White Paper

The Business Value of Data Protection in IT Transformation

Sponsored by: Dell EMC

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EXECUTIVE SUMMARY

For many organizations, digital transformation (DX) is the most strategically important initiative for the organization and may determine its ability to compete in the coming decade. IDC estimates that 60% of organizations will have created and begun implementation of a digital transformation strategy by 2020. These DX initiatives are designed to take the organization forward as a proactive, data-driven company that uses and monetizes data to gain competitive advantage in the marketplace.

Far from being an IT project, successful DX requires a companywide partnership between the business units and IT. IT transformation (ITX) is a critical supporting element for organizations executing a successful digital transformation. IT transformation provides the organization with the modern IT infrastructure critical for data access — in terms of location, form, and availability — to make digital transformation successful.

IDC research, conducted for this study, found that an average of 48.5% of ITX projects involve data protection changes and improvements designed to enhance data access and availability significantly. Furthermore, almost one-third (31.1%) of the ITX budget is dedicated to data protection on average.

To find out specifically what requirements organizations have for data protection as part of ITX and how Dell EMC solutions fit in, Dell EMC contracted with IDC to conduct a two-part study. For the first part, IDC surveyed more than 1,000 medium-sized and large-scale organizations worldwide. For the second part, IDC conducted in-depth interviews of organizations using Dell EMC Data Protection solutions to understand their impact on efficiency, data delivery and availability, and cost management. These solutions correlate to the products that organizations might deploy during an ITX project. Dell EMC customers reported substantial improvements in key data protection metrics, thereby reducing their operational risk. In addition, they have lowered data protection costs, ensuring that they can provide robust data protection services in the context of business growth and IT transformation initiatives. For Dell EMC customers, these benefits yield substantial value, which IDC quantifies as being worth an average of $218,928 per 100TB per year ($1.98 million per organization), by:

> ### Highlights
>
> - IT transformation is a critical partnership between business and IT.
> - Successful data protection–focused IT transformation with the Dell EMC products showed:
>   - 225% five-year ROI
>   - 50% lower cost of operating data protection environment
>   - 71% faster data recovery window
>   - 33% more frequent backups
>   - 45% more efficient data protection staff

- Reducing the impact of outages and performance degradation related to data protection activities on employees and business operations and business continuity
- Improving business confidence, thereby helping address business opportunities and increase revenue
- Increasing the productivity of IT staff responsible for data protection, freeing up their time to handle other priorities and initiatives
- Optimizing hardware costs associated with data protection environments through much higher data deduplication capabilities and extended hardware life spans

From this study, we were able to conclude that the top ITX data protection priorities (reduced risk of data loss and reducing costs) were met by the organizations we interviewed that had deployed Dell EMC data protection products.

SITUATION OVERVIEW

Organizations are now realizing that data — or, more accurately, the timely access, analysis, synthesis, and use of information — is the key to competitive advantage in the marketplace. This is the essence of data-driven organizations that have learned to monetize data in ways that contribute directly to the bottom line. IDC research shows that data managed and stored will grow from 2.6ZB in 2018 to 7.5ZB in 2025. IT organizations will be challenged to keep up with this data growth and to ensure that data is available, protected, and managed appropriately. Moreover, our research shows that more than 70% of data will be subject to compliance requirements by 2025.

As organizations journey through ITX projects, nearly all are heavily leveraging the cloud for both business applications and data protection. In fact, according to our research, the number 1 motivation for conducting an ITX project is making better use of cloud computing. This may include private cloud (i.e., on-premise and managed private cloud), public cloud (e.g., AWS and Azure), hybrid cloud (i.e., private and public cloud), and multicloud (i.e., more than one public cloud). For many organizations, though, the real environment will be "all of the above." Consequently, IT organizations must deal with data spread across multiple devices, infrastructure vendors, application vendors, and cloud vendors. In some cases, IT staff will have direct control over data operations, and in other cases, they will have only indirect control. But, regardless of the scenario, the IT staff will be responsible for the retention, protection, and accessibility of corporate data.

It stands to reason that data-driven organizations cannot tolerate data loss or unavailability. Having data spread across the application environments described previously will be no excuse for lost data. During ITX projects, therefore, IT leaders place a premium on solutions that span cloud environments yet address application-specific data protection requirements. This must be accomplished in the simplest, most automated way to reduce skills gap and staff size issues within the IT organization. Of course, speed and efficiency are also paramount as business-driven service-level demands continue to get shorter and shorter and data explosion leads to larger and larger databases that must be protected in these very short backup windows.

To summarize, we recommend that IT managers look for the following attributes for data protection in data-driven environments as part of their ITX projects:

- Broad cloud support (private, public, hybrid, and multicloud)
- Fast, efficient, and automated

- Simple product operation and management
- Application-specific support
- Service-level delivery at the lowest possible cost of ownership

RESEARCH METHODOLOGY

Because DX and the supporting ITX projects are so strategic in nature, their success or failure can shape or even determine the future business results of the organization. Dell EMC commissioned IDC to conduct an extensive two-part research effort: a survey of organizations conducting ITX projects and the empirical business value derived by organizations using Dell EMC data protection products and to find the correlation between the two.

The survey portion of our research sought to determine the business priorities for ITX outcomes and how organizations are going about achieving them. The survey had more than 1,000 worldwide participants, representing medium-sized to large-scale organizations from all major economic zones. A total of 18 industries were represented, with the top 3 being manufacturing (17%), information technology (15%), and financial services (9.4%). We wanted to include input from both the IT group and line of business.

IDC interviewed IT managers responsible for their organizations' IT and data protection operations at 12 organizations about the impact of using Dell EMC Data Protection solutions on a number of topics related to their IT operations, business risk and outcomes, and costs. These organizations varied by size, with an average employee base of 14,150 (median 6,600). They have significant operations in terms of both annual revenue (average $4.41 billion) and number of business applications (484). All interviewed customers are based in the United States, although several have international operations, and they represented a spectrum of verticals including accounting, financial services (3), healthcare (3), higher education (3), manufacturing, and media. Full demographic details may be found in the Appendix section (refer to Table 6).
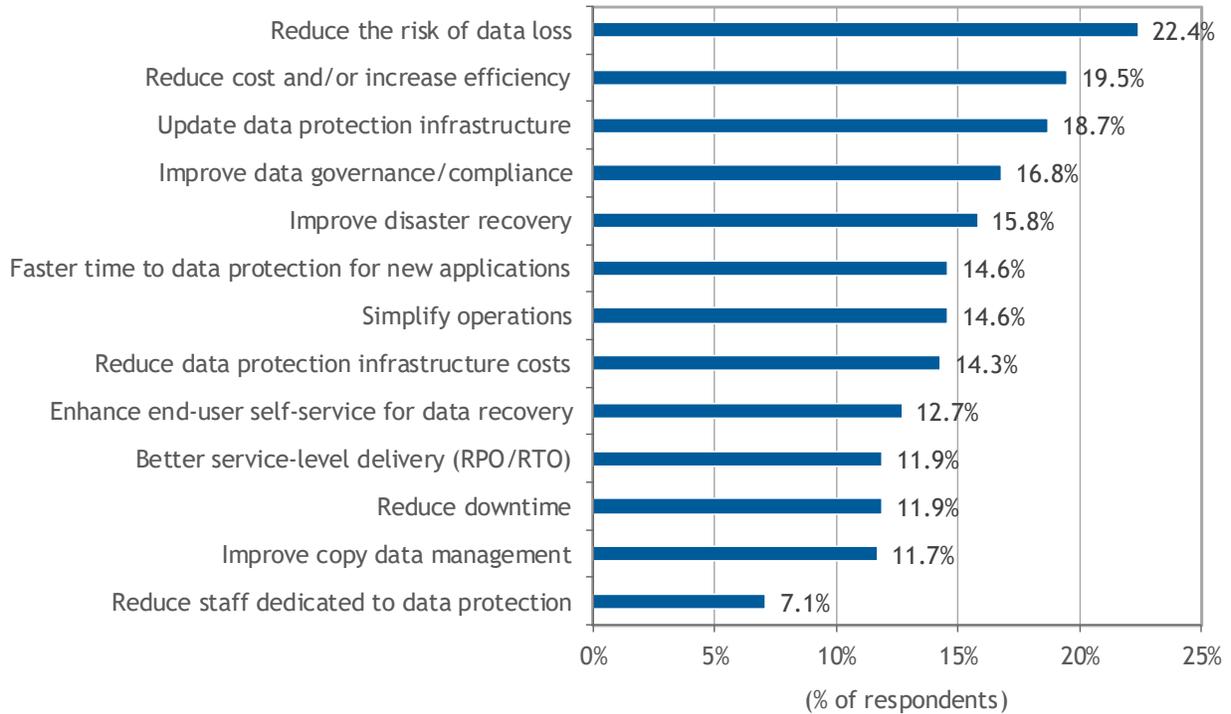
LINKING REQUIREMENTS WITH RESULTS

Data Protection Priorities for IT Transformation

Understanding the project objectives is critical to success. We asked respondents to tell us their data protection objectives for ITX projects. The results are detailed in Figure 1 and show that reducing the risk of data loss and reducing cost are the top 2 objectives.

FIGURE 1

Data Protection Objectives for ITX Projects

Objective	%
Reduce the risk of data loss	22.4%
Reduce cost and/or increase efficiency	19.5%
Update data protection infrastructure	18.7%
Improve data governance/compliance	16.8%
Improve disaster recovery	15.8%
Faster time to data protection for new applications	14.6%
Simplify operations	14.6%
Reduce data protection infrastructure costs	14.3%
Enhance end-user self-service for data recovery	12.7%
Better service-level delivery (RPO/RTO)	11.9%
Reduce downtime	11.9%
Improve copy data management	11.7%
Reduce staff dedicated to data protection	7.1%

(% of respondents)

n = 1,040

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Business Value Finding: Reduced Data Loss-Related Risk with Dell EMC Data Protection Solutions

Interviewed participants agreed that Dell EMC Data Protection solutions have helped their organizations reduce risk related to data availability, especially in the context of virtualized and hybrid IT environments. Risk involves not only the loss of data but also the consequences of the data outage, including impact on staff productivity, organizational reputation, and direct and indirect costs. Minimizing data-related risk supports best practices that include:

- Faster data recovery windows
- Keeping more data on-premise for longer periods to improve recovery time
- More frequent and faster data backups to reduce the possibility of data loss

In concert, increasing capabilities in these areas has reduced risk profiles for interviewed organizations. One Dell EMC customer described the effect on its operational risk:

> *"We have been able to segment and protect data strategically with Dell EMC. That allows us to better understand the risk that those environments and data are exposed to. We can let the business dictate the rules and we can comply with those business rules because 100% of the data is available at all times."*

Another customer commented:

> "With Dell EMC, we can understand and inventory [our data in] near time. . . . We can now with certainty go back in and recover information that's critical for the organization. The speed is remarkable. For our cybersecurity, we do a complete picture of the environment every night."

Participants spoke to the impact on their ability to effectively and efficiently protect their data environments. With Dell EMC, they have significantly sped up data recovery windows and maintain more data on-premises longer and perform more frequent and timely backups (see Figure 2). These operational improvements related to data protection activities all serve to reduce their overall risk profiles:

▪ **Data recovery:** Study participants have reduced data recovery windows by 71% and cut the amount of staff time required per data recovery effort by 60%. One study participant described the impact of Dell EMC in terms of VM recovery:

"*VM recovery is much faster with Dell EMC. Before, we needed to have failover. We would then bring them up one by one. There was no orchestration tool, so recovery management would be manual. In terms of time, it took many as much as 10-12 hours, whereas now it is almost synchronistic and recovery is prioritized. We go group by group for failover. It takes about 10 minutes now.*"

▪ **Data retention:** Study participants reported keeping more data on-premises for longer with Dell EMC Data Protection solutions. One interviewed Dell EMC customer explained:

"We now back everything up for a year. Before we had a 30-day window, and after that everything went to tape."

FIGURE 2

Data Recovery and Data Maintenance Metrics
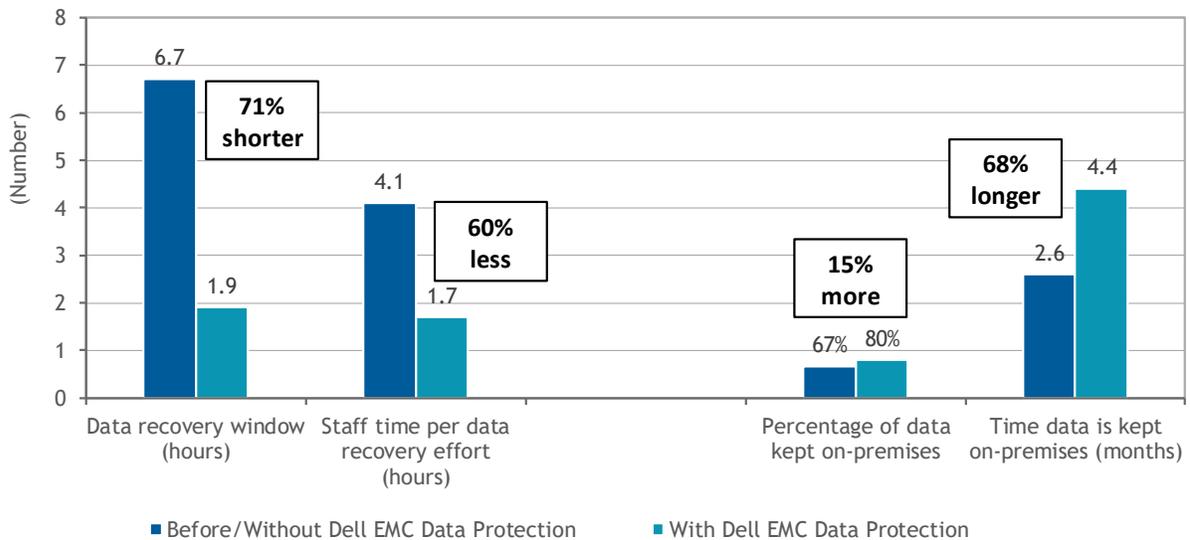
Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Meanwhile, some study participants also perform backups more frequently (33% more frequent on average) and take 36% less time to complete them. Faster, more frequent backups help organizations reduce their RPO (recovery point objective — data loss potential) and facilitate better RTO (recovery time objective — speed of recovery). Reducing these key performance indicators is critical to successful IT transformation (see Table 1). One interviewed organization explained:

> "We are backing up two-thirds more often, and it takes less time with Dell EMC. We can do a full backup in one night instead of taking two nights."

Another study participant spoke of the impact in terms of backing up its virtualized environment:

> "Dell EMC Avamar allowed us to dramatically shrink our backup window and use less physical storage in a much shorter backup window. It also made it much easier to administer and has dramatically reduced our recovery time objectives."

TABLE 1

Impact on Backup KPIs

	Before/Without Dell EMC Data Protection	With Dell EMC Data Protection	Difference	Change (%)
Number of backups performed per year per organization	124,934	166,677	41,743	33
Backup window in hours	15.4	9.9	5.5	36

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

According to study participants, reducing operational risk with Dell EMC Data Protection solutions has tangible and intangible benefits. Impacts that they described as more challenging to quantify included:

- Reducing the organizational-level risk associated with data loss and data breaches
- Minimizing the risk to their reputation from loss of customer and operational data
- Positioning themselves to leverage data to support business goals

More tangible benefits included reduced productivity losses associated with outages and lower performance from extended windows for data backups/restores. Table 2 shows the impact of Dell EMC Data Protection solutions, including 33% fewer unplanned outages related to data protection activities and 71% reduced overall impact on lost productive time. Addressing the reduction of costly business outages, one study participant said:

> "We now have zero downtime with Dell EMC and have redundancy and multiple failure points. There have been no outages to critical data in the last 10 years. Outages prior to Dell EMC were painful, [were] significant, and could last 24-48 hours. Outages can impact up to 60% of employees and have estimated losses approaching $1 million for 24 hours."

Another organization explained that its data protection activities no longer impinge on system performance:

> "Previously, our database performance took a hit in backup windows. We always knew when the backup windows were occurring; stuff would come to a halt or get slow. Now, with Avamar we don't even notice when the backup windows are happening."

TABLE 2

Impact on Unplanned Downtime

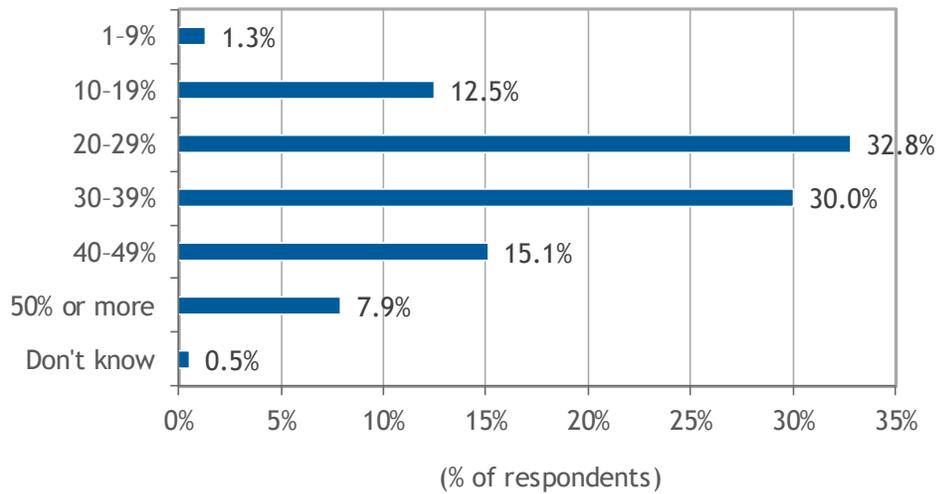|	Before/Without Dell EMC Data Protection	With Dell EMC Data Protection	Difference	Change (%)
Number of unplanned outages per year per organization	13.5	9	4.5	33
MTTR (hours)	4.7	2	2.7	57
Hours of lost productivity per user per year	2.3	0.6	1.6	71

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Cost Containment

With cost containment as the second priority for IT organizations, we examined the findings regarding organizational cost management and budgeting. We asked survey respondents to tell us the percentage of their ITX budget allocated to data protection (see Figure 3). As shown in Table 3, 62.8% of respondents allocated 20-39% of the budget to data protection. Clearly such a sizable sum indicates the importance of data protection to ITX.

FIGURE 3

Percentage of ITX Budget Allocated to Data Protection

n = 1,040

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Business Value Finding: Lower Data Protection Costs with Dell EMC Solutions

Study participants interviewed noted that Dell EMC Data Protection solutions have lowered their costs of providing data protection services. Enhanced capabilities in areas such as data deduplication help organizations avoid significant investment in storage, and hardware life spans are extended by reducing pressure on the underlying hardware through optimizing utilization rates and software-defined balancing. Meanwhile, the ability to extend data protection capabilities to virtualized environments without investment in additional hardware also helps maintain cost-effective data protection schemes.

One study participant commented:

> *"The fact that we can roll out [the backup/recovery] Avamar Virtual Edition in remote offices is a substantial benefit. We do not have to put in a physical grid to back up the software and replicate. I would estimate it could be a 40–45% savings on the infrastructure side."*

Addressing lower costs enabled by data deduplication, another organization said:

> *"Using Avamar and its deduplication technology, we are using less storage. We can store over the equivalent of 200TB with 30TB of physical space. That is a massive reduction in storage costs that we would otherwise take on."*

Table 3 presents specific metrics related to data protection infrastructure KPIs. For example, data deduplication ratios showed an impressive 210% increase with Dell EMC, while study participants reported extending the life spans of their data protection hardware by 55% on average.

TABLE 3

Data Protection Infrastructure KPIs

|	Before/ Without Dell EMC Data Protection	With Dell EMC Data Protection	Difference	Change (%)
Hardware life span (years)	3.0	4.6	1.6	55
Data deduplication ratio	7.5	23.3	13.8	210

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study*, 2018

These cost efficiencies — in terms of both hardware and staff time requirements — mean that Dell EMC customers can operate their data protection environments at a substantially lower cost. IDC calculates that they will spend an average of 50% less in these two areas over five years than they would taking their previous or alternative approach. A high deduplication ratio will significantly reduce storage requirements and allow each gigabyte of protection storage to go further (see Figure 4).

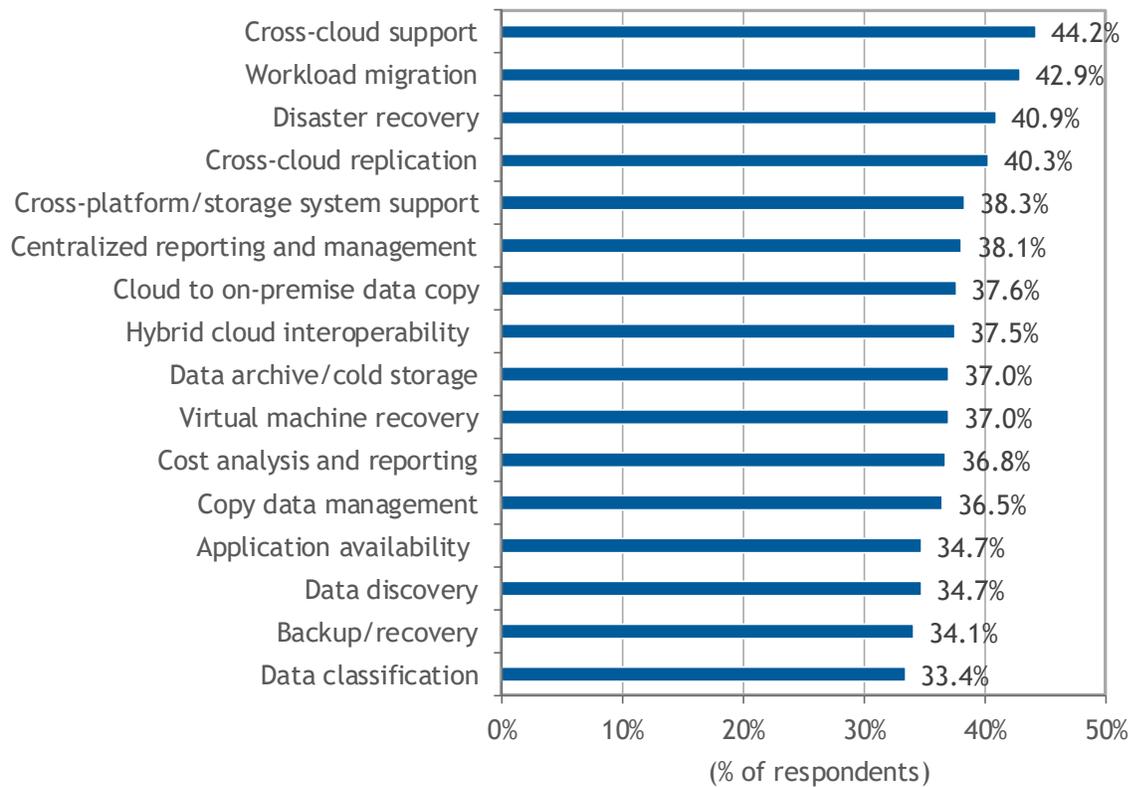## FIGURE 4

Five-Year Cost of Operations
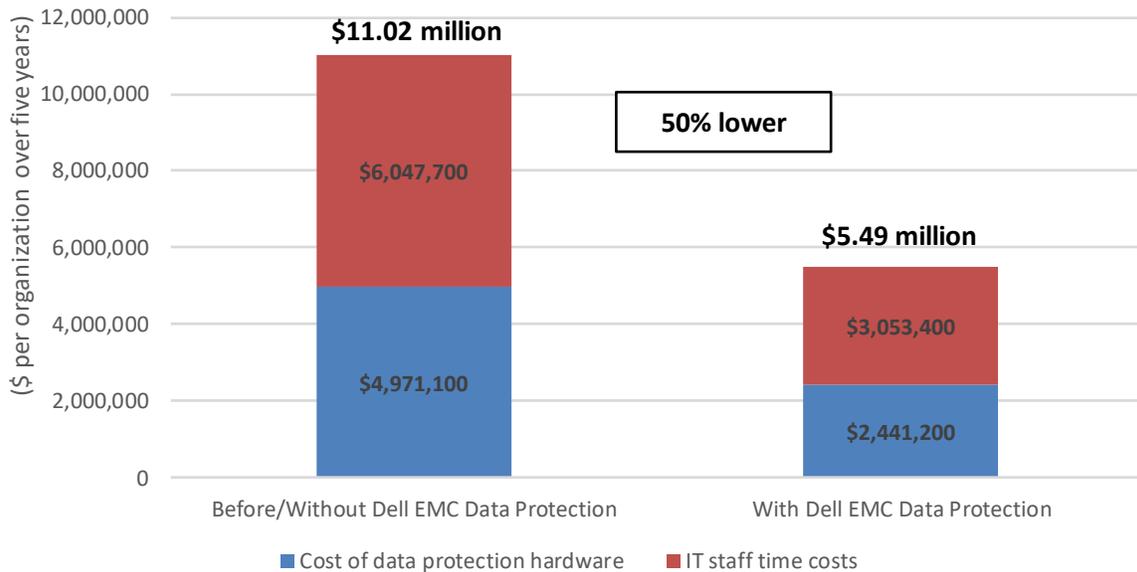
Source: IDC and Dell EMC's *Data Protection for IT Transformation Study*, 2018

Cloud-Related Data Protection Challenges for IT Transformation Projects

Because better use of cloud is a central element of ITX projects and because data protection is a key element in many of those projects, it is worthwhile to note what deficiencies organizations find with respect to data protection in ITX projects. Separate IDC research shows that 90% of organizations plan to use cloud in the data protection schemes within 12 months. Figure 5 shows that cross-cloud support was the major deficiency. Moreover, with workload migration and disaster recovery increasingly moving to the cloud, the top 4 deficiencies relate either directly or indirectly to the cloud (see Figure 5).

FIGURE 5

### Existing Data Protection Deficiencies for ITX

n = 1,040

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

With regard to broader cloud-related concerns, we wanted to know the specific data protection-related challenges organizations expect to face during cloud implementations of specific technologies in ITX projects. For example, respondents had 11 options to choose from when asked what data protection challenges they face for platform-as-a-service (PaaS) implementations. Figure 6 contains these results.

FIGURE 6

Data Protection Challenges in PaaS Implementations
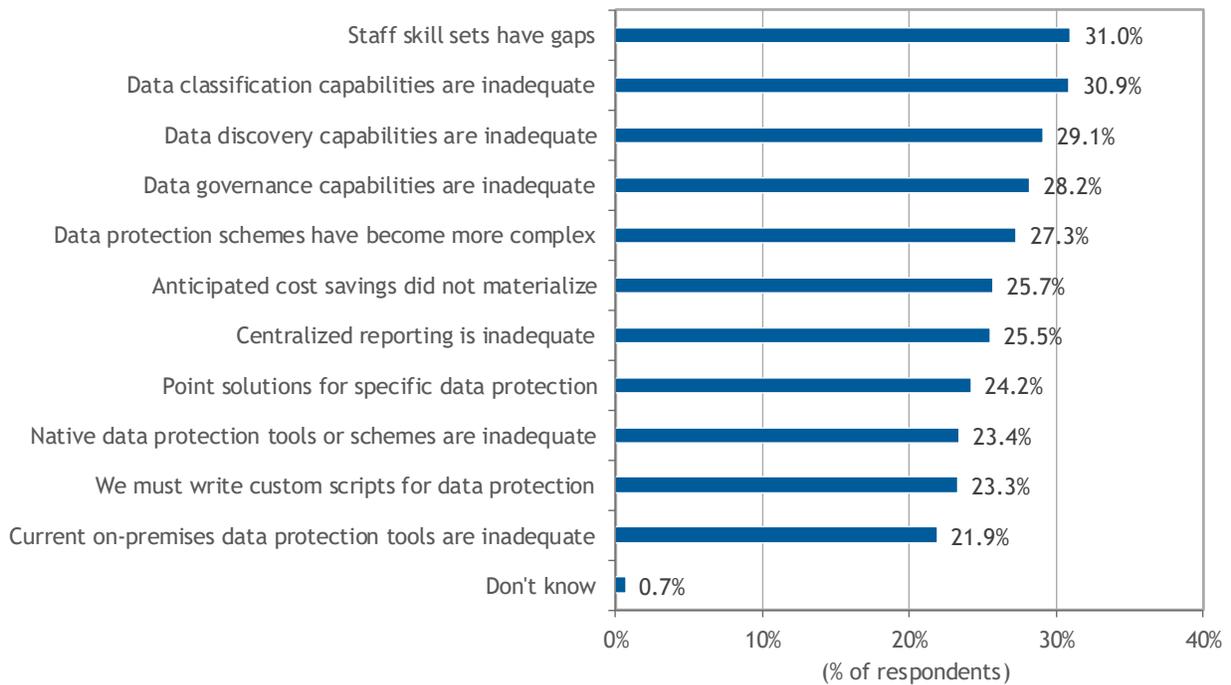
n = 990

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Figure 6 illustrates that the top concern for PaaS implementation is staff skills gaps. Interestingly, this became a theme as we asked about other, newer technology implementations. When asking about data protection-related challenges, "staff skill sets have gaps" was a top 3 concern in every case: Internet of Things (IoT) (number 1), Hadoop (number 2), data lakes (number 2), machine learning/artificial intelligence (number 1), real-time streaming analytics (number 3), and containers (number 1) (Note: Figures are not shown). While training can certainly address skills gaps, IT staff are usually stretched thin and have limited training time and opportunity. Rather, they look for solutions that can automate as many activities as possible and to simplify those activities that still require human intervention.

Business Value Findings: Dell EMC Data Protection Solutions in the Context of ITX, Cloud Initiatives, and Staff Efficiency

Interview participants' use of Dell EMC Data Protection solutions fits within their varied IT transformation initiatives that have C-level support. Interviewed IT managers explained that their organizations identified data protection as comprising an important aspect of these ITX initiatives. One study participant commented:

> *"Data protection is very much a critical cornerstone of our ITX effort. This is because we are such a data-driven business and everything we do depends on the data we gather."*

Interviewed organizations linked creation of value through data-driven digital services with efficient management and protection of data, including identifying and addressing data-related vulnerabilities. Further, while most of these organizations' data still resides on-premise, they increasingly must protect their data in the context of agile movement of workloads — from on-premises locations to the cloud and back — while maintaining and ensuring the same levels of security and continuity. A Dell EMC customer explained the challenges it faces:

> "We need to maintain the same sets of features and services, both on- and off-premises, to keep our customers from having to do anything. In other words, we run the systems that protect our customers' data, and they shouldn't have to know that we moved certain data from one environment to another environment."

For study participants, the need to minimize risk in the context of broader IT initiatives was of high importance. Interviewed IT managers described various reasons for choosing Dell EMC, including:

- **Customizable** — fitting organizations' varied data environments and needs
- **Flexible** — allowing organizations to protect data maintained efficiently in private, public, and hybrid cloud environments
- **Efficient** — helping organizations optimize storage requirements through much improved deduplication rates and software-driven processes

One organization explained the value of flexibility in customization with Dell EMC:

> "We needed a more customizable solution, and Virtustream [a Dell-owned cloud service provider] gave us more of what we are looking for across our data environment. The public cloud choices are almost too big to deal with, and we needed to work with someone who could adjust to our needs."

Another respondent can now better manage and understand its growing data environment:

> "Dell EMC Data Protection solutions have helped us better manage our data. It is important for us to understand the life cycle and governance of our data. . . . The top 3 rules in data life cycle for us are: Is your data protected? Is it recoverable? Is it vulnerable to threats? That is what we are trying to do with our data transformation. Be resilient, [be] protected, and understand the cost of ownership."

## Business Value Analysis: ROI and Staff Productivity Benefits from Dell EMC Solutions

Interviewed organizations reported leveraging Dell EMC Data Protection solutions to achieve more robust data protection positions, including across their virtualized and cloud environments. Importantly, they have made their data backup and data recovery efforts more efficient and effective, bringing tangible benefits such as reduced productivity losses associated with data-related outages and intangible benefits in terms of reducing risk to their reputations and businesses. Further, these Dell EMC customers are reducing the cost of protecting data by freeing up staff time and optimizing hardware use.

The net result is value that IDC quantifies to be worth an average of $218,928 per 100TB ($1.98 million per organization) over five years, spread relatively evenly between IT staff enablement, lower costs, and business and user enablement (see Figure 7):

- **IT staff productivity benefits:** By leveraging software-driven functionality and higher-performing environments, study participants have made their IT teams responsible for data protection much more productive. IDC puts the value of time savings and productivity gains at an annual average of $66,057 per 100TB ($598,900 per organization).

- **Risk mitigation — user productivity benefits:** By improving their ability to carry out data backups and data recovery activities, study participants have reduced the frequency of data-related outages. IDC calculates that they will realize higher user productivity benefits worth an average of $60,678 per 100TB ($550,100 per organization) per year.

- **IT infrastructure cost reductions:** By requiring less storage capacity as the result of improved deduplication rates and longer hardware life spans, study participants are optimizing the cost of protecting their data. IDC projects that they will save an average of $60,222 per 100TB ($546,000 per organization) per year.

- **Business productivity benefits:** By optimizing their data protection activities, study participants have limited degradation of system and application performance related to data protection efforts. IDC estimates that the result will be higher user productivity worth an average of $31,970 per 100TB ($289,800 per organization).

FIGURE 7

Average Annual Benefits per 100TB
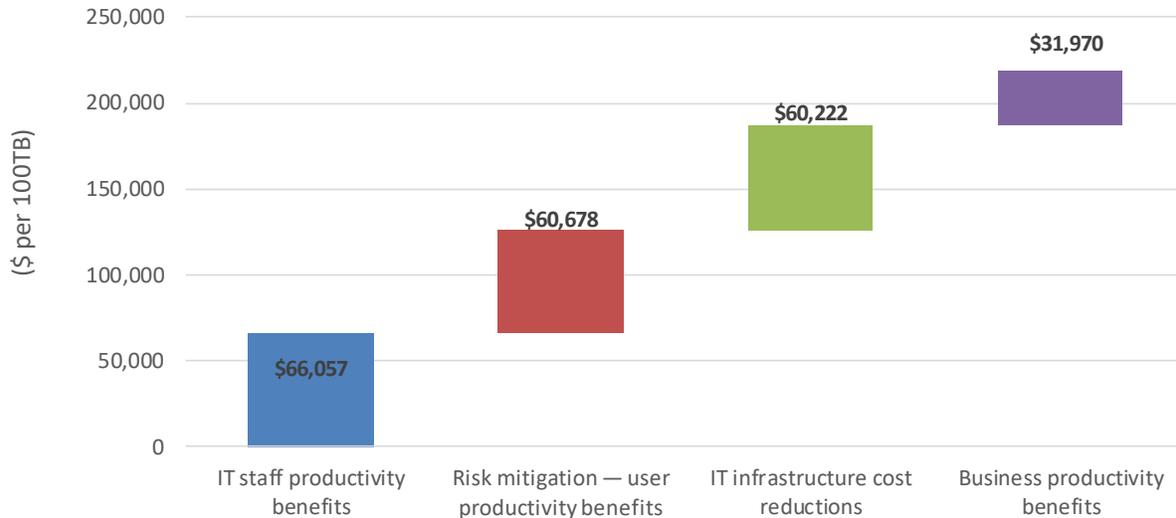
Average annual benefits: $218,928 per 100TB

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Providing Business Continuity and Confidence

While study participants may find it challenging to directly link improved data protection operations to business enablement, they understand its importance to their businesses in terms of issues such as business continuity and the confidence it engenders. Data availability helps inform business decisions and improve responses to market conditions. These business continuity benefits help organizations carry out their activities efficiently and effectively to support their businesses.

As described previously, speed of VM recovery is of high importance for most organizations, and recovery needs to happen quickly to ensure that users do not lose key data or access to applications. Interviewed organizations reported that Dell EMC Data Protection solutions help them achieve these goals by cutting the time needed for data recovery and carrying out backups that do not impact users and that do not impede system performance.

One Dell EMC customer explained the benefit of faster recovery efforts to users:

> "We can get data back to end users quicker, going from 6 or 7 hours on the virtual restores down to 30 minutes. Overall, we respond much more quickly to all requests around backups and restores."

Meanwhile, another study participant described how Dell EMC Data Protection solutions enable it:

> "Dell EMC Data Protection has improved our ability to do business. The way the systems work together enables us to perform restores very quickly and efficiently. Data protection is a very linear business, and most of it is based on specific data needs and that is all catalogued."

On the topic of confidence in data recovery related to virtualized workloads, another interviewed IT manager said:

> "Dell EMC Data Protection solutions have allowed us to be more confident in the projections we make in our disaster recovery time objectives and our ability to act on those plans."

More Efficient Data Protection Teams

Study participants stressed the importance of efficiency with running and supporting data protection activities. Study participants reported achieving an average of 45% more efficient data protection management and 64% more efficient infrastructure management and needing an average of 49% less staff time for data protection-related help desk activities (see Table 4).

For study participants, the importance of these efficiencies is in terms of what it frees their staff up to do. Study participants provided examples that included shifting time from day-to-day monitoring and support to other initiatives and objectives such as:

- **Better RPO and RTO life-cycle support:** *"Use of saved productivity allows us to look closer at the BCP, BIA, RPO, and RTO life cycles of our environment. It opened doors to introduce data management of our critical assets and understand the life-cycle responsibility of managing them and reporting to the C-Level for better strategic direction."*

- **Devoting staff time to long-term projects and initiatives:** *"We can work on long-term projects like looking at moving from on-premises to the cloud or more short-term [projects] like*

virtualizing the deployment of applications. We are not worried so much about keeping the lights on and are becoming better business enablers with the extra time."

▪ **Handling growing data environments without new hires:** *"We have additional parts and pieces to our data protection activities, and we did not have to add any staff at all."*

TABLE 4

Staff Impact — Data Protection-Related Activities

	Before/Without Dell EMC Data Protection	With Dell EMC Data Protection	Difference	Change (%)
Data protection management (FTEs per year per organization)	8.7	4.7	3.9	45
Infrastructure management (FTEs per year per organization)	2.6	1.0	1.7	64
Help desk (FTEs per year per organization)	0.8	0.4	0.4	49

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

ROI Analysis

Table 5 presents IDC's analysis of the benefits and costs of using Dell EMC Data Protection solutions for study participants. These Dell EMC customers will capture total five-year discounted benefits worth $767,226 per 100TB ($6.96 million per organization) based on a total discounted investment of $235,733 per 100TB ($2.14 million per organization). These levels of benefits and investment would result in a five-year ROI of 225%, with breakeven in their investment in Dell EMC Data Protection solutions occurring after an average of 14 months.

TABLE 5

ROI Analysis

	Five-Year Average per Organization	Five-Year Average per 100TB
Benefit (discounted)	$6.96 million	$767,226
Investment (discounted)	$2.14 million	$235,733
Net present value (NPV)	$4.82 million	$531,493
Return on investment (ROI)	225%	225%
Payback period	14 months	14 months
Discount rate	12%	12%

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

CHALLENGES AND OPPORTUNITIES

The largest data protection challenge today is simply the complexity of the many application deployment platforms and the specific data protection requirements that accompany each one. This is a challenge for IT organizations and data protection solution providers alike. While each individual platform is not in itself complex, the combination of them quickly creates a support and functionality matrix that multiplies quickly.

For IT suppliers, such as Dell EMC, this means constant attention to the rapidly changing data protection requirement of each platform. It also means adding functionality at least without adding complexity while attempting to automate and simplify the common tasks. However, this breadth also means that only very large suppliers have a chance of meeting the breadth of data protection requirements. Smaller or emerging data protection vendors may provide boutique solutions for specific platforms but simply won't have the resources to address the broader market. Nevertheless, addressing the broad market is not a certainty for Dell EMC or any other major vendor. The company will need to constantly address research and development requirements to remain a competitive leader in this market.

CONCLUSION

Leading organizations are aggressively pursuing digital transformation for their organization to evolve into data-driven entities that can respond faster to evolving market conditions with better, more informed decisions. IT transformation is a key element of DX because IT must be able to deliver the data at the right time, in the right place, and in the right format for decision makers. Foundational to both DX and ITX is data availability, without which a data-driven organization is not possible.

Dell EMC has an extensive portfolio of data protection products to provide data availability in datacenters, private clouds, public clouds, and hybrid cloud environments. IDC research into the business value of Dell EMC Data Protection solutions shows that these products have delivered substantial value to customers. This value includes reduced risk of data loss, faster recovery when data loss does occur, a reduction in both capital and operating expenses, and reduced staff time spent on data protection activities. In summary, Dell EMC Data Protection solutions showed measurable positive impact on the people, processes, and technology needed for optimum data availability.

APPENDIX

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Dell EMC Data Protection solutions as the foundation for the model. Based on interviews with these study participants, IDC has calculated the benefits and costs to these organizations of using Dell EMC Data Protection solutions. IDC used the following three-step method for conducting the ROI analysis:

- **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Dell EMC Data Protection solutions.** In this study, the benefits included staff time savings and productivity benefits and IT infrastructure-related cost reductions.
- **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Dell EMC Data Protection

solutions and can include additional costs related to migrations, planning, consulting, and staff or user training.

- **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Dell EMC Data Protection solutions over a five-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Lost productivity is a product of downtime multiplied by burdened salary.
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each company what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

Further, because IT solutions require a deployment period, the full benefits of the solutions are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

Study Demographics

For the demographics of interviewed organizations, see Table 6.

TABLE 6

Demographics of Interviewed Organizations

	Average	Median
Number of employees	14,150	6,600
Number of IT staff	372	163
Number of business applications	484	350
Revenue per year	$4.41 billion	$2.53 billion
Industries	Accounting, financial services (3), healthcare (3), higher education (3), manufacturing, and media	

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

Use of Dell EMC Data Protection Solutions

Study participants are supporting and protecting significant data and IT footprints with Dell EMC Data Protection solutions. On average, they have deployed 15 Dell EMC storage systems in support of 386 physical servers and 1,290 VMs, with almost 1PB of data capacity. As shown in Table 7, these organizations are using Dell EMC data protection solutions to support most of their business applications (453 of 484 applications on average) and users (12,450 of 14,150 employees on average).

TABLE 7

Dell EMC Data Protection Solutions Used by Interviewed Organizations

	Average	Median
Number of Dell EMC Storage systems	15	5
Number of terabytes	907	493
Number of sites/branches	70	38
Number of business applications	453	301
Number of physical servers	386	240
Number of VMs	1,290	995
Number of users (internal)	12,450	5,419

n = 12

Source: IDC and Dell EMC's *Data Protection for IT Transformation Study,* 2018

DELL EMC DATA PROTECTION SOLUTIONS

Dell EMC offers a full range of data protection solutions targeted at both physical and virtual workloads, both on-premises and in the cloud. These solutions are designed to span the varied platforms and application deployment platforms used by modern IT organizations.

The Dell EMC data protection storage system lineup includes the following:

- **Data Domain:** The flagship of Dell EMC's data protection lineup is its Data Domain line of purpose-built backup appliances that include:
  - **Target appliances:** These target appliances can be paired with virtually any backup software as well as various replication software. Replication can be on-premises, between datacenters, and to the cloud. Data Domain is well known for its highly efficient deduplication software and ability to scale from small entry-level systems up to petabyte rack-scale configurations.

- **Data Domain Virtual Edition (DD VE):** DD VE is a Data Domain system in a software-defined package. DD VE can be deployed on a wide variety of x86 and storage devices, both on-premises and in the cloud.

- **Integrated Data Protection Appliance (IDPA):** IDPA is an integrated data protection solution for backup, deduplication, replication, recovery, and cloud DR and LTR. It combines high-performance protection storage and software, search, analytics, and simplified management – in a single appliance, for the lowest cost to protect. This integration simplifies data protection management and deployment in a turnkey solution that accelerates time to protect.

The Dell EMC Data Protection software is provided through the Data Protection Suite Family:

- **Data Protection Suite Family:** This is a collection of five suites that simplifies data protection choices, making it easier than ever for businesses to access powerfully simple, best-of-breed backup, recovery, and archive solutions that fit any need or use case. With purpose-built solutions tailored to meet the requirements of all types of organizations and data protection environments, the Data Protection Suite Family protects your data no matter where it is and against whatever happens.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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