The Business Value of Dell Technology Rotation for Servers and Storage

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BUSINESS VALUE HIGHLIGHTS

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SERVERS

22%
lower cost of operations for two three-year Dell Technology Rotation subscription cycles versus one six-year buy-and-hold cycle, saving $23,299 per server

37%
more efficient IT server infrastructure teams

62%
less unplanned downtime

STORAGE

40%
lower cost of operations for two three-year Dell Technology Rotation subscription cycles versus one six-year buy-and-hold cycle, saving $6,549 per TB

37%
more efficient IT storage

Executive Summary

IT leaders are managing various risk factors in the early stages of the AI pivot, with IDC's research showing that the top global concerns include access to IT hardware, AI model costs, the cost of GPUs driving up vendor pricing, and staffing shortages. Subscription-based solutions for datacenter servers and storage offer effective answers to these risks, and organizations are choosing them for their flexibility, earlier access to newer technology, and ability to budget more effectively. The sustainability and circularity benefits are also increasingly valued as a benefit of subscription-based services because they include the energy efficiency benefits of newer equipment refresh cycles and the IT asset disposition (ITAD) services to recover, securely process, and resell or responsibly recycle used gear.

IDC interviewed organizations about the impact of taking a subscription-based approach to obtaining server and storage resources using Dell Technology Rotation rather than buying and holding equivalent resources. Interviewed Dell customers consistently reported benefiting from optimizing the overall cost of running equivalent server and storage environments and gaining greater IT agility and performance levels, as they have increased access to newer infrastructure resources. On average,

IDC calculates that study participants will reduce the total costs for servers by an average of 22% and storage by an average of 40% with two three-year cycles with Dell Technology Rotation compared with a single six-year buy-and-hold cycle.

Benefits for study participants include:

- **Moving away from a capital expenditure model** for provisioning server and storage resources and spreading costs through a subscription-based approach

- **Making IT infrastructure and support teams more efficient** by establishing more unified IT environments and facing fewer challenges related to aging infrastructure

- **Minimizing the impact of unplanned outages** by having more flexibility in supporting workloads and taking advantage of higher performance from newer server and storage infrastructure

- **Supporting organizational sustainability initiatives** by adopting circular economy principles and reducing power and other resource consumption with newer, more efficient server and storage hardware

Situation Overview

Navigating the AI pivot requires IT infrastructure choices that support experimentation, iteration, and flexibility while delivering on corporate sustainability objectives. Subscription-based models of IT infrastructure procurement are ideally suited for this early phase of the AI era, and IDC believes that their benefits will translate to continued demand over the medium and long terms. The benefits include quicker access to newer technology, as early indications show that the demands of AI workloads will require more frequent tech refreshes.

As IT decision-makers and CFOs work to manage the various sources of risk, enable technology refreshes, and fund new AI projects, IDC expects increased demand for subscription-based offerings for on-premises IT infrastructure.

Organizations are showing demonstrable business value across various performance, reliability, productivity, and sustainability metrics:

- Access to newer technology decreases downtime — in some cases significantly

- Ability to migrate and more readily move over to a faster server or storage array with more capacity

- Ease of being able to refresh servers, as those used for generative AI workloads usually need to be refreshed more frequently than every five years

- Newer equipment uses less power per workload compared with previous models for a given workload size or runs much larger workloads for the same power, cooling, and rack space requirements

- Ability to quickly initiate proof of concepts and pilot projects

- Ease of adopting innovations such as large language models that require newer processors

- Ability to attract and retain talent because of being on the latest technology

- Ease of ensuring secure and sustainable processing of equipment, including reuse and recycling (i.e., ITAD services)

- Ability to capture sustainability reporting data on equipment refurbishment/reuse and ewaste disposal

IDC's research shows that organizations identify the following as the most important attributes of on-premises subscription-based solutions for datacenter hardware: 1) cloud-like management features and 2) full life-cycle services, from deployment to management support/optimization and ITAD services for responsible reuse and recycling. Furthermore, for more intensive AI workloads that demand liquid cooling and higher power consumption, the built-in expertise within subscription-based services will become especially attractive, ensuring customer success in the AI pivot.

Dell Technology Rotation

Dell Technology Rotation is designed to help organizations optimize technology investments. It offers a flexible approach to datacenter hardware refreshes, allowing organizations to easily take advantage of the most up-to-date technology while reducing management overhead, contributing to the circular economy (which enhances sustainability goals), and freeing up capital.

Key outcomes of Dell Technology Rotation include:

- **Improved productivity:**
  By streamlining the technology refresh process, organizations can reduce management overhead and allocate more resources to strategic initiatives.

- **Improved efficiency:**
  Consistent updates ensure optimal performance and minimize downtime.

- **Enhanced security:**
  Dell provides the latest updates and patches to keep systems secure and compliant.

- **Increased flexibility:**
  The program offers options for purchasing, renewing, or upgrading equipment at the end of each subscription term.

- **Enhanced sustainability:**
  Dell's commitment to recycling and refurbishing equipment, along with the requisite data sanitization, contributes to sustainability goals, and optimized technology refresh strategies contribute to enhanced datacenter energy efficiency.

Dell Technology Rotation can help with business strategies that are focused on conserving capital, taking advantage of technology innovation, and driving progress toward sustainability targets.

The Business Value of Dell Technology Rotation

Study Demographics

IDC conducted in-depth interviews with organizations that obtain server and storage resources via subscriptions through Dell Technology Rotation to compare their experiences with buying and holding the same server and storage infrastructures. IDC designed the interviews to understand the quantitative and qualitative impacts of Dell Technology Rotation, including the impact on the management and performance of the server and storage infrastructure as it ages.

The study's sample included organizations using Dell Technology Rotation to obtain server and storage resources with an average of 25,383 employees (median: 8,750) and annual average revenues of $7.39 billion (median: $4.00 billion). The participating organizations are located in the United States (9), the United Kingdom (2), and India and include industries such as financial services (3), manufacturing (2), retail (2), consumer goods, healthcare, insurance, sports and entertainment, and utilities (see **Table 1,** next page).

TABLE 1

Demographics of Interviewed Organizations

	Average	Median
Number of employees	25,383	8,750
Number of IT staff	5,762	725
Number of business applications	518	382
Revenue per year	$7.39B	$4.00B
Countries	United States (9), United Kingdom (2), India	
Industries	Financial services (3), manufacturing (2), retail (2), consumer goods, healthcare, insurance, sports and entertainment, utilities	

n = 12; Source: IDC Business Value In-Depth Interviews, August 2024

Choice to Obtain Server and Storage Hardware Through Dell Technology Rotation

Study participants chose to obtain storage and server resources through Dell Technology Rotation via a subscription-based model rather than buying and holding infrastructure for various reasons. They found it to be a more cost-effective way to obtain these infrastructure resources and ensure continued strong infrastructure performance. They also saw value in moving away from a capex-intensive approach, finding the opex-based option more flexible and financially sustainable. They looked to the program to reduce the operational burden of managing infrastructure by offloading certain responsibilities and establishing more unified environments.

Further, they acknowledged the challenges in undertaking timely infrastructure refreshes, which made the solution attractive for catching up on deferred refreshes. They saw value in an approach that would allow for more frequent technology refreshes, especially with an eye for developing and running generative AI workloads.

Interviewed Dell customers mentioned the following reasons for choosing a subscription-based approach via Dell Technology Rotation rather than buying and holding hardware:

Catch up on deferred hardware refreshes:
"Before Dell Technology Rotation, our refresh cycle was every four years, and we deferred many equipment refreshes. This made the program more attractive to us, especially as deferred activity during the pandemic led us to rely on the program to catch up."

Need for more frequent refreshes for new technologies:
"We found that servers used for generative AI workloads needed to be refreshed more frequently than every five years, which led us to consider Dell Technology Rotation."

User-friendly nature of Dell:
"Dell provides a single interface for IT staff to manage infrastructure. This interface allows us to track technology rotation, application assets, server status, rotation schedules, outage frequency, and current liquidity. It also helps in planning the acquisition of new servers, all within a single window."

Use of Dell Technology Rotation

IDC carried out separate interviews with six organizations that obtained server and storage resources through Dell Technology Rotation to ensure a robust understanding of the impact for both technology types. For servers, the six study participants procured an average of 3,526 servers using Dell Technology Rotation (median of 247 servers) that run an average of 9,348 virtual machines (VMs) (median of 953 VMs). Meanwhile, the six storage customers have an average of 243 Dell Technologies storage systems (median of 79), with an average of 2,745 TBs of storage (median of 1,000 TBs) (see **Table 2,** next page). These numbers reflect the significant IT server and storage environments that these customers obtain through Dell Technology Rotation.

TABLE 2

Dell Technology Rotation Use by Interviewed Organizations

	Average	Median
Servers		
Number of servers	3,526	247
Number of VMs	9,348	953
Storage		
Number of storage systems	243	79
Number of TBs	2,745	1,000

n = 12 (total), n = 6 (servers), n = 6 (storage); Source: IDC Business Value In-Depth Interviews, August 2024

Business Value of Dell Technology Rotation for Servers and Storage

Interviewed organizations highlighted several common benefits of procuring server and storage resources through Dell Technology Rotation rather than buying and holding the same infrastructure. They emphasized infrastructure cost optimization and more efficient management, which enable them to scale their infrastructure more readily to support business growth. They also noted the positive impact of more frequent infrastructure refreshes on infrastructure performance and capabilities, citing experiencing fewer impactful outages and easier adoption of new technologies. Meanwhile, the shift away from a capex-focused model frees up capital for other projects, while the program's user-friendly nature and cost savings enable organizations to focus on innovation.

Study participants detailed the most significant advantages of moving to a subscription-based approach for server and storage resources with Dell Technology Rotation:

Ease of scaling infrastructure to support business growth:
"Dell Technology Rotation enhances our agility and scalability, allowing us to grow faster wherever needed. It makes scaling much easier."

Access to new technology as needed:
"Having access to newer technology with Dell Technology Rotation has significantly decreased downtime. It has made it easier for us to adopt innovations such as large language models that require the latest processors."

Shift away from the capex-focused model:
"The main reason we use Dell Technology Rotation, whether for servers or storage, is that it frees up capex dollars for other projects where those funds can be better utilized, rather than being tied up in operational solutions."

Scale to business needs and refocus on innovation:
"Dell Technology Rotation has helped us scale to new customers, allowing for easy expansion and adaptation to our business needs. It has also provided cost savings and reduced time spent on repetitive tasks. Overall, the program has enabled us to focus on innovation."

IDC's research demonstrates consistent operational cost savings for organizations that have moved to a subscription-based approach to procure server and storage resources with Dell Technology Rotation compared with buying and holding the same infrastructure.

Over six years, IDC calculates that organizations realize the following operational cost savings with two three-year Dell Technology Rotation cycles compared with one six-year cycle of buying and holding equivalent infrastructure:

(See **Figures 3–6** and **Appendix 2** for additional details.)

- **Servers:**
  Over six years, IDC projects that organizations will reduce the average server cost of operations by 22% with Dell Technology Rotation, saving an average of $23,299 per server.

- **Storage:**
  Over six years, IDC projects that organizations will save 40% on average on storage cost of operations with Dell Technology Rotation, saving an average of $6,549 per storage TB.

More Frequent Infrastructure Refresh Cycles

Interviewed organizations consistently reported that Dell Technology Rotation has enabled them to refresh their server and storage infrastructure more frequently. With Dell Technology Rotation, they know that they will have regular access to newer servers and storage. By refreshing their server and storage environments more frequently, they can leverage the capabilities and performance of new hardware earlier, which is especially important for data-heavy and performance-sensitive newer technologies and workloads.

Figure 1 shows the impact of using Dell Technology Rotation on typical server and storage refresh cycles for study participants. They reported average server refresh cycles to be 36% faster and 43% faster for their storage environments.

FIGURE 1

Impact on Infrastructure Refresh Cycles
(Number of years)
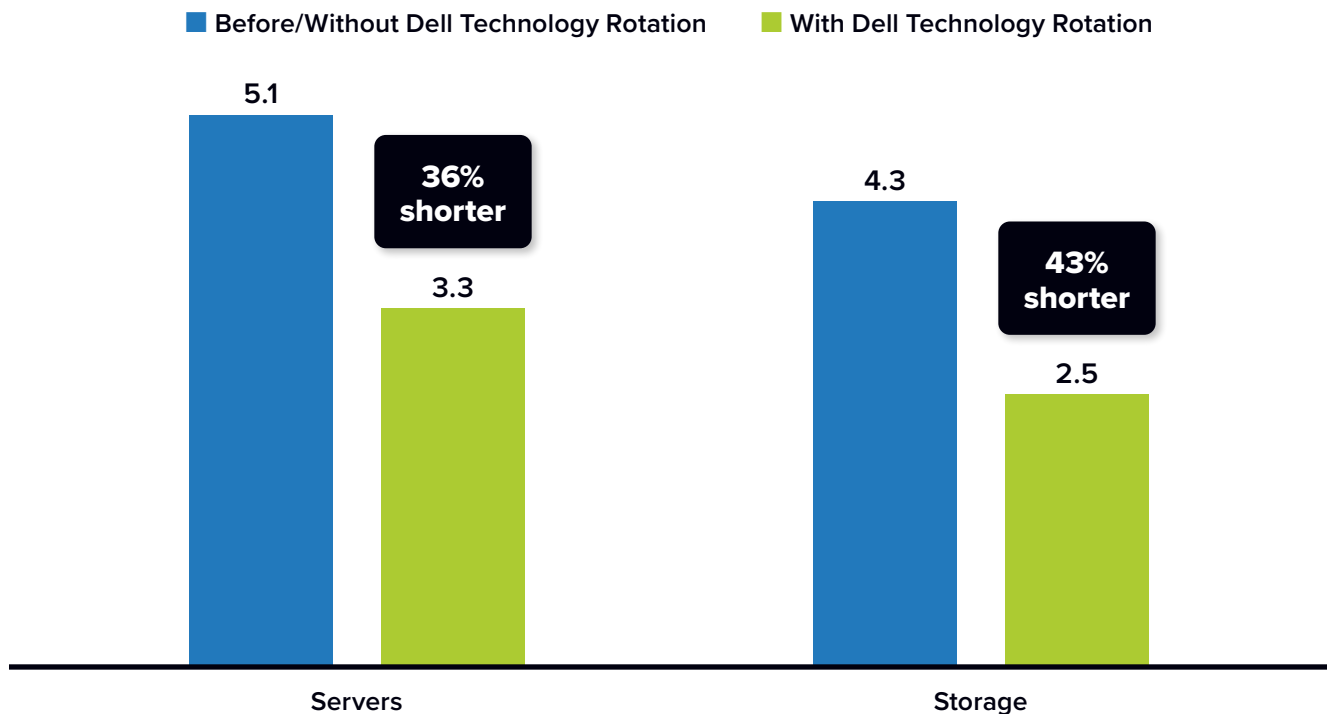
n = 12; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see Figure 1 Supplemental Data in Appendix 3.

Infrastructure Cost Optimization

Obtaining server and storage resources through Dell Technology Rotation impacts how study participants pay and account for infrastructure costs. By avoiding up-front capex, organizations can better leverage their financial resources and put their capital to use for other business and IT purposes. Interviewed customers noted that Dell Technology Rotation spreads infrastructure costs over time, aligning well with budget planning efforts. The shift to an opex model also minimizes the need for separate warranty and support arrangements, as they are built into subscriptions, and brings down the amount of staff time spent managing these arrangements.

Study participants did note that cumulative costs related to obtaining server and storage resources tend to converge over time with those of buying and holding the same infrastructure. However, the near-term value of avoiding large up-front costs and the ability to scale and adapt infrastructure needs still make Dell Technology Rotation an attractive option from a cost perspective, especially given other efficiencies and performance gains.

Interviewed customers detailed the impact of Dell Technology Rotation in terms of direct infrastructure costs:

Benefits of moving to the opex model:
"Leasing storage with Dell Technology Rotation provides financial advantages by spreading costs over time and freeing up capital for new hardware investments, aligning well with our budget planning. Unlike bulk purchases, leasing includes warranty and support costs."

Maintain capital for other investments and avoid maintenance and warranty costs:
"With Dell Technology Rotation, we don't have costs up front, so we have capital funding available to invest. This works for our budget cycle planning as well … With the leasing option, we also don't need to worry about warranties or support maintenance agreements."

Save on hardware and related services:
"Server costs would likely be higher if we bought them, depending on negotiations, probably at least 10%–20% more … Both hardware and services would be more expensive without Dell Technology Rotation."

IT Staff Efficiencies

Study participants reported that obtaining server and storage resources through Dell Technology Rotation reduces the burden on their IT infrastructure teams in several ways. First, it creates staff efficiencies by moving responsibilities for activities such as hardware disposal and certain monitoring activities to Dell, saving time and effort. Further, having continual access to newer server and storage resources tends to mean that less staff time is spent responding to performance issues and carrying out patching and updates. These factors combine to allow IT teams to focus more on strategic initiatives rather than operational concerns.

Study participants discussed the following benefits for their IT infrastructure teams responsible for server and storage environments:

Significant staff efficiencies:
"Without Dell Technology Rotation, we would need about 10 more people to support server deployment, which translates to roughly 7.5 full-time equivalents for servers, which is a 50% increase."

Efficiencies from not needing to handle hardware disposal:
"We do not have to worry about hardware disposal because Dell takes the old hardware and replaces it with new hardware through Dell Technology Rotation. This process saves us time and effort."

Decommissioning time savings:
"The decommissioning is really where the higher cost savings are with Dell Technology Rotation because we would otherwise have to go through the process of validating that the data has been wiped on a storage array."

Shift responsibilities to Dell:
"Dell is responsible for ensuring that our storage is patched and that the operating system is functioning properly. Under Dell Technology Rotation, they notify us of the latest patches and can install them and provide spares as needed."

Based on these benefits for IT infrastructure management teams regarding accessing resources through Dell Technology Rotation, IDC calculates an average efficiency of 37% for both server and storage management efforts.

▶ **TABLE 3**

Impact on IT Infrastructure Management Teams

	Before/ Without Dell Technology Rotation	With Dell Technology Rotation	Difference	Benefit
Server				
Hours of staff time per server per year	144.0	**91.0**	53.0	37%
Annual value of staff time per server	$7,669	**$4,827**	$2,842	37%
Storage				
Hours of staff time per storage TB per year	16.8	**10.7**	6.1	37%
Annual value of staff time per storage TB	$894	**$567**	$327	37%

n = 12 (total), n = 6 (servers), n = 6 (storage); Source: IDC Business Value In-Depth Interviews, August 2024

Study participants also consistently reported that they benefit from shortening infrastructure refresh cycles with Dell Technology Rotation. They noted that, as their server and storage infrastructures age, they require more staff time to manage, support, and run. They correlated these inefficiencies with an increased likelihood of problems in configuration and performance, especially as older infrastructure is called upon to run modern workloads that demand higher performance levels. In fact, as shown in **Table 4,** by the sixth year of a server's life span, study participants estimated that their staff must spend 48% more time on management activities than in years 1–3 of the life cycle, with a similar increase in time required of 49% for storage infrastructure.

TABLE 4

Impact of Aging Infrastructure on Staff Time Requirements

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Server						
Number of staff hours per server per year	144.2	144.2	144.2	164.2	186.4	213.2
Percent increase compared with years 1–3	n/a	n/a	n/a	14%	29%	48%
Storage						
Number of staff hours per storage system per year	217.1	217.1	217.1	236.6	272.1	322.5
Percent increase compared with years 1–3	n/a	n/a	n/a	9%	25%	49%

n = 12 (total), n = 6 (servers), n = 6 (storage); Source: IDC Business Value In-Depth Interviews, August 2024

Taken together, efficiencies gained with Dell Technology Rotation mean that study participants can run equivalent server and storage resources with significantly lower staff time requirements. IDC calculates that, over six years, they require 43% less time for servers and 48% less time for storage, despite investing time for a second infrastructure deployment with Dell Technology Rotation. These efficiencies provide the foundation for lowering the total cost of operating equivalent server and storage environments.

IT Performance and Reliability Improvements

Obtaining server and storage resources through Dell Technology Rotation minimizes problems and ensures adequate performance for new workloads by providing consistent access to newer infrastructure. The program makes it easy to add capacity to meet business needs, allowing for better planning and agility. Access to the latest servers and storage systems enables organizations to run cutting-edge applications, such as generative AI, more efficiently. Meanwhile, newer hardware experiences fewer outages, which reduces operational risk associated with unplanned downtime.

Study participants provided the following examples of delivering more reliable and available IT environments for their businesses with Dell Technology Rotation:

A more reliable platform for business:
"With Dell Technology Rotation, we can conduct business as usual more reliably. From a hardware perspective, the program benefits our overall capacity planning."

Improved scalability results in less downtime:
"The newer servers are more efficient, making the process of running scripts and deploying applications much quicker … We can scale our needs more effectively with fewer downtimes with Dell Technology Rotation."

Improved performance and efficiency with the latest server hardware:
"With Dell Technology Rotation, we always use the latest hardware revisions, leading to better performance and efficiency. Frequent hardware refreshes result in improved business outcomes."

Improved reliability and performance:
"Reliability and performance are significantly improved when we refresh according to the current agreement and use Dell Technology Rotation. Clear benefits include no longer needing to patch data servers as we used to."

Strong application quality and performance:
"Some of our critical applications run on the latest hardware through Dell Technology Rotation, which ensures excellent uptime. We can perform proactive maintenance on the infrastructure and work with the vendor to replace end-of-life components in a planned and structured manner."

Study participants reported that having access to newer servers and storage systems and better configuration and integration with Dell Technology Rotation results in better hardware performance. For interviewed Dell Technologies customers, this results in fewer outages and faster resolution of outages, leading to 62% less unplanned downtime for servers and 78% for storage.

▶ **TABLE 5**

Impact on Unplanned Downtime

	Before/ Without Dell Technology Rotation	With Dell Technology Rotation	Difference	Benefit
Server				
Number of unplanned outages per year	22.1	**11.3**	10.7	49%
Mean time to repair, hours	4.6	**2.0**	2.6	57%
Hours of productive time lost per user per year	4.7	**1.8**	2.9	62%
Value of lost productivity per server per year	$1,374	**$521**	$853	62%
Storage				
Number of unplanned outages per year	62.8	**21.9**	40.9	65%
Mean time to repair, hours	4.1	**1.3**	2.9	70%
Hours of productive time lost per user per year	1.8	**0.4**	1.4	78%
Value of lost productivity per storage TB per year	$548	**$120**	$428	78%

n = 12 (total), n = 6 (servers), n = 6 (storage); Source: IDC Business Value In-Depth Interviews, August 2024

Aging server and storage resources put increased pressure on business activities by experiencing more unplanned outages. Study participants reported that servers experience an average of 62% more unplanned outages by year 6 of a life cycle compared with years 1–3 and storage resources an average of 96% more unplanned outages. Thus, when organizations buy and continue to run older server and storage infrastructure, they risk not only requiring more staff time to respond to these issues but also potentially costly business interruptions.

TABLE 6

Impact of Aging Infrastructure on Staff Time Requirements

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Server						
Number of outages per year per organization	22.1	22.1	22.1	22.1	31.6	35.8
Percent increase compared with years 1–3	n/a	n/a	n/a	29%	43%	62%
Storage						
Number of outages per year per organization	62.8	62.8	62.8	75.3	101.3	123.2
Percent increase compared with years 1–3	n/a	n/a	n/a	20%	61%	96%

n = 12 (total), n = 6 (servers), n = 6 (storage); Source: IDC Business Value In-Depth Interviews, August 2024

Interviewed Dell customers capture significant value by substantially minimizing the frequency and impact of unplanned outages with Dell Technology Rotation. Over six years, IDC calculates that study participants will reduce lost employee productivity associated with unplanned outages affecting servers by an average of 69% and storage environments by an average of 83%.

Cost of Operations Analysis

IDC's analysis shows that study participants realize significant operational cost savings by obtaining servers and storage via a subscription for two three-year terms with Dell Technology Rotation rather than buying and holding for one six-year term.

The elements of this analysis include:

- **Staff time requirements:**
  Study participants require much less IT staff time to deploy, manage, support, and decommission their server and storage environments. This reduces operational costs and helps reallocate valuable staff time to innovative IT efforts that directly support business activities.

- **Unplanned downtime:**
  Study participants limit the costs associated with employee productivity losses and even revenue leakage resulting from unexpected outages. Thus, increasing the availability of key applications means limiting the costs associated with productivity and revenue losses.

- **Cost of infrastructure:**
  Study participants benefit initially from avoiding up-front capital costs in favor of subscription-based annualized payments.

From an annualized perspective, IDC's analysis shows how the costs associated with buying and holding server and storage infrastructures increase over time. For servers, IDC calculates that the cost of running a server is 23% more in year 6 with a buy-and-hold approach compared with two three-year cycles with Dell Technology Rotation (see **Figure 2**).

FIGURE 2

Year-by-Year Total Costs of Operations, Server

($ per server per year)
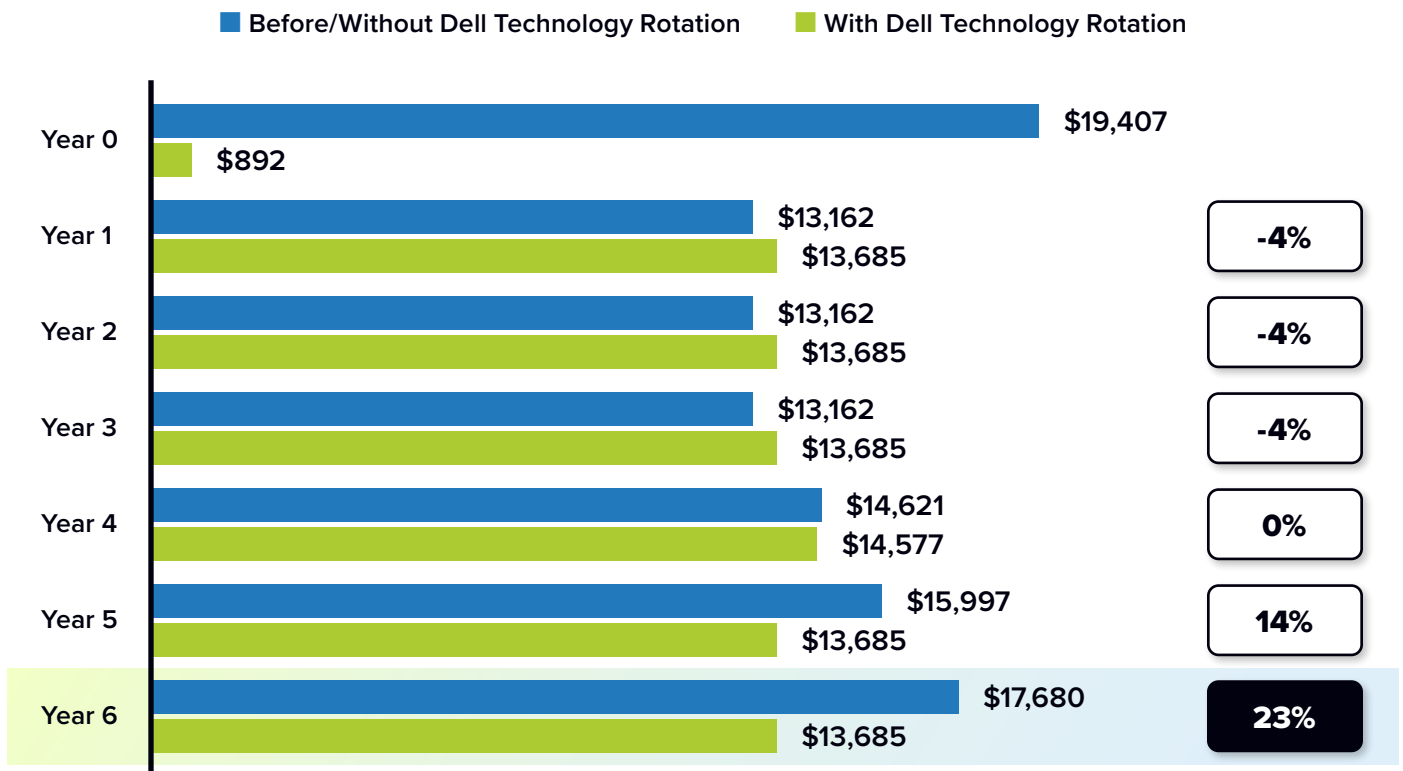
■ **Before/Without Dell Technology Rotation**　　■ **With Dell Technology Rotation**

	Before/Without Dell Technology Rotation	With Dell Technology Rotation	
Year 0	$19,407	$892	
Year 1	$13,162	$13,685	-4%
Year 2	$13,162	$13,685	-4%
Year 3	$13,162	$13,685	-4%
Year 4	$14,621	$14,577	0%
Year 5	$15,997	$13,685	14%
Year 6	$17,680	$13,685	23%

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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

Figure 3 shows the cumulative impact of obtaining servers through Dell Technology Rotation with two three-year refresh cycles rather than buying and holding the equivalent infrastructure over six years. Driven by initial cost savings and operational cost savings over time, IDC puts the overall cost savings of two three-year cycles with Dell Technology Rotation at an average of 22% over six years, saving $23,299 per server. For a more in-depth look at the costs of server operations with and without Dell Technology Rotation, please see Appendix 2.

▶ **FIGURE 3**

Cumulative Server Cost of Operations, Two Three-Year Cycles Versus One Six-Year Buy-and-Hold Cycle
($ per server)

■ **Before/Without Dell Technology Rotation** ■ **With Dell Technology Rotation**

Year	Before/Without Dell Technology Rotation	With Dell Technology Rotation
Year 0	$19,407	$892
Year 1	$32,569	$14,577
Year 2	$45,730	$28,261
Year 3	$58,892	$41,946
Year 4	$73,513	$56,523
Year 5	$89,510	$70,207
Year 6	$107,191	$83,892

22% savings after six years

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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

IDC's analysis shows a similar story for obtaining storage through Dell Technology Rotation. While accessing storage through Dell Technology Rotation maintains a more significant cost-of-operations benefit over an entire six-year life span, IDC puts the savings at 54% by year 6 with a buy-and-hold approach compared with two three-year terms with Dell Technology Rotation (see **Figure 4**).

FIGURE 4

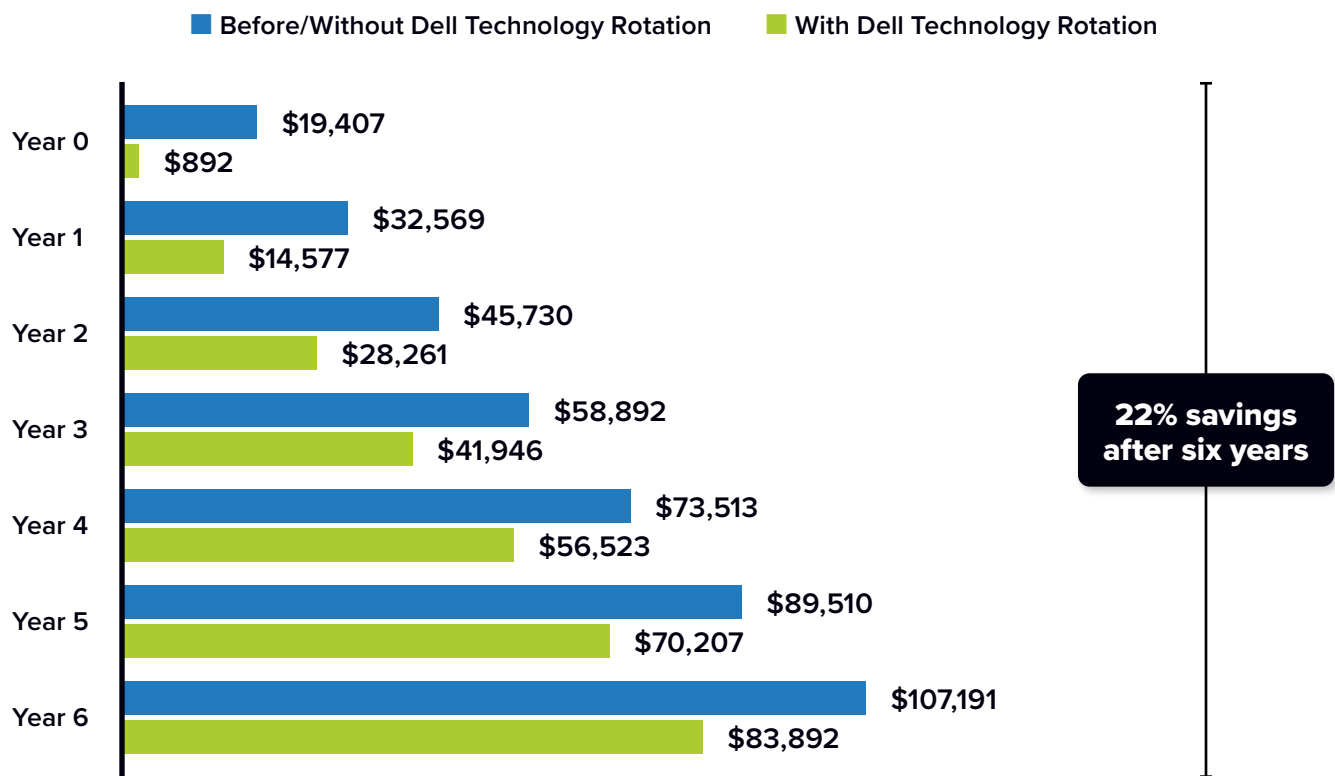## Year-by-Year Total Costs of Operations, Storage
($ per storage TB per year)
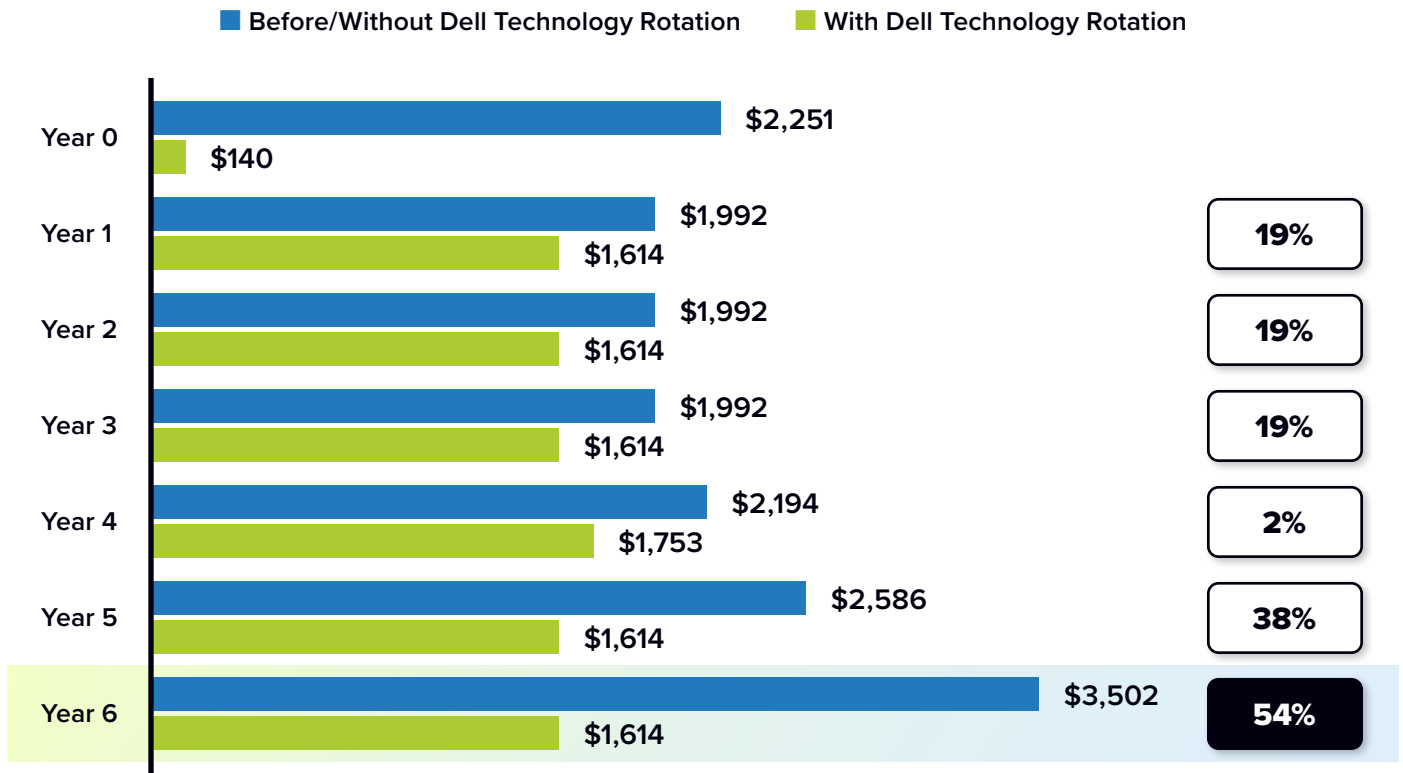
■ **Before/Without Dell Technology Rotation**   ■ **With Dell Technology Rotation**

	Before/Without	With	Savings
Year 0	$2,251	$140	
Year 1	$1,992	$1,614	19%
Year 2	$1,992	$1,614	19%
Year 3	$1,992	$1,614	19%
Year 4	$2,194	$1,753	2%
Year 5	$2,586	$1,614	38%
Year 6	$3,502	$1,614	54%

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see Figure 4 Supplemental Data in Appendix 3.

Organizations obtaining storage capacity through Dell Technology Rotation also benefit from not needing to make up-front capital investments and then ongoing staff and performance operational efficiencies. Over six years, IDC calculates that they will see an average cost of operations that is 40% lower with two three-year Dell Technology Rotation cycles, which equates to savings of $6,549 per storage TB (see **Figure 5**).

FIGURE 5

Cumulative Storage Cost of Operations, Two Three-Year Cycles Versus One Six-Year Buy-and-Hold Cycle

($ per storage TB)
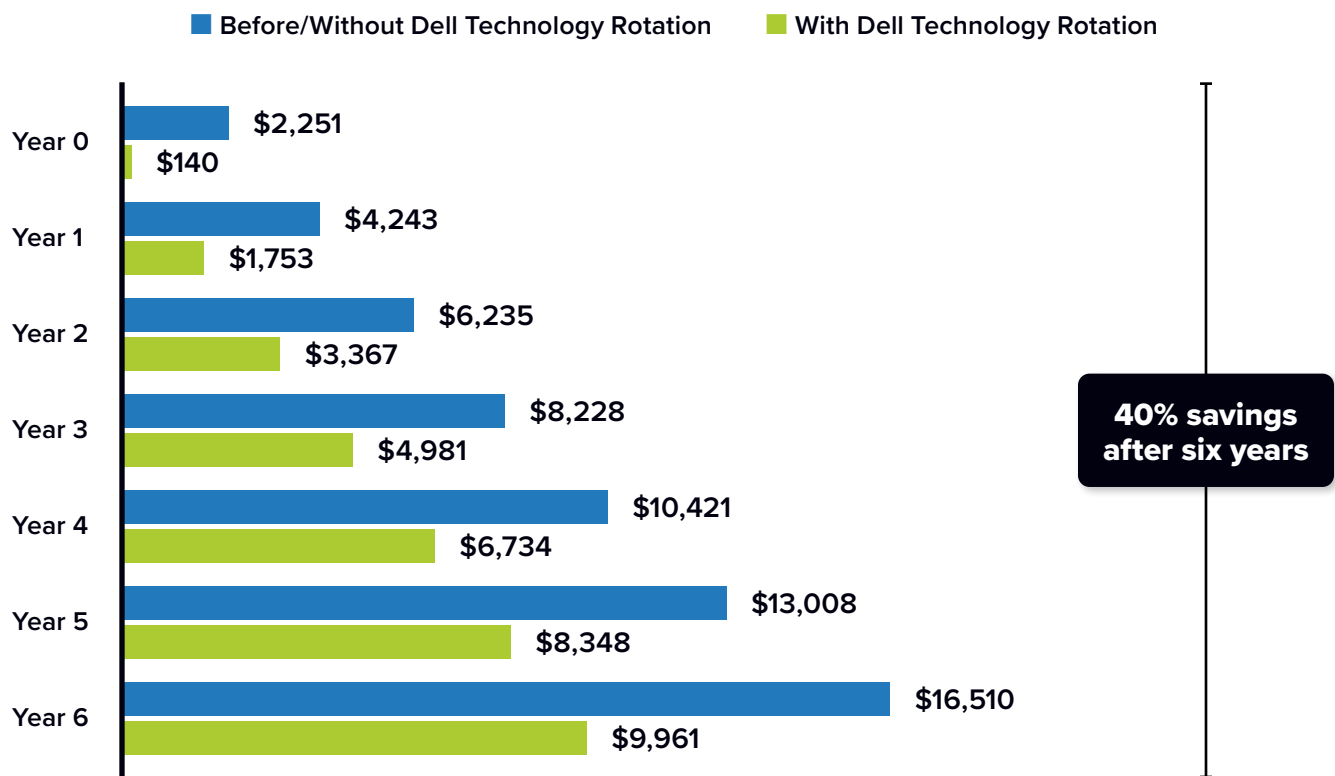
■ **Before/Without Dell Technology Rotation**   ■ **With Dell Technology Rotation**

	Before/Without	With
Year 0	$2,251	$140
Year 1	$4,243	$1,753
Year 2	$6,235	$3,367
Year 3	$8,228	$4,981
Year 4	$10,421	$6,734
Year 5	$13,008	$8,348
Year 6	$16,510	$9,961

40% savings after six years

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see **Figure 5 Supplemental Data** in Appendix 3.

IT Agility and Business Impact

Obtaining server and storage resources through Dell Technology Rotation provides significant benefits, such as greater IT agility for business activities. Participants highlighted the ability to quickly adjust storage capacity as needed, allowing them to migrate to faster or higher-capacity storage arrays to support growing data needs. Dell Technology Rotation also enables the rapid initiation of business-impacting projects, such as proof of concepts and pilot innovation projects, potentially generating new revenue streams. Adding capacity to meet robust workload and processing needs is made easier with a regular cadence that ensures better planning and agility in reallocating equipment types. Additionally, access to new hardware designed for cutting-edge applications, such as generative AI, allows organizations to execute these workloads more efficiently.

Participating customers provided examples of how they have increased their agility to benefit their business operations.

Ability to adjust storage as needed for business purposes:
"With Dell Technology Rotation, we can quickly migrate to faster or higher-capacity storage arrays. For example, as our business grows and our data needs increase, we can swiftly replace storage arrays to maintain performance, demonstrating our business agility."

Ability to move quickly on business-impacting projects:
"Dell Technology Rotation allows us to quickly initiate proof of concepts and pilot innovation projects. This could potentially enable us to generate additional revenue streams in the future."

Ease of adding capacity to meet business needs:
"Given our robust workload and processing needs, it's been easy to add additional capacity with Dell Technology Rotation. Our regular cadence allows for better planning and ensures we have the necessary capacity. We can also reallocate different equipment types with more agility."

Access to new servers for new technologies/workload types:
"We're able to run a lot more of what I would call leading-edge or bleeding-edge applications such as generative AI applications on newer hardware through Dell Technology Rotation because it is designed to basically execute those applications faster."

Sustainability and Circular Economy Benefits

Dell Technology Rotation offers significant sustainability benefits for study participants, particularly by promoting a circular economy. Participating customers noted that most hardware is reused rather than disposed of, with Dell recycling and remarketing equipment, which enhances sustainability. Further, because each new generation of servers is more

energy efficient, more frequent refreshes mean lower power requirements. Participating customers also noted that Dell actively supports these efforts by providing data on equipment refurbishment, reuse, and ewaste disposal. For companies with net-zero carbon objectives, the program helps track carbon footprint reductions through recycling efforts, earning credits that contribute to sustainability goals. This approach not only fosters environmental responsibility but aligns with broader corporate sustainability initiatives.

The following customer quotes demonstrate the impact of Dell Technology Rotation on sustainability efforts:

Energy efficiency fosters the reuse of hardware:
"From a sustainability perspective, Dell Technology Rotation reuses most hardware, recycling it for multiple customers instead of disposing of it. Additionally, each new generation of servers is more energy efficient."

Lower power consumption compared with the performance of newer servers:
"Newer equipment through Dell Technology Rotation uses about 15% less power over four years compared with our current equipment … Our carbon footprint is about 10% lower."

Operations and sustainability reporting:
"Dell is assisting us with reporting and accurately capturing data on equipment refurbishment, remarketing, reuse, and ewaste disposal."

Sustainability tracking:
"As a utilities company, we prioritize ethical sustainability and have significant objectives, including achieving net zero carbon. We're tracking our carbon footprint reduction with Dell Technology Rotation through recycling efforts."

Challenges/Opportunities

IDC's interviews with study participants illuminate the key challenges organizations face in making investment decisions for on-premises datacenter server and storage technologies, particularly in comparing capex with subscription-based approaches.

1. **Is it worth it to sweat out capex investments in infrastructure given the higher propensity for unplanned outages of unplanned infrastructure?**

    Study participants reported that servers experience an average of 62% more unplanned outages by year 6 of a life cycle compared with years 1–3, and storage resources an average of 96% more unplanned outages. Thus, holding onto infrastructure for longer means a risk of more staff time and costly business interruptions. Interviewed customers

noted that the Dell Technology Rotation subscription model aligned well with budget planning efforts and that the shift to the subscription-based model minimized the need for separate warranty and support arrangements, as they are built into subscriptions. This built-in warranty and support also reduced the amount of staff time spent managing these arrangements and ongoing costs associated with capex models.

2. **Do we have a solid, regular cadence for the planning for IT infrastructure that includes agility in reallocating equipment types?**

   Study participants acknowledged the challenges in undertaking timely infrastructure refreshes (before having Dell Technology Rotation), which made the program attractive for catching up on deferred refreshes. Looking ahead, it was clear they saw value in an ongoing approach that would facilitate more frequent technology refreshes where beneficial, such as for generative AI workloads covering model development and testing through production.

3. **Is our highest and best use of IT staff resources operating and managing IT infrastructure? How can we reduce the operational burden of managing infrastructure by offloading certain responsibilities and get more out of our IT budget?**

   Study participants required much less IT staff time to deploy, manage, support, and decommission their server and storage environments. This reduces operational costs and helps reallocate valuable staff time to supporting innovative IT efforts that directly support business activities. They also noticed the digital management platform interface that allowed the ability to track technology rotation, application assets, server status, rotation schedules, outage frequency, and current liquidity. IDC's research shows that as organizations continue to invest in AI infrastructure, additional expertise in technologies such as liquid cooling will be required. This represents another challenge that subscription-based offerings will be well suited to address.

4. **Are we satisfied with our current approach to ITAD, including sustainability?**

   In this study, customers noted that most hardware is reused rather than disposed of, with Dell recycling and remarketing equipment, which enhances sustainability. Further, because each new generation of servers is more energy efficient, more frequent refreshes mean lower power requirements. Study participants also noted much less IT staff time to decommission their server and storage environments. Because ITAD services are fundamentally important to addressing security and data sanitization concerns around datacenter equipment decommissioning, the fact that they are built into subscription-based services results in security, compliance, and cost benefits.

5. **Don't the costs of capex versus opex balance out over time?**

The customers IDC interviewed noted that cumulative costs related to subscription-based server and storage resources tended to converge over time with the costs of buying and holding the same infrastructure. However, the theme that emerged clearly was that the near-term value of avoiding large up-front costs and the ability to scale and adapt infrastructure needs still made Dell Technology Rotation an attractive option from a cost perspective.

The benefits of the subscription-based offering became especially apparent given the variety of other efficiencies and performance gains across a variety of metrics. Organizations have the opportunity to conserve capital, increase agility, and advance progress toward sustainability goals. In choosing subscription-based services, organizations can also make the relationship more strategic, driving further success.

Conclusion

This IDC study assesses the impact for organizations that take a subscription-based approach when acquiring server and storage infrastructures and services with Dell Technology Rotation. Organizations often consider their approach to obtaining infrastructure in the context of converging factors and pressure points — including the need to optimize costs — while maintaining high security, ensuring system performance for both day-to-day activities and the use of new technologies driven by data- and performance-hungry AI models, and carrying out sustainability and circular economy initiatives. IDC's study demonstrates that organizations obtaining server and storage resources with Dell Technology Rotation have achieved a better balance of these competing factors than through a more traditional buy-and-hold model.

Importantly, study participants reported benefiting from moving to a more flexible opex-driven procurement model, which optimizes the frequency of infrastructure refreshes. As a result, these companies not only avoid large up-front capital investment costs, which helps keep technical debt in line, but also have gained from the operational and business efficiencies associated with having newer infrastructure. Over six years, IDC found that study participants will reduce their total costs of acquiring server resources by an average of 22% and storage resources by 40% with two three-year cycles with Dell Technology Rotation as opposed to a single six-year buy-and-hold approach for the same server and storage resources. These efficiencies are largely a product of how Dell can effectively manage and keep these devices optimized throughout their life cycles. Additionally, study participants consistently reported that leveraging a subscription-based model with Dell Technology Rotation has improved their IT agility and scalability to support business activities and put them in a better position to progress on organizational sustainability objectives.

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 procuring server and storage capacity/resources through Dell Technology Rotation. To understand the impact of using Dell Technology Rotation, IDC gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of procuring server and storage capacity/resources through Dell Technology Rotation. In this study, the benefits included infrastructure cost savings, staff time savings and efficiencies, and the benefits of reducing risk associated with unplanned outages.

IDC uses several 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 this analysis, based on the geographic locations of the interviewed organizations, IDC has assumed 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).

Appendix 2: Additional Cost of Operations Figures

Figures 6 and 7 below provide additional information about the categories of cost per year for study participants with and without Dell Technology Rotation. These figures provide a more granular look at the comparative impact of taking a subscription-based approach to obtaining server and storage resources and demonstrate the impact of aging infrastructure on costs related to IT infrastructure management and support and the costs that unplanned outages exert on businesses.

Figure 6A (page 27) and **Figure 6B** (page 28) compare the costs for two three-year cycles for servers with Dell Technology Rotation with one six-year buy-and-hold cycle without Dell Technology Rotation. As noted, total six-year costs are on average 22% lower with Dell Technology Rotation.

FIGURE 6A

Breakdown of Cost of Operations for Servers: **Without** Dell Technology Rotation Program
($ per server)

■ Initial server cost   ■ Ongoing server cost   ■ Staff time cost, management/support
■ Unplanned downtime productivity loss   ■ Asset disposal time cost   ■ Salvage value

Total six-year cost: **$107,191** per server
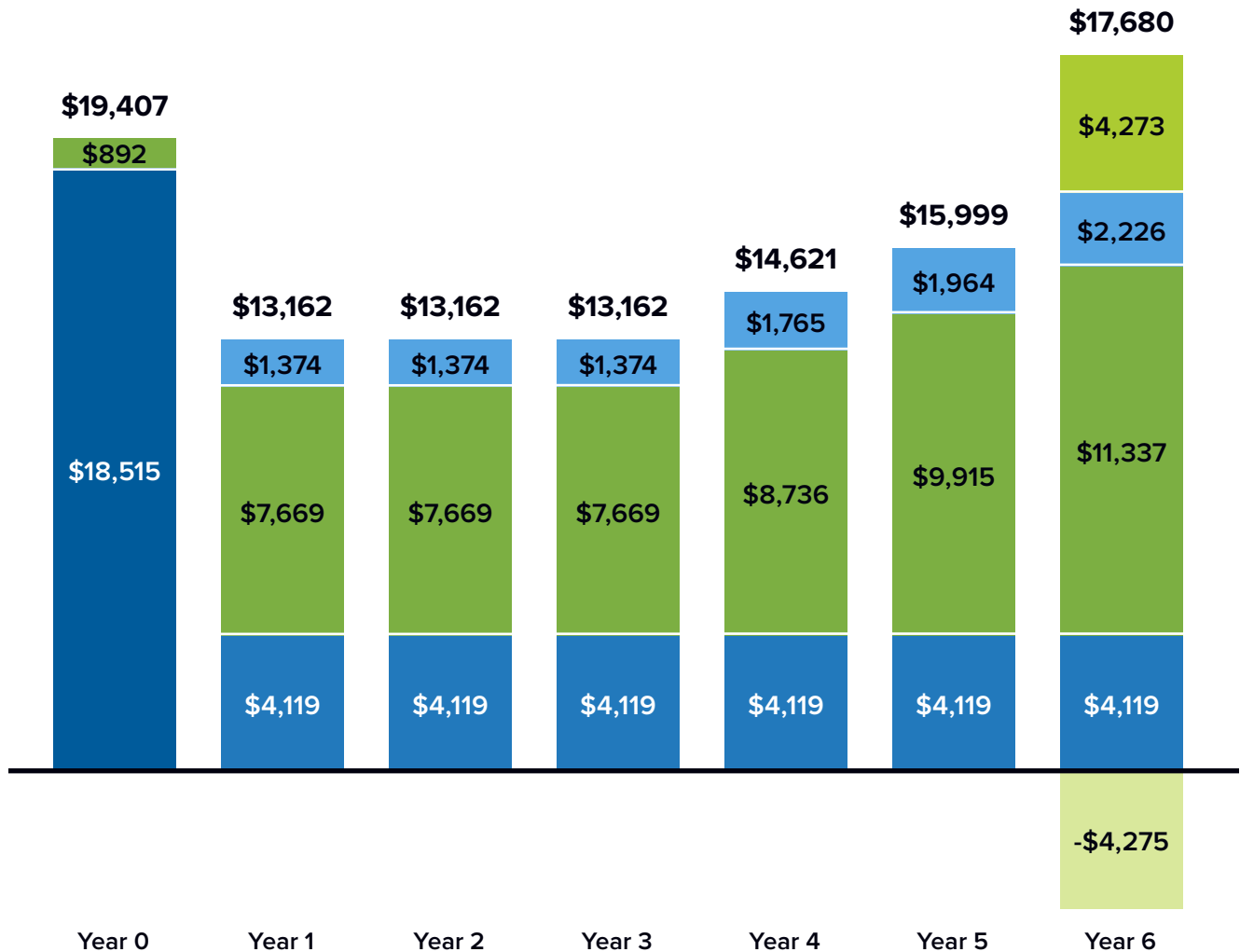
n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see Figure 6A Supplemental Data in Appendix 3.

FIGURE 6B

Breakdown of Cost of Operations for Servers: **With** Dell Technology Rotation Program
($ per server)

■ Initial server cost ■ Ongoing server cost ■ Staff time cost, management/support
■ Unplanned downtime productivity loss ■ Asset disposal time cost ■ Salvage value

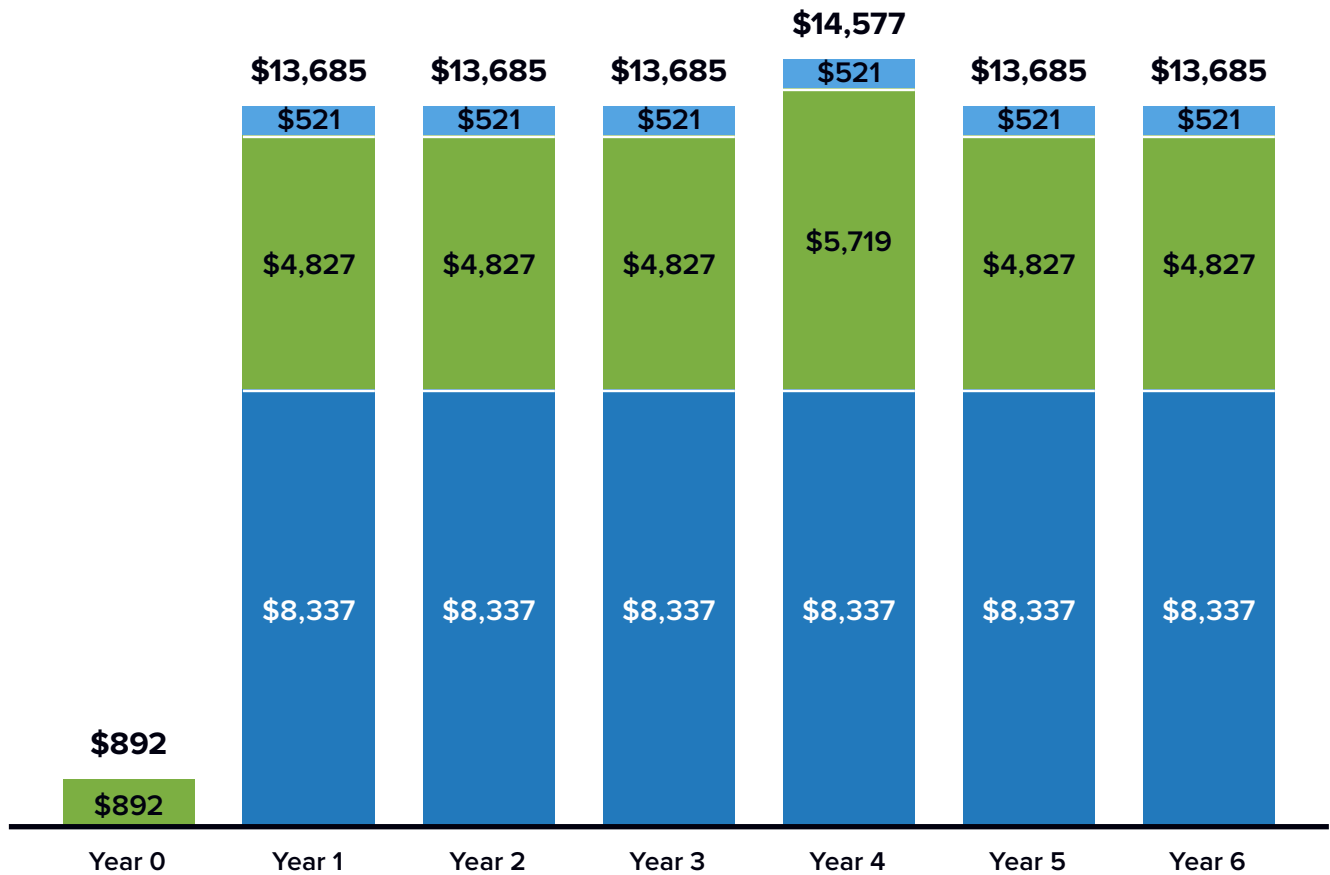**Total six-year cost: $83,892 per server**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see **Figure 6B Supplemental Data** in Appendix 3.

Figure 7A and Figure 7B (page 30) compares the costs for two three-year cycles for storage with Dell Technology Rotation with one six-year buy-and-hold cycle without Dell Technology Rotation. As noted, total six-year costs end up 40% lower on average with Dell Technology Rotation.

FIGURE 7A

Breakdown of Cost of Operations for Storage: **Without** Dell Technology Rotation Program
($ per server)

Legend:
- ■ Initial server cost
- ■ Ongoing server cost
- ■ Staff time cost, management/support
- ■ Unplanned downtime productivity loss
- ■ Asset disposal time cost
- ■ Salvage value

Total six-year cost: $16,510 per storage TB

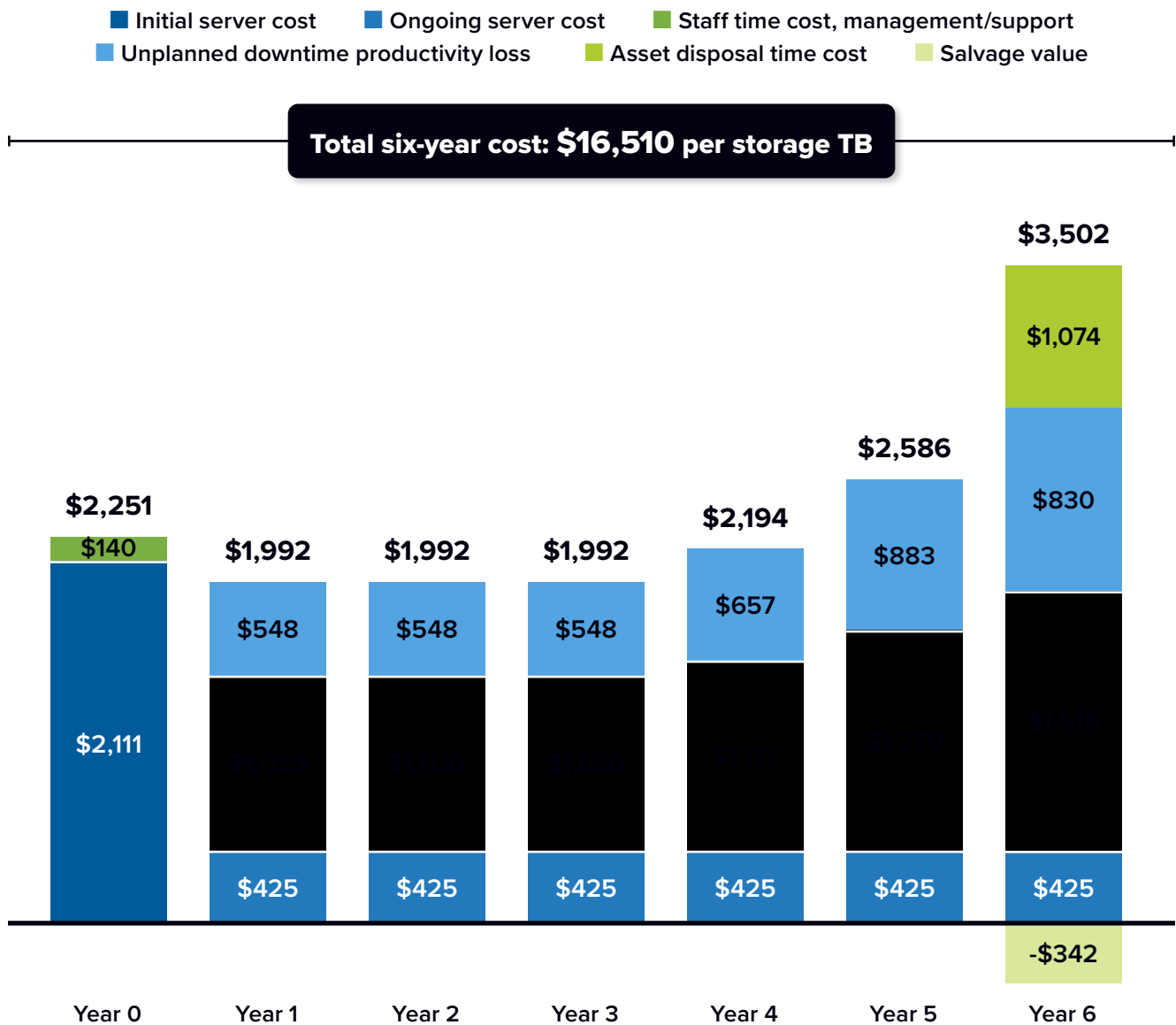|	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Total	$2,251	$1,992	$1,992	$1,992	$2,194	$2,586	$3,502
Salvage value / Asset disposal	$140						$1,074
Unplanned downtime		$548	$548	$548	$657	$883	$830
Initial/Ongoing server cost	$2,111						
Staff time		$425	$425	$425	$425	$425	$425
Salvage value (negative)							-$342

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see Figure 7A Supplemental Data in Appendix 3.

FIGURE 7B

Breakdown of Cost of Operations for Storage: **With** Dell Technology Rotation Program
($ per server)

■ Initial server cost ■ Ongoing server cost ■ Staff time cost, management/support
■ Unplanned downtime productivity loss ■ Asset disposal time cost ■ Salvage value

Total six-year cost: **$9,961** per server

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Total	$140	$1,614	$1,614	$1,614	$1,753	$1,614	$1,614
Unplanned downtime		$120	$120	$120	$120	$120	$120
Staff time cost		$567	$567	$567	$707	$567	$567
Ongoing server cost		$927	$927	$927	$927	$927	$927
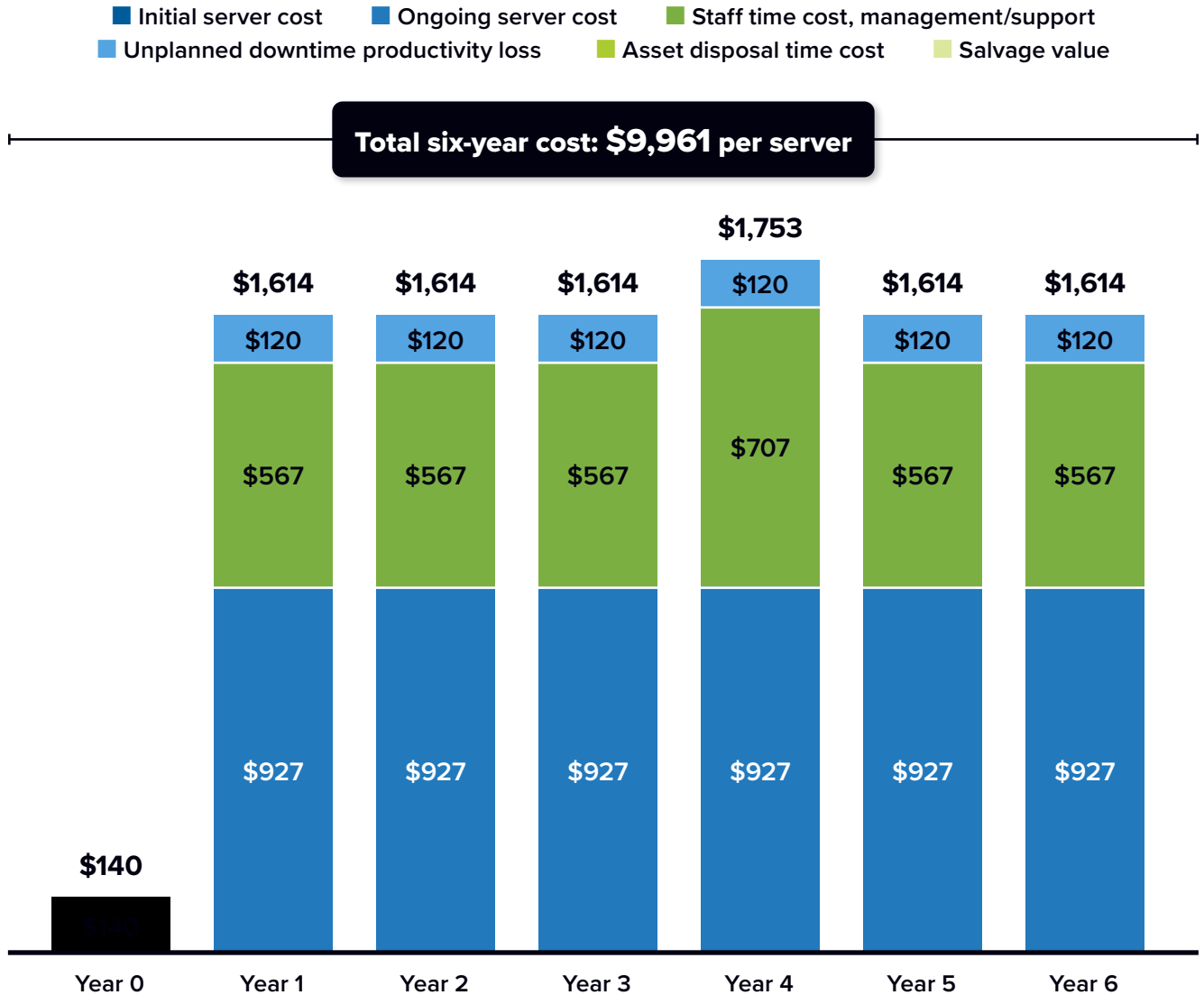
n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

For an accessible version of the data in this figure, see **Figure 7B Supplemental Data** in Appendix 3.

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

Appendix 2: Supplemental Data

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

FIGURE 1 SUPPLEMENTAL DATA

Impact on Infrastructure Refresh Cycles

	Servers	Storage
Before/Without Dell Technology Rotation	5.1	4.3
With Dell Technology Rotation	3.3	2.5
Difference	**36% shorter**	**43% shorter**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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FIGURE 2 SUPPLEMENTAL DATA

Year-by-Year Total Costs of Operations, Server

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Before/Without Dell Technology Rotation	$19,407	$13,162	$13,162	$13,162	$14,621	$15,997	$17,680
With Dell Technology Rotation	$892	$13,685	$13,685	$13,685	$14,577	$13,685	$13,685
Difference	**n/a**	**-4%**	**-4%**	**-4%**	**0%**	**14%**	**23%**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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Appendix 2: Supplemental Data (continued)

FIGURE 3 SUPPLEMENTAL DATA

Cumulative Server Cost of Operations, Two Three-Year Cycles Versus One Six-Year Buy and Hold Cycle

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Before/Without Dell Technology Rotation	$19,407	$32,569	$45,730	$58,892	$73,513	$89,510	$107,191
With Dell Technology Rotation	$892	$14,577	$28,261	$41,946	$56,523	$70,207	$83,892

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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FIGURE 4 SUPPLEMENTAL DATA

Year-by-Year Total Costs of Operations, Storage

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Before/Without Dell Technology Rotation	$2,251	$4,243	$6,235	$8,228	$10,421	$13,008	$16,510
With Dell Technology Rotation	$140	$1,753	$3,367	$4,981	$6,734	$8,348	$9,961
Difference	n/a	19%	19%	19%	0%	38%	54%

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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Appendix 2: Supplemental Data (continued)

FIGURE 5 SUPPLEMENTAL DATA

Cumulative Storage Cost of Operations, Two Three-Year Cycles Versus One Six-Year Buy and Hold Cycle

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Before/Without Dell Technology Rotation	$2,251	$4,243	$6,235	$8,228	$10,421	$13,008	$16,510
With Dell Technology Rotation	$140	$1,753	$3,367	$4,981	$6,734	$8,348	$9,961

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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FIGURE 6A SUPPLEMENTAL DATA

Breakdown of Cost of Operations for Servers: **Without** Dell Technology Rotation Program

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Initial server cost	$18,515	n/a	n/a	n/a	n/a	n/a	n/a
Ongoing server cost	n/a	$4,119	$4,119	$4,119	$4,119	$4,119	$4,119
Staff time cost, management/support	$892	$7,669	$7,669	$7,669	$8,736	$9,915	$11,337
Asset disposal time cost	n/a	n/a	n/a	n/a	n/a	n/a	$4,273
Salvage value	n/a	n/a	n/a	n/a	n/a	n/a	-$4,275
Unplanned downtime productivity loss	n/a	$1,374	$1,374	$1,374	$1,765	$1,964	$2,226
Total	**$19,407**	**$13,162**	**$13,162**	**$13,162**	**$14,621**	**$15,999**	**$17,680**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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Appendix 2: Supplemental Data (continued)

FIGURE 6B SUPPLEMENTAL DATA

Breakdown of Cost of Operations for Servers: **With** Dell Technology Rotation Program

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Initial server cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ongoing server cost	n/a	$8,337	$8,337	$8,337	$8,337	$8,337	$8,337
Staff time cost, management/support	$892	$4,827	$4,827	$4,827	$5,719	$4,827	$4,827
Asset disposal time cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Salvage value	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unplanned downtime productivity loss	n/a	$521	$521	$521	$521	$521	$521
Total	**$892**	**$13,685**	**$13,685**	**$13,685**	**$14,477**	**$13,685**	**$13,685**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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Appendix 2: Supplemental Data (continued)

FIGURE 7A SUPPLEMENTAL DATA

Breakdown of Cost of Operations for Storage: **Without** Dell Technology Rotation Program

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Initial server cost	$2,111	n/a	n/a	n/a	n/a	n/a	n/a
Ongoing server cost	n/a	$425	$425	$425	$425	$425	$425
Staff time cost, management/support	$140	$1,020	$1,020	$1,020	$1,112	$1,279	$1,515
Asset disposal time cost	n/a	n/a	n/a	n/a	n/a	n/a	$830
Salvage value	n/a	n/a	n/a	n/a	n/a	n/a	-$342
Unplanned downtime productivity loss	n/a	$548	$548	$548	$657	$883	$1,074
Total	**$2,251**	**$1,992**	**$1,992**	**$1,992**	**$2,194**	**$2,586**	**$3,502**

n = 6; Source: IDC Business Value In-Depth Interviews, August 2024

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Appendix 2: Supplemental Data (continued)

FIGURE 7B SUPPLEMENTAL DATA

Breakdown of Cost of Operations for Storage: **With** Dell Technology Rotation Program

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Initial server cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ongoing server cost	n/a	$927	$927	$927	$927	$927	$927
Staff time cost, management/support	$140	$567	$567	$567	$707	$567	$567
Asset disposal time cost	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Salvage value	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unplanned downtime productivity loss	n/a	$120	$120	$120	$120	$120	$120
Total	**$140**	**$1,614**	**$1,614**	**$1,614**	**$1,753**	**$1,614**	**$1,614**

n = 12; Source: IDC Business Value In-Depth Interviews, August 2024

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About the IDC Analysts

Rob Brothers
Program Vice President, Datacenter and Support Services, IDC

Rob is a program vice president for IDC's Datacenter and Support Services program, as well as a regular contributor to the Infrastructure Services and Financial Strategies programs. He focuses on worldwide support and deployment services for hardware and software and provides expert insight and intelligence on how enterprises should be addressing key areas for datacenter transformation and edge deployment and management strategies. IT hardware services covered include IoT devices, converged infrastructures, storage, servers, client devices, networking equipment, and peripherals. Software covered includes software-defined infrastructures, cloud support, operating systems, databases, applications, and system software. He also has expertise in the latest consumption models, which include as-a-service models such as device as a service.

More about Rob Brothers

Lara Greden
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Lara Greden leads IDC's worldwide research on IT infrastructure as-a-Service (aaS) solutions, flexible consumption models, leasing markets, and circular economy sustainability strategies. Her analysis provides insight from both a supply-side and a buyers point of view, with core research coverage including circular economy and sustainability for IT assets and the evolution of procurement strategies for better operating models from purchasing, leasing, and financing to as-a-service models, also known as flexible consumption. Based on her expertise on procurement strategies, IT asset lifecycles, and sustainability, Lara's research helps vendors and buyers understand the top drivers of circular economy market strategies and flexible consumption models, including the impact of these new buying behaviors on long-term IT asset values and forecasts.

More about Lara Greden

Matthew Marden

Research Vice President, Business Value Strategy Practice, IDC

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 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.

More about Matthew Marden

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