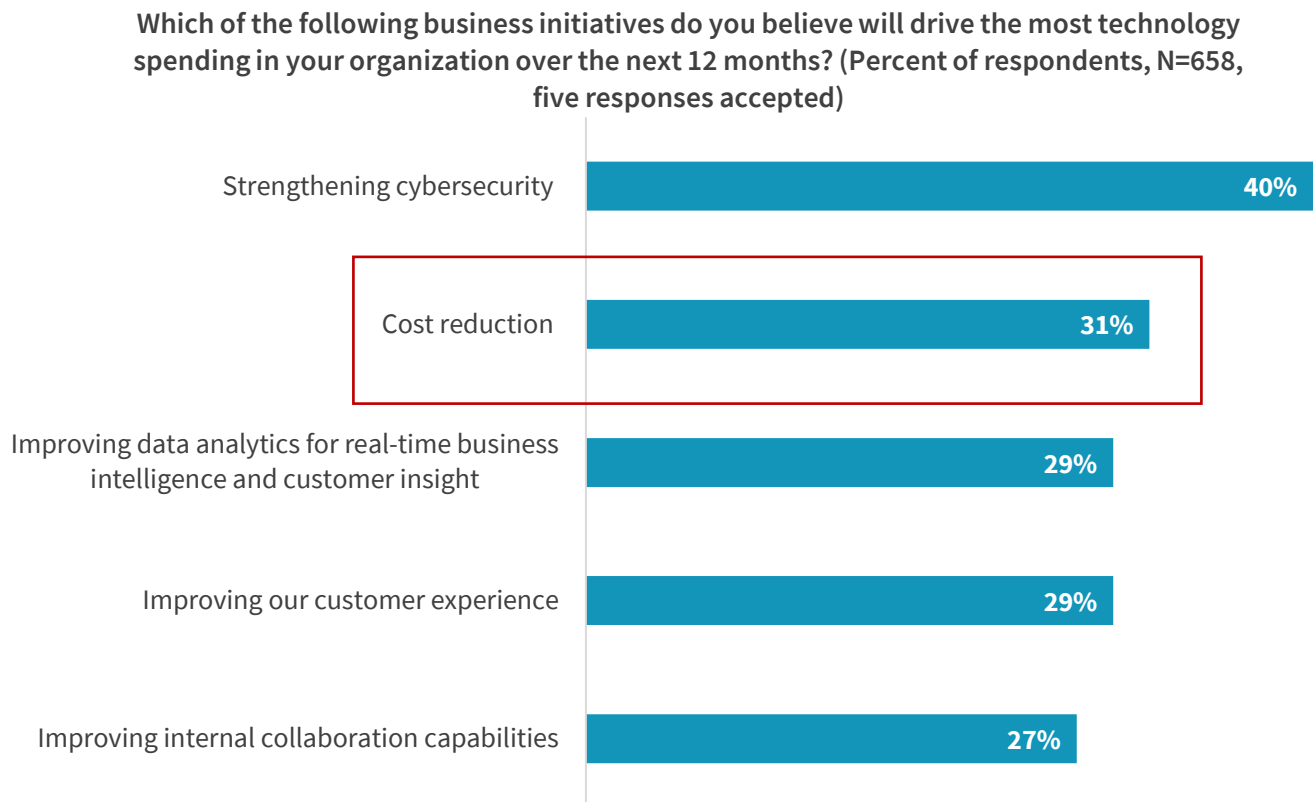
This ESG Economic Validation focused on the benefits organizations can expect from leveraging the Dell EMC PowerProtect portfolio of data protection products from Dell Technologies to create a single vendor, highly scalable, cloud extendable enterprise-class data protection environment. ESG’s modeled scenario demonstrates how organizations can expect to see extremely high cost efficiencies in protection data storage efficiency, operational overhead, backup and restore performance, and optional automated cloud disaster recovery and long-term retention capabilities.

Challenges

The IT world is getting continuously more complex as it goes through the latest digital transformation cycle. Many factors are driving this increased complexity, including: increase in the number and type of endpoint devices, higher data volumes, increase in the number and types of applications, and the need to use both on-premises data centers and public cloud providers.¹ Now more than ever, data is not just stored, it is mined, managed, and used to more efficiently operate business. Protecting this valuable data in the most efficient way is also a top priority when it comes to data center modernization initiatives, which only makes sense due to the high value of all this data to the organization.

In our *2020 Technology Spending Intentions Survey*, ESG asked respondents about the different business initiatives they expected to drive the most technology spending at their organizations over the next 12 months. As shown in Figure 1, 31% of the respondents identified reducing costs as one of the major drivers of increased technology spending for their organizations.

Figure 1. Top Five Business Drivers for Tech Spending



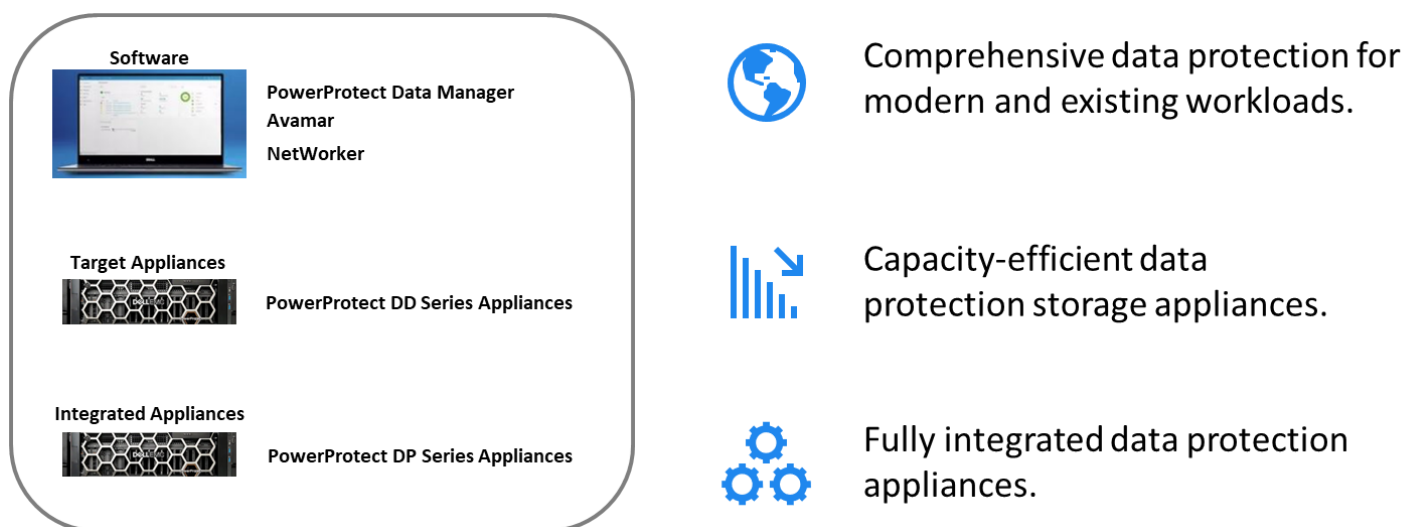
Source: Enterprise Strategy Group

¹ Source: ESG Research Report, [2020 Technology Spending Intentions Survey](#), February 2020. All ESG research references and charts in this economic validation have been taken from this research report, unless otherwise noted.

The Solution: Dell EMC Data Protection Portfolio

Dell Technologies offers a comprehensive data protection portfolio to meet the needs of organizations of all sizes and protect data and applications residing in on-premises, edge, ROBO, or multi-cloud environments. As shown in Figure 2, the portfolio includes Dell EMC PowerProtect Data Manager for software-defined data protection; the Dell EMC Data Protection Suite, a compilation of data protection software; Dell EMC PowerProtect DD physical or virtual appliances; and Dell EMC PowerProtect DP series appliances, a converged all-in-one solution. The portfolio delivers backup and recovery, application-consistent protection with governance, cloud disaster recovery, VMware integration, and continuous replication for point-in time recovery built to protect proven and modern workloads. Strong interoperability between systems allows for advanced capabilities such as scale on-demand and one-touch upgrades, making the environment easy to manage while maintaining data integrity aligning to business objectives. For control and automation, PowerProtect Data Manager provides a single dashboard view across all systems and sites to streamline processes and provide business insight while enabling global oversight of application backups to ensure compliance and governance.

Figure 2. Dell EMC Data Protection Portfolio



Source: Enterprise Strategy Group

The Dell EMC data protection portfolio includes:

- **PowerProtect Data Manager:** provides software-defined data protection, automated discovery, deduplication, operational agility, self-service, and IT governance for physical, virtual, and cloud environments.
- **Data Protection Suite:** Comprehensive data protection software with monitoring and management to deliver a complete software-driven end-to-end solution whether on physical hardware, virtual machines, or in the cloud.
- **PowerProtect DD Series Appliances:** The series is designed with storage ranging up to 1.5 PB of physical or virtual storage (97.5 PB of logical storage), compute, and next-generation Data Domain deduplication technology.
- **PowerProtect DP Series Appliances:** The series is a converged solution that offers complete backup, replication, recovery, deduplication, instant access and restore, search and analytics, and seamless VMware integration, all in a single appliance. The solution is easily managed from a single intuitive console, and getting started is made easy with a fully automated deployment procedure.

ESG Economic Validation

ESG completed a quantitative economic analysis of customer-deployed Dell EMC data protection solutions. Focus was placed on the economic benefits organizations can expect when leveraging different components and configurations of the Dell EMC data protection portfolio to automate data protection across the organization. The Economic Validation process leverages ESG’s core competencies in market and industry analysis, forward-looking research, and technical/economic validation. ESG analyzed and modeled system field data and conducted in-depth interviews with end-users to better understand and quantify how Dell data protection solutions have improved organizations’ ability to mitigate risk.²

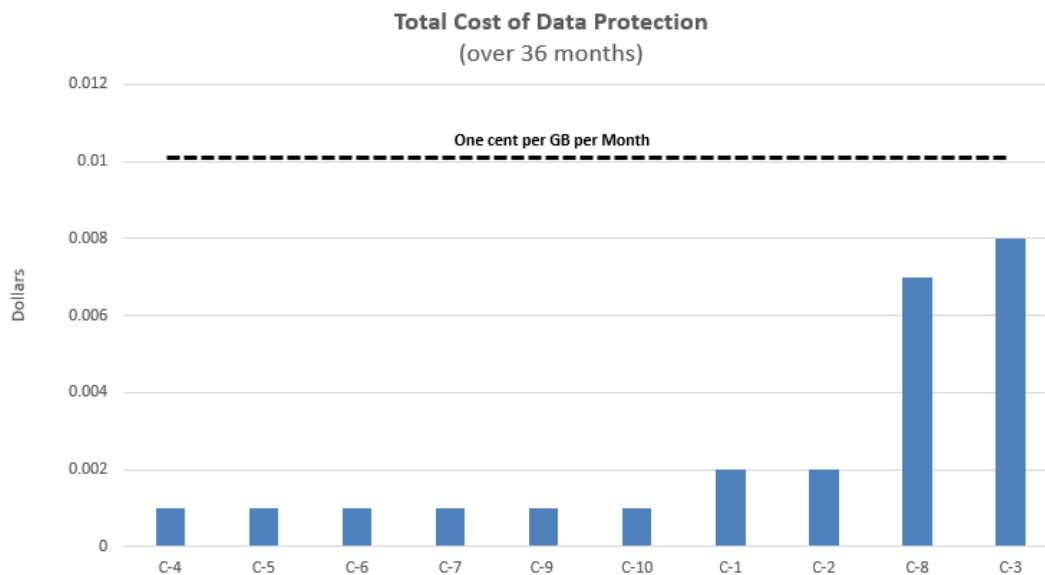
Total Cost to Protect

To start the analysis process of determining the cost to protect the production data assets of an organization, ESG audited performance, capacity, and utilization metrics from more than ten field-deployed environments that are leveraging Dell EMC data protection solutions. The results of the analysis are shown in Figure 3. The figure details how Dell EMC backup and recovery software, DD series appliance and DP series appliance architectures translate into economic benefits for business stakeholders. This part of the analysis measures solution efficiency against hardware, software, support, and Dell Technologies/Partner professional services costs. It should be noted that the cost to protect ranges between 0.001 dollars per gigabyte for six out of the ten customers and .002 dollars to .008 dollars per gigabyte for the remaining four customers.

“For us, standardizing on the Dell data protection portfolio was a big win on overall data protection cost savings.”

Source: ESG Interview with Senior Tech Architect, Government Sector.

Figure 3. Total Cost to Protect



Source: Enterprise Strategy Group

ESG’s analysis of real-world data demonstrates that the Dell EMC data protection software, DD series appliances, and DP series appliances are easily capable of serving data resources and services for fractions of a penny per GB per month.

² Source: All quotes in this document come from ESG interviews with real-world Dell EMC data protection customers.

Storage Efficiency

Storage efficiency is a critical part of operating an efficient data protection environment and represents significant cost savings. ESG began its exploration of storage efficiency by analyzing 16 data protection environments with either Dell EMC backup and recovery applications or third-party backup applications with Dell EMC target appliances or fully integrated appliances including the new DD series appliances with advanced hardware-assisted deduplication and compression.³ The

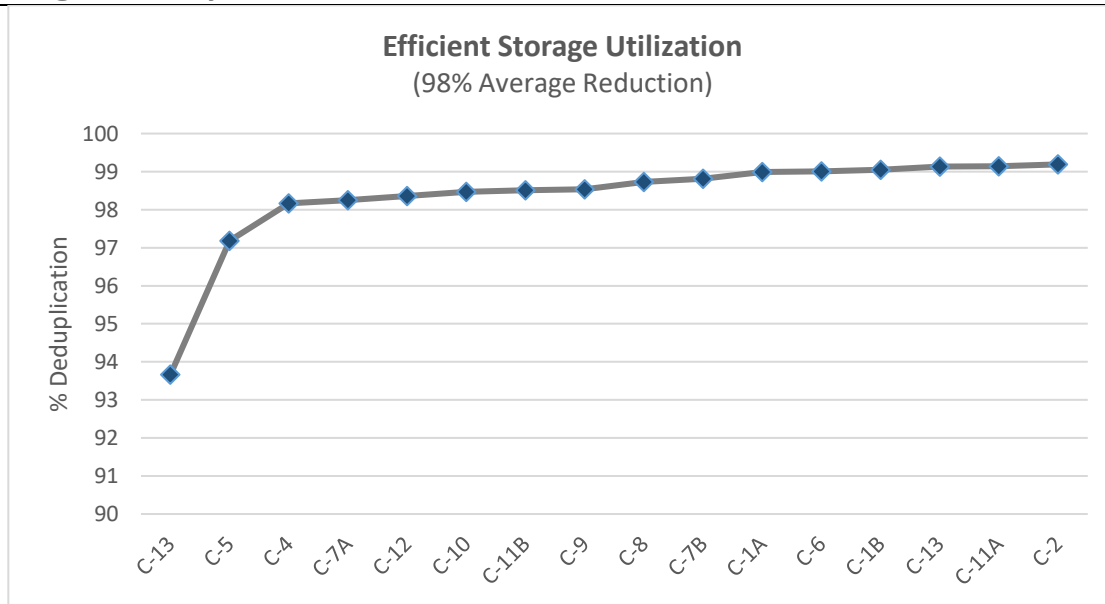
“We were expecting good storage efficiency with our new solution, but the results we actually achieved were quite amazing.”

Source: ESG Interview with IT Director, Healthcare Sector.

customers range from protecting as much as 29 Petabytes of production data to a smaller customer with 250 Terabytes of production data. This range allows for a regression analysis to determine if data volume is a factor on deduplication. As shown in Figure 4, the deduplication rates are extremely high and range from a low of 93.67% (15:1 deduplication ratio) to a high of 99.19% (122:1

deduplication ratio) with an average of 98.32% (60:1 deduplication ratio) and thirteen of the sixteen customers seeing results above the average. The customers spanned multiple industries, including technology, manufacturing, insurance, and healthcare. The selection of customers in different industries was designed to capture deduplication results across different types of data sets. Even the customer with the smallest observed deduplication rate of approximately 15:1 could protect almost 1.4 PB of data using just 87 TB of capacity. This customer is identified by the first data point on the left side of Figure 4 and is the only customer not using an end-to-end Dell EMC solution. This data pattern suggests that customers get the biggest storage efficiency when using an end-to-end Dell EMC data protection solution that includes both the protection software and appliance.

Figure 4. Storage Efficiency



Source: Enterprise Strategy Group

There is also no pattern to suggest that high or low volumes of data have any effect on deduplication rates. Some organizations with large production environments performed better than others with lower volumes and, in some cases, small environments outperformed larger ones, suggesting that the type of data is more of a driving factor than the amount of data. Additional efficiencies are also seen over time. Typically, the longer the Dell EMC data protection solution has been receiving data in the environment, the higher the deduplication rate.

³ Reference: ESG Technical Review, [Next-generation Performance with PowerProtect DD Series Appliances from Dell EMC](#), January 2020.

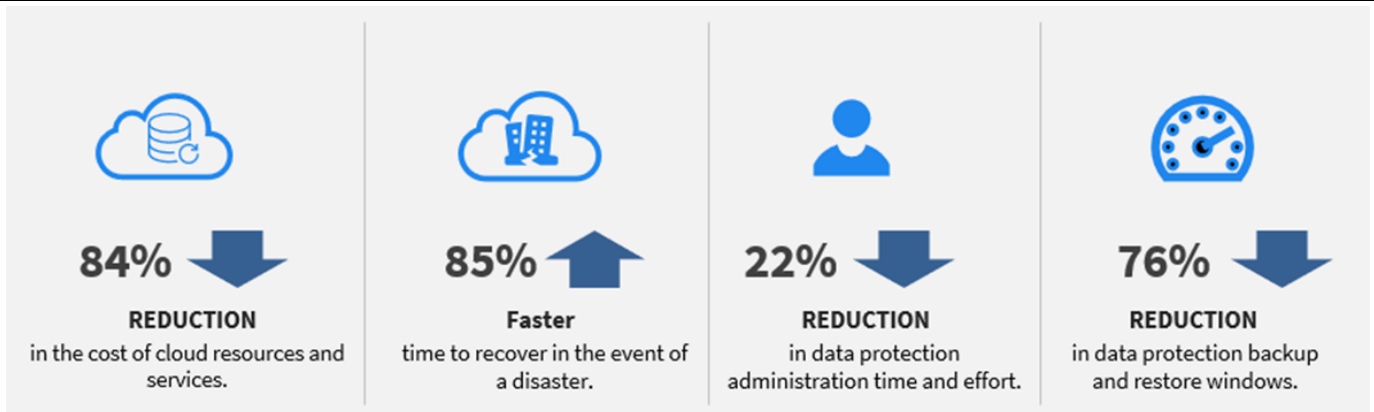
Improved Business Agility and Operational Efficiency

ESG validated that leveraging the Dell EMC data protection portfolio automation capabilities can improve operational efficiency and performance, which translates into a more agile and effective business environment. Higher performance and increased agility were seen when vendor standardization increased. This standardization allowed more advanced features to be enabled, along with the consolidation of management tasks such as the ability to push out software updates with a single click, and the option of automating data tiering and DR in the cloud. This simplified administration to where more senior staff could be reallocated to higher priority projects. Customers found that the Dell EMC data protection portfolio helped to make the business operate in a more agile and effective manner. The qualitative and quantitative findings of deploying Dell EMC data protection solutions were used as the basis for the economic metrics highlighted in Figure 5. Interviewed customers conveyed positive experiences with overall automation when using Dell EMC solutions, finding reduced costs when tiering to the cloud, faster cloud DR recovery times, higher storage utilization rates due to mature deduplication, reduced IT operational costs, and faster overall recovery times.

“Standardizing on Dell for our data protection gives us the real-time control we need today along with the intelligence we desired to plan and prepare for the future.”

Source: ESG Interview with IT Director, Manufacturing Sector.

Figure 5: Business Agility and Operational Efficiency Summary



Source: Enterprise Strategy Group

Key agility and efficiency benefits of the Dell EMC data protection portfolio include:

- Cloud Tier:** Allow businesses to leverage the cloud to help lower overall TCO. With Cloud Tier, data is natively tiered to the public, private, or hybrid cloud for long-term retention. With Cloud Tier, customers reported up to an 84% reduction in resources and service costs over their previous offsite data storage solutions. A big factor in the reduction was the deduplication of data from the primary data store to the offsite location.
- Disaster Recovery:** Cloud Disaster Recovery (CDR) allows enterprises to copy backed-up VMs from their on-prem environments to the public cloud for the orchestration and automation of DR testing. Analysis of CDR revealed up to 85% faster DR recovery times over previous customer DR procedures.
- Reduced Administration Cost:** Through automation, administrative efficiencies were achieved and measured to show a cost reduction of 22%. Due to administrative simplicity, senior IT staff was able to allocate freed cycles to more strategic initiatives.
- Improved Backup and Restore Times:** Backup and restore windows were reduced by 76%, which can have a major impact on business resiliency and reliability of backed up data. The ability to quickly and safely recover from ransomware attacks is also greatly increased, which can reduce any financial or reputational damage to the company.

The Bigger Truth

The top data protection mandates from IT leaders are focused on improving the fundamental reliability and agility of the solutions they use.⁴ However, as highlighted in the ESG 2020 Technology Spending Intentions Survey, driving down overall IT costs is an equally important business initiative. These challenges are not mutually exclusive; in fact, as customers attest, they can all be addressed by deploying efficient end-to-end Dell EMC data protection solutions.

ESG validated the many benefits of the Dell EMC data protection portfolio by auditing performance, capacity, and utilization field data from more than ten customer environments and from speaking with real-world customers that have upgraded their architectures or moved from competitive systems, and have standardized on Dell Technologies as the primary, if not only, vendor. Many of the organizations we spoke with felt that they transformed from being a very reactive organization to being able to proactively handle issues while providing consistency and improved business agility. Based on validated assumptions from these discussions, ESG’s modeled scenario shows a drop of 98% in the amount of storage required for data protection compared to the production environment. This is highly driven by the deduplication technology of Dell EMC data protection products. Another 22% reduction in administration costs was found by simplifying management to the point where entry-level IT staff could administer all data protection tasks once initially set up by more senior staff. This all resulted in seeing a 76% drop in backup and restore windows. Each of these on its own is significant; combined, they represent a big contribution to the business objective of becoming more agile.

Important differentiable elements of these solutions also include the ability to extend data protection to public, hybrid, and private clouds. With Cloud Tier, customers reported up to an 84% reduction in resources and service costs and Cloud Disaster Recovery delivered up to 85% faster DR recovery times.

Organizations that are hesitant to make a Dell EMC PowerProtect Data Manager, Data Protection Suite, DD series appliances, or DP series appliances investment based on “acquisition price alone” would be well served to reconsider the economic benefits over time, including the cost of reduced downtime and data loss, improved performance, and, most important, a steady state cost to protect of less than a penny per GB per month. If you are looking to modernize your data protection infrastructure with a solution that is comprehensive, we highly recommend that you consider exploring the features and capabilities of the Dell EMC data protection portfolio to see if it might be the right fit for you.

“Before Cloud DR we had a horrible mishmash of solutions that simply didn’t work. Now with the Dell EMC solution, we can quickly and easily test our DR process; this really helps me sleep at night.”

Source: ESG Interview with IT Manager, Software Development Sector.

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⁴ Source: ESG Survey Results, [2018 Data Protection Landscape Survey](#), November 2018