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November 2017

Business Value Highlights

32%

freed up annual IT budgets for innovation

23%

lowered IT infrastructure cost

35%

increased IT staff efficiency

73%

cut time lost due to unplanned downtime

69%

avoided revenue loss due to unplanned downtime

The Technology Impact of IT Transformation

Reducing Technical Debt and Optimizing IT Costs with IT Modernization Initiatives

EXECUTIVE SUMMARY

Today's enterprises depend on IT to provide the technological backbone needed to capture new business opportunities and speed time to market. But too many existing datacenters haven't kept pace with the demands of modern workloads. Instead of propelling growth and creating value, legacy IT systems actually stymie business, in effect becoming a repository for technical debt that drives IT costs higher, with no benefits.

Today, enterprise datacenters are under pressure; downtime because of system failure and human error is common and costly. To improve resiliency and support the level of agility needed to drive innovation, most enterprise datacenters will need to be modernized.

The benefits of modernization go beyond improving the ability to support innovation. IT organizations that undergo modernization are able to realize a vast reduction in those hidden costs associated with maintaining and operating legacy IT systems.

As IT hardware, approaches, and processes age, they tax the ability of IT organizations to support their business operations efficiently and cost effectively. Sometimes, organizations fail to even fully realize that they are incurring such costs. The nature of these costs varies, but their impact is the same: they increase the cost to an organization to provide IT services to its businesses and customers or limit the effectiveness of IT operations. The cost can accrue in different ways: higher than necessary hardware and operational costs, IT staff inefficiencies, friction that slows the ability of IT departments to serve their businesses, and ultimately inefficient business operations and suboptimal business results.

IDC conducted in-depth interviews with organizations that are undertaking initiatives to modernize their IT operations and ultimately transform their IT operations (ITX) to understand the costs (i.e., technical debt) they had incurred prior to their IT modernization initiatives. IDC's analysis reveals that study participants had accrued significant technical debt but are now making great strides in reducing it by modernizing their IT environments. IDC calculates that these organizations have already reduced or eliminated technical debt worth an average of almost \$40 million per organization per year, or 32% of their annual IT budgets, through their IT modernization efforts by:

- Lowering IT infrastructure costs in the context of supporting business growth by optimizing hardware utilization and incurring lower costs related to licensing and operating IT infrastructure
- Making IT teams more efficient by limiting the amount of time IT infrastructure, support, and security teams need to carry out day-to-day operations
- Enhancing IT agility and application development team productivity by minimizing the extent to which the procurement and delivery of IT resources impede business and development processes
- Ensuring higher levels of IT performance and security by reducing the frequency and duration of unplanned outages and making data protection efforts more effective

SITUATION OVERVIEW

Many organizations seek to invest in modern IT to take advantage of new opportunities, generate additional revenue, and speed time to market. While investing in new technology has well-recognized business benefits and operational advantages, the costs associated with not investing in modern IT infrastructure are less clearly understood.

IDC refers to the costs associated with aging technology as technical debt. Technical debt includes direct and indirect costs of work that simply maintains an existing system but can't be applied to implement new, innovative programs. Scalable digital transformation requires that innovations be continuously integrated into the enterprise IT infrastructure in the form of business services. Not doing so results in a backlog of necessary work or technical debt. Failure to address this debt can result in a failed digital transformation and operational disasters.

Indeed, it turns out that organizations can incur significant expense in terms of infrastructure and licensing costs, staff inefficiencies, and lost productivity when their IT infrastructures and systems are not modernized and transformed with new technologies and solutions.

IDC finds that in terms of modernizing IT infrastructure, surveyed organizations reduced or eliminated technical debt or opportunity costs worth almost one-third (32%) of their annual IT budgets through modernization initiatives they have invested in and are executing.

Specifically, organizations are achieving reduced technical debt through:

- **Consolidating their server hardware infrastructures and associated licensing and other costs.** Such consolidation efforts can happen through a combination of both modernizing IT on converged systems internally and deploying external cloud solutions where appropriate.
- **Enabling IT infrastructure staff members to be more productive.** Automation and self-provisioning are among the capabilities that provide a means for IT staff to reduce or even eliminate the time they spend on routine support and maintenance tasks.
- **Making security and data protection efforts more efficient and effective.** With systems and applications dispersed and distributed both internally and externally, centralized security processes and data governance and protection initiatives can ensure that security is managed in a holistic — and subsequently comprehensive — manner.
- **Creating more value through their application development efforts.** With IT freed up from routine tasks, more time and effort can be spent with the lines of business (LOBs) to develop applications that meet specific business requirements and therefore deliver more value.
- **Reducing the operational and business impact of unplanned outages.** Any unexpected system outages can disrupt business operations and thereby negatively impact revenue. Maintaining reliable IT operations can mitigate the financial fallout associated with service issues.

In effect, IT modernization efforts can improve datacenter performance, reduce operations costs, improve organizational productivity, better protect data, and reduce instances of unplanned downtime. These modernization efforts also help IT organizations better serve internal customers. In the datacenter, IT modernization improves the performance, agility, reliability, and security of IT systems.

STUDY DEMOGRAPHICS

IDC interviewed 16 organizations around the world about the impact of their IT modernization efforts and initiatives on their IT costs and operations. These organizations have an average of almost 10,000 employees (2,500 median), with IT budgets of \$124 million per year to support business operations generating \$1.61 billion in revenue per year. Interviews were in-depth in nature and covered various topics related to understanding the qualitative and quantitative impact of study participants' IT modernization steps. Interviews reflect the experiences of organizations located in North America, EMEA, and APAC and a cross-section of industry verticals. Table 1 provides firmographic details about these organizations by average, median, and range.

TABLE 1 Demographics of Interviewed Organizations

	Average	Median	Range
Number of employees	9,878	2,500	300–75,000
Number of IT staff	586	130	5–4,800
Number of IT users	9,716	2,438	150–75,000
IT budgets per year	\$124 million	\$17 million	\$1.7 million to \$1.2 billion
Number of business applications	417	100	18–3,000
Revenue per year	\$1.61 billion	\$313.5 million	\$0 billion to \$11 billion
Countries	United States (12 organizations), Germany, Italy, India, and Indonesia		
Industries	Financial services (3 organizations), government, healthcare (3 organizations), higher education (2 organizations), hospitality, IT service provider, legal, logistics, manufacturing, professional services, and retail		

n = 16 Source: IDC, 2017

IT MODERNIZATION INITIATIVES AT INTERVIEWED ORGANIZATIONS

Interviews with study participants covered the impact of their IT modernization programs on IT costs, IT operations, and business results. For purposes of this study, IT modernization initiatives were defined to include threshold adoption of several of the following technologies and solutions: converged/hyperconverged infrastructure, refreshed server environments, flash storage deployment, migrating/deploying applications to a hybrid cloud environment, undertaking data protection and next-generation security initiatives, automated provisioning of IT services, and implementing a DevOps approach to software development efforts.

Table 2 reflects the heterogeneity of the efforts of study participants to modernize their IT operations as they seek to make IT more effective and efficient and enable their lines of business. Of the various technologies and approaches, study participants had uniformly adopted only data protection to at least some extent, but more than half of interviewed organizations have deployed or undertaken each of the other modernization initiatives, reflecting the depth and scale of their IT modernization efforts that provide the basis for IDC's analysis in this study.

TABLE 2 IT Modernization Initiatives Undertaken by Study Participants

	Average	Median	Range
Converged/hyperconverged (% of server environments)	60	6	0–100
Flash storage (% of storage)	17	20	0–100
Hybrid cloud (% of applications)	21	14	0–75
Server refreshes (% of servers refreshed)	40	30	0–100
Data protection (% of IT environment)	87	95	50–100
Next-generation security (% of IT environment)*	55	63	0–100
Automated provisioning of IT services (% of employees with access)	19	1	0–100

n = 16 Source: IDC, 2017

* Next-generation security includes analytics- and sensor-driven security measures.

Note: Data shows the relative nature of each IT modernization initiative (average of percentage by organization).

According to study participants, their IT modernization efforts are considered strategically important. As a result, these initiatives enjoy C-level sponsorship at nearly every interviewed organization from either the CIO/CTO (IT organization) or the CEO (line of business). Interviewed organizations described objectives for and impact of their IT modernization steps that go to the heart of their efforts to provide digital services to their employees and customers and transform their IT operations:

- *"We want to make the back end fully automated and leverage the automation not just to become digital but to free the workforce and allow them to work to create revenue for the company We are now much better positioned to meet goals and bring services to market."*
- *"There were business drivers for IT modernization because we're pushing into new markets to grow, and so the big thing for us is having a flexible cloud-based infrastructure I'd say we've grown the size of the company by more than 25–30%."*

- *“Our IT modernization and [IT transformation] initiatives have allowed our business to flow seamlessly in terms of operations. As our databases continued to grow, we just saw performance being a problem, so we went to all-flash arrays. Now, it’s just so much more seamless for our database teams and the transactions we’re running on these databases.”*
- *“We want to make the back end fully automated . . . to free the workforce and allow them to work to create revenue for the company.”*

IT MODERNIZATION AND REDUCING TECHNICAL DEBT/COST OF OPERATIONS

IDC’s research demonstrates that by modernizing and enabling their IT organizations through the steps described previously, organizations can substantially reduce technical debt and operate in a more streamlined, cost-effective way. The benefit of these IT modernization initiatives to surveyed organizations is significant from both an absolute and a relative perspective. IDC’s analysis shows that the organizations are reducing technical debt by an average of almost \$40 million per year, worth almost one-third of their annual IT budgets (32%), through their IT modernization steps, as shown in Table 3, by:

- **Optimizing IT infrastructure costs:** Interviewed organizations are reducing technical debt associated with IT infrastructure costs by an average of \$6.67 million per year per organization, or 5% of their overall IT budgets, through their IT modernization.
- **Making IT staff, including developers, more productive:** Interviewed organizations are significantly increasing the value their IT teams deliver by minimizing inefficiencies and enhancing their productivity. IDC quantifies the additional value being realized at \$26.55 million per year per organization with IT modernization, worth the equivalent of 21% of the organizations’ IT budgets.
- **Minimizing the impact of unplanned outages on business operations and user productivity:** Interviewed organizations are minimizing productivity and revenue losses associated with application and system outages, saving \$6.57 million per year per organization in technical debt, with a value of 5% of their IT budgets.

Otherwise stated, IDC’s analysis demonstrates that when organizations fail to modernize their IT environments, they accrue substantial organizational debt as they operate well below peak efficiency levels. This increases the cost of doing business and limits their IT organization’s ability to grow to match demand from their businesses. Survey respondents recognized the

burden, with one interviewed organization explaining: *“Our IT modernization initiatives help us reduce technical debt because we had accrued a lot of technical debt in our old virtualization environment. Adopting an agile DevOps approach is letting us completely blow that away and redeploy it without anyone noticing. We’ve paid off almost all that technical debt.”*

TABLE 3 Impact of IT Modernization on Technical Debt

	Per Organization	Per 100 Users	Per Physical Server	Percentage of IT Budget
IT budget per year	\$124.1 million	\$1.28 million	\$79,865	NA
IT infrastructure technical debt per year	\$6.67 million	\$68,624	\$4,290	5.4
IT budget per year	\$26.55 million	\$273,283	\$17,082	21.4
IT infrastructure technical debt per year	\$6.57 million	\$67,656	\$4,229	5.3
IT infrastructure technical debt per year	\$39.8 million	\$409,562	\$25,601	32.1

n = 16 Source: IDC, 2017

IT Infrastructure Cost Optimization

Study participants are achieving dual objectives of improving their IT systems’ performance while still optimizing IT costs through IT modernization. For these organizations, IT cost optimization begins with deploying a more efficient IT infrastructure in terms of server and storage hardware. Study participants have leveraged IT modernization initiatives, including server refreshes and deployment of converged/hyperconverged infrastructure systems, to consolidate their physical server environments while gaining scale and performance benefits from increasing virtualization levels and deploying substantially more flash storage (refer back to Table 2).

Thus, even while study participants have brought down the number of physical servers by one-third (33%), they have more than doubled the number of VMs (119%) and have brought flash storage up to 17% of their total storage environments (47 times more terabytes of flash storage in their IT environments) (see Table 4). One organization alluded to the benefit of server consolidation in the context of supporting its cloud initiative: *“We’ve gone from around 10,000 servers to 6,000 by consolidating through convergence and virtualization Our new datacenter that supports call center operations is where we are utilizing hyperconverged infrastructure. If we were using traditional servers, we could not use a cloud-based approach as often.”*

TABLE 4 Impact of IT Modernization on IT Infrastructure Environments

	Before/Without IT Modernization	With IT Modernization	Difference	Change
Number of physical servers	2,304	1,554	750	33%
Number of VMs	7,031	15,433	8,402	119%
Virtualization density (VMs per physical server)*	2.0	9.9	7.9	397%
Flash storage terabytes in IT environments (TB)	37	1,767	1,730	47 times

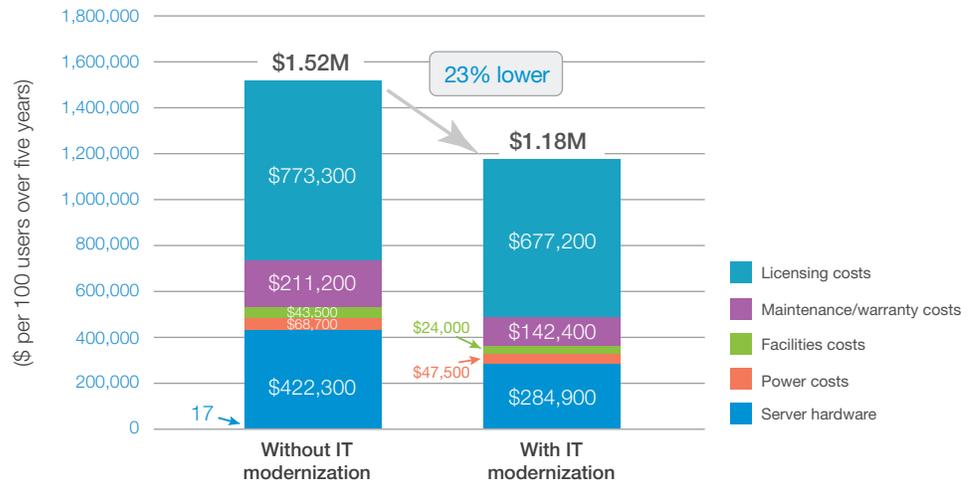
n = 16 Source: IDC, 2017

** Average density ratio by organization*

For study participants, improved efficiency in terms of hardware use combined with cost savings they are achieving related to datacenter operations and licensing make their IT infrastructure environments more cost effective to build and run. Consolidated, virtualized, and higher-performing hardware achieved through modernization initiatives saves organizations significant amounts of IT budgets that can be reinvested in expansion or elsewhere and enables them to grow their business operations without commensurate expansion of their IT infrastructure budgets. As shown in Figure 1, IDC calculates that interviewed organizations would forego an average of 23% cost efficiencies in their IT infrastructure environments without their modernization initiatives (33% on average when excluding licensing costs), worth \$6.67 million per year in technical debt, or 5% of their annual IT budgets. In particular, savings accumulate in terms of:

- Licensing.** Study participants require fewer hypervisor, application, and database licenses as a result of their modernization initiatives, reducing their licensing costs by 12% on average. One organization explained: *"We are avoiding around 50% for our hypervisor licenses — I'm talking millions of dollars in one-time expenses and then typically 20% annually."*
- Server hardware and warranty costs.** Interviewed organizations have consolidated their server environments and can now run equivalent workloads at 33% lower cost. One study participant noted: *"We're spending less on hardware by maybe 30–40% with our ITX initiatives . . . Also, performance would be slower on traditional servers, and I don't know that we could actually get the performance we have now."*
- Operational expenses, including power and datacenter space costs.** Study participants are benefiting from reducing costs associated with power (31% on average) and facilities space (45% on average) with more powerful, cost-efficient modernized IT infrastructures.
- Lower overall cost.** One study participant commented: *"All told, if you look at maintenance and refresh, I'd say that we'd be spending 20% more on hardware without the ITX initiatives."*

FIGURE 1 Five-Year Cost of IT Infrastructure per 100 Users



Source: IDC, 2017

More Efficient IT Staffs

Surveyed organizations credited IT modernization with making various IT teams much more efficient and productive, thereby increasing their organizational value. Before modernization, teams responsible for administering, managing, supporting, and securing IT infrastructure had to spend much more time on day-to-day activities, while software development teams delivered less value to their organizations. These inefficiencies imposed significant costs on surveyed organizations, either as a direct cost in terms of requiring more staff time to carry out IT operations or as a lost opportunity cost from needing to spend staff time on day-to-day activities, rather than allocating time for other more valuable projects.

Interviewed organizations face an imperative to maximize the value of the talents and skills of their IT staffs given budget constraints and challenges in finding IT talent. Before undertaking their IT modernization initiatives, IT teams spent more time managing dispersed and siloed infrastructure and responding to more frequent problems and outages, struggled to provide sufficient levels of security, and often could not ensure that IT operations met the speed of their businesses. In total, such inefficiencies exert a significant cost on IT operations, representing the cost of staff time that could be better used in innovating, driving new projects, or supporting business expansion. IDC calculates that IT teams at these organizations are 35% more productive with IT modernization (see Table 5), thereby increasing the value of their IT teams by \$26.55 million per organization (\$273,283 per 100 users per year) (see Figure 2), which represents a reduction of technical debt worth 21% of their total annual IT budgets.

TABLE 5 Impact of IT Modernization on IT Staff Productivity

	Before/Without IT Modernization	With IT Modernization	Difference	Change (%)
IT infrastructure team, FTEs	197	110	87	44
IT support, FTEs	189	95	94	50
Application development, FTEs	326	245	82	25
IT security, FTEs	42	39	3	7
Total impacted IT staff, FTEs	754	489	265	35

n = 16 Source: IDC, 2017

The technical debt or opportunity cost associated with inefficient IT staff operations means that these teams were creating and driving less value than they are now with a modernized IT environment. Study participants provided numerous examples of how they have minimized inefficiencies and enabled IT teams to take on higher-value project work:

- Holding staff levels steady while taking on more work.** *“We’re doing more with the same number of people. Without our modernization efforts, we would have needed to hire more staff — probably at least 40% more.”*
- Delivering new products and improving existing services.** *“We’ve given ourselves the ability to dedicate staff to special or new projects without interruption by going from having our staff spend 85% of their time keeping the lights on to 65% of their time. This speeds up the development of new products or improvements on existing services.”*
- Focusing on new projects.** *“Across the entire company, most of the time we’re saving is spent working on new projects and products. For my team, about 1,000 team members — or one-third — can now focus on supporting new products almost exclusively.”*
- Bringing new technologies to the organization.** *“We’re learning about new technologies like IoT and doing things with IoT, AI, and machine learning. And none of those things would have been available to my team prior because they just wouldn’t have the time or the ability to do it. Now, they have the ability to train and to learn to engage in new technologies, which is great.”*
- Upgrading IT environments.** *“With efficiencies enabled by our modernizing IT, we have undertaken implementation of newer, more up-to-date operating systems and added networking capabilities like going to distributed switching within the virtual environment, which has helped speed things up. So we can more effectively use the hardware that we have.”*

FIGURE 2 Increased Value of IT Staff per 100 Users per Year

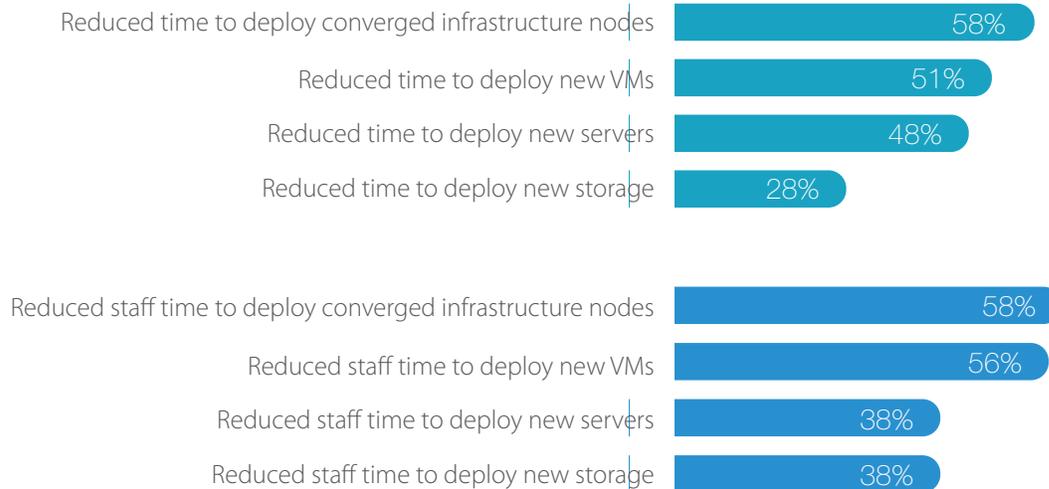
Source: IDC, 2017

* Assumption of \$100,000 salary per year per IT staff member

IT Agility and Development

Dated infrastructure and inefficient processes also exert a cost by making IT operations more cumbersome. As businesses grow and strategies change, IT departments are called upon to provide the IT resources — whether compute, storage, or networking — required by business applications, users, and customers. When they cannot do this because of resource constraints or siloed processes, IT slows down the delivery of digital resources to the business, with the cost being especially evident in terms of their application development efforts. When IT organizations are not able to deliver IT service quickly, they are at risk of being viewed as a barrier to, as opposed to an enabler of, innovation.

Study participants attributed substantial gains in IT agility to modernizing their IT environments. As shown in Figure 3, they can deliver server, converged/hyperconverged infrastructure, VMs, and storage resources much faster and with significantly less staff time. As a result, they can better support their businesses with timely delivery of applications and new functionality. One organization has achieved 10 times more frequent release windows for new features after adopting continuous development processes through its IT modernization efforts: *“We’re now able to address business opportunities as they come up. Having a lot of automation and the ability to turn things up or down and be elastic to meet the needs of the business gives us that ability. I feel like we’re constantly more engaged in the business now, as opposed to putting out fires.”*

FIGURE 3 Impact of IT Modernization on IT Agility

Source: IDC, 2017 % improvement

In large part because of more agile IT infrastructures and also because of adoption of DevOps approaches and self-service capabilities, study participants have significantly reduced the friction that was reducing the effectiveness of their software development efforts. As a result, application development teams are creating significantly more value for their organizations. As shown in Table 6, this value manifests itself in increased number of application and new feature releases and faster times to delivery for applications and releases. Their increased effectiveness is also evident in application functionality and use, including 25% more applications that are fully functional for mobile users and 10% faster user adoption of new applications and features.

Study participants provided numerous examples of how modernizing IT has made their application development teams more effective and productive:

- Timely delivery of compute resources.** *“Because of our converged infrastructure, we’re able to deliver VMs in much less time, which helps developers deliver 20% more applications and features in a timely manner Previously, we had to tell them we didn’t have capacity, which created a lot of slowdown.”*
- Continual processes enhancing productivity.** *“Our developers are more productive with the ITX efforts because they don’t have to wait when they need things — probably 20% more productive because things just happen and it keeps processes moving.”*

- More time to focus on the quality of applications and features.** *“If applications are running better in terms of performance, then there are fewer complaints and less time is spent investigating issues. Our developers can then focus on more innovation and issues that matter, as opposed to just troubleshooting things.”*

TABLE 6 Impact of IT Modernization on Application Development

	Before/Without IT Modernization	With IT Modernization	Difference	Change(%)
New applications with new logic				
Number of new applications per year	7.1	8.7	1.6	22
Development life cycle (weeks)	27.4	16.7	10.7	39
New applications with existing logic				
Number of new applications per year	13.6	22.3	8.7	64
Development life cycle (weeks)	23.5	13.2	10.3	44
New application features				
Number of new application features per year	40.8	110.8	70.0	172
Development life cycle (weeks)	7.4	4.6	2.8	38

n = 16 Source: IDC, 2017

IT Performance, Reliability, and Risk Mitigation

Organizations that fail to modernize and upgrade their IT environments also create significant costs related to IT performance, reliability, and security. These costs can be incurred in various ways: needing to overprovision hardware, causing staff inefficiencies, and losing productive time and revenue because of application and system outages as well as data protection efforts. For purposes of this study’s technical debt analysis, IDC has quantified the value of technical debt these organizations have reduced with IT modernization by minimizing productivity and revenue loss associated with outages at \$6.57 million per organization, representing 5% of their total annual IT budgets.

Application and system outages may be seen as part of doing business, but they often generate significant costs to the business. Study participants reported that modernizing IT has gone a long way in minimizing these costs by enabling them to reduce the frequency (55%) and duration (75%) of unplanned outages. As a result, they have decreased the productivity cost of unplanned outages by 73% on average and revenue loss by 69% (see Table 7).

Study participants provided various examples of improved system and application availability related to modernizing their IT operations. One organization confirmed such an impact on its business operations: *"I do know that our number of outages have been almost nonexistent in the last several years, since we sort of transformed a lot of our stuff . . . Now, with everything being converged and virtualized and redundant and with DR, we haven't had — knock on wood — a major outage of any kind in some time."* Another organization commented on how modernizing IT has reduced revenue loss related to unplanned outages: *"Across our entire environment, we've gone from 8–10 unplanned outages per month to about 4 outages per month and reduced the MTTR by about one-half . . . Of all unplanned outages, about 10% are revenue affecting, at around \$1 million per incident."*

TABLE 7 Impact of IT Modernization on Unplanned Downtime

	Before/Without IT Modernization	With IT Modernization	Difference	Change(%)
User productivity				
Number of outages per year per organization	53	24	29	55
MTTR (hours)	6.6	1.7	5.0	75
Equivalent FTE time lost per year	49.5	13.2	36.3	73
Lost productivity per user per year (hours)	9.6	2.6	7.0	73
Revenue impact				
Lost revenue per year per organization	\$38.89 million	\$12.02 million	\$26.87 million	69
Recognized revenue loss per year per organization	\$5.83 million	\$1.80 million	\$4.09 million	69

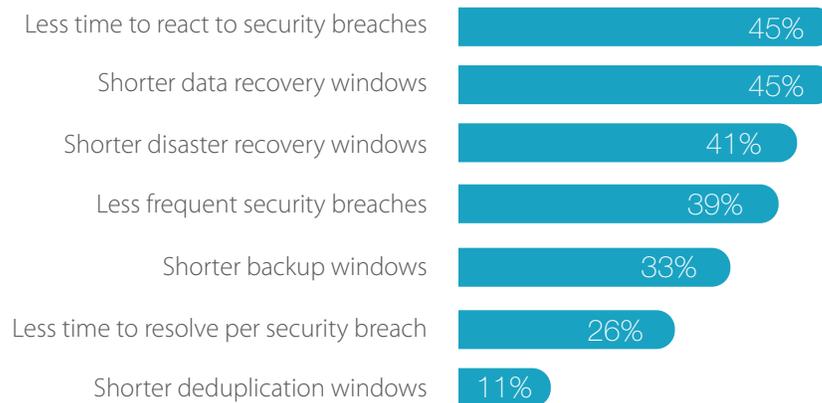
n = 16 Source: IDC, 2017

Data protection initiatives were one of the most common initiatives undertaken by surveyed organizations, and they seek to secure their data environments and limit operational risk related to data. In particular, data protection and other modernization initiatives are enabling these organizations to shrink data backup and recovery windows and carry out these activities more frequently while reducing the frequency of security breaches and the time to address them, as shown in Figure 4. For these organizations, this helps limit risk associated with these activities and ensure a more robust, current environment. From the perspective of this study's technical debt analysis, more efficient handling of data factors into reduced impact of unplanned outages and helps increase the efficiency of IT infrastructure, support, and security teams.

Study participants provided details about the impact of modernizing IT on these types of data protection activities:

- **Data backup:** *"We've shrunk our data backup window by 40% because we're backing up in chunks. We used to fight to get it done by morning, and we don't have that issue anymore."*
- **Data recovery:** *"This is about 90% faster. Modernization has enabled this by bringing things together It would have been too hard to do with physical servers all over — very difficult to do."*

FIGURE 4 Impact of IT Modernization on Data Protection



Source: IDC, 2017 % improvement

CHALLENGES AND OPPORTUNITIES

Convincing the finance department to invest in technology initiatives aimed primarily at reducing technical debt can be a difficult task. Many businesses want IT to provide the types of services that drive business value, yet the connection between technical debt and the ability of IT to offer such services is not clearly understood or articulated. To obtain the necessary funding, IT organizations should develop business cases outlining the business opportunities that IT transformation can help capture. Conversely, they can develop scenarios depicting how existing datacenters stymie the enterprise's efforts to compete effectively.

Another challenge is to create awareness around the security and governance considerations in workload placement decisions. Many LOB managers gravitate toward cloud first or cloud only because their primary objective is to quickly meet a business objective, and they perceive

public cloud resources to be the fastest and most flexible option. The IT organization's ability to not only communicate the importance of data governance and security best practices but also be able to deliver the IT service levels needed is critical. Developing on-premises resources that can meet LOB needs is an important first step. Then communication and coordination between the LOB and the IT organization to create a process for determining and provisioning resources across all options become more informed and effective.

Most organizations will require a hybrid IT approach that includes a mix of on-premises and public cloud solutions — an approach that requires more due diligence to manage risk while optimizing performance and controlling costs.

CONCLUSION

IDC research clearly illustrates that organizations that fail to modernize their IT environments will accrue significant technical debt. Such organizations operate below peak efficiency levels. This increases the cost of doing business and limits the ability of the IT department to support the business and grow and respond to business demands.

IT transformation is necessary for organizations to mitigate their technical debt and thereby enable responsive, cost-effective IT services. Those organizations that have modernized their IT systems through deployment of hyperconverged systems have realized significant benefits. They are more responsive to the business in terms of the ability to both provision computing resources in a timely manner and deliver more applications with more features on time. As a result of modernized IT, the IT department itself is more productive, and the costs associated with legacy systems are significantly reduced.

APPENDIX

IDC's standard Business Value methodology was utilized for this project. This methodology is based on gathering data from organizations that are pursuing various IT transformation initiatives (refer back to Table 2 for the model). Based on interviews with these study participants, IDC measured the savings associated with pursuing ITX initiatives for these organizations in terms of reduced IT costs (staff, hardware, software, maintenance, and IT support), increased user productivity, and business impact measured by revenue lost because of unplanned outages. IDC projects these values over a five-year period, which is the time basis for the analysis in this study.

IDC uses certain assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For purposes of this analysis, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.
- The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.
- Lost productivity is a product of downtime multiplied by burdened salary.
- 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.

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

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