

Economic Validation

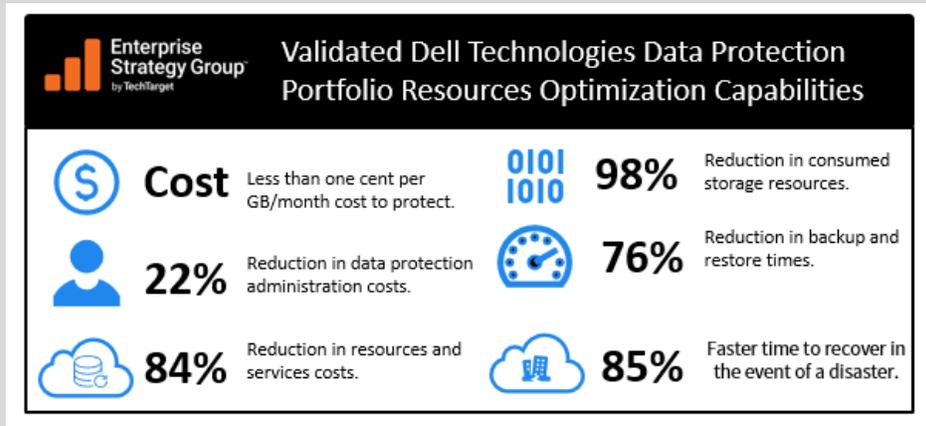
Analyzing the Economic and Operational Benefits of the Dell Data Protection Portfolio

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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, and support across a diverse network of systems on-premises, in public and private data centers, in multiple clouds, and in remote office/branch offices (ROBO) and edge environments.

TechTarget’s Enterprise Strategy Group (ESG) has modeled the Dell 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

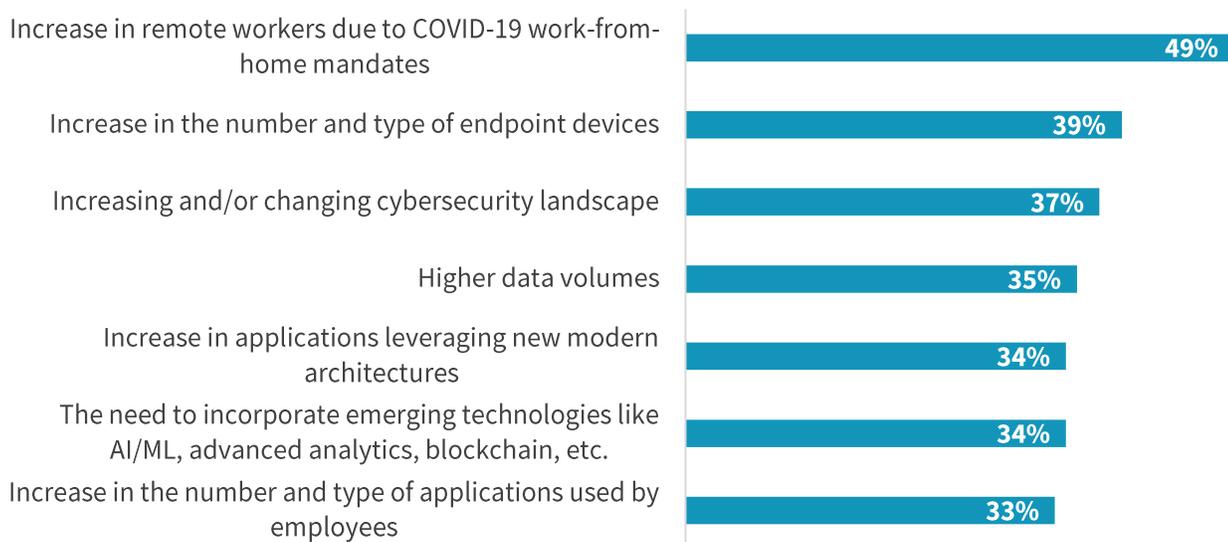
This Economic Validation focused on the benefits organizations can expect from leveraging the Dell PowerProtect portfolio of data protection products from Dell Technologies to create a single-vendor, highly scalable, cloud-extendable enterprise-class data protection environment. The modeled scenario by Enterprise Strategy Group (ESG) demonstrates how organizations can expect to see extremely high cost-efficiencies in protection and data storage optimization efficacy, 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. In our *2022 Technology Spending Intentions Survey*, we asked respondents about the different factors that have caused their environment to become more complex. As shown in Figure 1, almost half of the respondents identified that the increase in remote workers due to COVID-19 work-from-home mandates was a big reason their organization’s IT environment became more complex.¹ This change came at an escalated rate in 2020, forcing companies to react to changing requirements far faster than most technology roadmaps had planned. Other top reasons that respondents cited for their organization’s increased complexity include an increase in the number and type of endpoint devices, an increase or change in the cybersecurity landscape, higher data volumes, and an increase in the number and type of applications used by employees.

Figure 1. Top 7 Drivers for Increased Complexity in IT Environments

What do you believe are the biggest reasons your organization’s IT environment has become more complex? (Percent of respondents, N=329, five responses accepted)



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

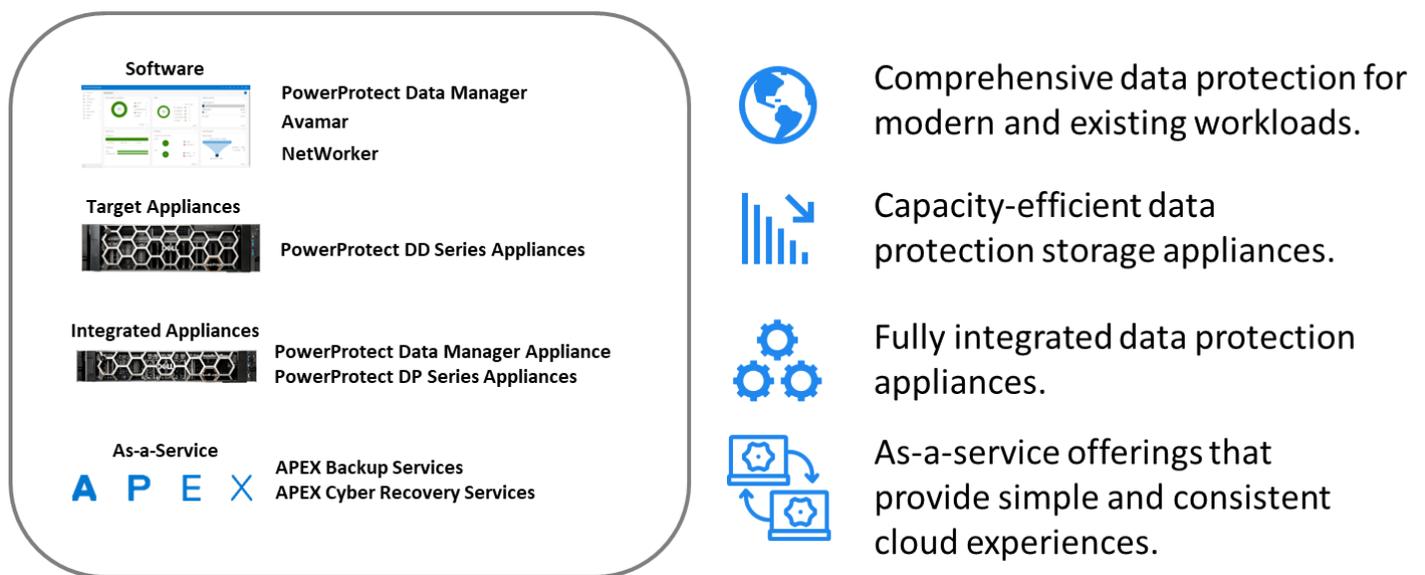
Another driver of complexity is the changing role of data. Now, more than ever, data is not just stored; it is mined, managed, and used to more efficiently operate the business. Protecting this valuable data in the most efficient way is also a top priority when it comes to data center modernization initiatives, which makes sense due to the high value of all this data to the organization.

¹ Source: Enterprise Strategy Group Research Report, *2022 Technology Spending Intentions Survey*, November, 2021. All Enterprise Strategy Group research references and charts in this economic validation have been taken from this research report, unless otherwise noted.

The Solution: Dell Data Protection Portfolio

Dell offers a comprehensive cyber-resilient multicloud data protection portfolio to meet the needs of organizations of all sizes and protect data and applications residing in on-premises, edge, ROBO, or multicloud environments. As shown in Figure 2, the portfolio includes software, Dell PowerProtect Data Manager for software-defined data protection, which is also available as an integrated appliance; the Dell Data Protection Suite, a compilation of data protection software; appliances both targeted and integrated with Dell PowerProtect DD series appliances; and Dell PowerProtect DP series appliances, a converged all-in-one solution, as well as as-a-service offerings through Dell Technologies APEX. The portfolio delivers cyber-resilient, multicloud 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 Data Protection Portfolio



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

The Dell data protection portfolio includes:

- PowerProtect Data Manager:** Provides software-defined data protection, automated discovery, deduplication, operational agility, self-service functionality, and IT governance for physical, virtual, and cloud environments. It also offers support of [Transparent Snapshots](#) for simplified VM image backups for near-zero impact to your VMs and increases in backup performance, lower costs, and simplified management to reduce the risk of data loss. The [PowerProtect Data Manager Appliance](#) simplifies the journey to modern data protection. Based on PowerProtect Data Manager, this scale-up integrated appliance offers capacities from 12TB to 96TB. The Data Manager Appliance protects existing and modern workloads, delivers operational and cyber resilience, and simplifies operations through a unified user experience.
- 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. [Smart](#)

[Scale](#) is the latest innovation for PowerProtect appliances, which enables pooling of multiple DD series appliances, providing up to 48PB of usable capacity and >3EB of logical capacity with typical deduplication rates configured under a single namespace. You will be able to optimize protection storage with non-disruptive data mobility to guide placement of workloads, perform migrations with automatic client redirection, and gain valuable capacity insights and recommendations across the environment to project capacity utilization of integrated data protection appliances.

- [Data Protection Suite](#): Offers 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 DP series appliances](#): This 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.
- [PowerProtect Cyber Recovery](#): PowerProtect Cyber Recovery provides immutability, isolation, and intelligence to protect critical data from ransomware and other sophisticated threats.

Dell Technologies APEX Data Protection and Backup Services

[APEX](#) is a growing portfolio of as-a-service offerings that provide powerful sets of functionality while reducing the complexity and challenges found with modern IT. To read our economic validation on APEX, visit [here](#). APEX offers backup and recovery capabilities, including:

- [APEX Backup Services](#): Deliver radically simple data protection as-a-Service. With no hardware to manage, infinite scalability, complete visibility, and end-to-end security, customers are experiencing simplified day-to-day operations, time and cost savings, and a comprehensive solution to address cyber-attacks and native gaps in their environment.
- [APEX Cyber Recovery Services](#): Provide a fully managed solution for customers to feel confident in the ability to recover from a destructive cyber-attack. By offloading both the day-to-day management and recovery operations of Dell PowerProtect Cyber Recovery, organizations can better focus on supporting their core business objectives. With APEX Cyber Recovery Services, organizations can simplify their cyber recovery solution with standard configurations and templated recovery runbooks and procedures that give them control over growing cyber-threats.

Economic Validation

Enterprise Strategy Group (ESG) completed a quantitative economic analysis of customer-deployed Dell data protection solutions. The focus was placed on the economic benefits organizations can expect when leveraging different components and configurations of the Dell 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.

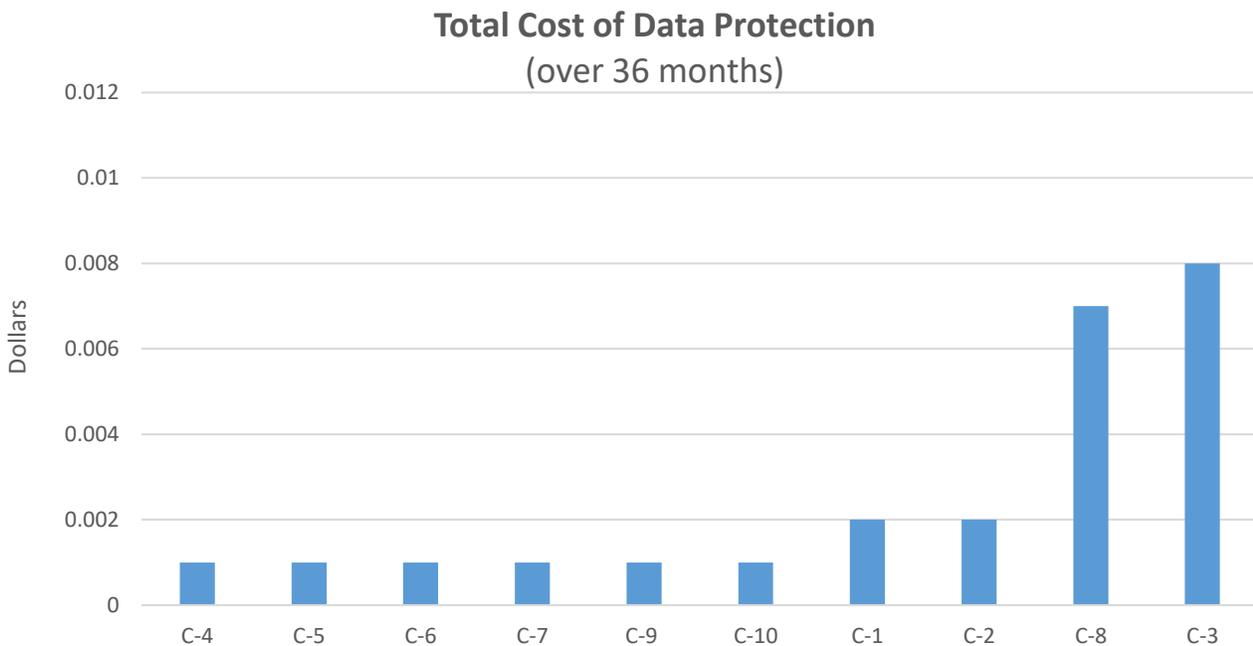
Total Cost to Protect

To start the analysis process of determining the cost to protect the production data assets of an organization, we audited performance, capacity, and utilization metrics from more than ten field-deployed environments that are leveraging Dell data protection solutions. The results of the analysis are shown in Figure 3. The figure details how Dell backup and recovery software, DD series appliances, and DP series appliances 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.”

- *Senior Tech Architect, Government Sector*

Figure 3. Total Cost to Protect



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Our analysis of real-world data demonstrates that the Dell 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.

Storage Efficiency

Storage efficiency is a critical part of operating an efficient data protection environment and represents significant cost savings. Enterprise Strategy Group (ESG) began its exploration of storage efficiency by analyzing 16 data protection environments with either Dell backup and recovery applications or third-party backup applications with Dell target

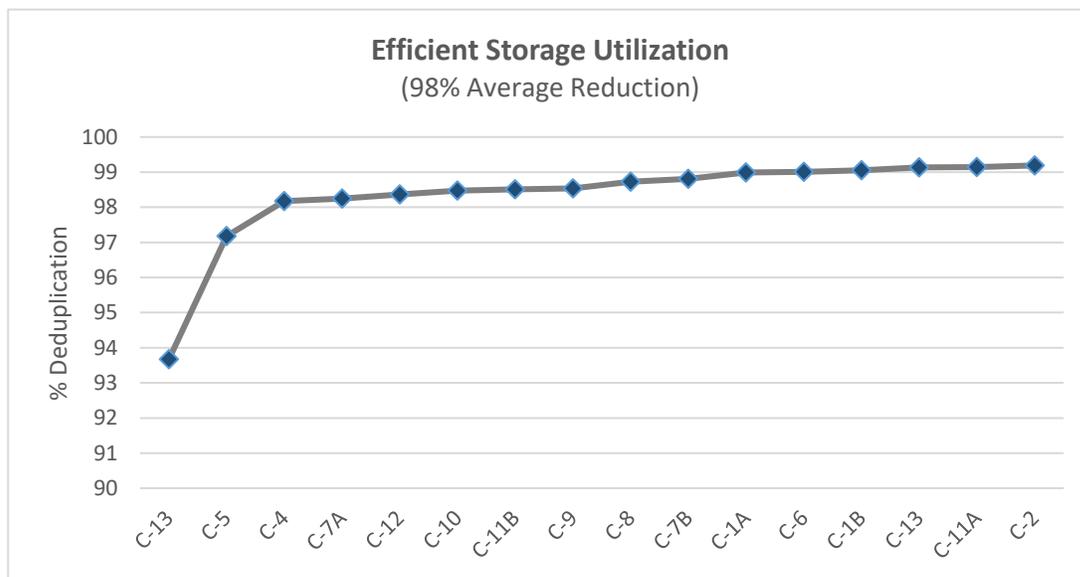
“We were expecting good storage efficiency with our new solution, but the results we actually achieved were quite amazing.”

- *IT Director, Healthcare Sector*

appliances or fully integrated appliances including the new DD series appliances with advanced hardware-assisted deduplication and compression. For more information about the data protection applications used in these 16 environments, you can review ESG’s technical review, *Next-generation Performance with PowerProtect DD*

*Services Appliances from Dell.*² This range of data environments needing protection—from 250 terabytes all the way up to 29 petabytes—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 solution. This data pattern suggests that customers get the biggest storage efficiency when using an end-to-end Dell data protection solution that includes both the protection software and appliances.

Figure 4. Storage Efficiency



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

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 data protection solution has been receiving data in the environment, the higher the deduplication rate. We continued our research on optimizing storage efficiency with a study on capacity management and performance optimization with Smart Scale for Dell PowerProtect appliances, finding that Smart Scale eliminates complexity of appliance capacity management and provides insights into improving data protection.³

² Source: Enterprise Strategy Group Technical Review, [Next-generation Performance with PowerProtect DD Series Appliances from Dell EMC](#), January 2020.

³ Source: Enterprise Strategy Group First Look, [Capacity Management and Performance Optimization with Smart Scale for Dell PowerProtect Appliances](#), March 2022.

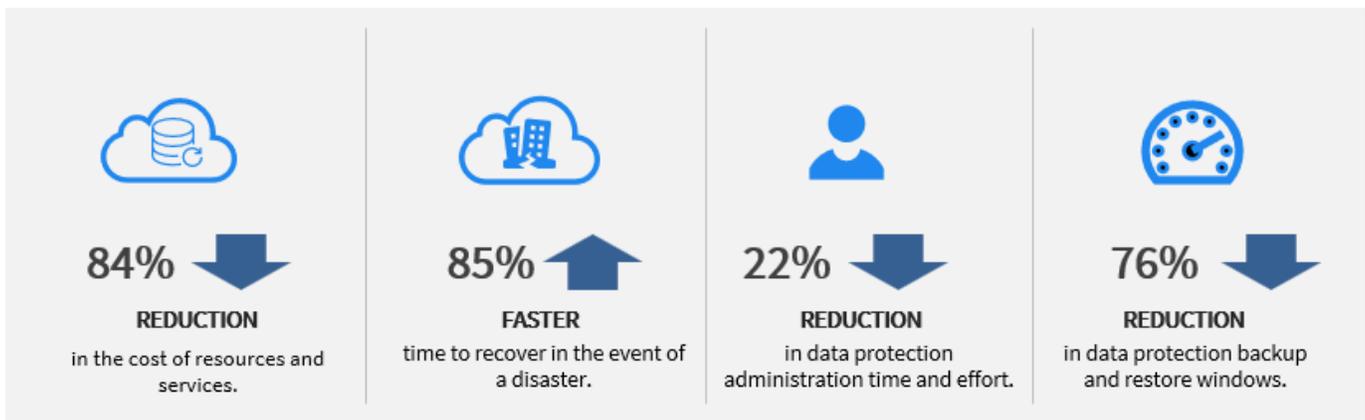
Improved Business Agility and Operational Efficiency

We validated that leveraging the Dell 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 so that more senior staff could be reallocated to higher priority projects. Customers found that the Dell data protection portfolio helped to make the business operate in a more agile and effective manner. The qualitative and quantitative findings of deploying Dell 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 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.”

- IT Director, Manufacturing Sector

Figure 5. Business Agility and Operational Efficiency Summary



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

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

- 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. Customers also reported up to an 84% reduction in resources and service costs over their previous solutions. A big factor in the reduction was the deduplication of data from the primary data store to the offsite location.
- 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.

- **Protection Against Ransomware:** The Cyber Recovery vault moves critical data away from the attack surfaces, physically isolating the data within a protected part of a data center or public cloud. Separate security credentials and multifactor authentication are required for access, offering multiple layers of protection to provide resilience against cyber-attacks, even from an insider threat. Using machine learning and analytics, corruption can be detected in the vault and a clean backup can be identified for recovery to resume normal business with confidence.
- **As a Service:** Dell backup technologies include traditional on-prem solutions, multicloud capabilities, and APEX services. Dell APEX is a growing portfolio of as-a-service offerings that provides simple and consistent cloud experiences. While other as-a-service offerings generally provide a single, pre-defined solution that organizations must build around, Dell APEX provides the flexibility of choosing outcomes from pre-defined solutions or building custom as-a-service offerings for the technology and guidance that best match a customer's need and budget.

The Bigger Truth

The top data protection mandates from IT leaders are focused on strengthening data security, improving the IT experience for both employees and customers, and improving processes to enable digital transformation. However, increases in the cost of ransomware planning and remediation, as well as rapidly increasing cloud costs, are taking a higher percentage of annual IT budgets. The challenge is enabling value to be pulled out of data while protecting datastores that are rapidly increasing in complexity. These challenges are not mutually exclusive; in fact, as customers attest, they can all be addressed by deploying efficient end-to-end Dell data protection solutions.

Enterprise Strategy Group (ESG) validated the many benefits of the Dell data protection portfolio by auditing performance, capacity, and utilization of field data from more than ten customer environments and by speaking with real-world customers that have upgraded their architectures or moved from competitive systems and have standardized on Dell Technologies as their 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 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 Disaster Recovery, customers reported up to an 84% reduction in resources and service costs and up to 85% faster DR recovery times.

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

Organizations that are hesitant to make a Dell PowerProtect Data Manager, Data Protection Suite, DD

- *IT Manager, Software Development Sector*

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 importantly, 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 data protection portfolio to see if it might be the right fit for you.

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