REGION FOCUS: WORLDWIDE

The Business Value of Dell Technologies APEX Multicloud and As-a-Service Solutions

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Executive Summary

IDC's research demonstrates that enterprise organizations are prioritizing digital infrastructure (DX) resiliency as a foundational element of their IT strategy. Organizations are looking for richer levels of visibility, cross-platform control, advanced data management, and protection that spans the entire ecosystem, including public or private cloud, on premises, colocation facility, and edge. DX initiatives rely on data-driven insights to deliver competitive differentiation, increased customer engagement, streamlined business operations, increased staff productivity, and growth in revenue and profitability. IT infrastructure is one of the crucial pillars of DX. In fact, DX cannot succeed without IT transformation, aligned with business strategy to meet or exceed service-level objectives for data-driven insights. Because of this realization, organizations are now focused on managing outcomes instead of IT infrastructure and looking to vendors and partners to help reach this goal.

Recent IDC surveys demonstrate customer interest and market momentum. In a June 2022 survey, 77% of IDC respondents agreed that shifting to consuming digital infrastructure as a service is a critical element of their future strategy (source: *Future of Digital Infrastructure 2022 Global Sentiment Survey,* IDC, June, 2022; n = 1,058). Adopters of consumption models recognize that using them provides the flexibility necessary to enable business growth. In addition, the current economic environment is compelling organizations to increase scrutiny on cloud spending, monitor budgets, and look for tactics to improve spending metrics. **Figure 1** (next page) highlights IDC research from January 2023 and details the tactics that organizations are deploying to optimize cloud spending, and "explore as-a-service private cloud offering" is one of the top strategies.

Business Value Highlights

Click each highlight below to navigate to related content within this document.

39%
lower three-year cost of operations

38%
more efficient IT infrastructure teams

54%
more efficient help desk

39%
lower infrastructure costs

34%
reduction in buffer capacity required

33%
faster to prepare IT for business extensions

12%
faster development life cycles

$7.66 million
in higher revenue per year per organization

FIGURE 1

Tactics for Optimizing Overall Cloud Spending

(% of respondents)

Tactic	%
Enhance cloud sourcing and vendor management	32%
Explore as-a-service private cloud offerings	25%
Consolidate software-as-a-service (SaaS) contracts	24%
Reduce cloud infrastructure spend	24%
Extend SaaS contracts	23%
Set up FinOps team and invest in FinOps tools	20%
Reduce SaaS contract length	19%
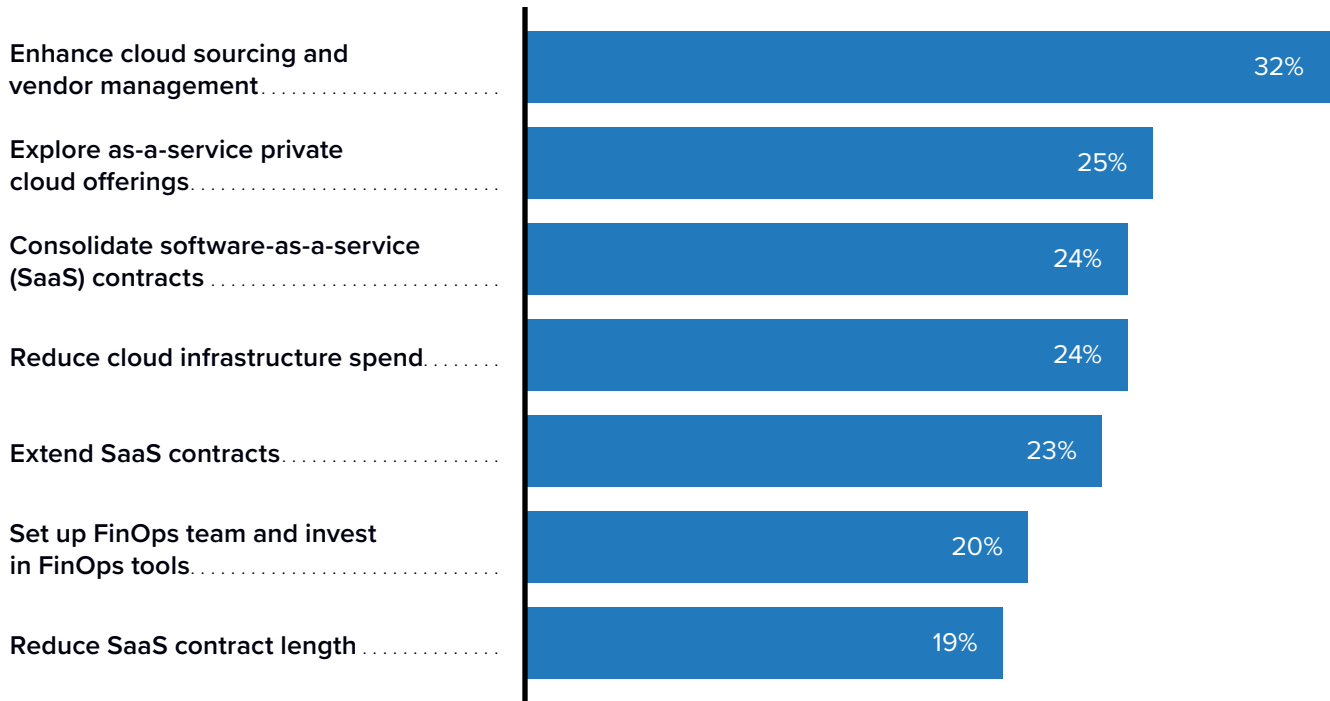
n = 985; Source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 1,* February 2023

This interest in anything-as-a-service (XaaS) models is driven by economic uncertainty, budget pressures, and an explosion of interconnected applications and data across multiple locations that stretch from edge to core. All of this serves to demonstrate a clear market opportunity and the need for new operating models like Dell Technologies APEX.

IDC interviewed organizations that have deployed significant workloads on Dell Technologies APEX as-a-service hyperconverged, storage, cyber-recovery, and data protection solutions about their experiences. Interviewed Dell Technologies customers reported using APEX to not only establish more efficient and cost-effective IT environments but also ensure that they can adjust to and match changing business needs.

Based on interviews with Dell Technologies APEX customers, IDC's analysis shows that they are capturing significant value by:

- **Placing workloads in an optimal environment to deliver the best outcomes** by enabling workloads to be migrated seamlessly and interoperably across on-premises and public

cloud environments and reducing concerns of moving data and applications off premises while ensuring cloudlike experiences across the IT infrastructure (APEX also provides the security, compliance, and data migration that organizations require.)

- **Establishing more efficient and effective IT operations** by creating streamlined IT environments with strong functionality and Dell Technologies support and managed services, thereby freeing valuable IT team time to focus on other activities and initiatives

- **Running more cost-effective IT environments** by matching infrastructure capacity to actual business requirements, which limits the need for over-provisioning and maintaining buffer capacity and allows for streamlined use of compute, storage, and data protection capacity

- **Increasing agility and improving business results** by having the ability to introduce innovative technologies, extend IT capacity quickly, and deliver IT resources as business/development requirements change — improving IT organizations' ability to serve as a partner to business operations and resulting in business gains in the form of higher revenue and better services more quickly

- **Adding data protection and cyber-recovery solutions:** IT buyers are looking for solutions that include identifying and detecting capabilities as well. At a minimum, this will include the forensics needed to identify the attack type, impact, and scope; a "fenced" and sanitary sandbox for recovery; and advanced malware scanning of primary storage, copies, and backups to avoid reinfection.

Most organizations will continue DX investment plans even with an uncertain economic outlook but are prepared to reduce the scope of these investments if necessary.

Situation Overview

Most organizations will continue DX investment plans even with an uncertain economic outlook but are prepared to reduce the scope of these investments if necessary. Fundamentally, the reason for the continued investment cycle is because one of the key lessons learned from the COVID-19 pandemic was that companies that were ahead in their digital transformation performed better than DX laggards.

Leaders focus on:

- Developing the skills of staff and leveraging as-a-service solutions

- Maximizing the value of working with many suppliers, ecosystems, and marketplaces and reducing the limitations of relying on one supplier

- Accelerating modernization, automation, and consumption strategies

- Strengthening and extending collaboration and governance across line-of-business, development, and data teams

- Aligning KPIs to business outcomes

In addition, most organizations have embraced a multicloud environment because this operating model delivers the agility, efficiency, and resiliency that organizations need to be competitive. But organizations continue to be mindful of budget pressure and improving responsiveness within a secure environment. An IDC survey from November 2022 underscores the ongoing challenges that IT decision makers face in a multicloud environment as they balance DX effort and budget constraints: 65% of organizations recognize the need to simplify, unify, and standardize dedicated (on-premises) and shared (public) cloud infrastructure management and security to improve resiliency and reduce operational costs (source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 10,* November 2022; n = 824).

The need for infrastructure resiliency is changing the way organizations think about investment cycles. Awareness of the benefits-as-a-service model is increasing, and organizations are looking for innovative solutions to traditional procurement models. For organizations struggling with legacy infrastructure, budget constraints, and IT staff shortages, XaaS models can reduce these operational challenges and improve business results.

Pressure to Meet Sustainability Goals Drives Interest in XaaS

IDC observes that the growing interest in sustainability is reframing how organizations think about IT asset usage, life-cycle services, and end-of-life disposal practices. Sustainability requirements from their vendors and partners are now included in the request for proposal (RFP). To address these requirements, many organizations are focused on working with trusted partners or suppliers to help improve sustainability metrics and will select their final choice based on these criteria.

Recent IDC survey data underscores the importance of these efforts. Research from an IDC sustainability and buyer value survey indicates that 83% of respondents agree that sustainability is one of the most important criteria for IT buying decisions, and in a 2023 IDC survey, respondents selected the top sustainability issues that were connected to DX planning and procurement goals (see **Figure 2,** next page).

FIGURE 2

Sustainability Initiatives for Digital Infrastructure

Which of the following are included in your organization's sustainability initiatives, or formal sustainability policy, for your digital infrastructure planning and procurement?
(% of respondents)

Reusing or cascading IT assets/technology within our organization	44%
Reducing IT/datacenter energy consumption (PUE reduction, improve utilization rates, etc.)	43%
Reducing use of plastics and foams or shifting to more eco-friendly packing	40%
Vendor's commitment to responsible component sourcing	37%
Working with suppliers and partners that share our sustainability aspirations	37%
Working toward goals like net-zero carbon emissions	36%
Reducing individual employee carbon footprint	35%
Vendor's commitment to safe disposal practices	32%

n = 540; Source: IDC's *Used Equipment Market Survey,* January 2023

The scope of sustainability initiatives can be daunting, but working with a like-minded vendor or partner can reduce the complexity of these projects. Adopting a XaaS model offers IT organizations the opportunity to work with a partner that will oversee all of the end-of-life asset disposal objectives and include recycled and refurbished equipment within the environment. IDC observes that many IT vendors are focused on improving power metrics for new equipment, providing details about scope 1 and 2 emissions, and complying with the latest industry regulations to help customers navigate this complex topic. One of the key concerns of IT leaders is that the guidelines and standards for sustainability continue to evolve, so they need help. Relying on a vendor or partner that has vertical market expertise and can share its own sustainability journey alleviates some of the risk of making the wrong choices.

Dell Technologies APEX Overview

Dell APEX is a modern cloud and consumption experience that brings a cloud operating model to devices, apps, and data. APEX enables a simplified procurement and management experience while increasing IT and development organizations' agility and enabling better control of technology and intellectual property.

Multicloud by Design

Managing workloads and data in a multicloud environment can be costly and complex. Dell APEX delivers multicloud by design, comprising ground-to-cloud, cloud-to-ground, and as-a-service strategies that optimize the placement of data and workloads to simplify operations, improve business agility, and control costs across your multicloud landscape.

Ground to Cloud

The Dell APEX ground-to-cloud strategy brings its flagship storage and data protection software to public clouds. IT teams can leverage the same enterprise-grade functionality, performance, and resiliency they may already trust on premises and in public clouds. APEX enhances data mobility and drives management consistency across environments.

Cloud to Ground

The Dell APEX cloud-to-ground strategy lets organizations deploy cloud software stacks, fully integrated with Dell infrastructure. APEX cloud platforms extend familiar cloud experiences on premises to maximize performance and mitigate risk and to boost workload agility and empower unrestrained software innovation, wherever applications and data live.

As a Service

The Dell APEX as-a-service portfolio simplifies and offloads the life-cycle management of traditional infrastructure, from deployment to operations to decommissioning, providing three tiers of services that free up IT to focus on other priorities. APEX can help reduce operating costs, improve IT flexibility, and manage end-of-life assets, securely and sustainably.

Pay per Use

Dell APEX pay-per-use subscriptions can help align costs with actual use by deploying buffer capacity to reduce overprovisioning costs. Organizations can elastically scale up and down within the buffer, paying for capacity as it is used — all at one rate with no overage fees. APEX usage-based solutions can help optimize costs and minimize downtime.

The Dell APEX multicloud and as-a-service portfolio satisfies a broad range of requirements, from storage and data protection with cyber-recovery to compute and cloud platforms to client devices and custom solutions and more. Many offers are widely available today through both Dell and its partner community, though there are regional and country-specific differences.

Furthermore, Dell is focused on the creation of sustainable technology that helps customers drive business and environmental outcomes.

Dell's updated 2030 targets include:

- Reducing scope 1 and 2 greenhouse gas (GHG) emissions by 50% — supported by Dell's commitment to increase the use of renewable electricity by 75% (and 100% by 2040)

- Reducing absolute scope 3 GHG emissions from purchased goods and services by 45%

- Reducing absolute scope 3 GHG emissions associated with the use of sold products by 30%

The Business Value of Dell Technologies APEX

Study Demographics

IDC interviewed 20 organizations[1] using Dell Technologies APEX as-a-service solutions for hyperconverged, storage, and data protection capacity. Interviews were designed to understand the overall impact for these organizations of using Dell Technologies APEX, including the impact on IT operations, IT costs, and business agility and results.

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[1] 17 interviews were completed in June 2021 for the Business Value study. An additional three interviews were completed in 2023 for further insights into Dell products.

IDC's research included:

- Eight interviews with organizations using Dell Technologies APEX for hyperconverged infrastructure capacity

- Six interviews with organizations using Dell Technologies APEX for storage capacity

- Six interviews with organizations using Dell Technologies APEX for their data protection environments

Table 1 provides an overview of the firmographics of study participants. Interviewed Dell Technologies APEX customers had an enterprise profile, with an average employee base of 28,627 and annual revenue of $9.96 billion (medians of 8,000 and $1.50 billion, respectively). Interviews provided the perspectives and experiences of organizations from a variety of industry verticals: financial services, healthcare, manufacturing, IT services and manufacturers, and others.

TABLE 1

Demographics of Interviewed Organizations

	Average	Median
Number of employees	28,627	8,000
Number of IT staff	485	300
Number of business applications	436	60
Revenue per year	$9.96B	$1.50B
Countries	United States, Philippines, Singapore, United Kingdom	
Industries	Financial services (4), healthcare (3), manufacturing (2), financial technology, IT services, marketing, medical technology, nonprofit, state government, telecommunications, technology services, wholesale	

n = 17; Source: IDC In-depth Interviews, June 2021

Choice and Use of Dell Technologies APEX

Study participants chose APEX as-a-service solutions for hyperconverged, storage, and data protection in the context of deciding to use flexible consumption models for procuring infrastructure capacity. They described viewing enhanced flexibility and greater control over costs as advantages of a flexible consumption model, as well as allowing them to move toward more of a cloudlike infrastructure environment without needing to move fully to the public cloud.

Interviewed Dell Technologies customers spoke to these considerations in more detail:

Financial services company using APEX hyperconverged fits broader initiatives and trends:
"Flexible consumption with Dell Technologies for hyperconverged fits into our strategy because we are completely changing how we run our storage. We're also moving from more of a datacenter-based approach to a cloud approach."

Financial technology firm using APEX hyperconverged values transparency of pricing that matches broader need:
"Dell Technologies APEX fits pretty well, given the ever-changing dynamics of our industry nowadays. Nothing is static and everything has to be elastic and more transparent."

Manufacturing organization using APEX storage improved agility and reliability:
"The benefits of Dell Technologies APEX are business agility and ability to depend on flexibility and predictability in terms of both cost and reliability for meeting SLAs."

Study participants cited similar reasons related to increased flexibility, visibility, transparency in cost, and ease of management for choosing APEX, as well as the strength of their existing relationships with Dell Technologies. For study participants, the advantages of APEX made it a more compelling solution than extending or upgrading their previous environments, which were generally based on purchasing and running on-premises hyperconverged, storage, and data protection hardware and capacity.

Study participants cited the compelling value proposition that Dell Technologies offered in terms of IT operational enablement and costs, as well as improved ability to match IT to actual business needs:

Nonprofit using APEX storage solution to match infrastructure spending to actual demand and benefit from payment flexibility:
"The biggest thing with APEX is that we're actually able to use what we need instead of overconsuming in resources and spending money that we didn't need to spend, as we had in the past."

Healthcare firm using APEX hyperconverged for operational flexibility:
"The advantage of APEX is being capable to adjust in our environment. … We grow and move from one facility to another to accommodate patient counts, so we had to be flexible enough to have a parallel system while that transition occurred. … I haven't seen any disadvantages in this model."

Technology services company using APEX storage for ability to match cost to actual use:
"Basically, we can scale up or scale down with Dell Technologies APEX and that's the beauty of it. So if we get rid of a lot of data as we're transforming or need more, we can get more or less."

Healthcare firm using APEX data protection for ease of management:
"Our platform administrators no longer have to worry about the health of our data protection environment because that's all managed now. … It helps with attracting and retaining talent because now we are getting into some more cloud services, which is the trend."

Table 2 provides specifics about study participants' use of APEX solutions. Overall, study participants reported running environments with an average of 366TB of storage, ranging from 156TB for data protection and 190TB for hyperconverged to 690TB for storage customers. In addition, Table 2 notes that hyperconverged customers reported using 47 Dell Technologies hyperconverged appliances to run an average of almost 2,000 virtual machines (VMs). Study participants reported running almost exactly one third (33%) of their relevant environments (e.g., compute, storage, and/or data protection) on Dell Technologies APEX solutions, with APEX constituting almost all of their use of flexible consumption models (91% on average).

TABLE 2

Dell Technologies APEX Environments

	Average	Median
Number of appliances (hyperconverged only)	47	19
Number of VMs (hyperconverged only)	1,986	390
Number of terabytes (TB) (hyperconverged only)	190	70
Number of TB (storage only)	690	200
Number of TB (data protection only)	156	71
Number of TB (overall)	366	100

n = 17; Source: IDC In-depth Interviews, June 2021

Business Value and Quantified Benefits of Dell Technologies APEX

IDC's research demonstrates the value of using Dell Technologies APEX solutions — that is, Dell Technologies as-a-service hyperconverged, storage, and data protection solutions to run and support their business operations. Study participants reported optimizing IT costs, freeing up IT staff time, and gaining in agility, reliability, and performance through their use of as-a-service infrastructure solutions with APEX.

Efficient and Effective IT Operations

Study participants' IT organizations have been tasked with not only remaining lean and efficient but also taking an increasingly pronounced role as business partner and enabler. These objectives, which could be viewed as contradictory in nature, require IT organizations to find solutions that help them achieve the delicate balance of efficiency and effectiveness. Interviewed Dell Technologies customers explained that they view their use of Dell Technologies APEX solutions as fundamental to their ability to deliver to increasing expectations in terms of IT operations.

For study participants, APEX solutions provide the requisite balance of strong functionality and performance with features and capabilities that enable efficient and effective IT operations.

In particular, study participants' ability to maintain more streamlined infrastructure environments and leverage specific features of APEX frees valuable IT team time to focus on other business-related activities and initiatives.

Study participants noted strong efficiencies related to capacity planning and procurement, gains in performance related to telemetry, time savings, and the substantial value of having direct support from Dell Technologies as needed:

Telecommunications company using APEX hyperconverged for ease of management and access to data from telemetry:
"Dell Technologies APEX is easier to manage because it's service provided, and so we just request our requirements and then it's done without needing to plan. … Telemetry is a benefit, and all of the reporting that we receive, such as diagnostics, is very helpful, as are capacity and availability metrics, and KPIs [key performance indicators]."

Healthcare firm using APEX hyperconverged for more proactive IT:
"With Dell Technologies APEX, we're able to do more planning and projects capability for the capacity to be more preemptive instead of reactive. When you look at the capacity use for

most users, we can react to that without having to worry about legal processes or changes. We can react fairly easily. Before, it would have to be a quarterly or annual preparation."

State government using Dell APEX Backup Services, delivering significant time savings:
"Let's say that there's a mistake, something gets corrupt, and we must restore that file, and we do those in 15-minute increments. The process for that used to take 3–4 hours of an individual's time, and so all financial operations stopped, so that is a bad day. With Dell APEX Backup Services, it takes about 5–15 minutes now."

Manufacturing firm using APEX hyperconverged experiencing faster deployments:
"The additional deployment is where the time is saved, from weeks down to days."

Another customer noted: *"Access to new capacity has been reduced from 6–9 months to less than 30 days. This has improved productivity and impressed our customers within the state. They now come to us first if there's a new application they want, instead of looking elsewhere."*

For study participants, these types of efficiencies are critical to their ability to minimize the amount of their teams' time required to administer and run their hyperconverged, storage, and data protection environments. These teams frequently must grapple with the need to grow their IT environments to match business requirements or deliver new capabilities to the business, which highlights the importance of efficiencies they achieve for these teams with APEX. As shown in **Table 3,** study participants reported that their IT infrastructure teams are 38% more efficient with APEX, thus providing a path for handling growth in a resource-effective manner.

TABLE 3

Impact on IT Infrastructure Teams

	Before/Without Dell Technologies APEX	With Dell Technologies APEX	Difference	Efficiency
Staff time to manage per organization (FTEs)	9.6	5.9	3.7	38%
Number of staff hours per 100 users per year	63	39	24	38%
Value of staff time per year	$962,300	$593,800	$368,400	38%

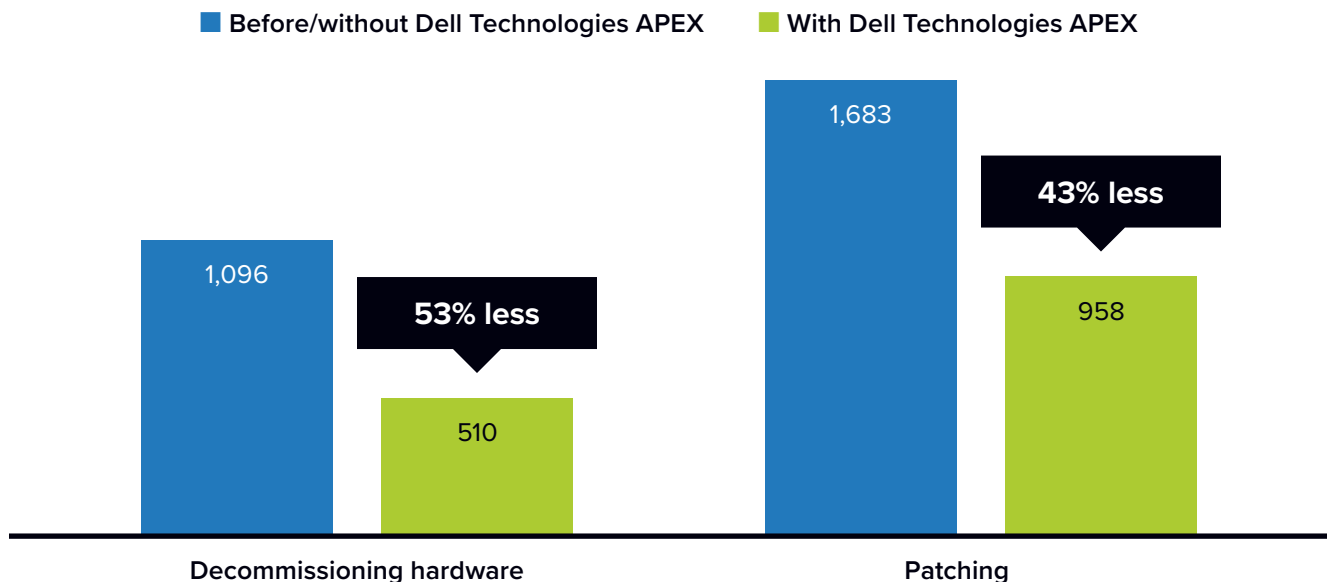n = 17; Source: IDC In-depth Interviews, June 2021

Study participants pointed to two responsibilities of their IT infrastructure teams in particular where the APEX as-a-service model and its functionality have driven strong efficiencies. By moving away from a "buy and replace" model, study participants must handle activities related to decommissioning and retiring hardware with less frequency. Thus, beyond the benefit of increasing the sustainability of their IT environments, their IT staff spend 53% less time on average on these activities. Likewise, their IT teams have captured the benefit of automated and reliable patching, with Dell Technologies handling most of these tasks, needing 43% less time to plan and complete patches with APEX (see **Figure 3**).

These efficiencies also carry over to other IT teams, including:

- **Help desk teams,** which are an average of 54% more efficient with Dell Technologies APEX, including being able to resolve problems an average of 31% faster (worth an average of $92,000 per year per organization)

- **Security teams,** which are an average of 24% more efficient, demonstrating their ability to provide more secure, robust IT environments for their businesses without adding commensurate security team resources (worth an average of $28,100 per year per organization)

FIGURE 3

IT Infrastructure Staff Time Requirements
(Staff hours per year per organization)

■ **Before/without Dell Technologies APEX**   ■ **With Dell Technologies APEX**

Decommissioning hardware: 1,096 → 510 (53% less)
Patching: 1,683 → 958 (43% less)

n = 17; Source: IDC In-depth Interviews, June 2021

For an accessible version of the data in this figure, see Figure 3 Supplemental Data in Appendix 2.

For interviewed customers, the value of APEX in terms of IT operations is not about reducing head count; rather, it is about enabling IT teams to deliver the most value possible.

Study participants described their perspectives on IT operational enablement with Dell Technologies APEX with varied examples that spoke directly to the substantial impact:

Manufacturing company using APEX hyperconverged realized an improved ability to respond to issues and higher performance:
"With Dell Technologies APEX, we have help desk tickets a few times a month. Without the flexible consumption model, it would be around four times a week. Time to resolve is now 20 minutes to an hour, but would be much longer, maybe a couple of hours. … Our help desk team is saving time because they're armed with specific tools to address issues."

Manufacturing firm using APEX storage focused on strategy instead of maintenance:
"With Dell Technologies APEX, we can have our staff focused on strategic things and leave the maintenance to Dell, and so there's definitely cost savings and reduced overhead costs."

Nonprofit using APEX storage expanded the role of IT:
"Our environment has really turned into an 'environment' with Dell Technologies APEX, where before you'd have a staff person that would be allocated to one specific task. Now, we're all in a hybrid role and we're getting involved in security projects, architectural projects, strategy, and security policies. … We were datacenter engineers, and now, we are the data services team."

Thus, IT operational enablement with APEX goes well beyond quantifiable time savings and efficiencies for study participants' IT organizations. In many respects, study participants' ability with Dell Technologies APEX to deliver IT services at a higher level has profound business implications. In other words, the metrics and topics that businesses use to evaluate their success, including time to market, risk, and customer satisfaction, all relate back to IT operational enablement spurred by use of APEX.

More Cost-Effective IT Environments

Study participants also expressed a clear link between their use of Dell Technologies APEX and their ability to deploy and maintain cost-effective hyperconverged, storage, and data protection environments. Like many organizations, interviewed Dell Technologies customers face the ongoing dilemma of how to have sufficient IT capacity to meet always-shifting business requirements, but without incurring excessive costs. Generally speaking, they will lose in one of two ways: by foregoing business opportunities when they cannot provide requisite IT resources, or by over-provisioning IT resources and thus maintaining excess capacity that comes with additional costs.

Most importantly, by moving to an as-a-service solution with Dell Technologies APEX, study participants gained the ability to move with sufficient agility and speed to match the capacity they provision to actual business requirements. They can do this both ways also: as they require additional capacity, and as their need for capacity diminishes.

The result is that they face fewer situations in which they make costly up-front investments in resources with the intent to "grow into" their environments and more closely tailor their hyperconverged, storage, and data protection environments to business needs.

Interviewed Dell Technologies customers provided specific examples:

Financial services firm using APEX storage maintained higher use rate:
"We'd need more storage capacity with a classic on-premises approach — I think we'd need 20–25% more. … Our use rate is around 80–85% with Dell Technologies APEX. … If we did this with on-premises, it would probably be 75%."

Medical technology firm using APEX hyperconverged realized cost and sustainability efficiencies from on-demand model:
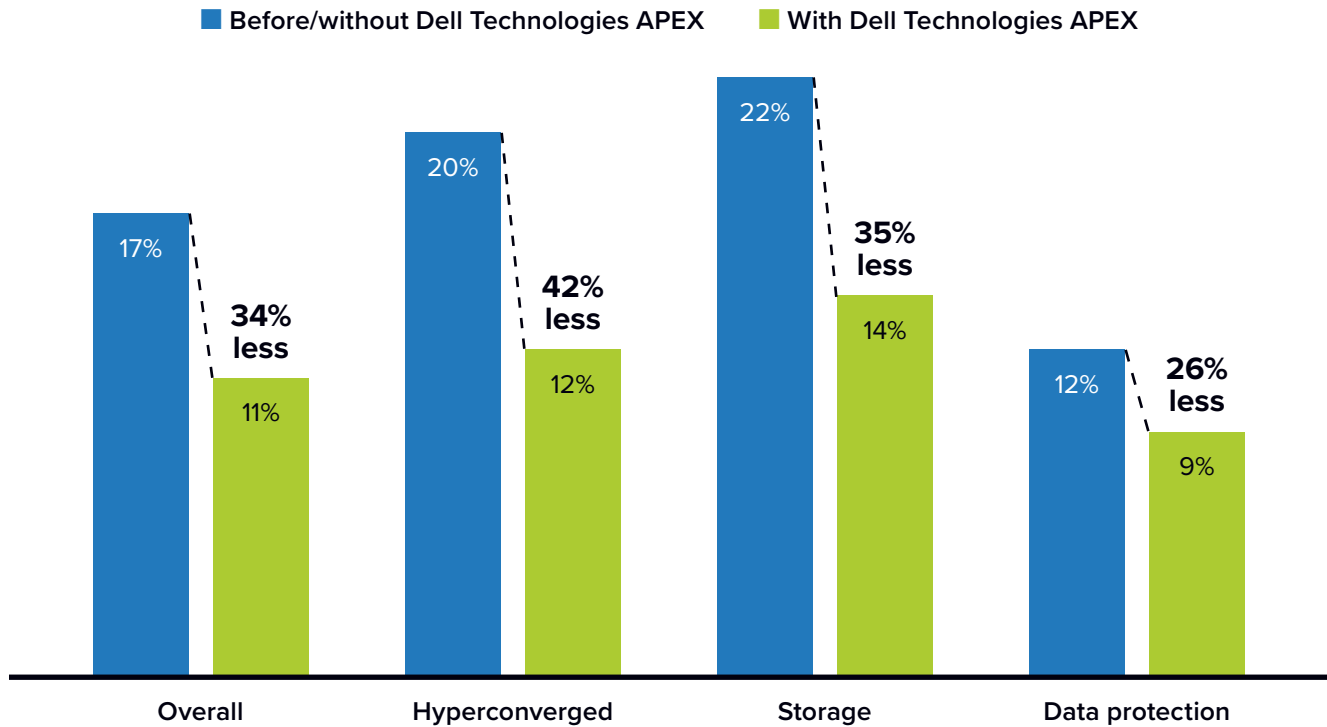*"We have less compute with Dell Technologies APEX because we're buying less up front, which means we're buying less overhead, which means less hardware and power use and better sustainability."*

State IT department using APEX data backup services saw improved employee morale and retention:
"The Dell APEX data backup solution has improved operational efficiencies and reduced IT staff workloads. In the past, it was difficult to retain IT talent because of older infrastructure that hindered performance and was not state-of-the-art. The CIO credits the adoption of Dell's APEX solution with improving employee morale and retention rates. He selected Dell because he wanted a partnership that didn't end when the invoice was signed. With the Dell partnership, he has access to expert engineers to talk through a couple of situations and help with future planning and scenarios."

As shown in **Figure 4** (next page), study participants reported across-the-board reductions in their need to maintain "buffer" or extra capacity. On average, they reported environments with 34% less buffer capacity, or six percentage points lower. This is a key contributor to their ability to establish and run more cost-effective IT infrastructures.

FIGURE 4

Reductions in Over-Provisioning
(Capacity and buffer capacity)

■ Before/without Dell Technologies APEX   ■ With Dell Technologies APEX

	Overall	Hyperconverged	Storage	Data protection

- Overall: 17% / 11% — **34% less**
- Hyperconverged: 20% / 12% — **42% less**
- Storage: 22% / 14% — **35% less**
- Data protection: 12% / 9% — **26% less**

n = 17; Source: IDC In-depth Interviews, June 2021

For an accessible version of the data in this figure, see **Figure 4 Supplemental Data** in Appendix 2.

Study participants have optimized their cost of providing hyperconverged, storage, and data protection capacity to a substantial extent as they maintain resources more closely tailored to business demand. Further, they spoke of the value of having greater visibility to project capacity requirements and then meet those requirements in a flexible and timely manner.

Again, interviewed Dell Technologies customers provided examples:

Nonprofit using APEX storage to optimize infrastructure spending:
"We've been overconsuming our resources over the years. This pandemic really gave us the realization of too much spending. … Now, with Dell Technologies APEX, we get reports on a weekly basis that give us the ability to predict better. That way, we can go to the business earlier and just say, 'Hey, it looks like by June we may run out of storage that's been allocated to you guys. So we should start making plans to add more.' It makes the experience a little better, and it makes it flexible and proactive instead of reactive."

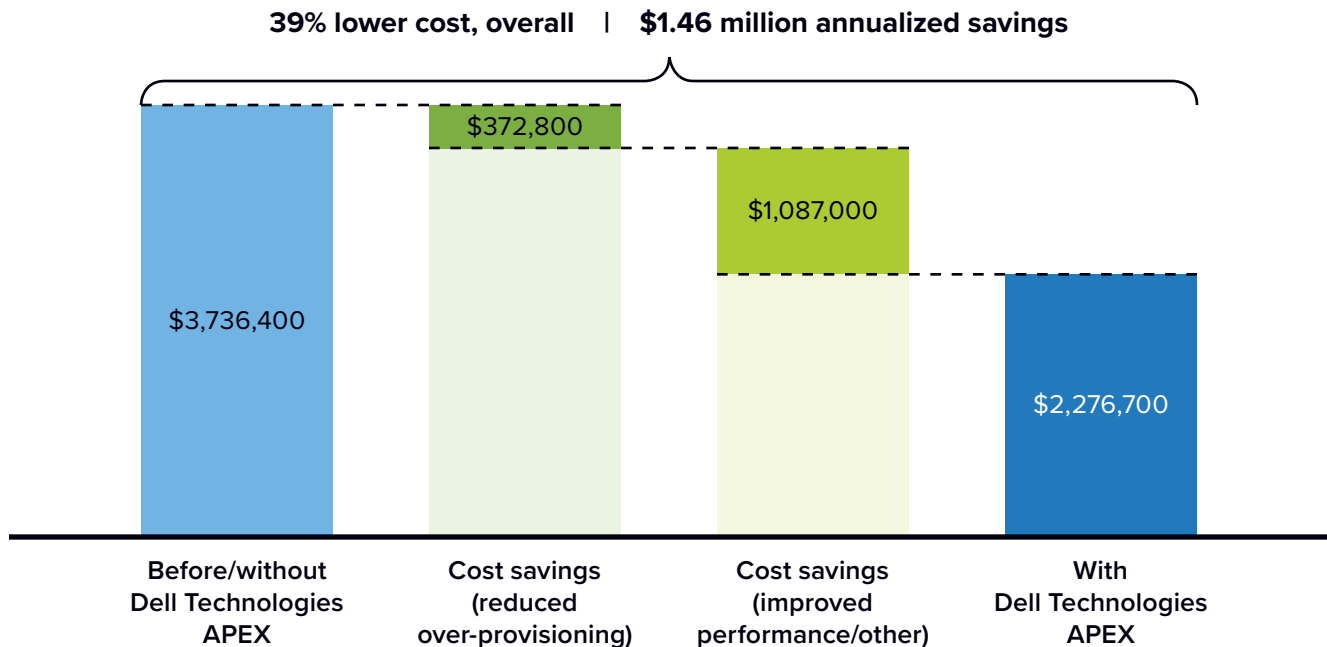**Financial services firm using APEX hyperconverged to optimize costs:**
"For internal applications, looking at the financial benefits, I would say there's roughly an 18–25% improvement in cost savings across the board with Dell Technologies APEX."

State government using APEX backup services to improve operating costs:
"The APEX model and the flexibility of using storage pools for all our data is so much better than having to dedicate storage per user. And if you look at the flexibility behind that, it completely changes your operating cost. You know you'll have a particular user who works in a way, and they are not heavy data-centric, but I'll have another user that is … well, it's a pool. So I can assign more resources to one without impacting the other. Ease of use and peace of mind from APEX, I can't put a price on that."

Figure 5 reflects the substantial value for study participants of optimizing their spending on hyperconverged, storage, and data protection resources with Dell Technologies APEX. On average, study participants reported spending almost $1.5 million per year less with APEX to run equivalent workload and application environments for their businesses, which reflects a 39% cost efficiency.
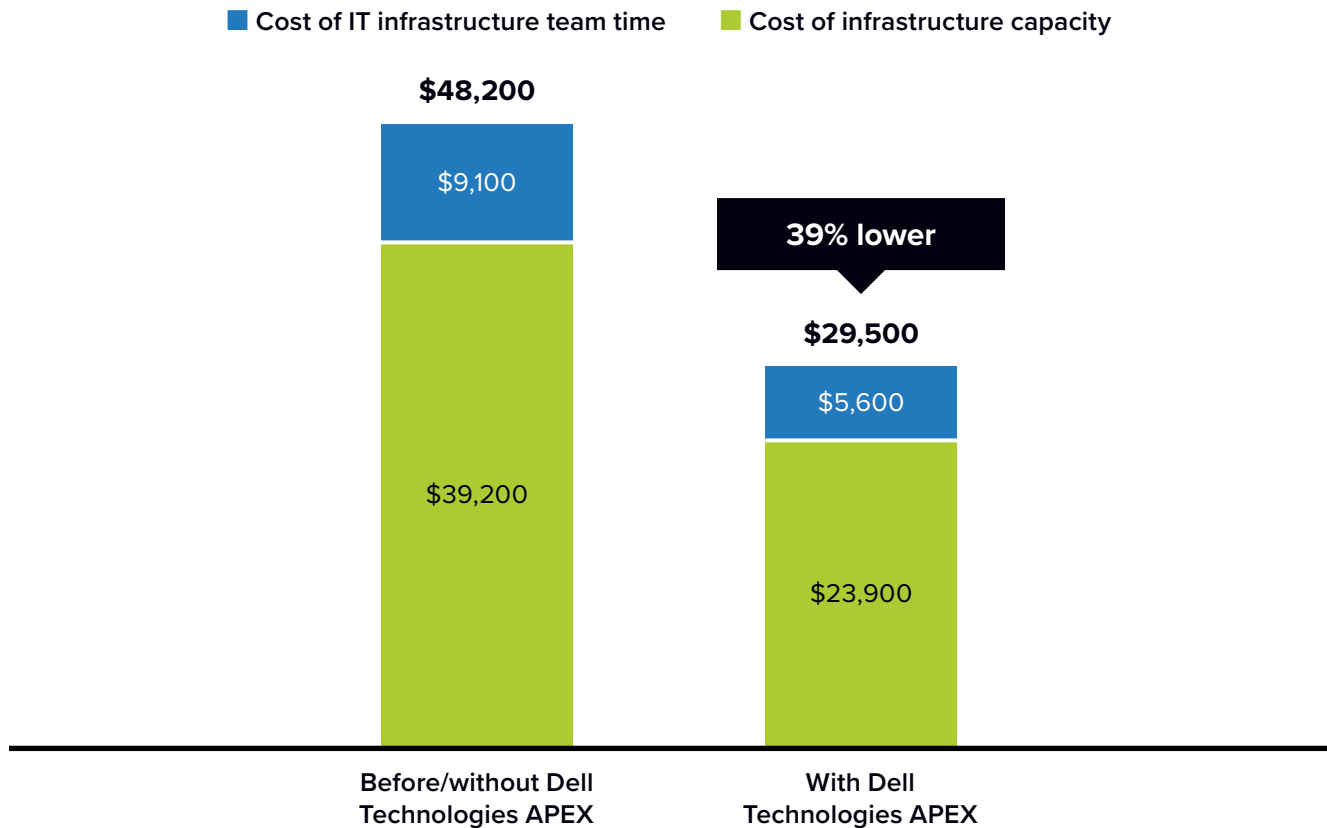
FIGURE 5

Cost of Procuring Capacity per Organization
(Annualized cost per organization)

39% lower cost, overall | $1.46 million annualized savings

$3,736,400	$372,800	$1,087,000	$2,276,700
Before/without Dell Technologies APEX	Cost savings (reduced over-provisioning)	Cost savings (improved performance/other)	With Dell Technologies APEX

n = 17; Source: IDC In-depth Interviews, June 2021

For an accessible version of the data in this figure, see Figure 5 Supplemental Data in Appendix 2.

These infrastructure-related cost savings, along with the IT team efficiencies already discussed, mean that interviewed Dell Technologies APEX customers incur substantially lower costs for running the same workloads and applications compared with their previous or alternative IT environments, which were primarily on-premises infrastructure environments that did not include flexible consumption opportunities. IDC calculates that the study participants will on average incur 39% lower costs over three years, equating to a savings of $5.38 million per organization, or over $18,000 per 100 users (see **Figure 6**).

FIGURE 6

Three-Year Cost of Operations per 100 Users
($ per 100 users — three years)

n = 17; Source: IDC In-depth Interviews, June 2021

For an accessible version of the data in this figure, see Figure 6 Supplemental Data in Appendix 2.

Improved Agility and Business Results

Study participants also ascribed business enablement to their use of Dell Technologies APEX. As is the case for most organizations, IT operations play an increasingly central role in business success. In other words, organizations count on the availability, flexibility, adaptability, reliability, and performance of their IT systems. When their IT organizations cannot deliver at a sufficiently high standard to meet these types of demands, study participants will inevitably find it more challenging to execute their business strategies and ultimately to maintain business success.

Flexibility is a core trademark of successful IT organizations. When they are insufficiently agile, scalable, or adaptable, then there will always be situations in which IT fails to deliver at the needed level for the business. Study participants stressed that their use of Dell Technologies APEX has increased their agility to a significant extent. Because they can provision hyperconverged, storage, and data protection capacity as needed and with far less planning, business needs can be met in near real time and with far less consideration of cost implications.

Study participants provided specific examples of how Dell Technologies APEX has enabled them to be more agile and scalable:

Technology services firm using APEX storage experienced true scalability:
"Dell Technologies APEX offers you total flexibility. … There are no negatives to it because it has that scalability so we can go up or down. … It also enables agile DevOps."

Technology services firm using APEX storage enabled seamless changes to applications with enhanced flexibility and access to storage resources:
"We're able to deploy changes more quickly with Dell Technologies APEX. … We can make changes in the background, without even having to bring down the whole system. This means that a lot of times there is no downtime."

Financial technology organization using APEX hyperconverged experienced ease of provisioning IT to support business:
"Previously, we bought equipment, which was a capex cost. Now, with Dell Technologies APEX, we have all this elasticity because it comes as an opex line item, so it makes things much easier to get approved."

Manufacturing firm using APEX hyperconverged experienced better performance with improved maintenance and monitoring:
*"APEX having them all consistently refreshed means that you don't have this huge disparity in performance and means things are under maintenance. Before, if a server had a SIM go bad, we had to take it out of service and either order a replacement ourselves or buy a third-party maintenance or pay extra for first-party maintenance from Dell. All that stuff goes away in this APEX model. That means we're not going to be operating these things*

long beyond their supported life cycle from Dell to get bio updates and other things. So I can push to those devices and not have these long-lived old security vulnerabilities, potentially."

Figure 7 provides metrics related to the time study participants require to provide new hyperconverged, storage, and data protection capacity. They reported being able to deploy new capacity — whether compute, storage, or data protection — 60% faster compared with their previous, primarily on-premises IT environments that were not based on flexible consumption models, thereby moving up delivery by more than 2.5 days and needing 64% less staff time.

Perhaps even more importantly, interviewed organizations linked their use of Dell Technologies APEX to the ability to extend and grow their business operations with greater agility. There are numerous potential situations in which an organization needs to deploy IT for a new location, site, or even company, including expansion efforts and merger-and-acquisition activity. Delay of IT deployment can impede business operations and even result in substantial lost business opportunities. Thus study participants' ability to move forward to prepare IT infrastructures for new branches or locations by more than two weeks on average, or 33% faster, stands as a confirmation of the type of real-world value that greater agility with Dell Technologies APEX can provide to companies (see **Figure 7**).

FIGURE 7

Agility KPIs
(Time required)
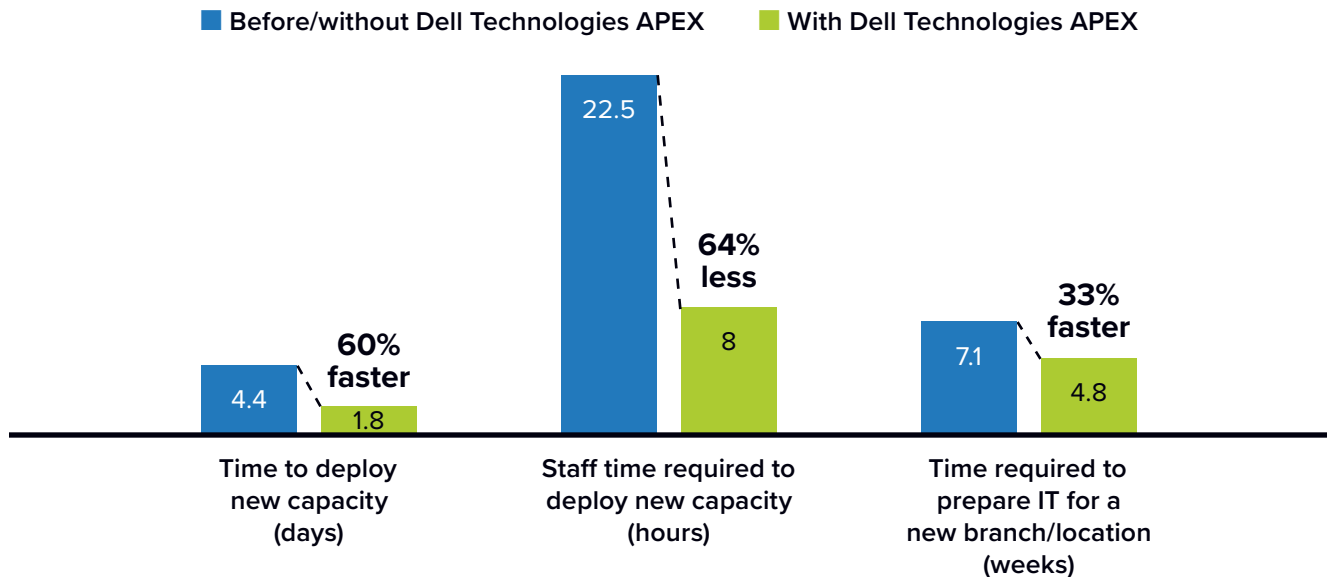
n = 17; Source: IDC In-depth Interviews, June 2021

For an accessible version of the data in this figure, see Figure 7 Supplemental Data in Appendix 2.

For study participants, enhanced agility of their IT environments with Dell Technologies APEX can spur improved development activities. In particular, they described the value with APEX of developers having easy and consistent access to resource capacity needed, especially for testing and deployment. One interviewed organization in the financial technology vertical explained: *"We are getting the feedback that developers are happier with Dell Technologies APEX … . In general, the developer experience has been better because earlier, building infrastructure would take 15 minutes and now it takes two or three minutes because of the compute capacity they have available with flexible consumption."* **Table 4** presents several key findings related to the impact of Dell Technologies APEX on study participants' development activities, including delivery of 6% more new applications and features, reducing development life cycles by an average of 12%, and 11% higher productivity for developers working on the Dell Technologies APEX platform.

TABLE 4

Impact on Development Team and Development KPIs

	Before/ Without Dell Technologies APEX	With Dell Technologies APEX	Difference	Efficiency
Productivity level of development team per organization (FTEs)	30.6	33.8	3.2	11%
Value of development team productivity per year per organization	$3.06M	$3.38M	$322,200	11%
Increase in number of applications/features delivered	NA	NA	6%	NA
Faster development life cycle	NA	NA	12%	NA

n = 17; Source: IDC In-depth Interviews, June 2021

Study participants also linked improved infrastructure performance, reliability, and security to their use of Dell Technologies APEX. They noted especially the built-in resiliency and security features of the APEX platform. An interviewed financial services company noted: *"When we would have an outage or experience something that was affecting our power, it was a 'hot fire.' Now, that emergency 911 call doesn't happen nearly as often. …*

The built-in redundancy with Dell Technologies APEX is a huge part of the success, and the other is that there are fewer mistakes with the system, so managing it is much easier." Meanwhile, an interviewed nonprofit organization using storage as a service commented on the value of telemetry capabilities to its security operations: *"We did not have telemetry before in our traditional procurement environment. … Splunk is integrated, so we really get some nice reports and updates. … That's one of the perks in terms of what we do in the security standpoint with PowerFlex with Dell Technologies APEX."* **Table 5** reflects the important gains in reliability and reduction of operational risk that study participants have achieved with Dell Technologies APEX. They reported reducing productivity losses associated with outages affecting their compute, storage, and data protection environments by an average of 88%, thereby saving more than four hours of lost productivity per IT user per year.

TABLE 5

Impact on Unplanned Downtime

	Before/ Without Dell Technologies APEX	With Dell Technologies APEX	Difference	Efficiency
Number of unplanned outages per year	7.9	2.8	5.1	64%
MTTR (hours)	4.9	2.6	2.3	46%
Lost productivity per user per year (hours)	4.9	0.6	4.3	88%
Value of lost productive time per organization per year (FTEs)	74.7	8.6	66.1	88%
Value of lost productive time per organization per year	$5.23M	$0.60M	$4.62M	88%

n = 17; Source: IDC In-depth Interviews, June 2021

Many of the interviewed organizations also reported achieving direct business gains through their use of Dell Technologies APEX. In particular, they can move more quickly to address customer demand and provide customers with higher-quality solutions and services. A technology services company using storage solutions noted: *"Our customer satisfaction is about how we perform, which is also dependent on our systems being available and being*

in the best shape they can be. … I think the applications are performing better on Dell Technologies APEX."

Likewise, a financial services company using hyperconverged commented: *"Dell Technologies APEX has made us more agile and responsive to business demand by allowing us to create new VMs more easily. For example, if we want to pilot a product, we can create a secure sandbox to test user acceptance testing (UAT) environments."*

Table 6 shows the extent of revenue gains that study participants linked to their use of Dell Technologies APEX, reporting average revenue gains of $7.66 million per year. For these APEX customers, the data shown reflects their real and direct ability to achieve important business gains.

TABLE 6

Business Productivity Benefits — Higher Revenue

	Per Organization	Per 100 Users
Total additional revenue per year	$7.66M	$26,800
Assumed operating margin	15%	15%
Total additional net revenue per year*	$1.15M	$4,000

n = 17; Source: IDC In-depth Interviews, June 2021

* Additional net revenue reflects a 15% operating margin assumption used by IDC to calculate the revenue impact recognized for purposes of the ROI analysis.

Challenges/Opportunities

APEX represents a tremendous opportunity for Dell because it will be able to deliver as-a-service models across a broad range of infrastructure assets. The focus on simplicity, agility, and control provides the ease of use that organizations want and focuses on the main drivers for adopting as-a-service models: aligning usage with budgets and reducing the complexity of managing IT infrastructure. When done right, businesses gain access to actionable insights while ensuring consistent end-to-end performance and control. As IDC's business value research demonstrates, customers already find value in the APEX offerings, with quantifiable savings in many areas from business productivity, higher revenue, and improved efficiencies.

The challenges for the Dell Technologies APEX platform are threefold:

- **Competition:**
  Most OEMs, cloud providers, and large partners are offering flexible consumption offers and are rapidly looking to expand alliances to gain share. Dell Technologies continues to announce new partnerships, offers, and investment plans to expand the APEX portfolio, demonstrating an understanding of customers' need, and it will be important that Dell keep this level of focus to demonstrate the depth of its APEX ecosystem. The recent addition of PC as a service (PCaaS) within the APEX offerings is a competitive differentiator and will increase market momentum and share.

- **Partner programs:**
  Dell continues to fine-tune its partner programs with new incentives, comprehensive training, and support. It has listened to partner feedback and simplified its incentive structure, launched a Dell APEX competency to help partners learn the portfolio, and expanded offers for global availability. In addition, partners can now deploy select Dell APEX solutions on their own terms with the launch of partner deployment and can use existing Service Delivery Competencies to gain more control over their Dell APEX deployment options and expand value-added specialty services. We encourage Dell to continue its investment in partner development, including lead generation and offering simplified contracts.

- **Focus on sustainability:**
  For over 10 years, Dell has focused on product innovations to deliver solutions that use less energy and reduce carbon intensity. Dell has also concentrated on its asset recovery and disposition program to ensure a cohesive offering from all partners that operate in this ecosystem. Dell's investment and leadership in sustainability initiatives are admirable and will attract like-minded customers that want to work with a trusted vendor that will provide detailed metrics about secure asset disposal in every region they operate. It will be important for Dell to continue to highlight its advancements in reducing power consumption, design improvements that include renewables, and efforts to reduce ewaste. Organizations will be evaluating vendors on both sustainability advancements and investments when making vendor selections.

Conclusion

Organizations need solutions to address the ongoing challenges with their IT investments. They require more visibility, cross-platform control, advanced data management, and protection that spans the entire ecosystem, including public or private cloud, on-premises, colocation facility, and edge. Achieving this objective often requires vendors and other partnerships to consider new ways of procuring IT infrastructure. Consumption-based

models are one such way of obtaining IT resources that can meet the requirements placed upon IT organizations to build an environment that provides data resiliency, business agility, and robust security that enables growth.

IDC research underscores that the as-a-service consumption model has proven to be a foundational framework for digital transformation. More and more companies are using or planning to use flexible consumption models for their digital infrastructure, and they are shifting to purchasing digital infrastructure as a service. In *IDC FutureScape: Worldwide Future of Digital Infrastructure 2023 Predictions* (IDC #US48376222, October 2022), we stated, "By 2026, 65% of tech buyers will prioritize as-a-service consumption models for infrastructure purchases to help restrain IT spending growth and fill ITOps talent gaps." IDC believes that organizations are shifting away from the traditional model for acquiring IT capacity and equipment and will evolve to a more flexible as-a-service model that is strongly preferred by businesses worldwide.

IDC's research shows that Dell Technologies customers are successfully using its APEX solutions — that is, Dell Technologies as-a-service hyperconverged, storage backup, and data protection solutions to name a few — to run and support their business operations. Interviewed Dell Technologies customers described achieving a variety of benefits through their use of APEX solutions, including lower IT costs; IT team efficiencies, retention, and productivity gains; improvements in data resiliency; as well as enhanced agility, reliability, and business acceleration. As one customer shared, adopting APEX provided his organization ease of use and peace of mind from APEX, and *"I can't put a price on that!"*

As a result, IDC's analysis shows that they not only are achieving substantial cost of operations efficiencies — 39% lower on average over three years — but also are better positioned to provide agile and high-performing applications and services to their businesses. With Dell Technologies APEX, they have confidence that they have an IT infrastructure sufficiently cost-effective, agile, and high-performing to match business requirements at any given time.

Appendix 1: Methodology

IDC's standard business value/ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Dell Technologies APEX as-a-service solutions, including hyperconverged, storage, and data protection solutions, as the foundation for the model. To understand the impact of using Dell Technologies APEX solutions, IDC gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Dell Technologies APEX solutions. In this study, the benefits included IT infrastructure cost savings, staff time savings and efficiencies, the benefits of reducing risk associated with unplanned outages, and business gains such as increased revenue.

IDC uses a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, 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).

- Because IT solutions require a deployment period, the full benefits of the solution 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.

Appendix 2: Supplemental Data

The tables in this appendix provide an accessible version of the data for the complex figures in this document. Click "Return to original figure" below the table to get back to the original data figure.

FIGURE 3 SUPPLEMENTAL DATA

IT Infrastructure Staff Time Requirements

	Decommissioning Hardware	Patching
Before/without Dell Technologies APEX	1,096	1,683
With Dell Technologies APEX	510	958
Difference	**53% less**	**43% less**

n = 17; Source: IDC in-depth interviews, June 2021

Return to original figure

FIGURE 4 SUPPLEMENTAL DATA

Reductions in Over-Provisioning

	Overall	Hyper-converged	Storage	Data Protection
Before/without Dell Technologies APEX	17%	20%	22%	12%
With Dell Technologies APEX	11%	12%	14%	9%
Difference	**34% less**	**42% less**	**35% less**	**26% less**

n = 17; Source: IDC in-depth interviews, June 2021

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Appendix 2: Supplemental Data (continued)

FIGURE 5 SUPPLEMENTAL DATA

Cost of Procuring Capacity per Organization

	Before/ Without Dell Technologies APEX	Cost Savings, Reduced Over-Provisioning	Cost Savings, Improved Performance/ Other	With Dell Technologies APEX
Annualized cost per organization	$3,736,400	$372,800	$1,087,000	$2,276,700

n = 17; Source: IDC in-depth interviews, June 2021

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FIGURE 6 SUPPLEMENTAL DATA

Three-Year Cost of Operations per 100 Users

	Before/Without Dell Technologies APEX	With Dell Technologies APEX
Cost of IT infrastructure team time	$9,100	$5,600
Cost of infrastructure capacity	$39,200	$23,900
Total	**$48,200**	**$29,500**

n = 17; Source: IDC in-depth interviews, June 2021

Return to original figure

Appendix 2: Supplemental Data (continued)

FIGURE 7 SUPPLEMENTAL DATA

Agility KPIs

	Time to Deploy New Capacity	Staff Time Required to Deploy New Capacity	Time Required to Prepare IT for a New Branch/ Location
Before/without Dell Technologies APEX	4.4 days	22.5 hours	7.1 weeks
With Dell Technologies APEX	1.8 days	8 hours	4.8 weeks
Difference	**60% faster**	**64% less**	**33% faster**

n = 17; Source: IDC in-depth interviews, June 2021

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About the IDC Analysts

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Susan leads IDC's worldwide research on IT equipment, software, and services financing markets. As research vice president for IDC's Flexible Consumption and Financing Strategies for IT Infrastructure research, she provides analysis and insight from both a supply-side and a buyer's point of view. Susan's core research coverage includes the evolution of procurement models from purchasing, leasing, and financing to the new as-a-service models, also known as flexible consumption. Based on her analysis and expertise on procurement strategies and IT equipment life cycles, Susan's research helps vendors and buyers understand the top drivers of the new flexible consumption models and the impact of these new buying behaviors on long-term IT equipment values and forecasts.

More about Susan Middleton

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment (ROI) of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

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