The Business Value of Pure Storage FlashStack

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BUSINESS VALUE HIGHLIGHTS

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$583,456
average annual benefits per 100 flash TBs

343%
three-year return on investment

9-month
payback on investment

60%
reduced three-year total cost of ownership (TCO) in comparison to an equivalent environment

89%
more efficient help desk

54%
more efficient IT management teams

70%
less time required to deploy additional storage

60%
less time required to deploy additional VMs/compute

25%
more time spent innovating

38%
less time required to run analytical queries

49%
less application latency

35%
less time required to run batch processes

16%
more productive developers

83%
reduction in unplanned downtime

21%
improvement in internal SLAs

Executive Summary

Organizations in the digital business era are facing overwhelming pressures on their IT environments and teams. They are tasked with supporting competitive differentiation through application modernization, increasing operational efficiency, and keeping costs down while leveraging existing legacy infrastructure. They need to be more productive while managing more applications along with the requisite compute, storage, and networking capacity, all with fewer resources. Legacy systems create silos, increase maintenance costs, and lack the scalability required for modern applications such as AI, as well as other data-intensive workloads that are driving interest, investment, and value for enterprises.

Modern software-defined infrastructure platforms simplify the procurement, deployment, and utilization of IT infrastructure by providing validated designs intended

to ensure compatibility, performance, and management. By combining Cisco compute and networking resources with Pure Storage's high-performance all-flash storage, FlashStack aims to lower the TCO by simplifying and streamlining the infrastructure ownership life cycle. At the same time, these technologies speed up the deployment of infrastructure and applications, consolidate workloads, and drive efficiencies in datacenter operations and among the people who manage and the developers who depend on that infrastructure.

From a financial perspective, modernization initiatives can offer a direct impact on ROI, not only by driving innovation and efficiency but by reducing downtime and improving operational SLAs. As businesses navigate economic uncertainty, prioritizing efficiency, flexibility, and automation-first strategies will be essential to maintaining competitive advantage and ensuring long-term growth.

IDC conducted research that explored the value and benefits for organizations using FlashStack to support their networking, storage, and compute operations.

Based on an extensive data set and employing a specialized Business Value methodology, IDC calculated that these customers will achieve benefits worth an annual average of $4.8 million per organization ($583,500 per 100 flash TBs) and a three-year ROI of 343% by:

- Improving overall IT infrastructure performance by fully integrating computing, networking, and storage resources, streamlining datacenter operations, and reducing the time needed to deploy key IT resources
- Fostering a more productive development process to optimize the delivery of high-quality applications to internal users and customers
- Boosting the performance of a variety of IT teams, including those dedicated to infrastructure, storage, help desk, and security operations
- Better managing business risk by improving security and compliance, minimizing the occurrence of unplanned downtime to improve end-user productivity, and quickly restoring service when events occur
- Improving business results through the combined synergies of the above improvements and better cross-organization IT performance

Situation Overview

IT organizations in companies of all sizes in every market face the need to shift from simply keeping the lights on in the datacenter to providing genuine business value in a rapidly changing data-driven world. Unfortunately, the sheer number of applications and critical workloads has led many to invest in best-of-breed solutions that add complexity, create data and innovation silos, increase management inefficiencies and overheads, and lower employee productivity. Adding to this complexity is the need to support legacy applications; newer, cloud-native virtual and containerized applications; and deployments on premises, at the edge, and in hybrid multicloud deployments.

IDC's *EI Pulse Survey* (October 2024) indicates that 70% of organizations have embraced a hybrid cloud or multicloud philosophy, further increasing complexity for application and data observability and management. In that same survey, only 18% of respondents stated that they have successfully implemented a unified management system across the entirety of their hybrid environments, but another 80% expressed a desire to implement unified management and are either exploring options or testing or have tried and failed to do so.

The growth in capacity requirements for typical enterprises has increased exponentially for decades, but the advent of data-intensive workloads, such as AI, GenAI, high-performance computing, and ML, has increased the rate of growth and the performance that data storage infrastructure requires. In IDC's *U.S. Data Utilization Survey* (2025), 42% of respondents indicated that GenAI alone would significantly increase their capacity requirements over the next two years, while one in five stated that it had already increased those requirements by over 50%.

Scale-out, software-defined storage can help address rapid (and sometimes irregular) growth, while all-flash arrays (AFAs) can provide greater performance in the datacenter, not just for these demanding applications, but also to serve a broader spectrum of workload characteristics, allowing for greater consolidation of workloads onto common infrastructure. In 2024, all-flash arrays represented about one-third of all capacity shipped in external storage systems, as well as half the revenue of that market. IDC continues to see increased interest in quad-level cell flash that can provide high performance at greater data densities than previous flash technologies or spinning discs. As the cost per TB continues to decline, it becomes even more attractive for a wider variety of workload consolidation, as well as read-heavy, high-performance applications.

FlashStack Overview

Pure Storage has developed all-flash storage solutions for over 15 years, carving out a leadership niche in a market that spinning hard disk drives (HDDs) initially dominated. In 2011, the company started shipping its first AFAs and saw rapid growth in the enterprise storage systems external array market segment.

In 2014, Pure Storage and Cisco announced a modern infrastructure offering called FlashStack, combining Cisco's UCS servers and Nexus switching Pure Storage's FlashArray NVMe AFAs. Over a decade of continued innovation, hardware upgrades and refreshes, and software integrations brings us to today, with availability across a wide range of validated designs for workloads, from database deployments to container and virtualization platforms to AI training and inferencing. FlashStack now incorporates Cisco's intelligent Intersight management platform as well as more modern FlashArray and FlashBlade storage arrays, from entry-level to high-end enterprise models.

Full integration of the FlashStack solution does not demand lock-step scaling of compute, networking, and storage resources. Each component is discrete and can scale independently, increasing provisioning efficiency and allowing for appropriate resource tuning for unexpected application demands. Cisco's Intersight and AppDynamics provide proactive monitoring and management for infrastructure and applications, respectively, while Cisco XDR integration helps make FlashStack users more resistant to cyberattacks.

The FlashArray and FlashBlade families allow for petabyte-scale storage deployment and the performance needed to support even the most demanding workloads, such as AI. This scale and performance are intended for the most demanding applications, from mission-critical databases to AI training. Nondisruptive scaling and upgrades to system components provide "6 9s" or 99.9999% availability.

Pure Storage specifically designed its operating system, Purity, to derive maximum performance from solid state media, especially Pure's DirectFlash modules (DFMs). Eliminating legacy HDD capabilities and the translation layer that commercial solid state drives (SSDs) require provides better performance, efficiency, reliability, and power usage. Purity's feature set includes inline data reduction via compression and deduplication, thin provisioning, encryption, host multipathing, and quality of service capabilities. Snapshots, synchronous and asynchronous data replication, ActiveCluster, and air gap protection increase data resilience for high-performance structured and unstructured data environments, which contribute to the appeal of this solution for a variety of workloads, including consolidating diverse workloads across enterprise environments.

DirectFlash modules provide additional advantages to users beyond simplicity and reliability — they claim to deliver two to three times the storage density of other solid state solutions while consuming significantly less power per capacity unit. While the DFM unit is

larger than an off-the-shelf SSD, the maximum capacity of DFMs shipping in early 2025 is 150TB, with an expectation to double that to 300TB per module by the end of the year. Density increases of this type can significantly reduce the datacenter footprint while increasing energy efficiency — energy usage does not scale linearly with DFM capacity, making larger units more energy efficient.

Evergreen subscriptions are Pure Storage's way of providing a cloud-like OPEX experience to customers, along with a series of guarantees and CX initiatives. From a 30-day money-back guarantee to SLAs around data reduction, performance, uptime, data loss, downtime, fixed maintenance pricing, capacity consolidation, energy efficiency, cyber-recovery, and resilience SLAs, Pure Storage's approach to storage ownership and CX has led to high satisfaction levels among its customer base. For the last seven years, it has maintained a net promoter score of over 80, which is in the top 1% of Medallia's B2B scoring.

The Business Value of FlashStack

Study Firmographics

IDC conducted research that explored the value and benefits for organizations using FlashStack to support their networking, storage, and compute operations. The project included interviews with seven organizations that use FlashStack and have experience with and/or knowledge about the benefits and costs of using the platform. During the interviews, IDC asked the companies a variety of quantitative and qualitative questions about the impact of the offerings on their IT operations, core businesses, and costs.

Table 1 (next page) presents the study's firmographics. The organizations that IDC interviewed had an average base of 13,393 employees and average annual revenues of $2.8 billion. On average, these companies had 1,208 IT professionals supporting 369 business applications serving 7,891 employees. In terms of location, six companies were based in the United States and one in Canada. From a vertical market standpoint, there was representation from companies in the government, insurance, healthcare, higher education, retail, software, and utilities sectors. **Table 1** (next page) also presents additional metrics.

TABLE 1

Firmographics of Interviewed Organizations

Firmographics	Average	Median	Min.	Max.
Number of Employees	13,393	2,300	700	75,000
Number of IT staff	1,208	200	25	4,000
Number of employees using IT services	7,891	2,300	686	37,500
Number of business applications	369	250	12	1,500
Company revenue	$2.8B	$777.0M	$80.0M	$12.0B
Countries	United States (6), Canada			
Industries	Government, Insurance, Healthcare, Higher Education, Retail, Software, Utilities			

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Choice and Use of FlashStack

The organizations that IDC interviewed described the criteria involved in their selection of FlashStack to support their networking, storage, and compute operations; advance digital transformation; and drive IT innovation. Frontline managers and IT professionals who had direct experience with FlashStack's value proposition offered detailed comments about their purchase decisions. Study participants noted that FlashStack was easy to deploy and manage while offering excellent performance, scalability, and flexibility advantages that were consistent with their in-house IT requirements. They also highlighted how the platform was able to balance and merge cloud and on-premises environments to provide a maintainable ecosystem that could easily scale.

Study participants elaborated on these and other selection criteria:

Decreased complexity (Software):

"My company only has a team of 23 IT staff members that manage the entire IT environment. We chose FlashStack because it was simple to deploy and manage."

Scalability, flexibility, performance (Retail):

"My organization chose FlashStack for its high performance, scalability, flexibility, and its ability to meet our overall IT requirements."

Environment scalability (Insurance):

"My organization has legacy on-premises infrastructure and a big presence in the cloud. FlashStack was appealing because we needed a solution that would balance and merge both of our environments so that we could have a maintainable ecosystem that could grow. We really liked the scalability, reliability, performance, and modernization that FlashStack could bring to our environment."

Replacement of an aging solution (Healthcare):

"My organization selected FlashStack because we faced challenges with our aging solution — we really weren't happy with it."

Performance challenges (Government):

"The primary IT and business challenge that made my organization select FlashStack was the lackluster performance we experienced across our existing legacy technology."

Table 2 provides a quantitative view of FlashStack usage across all companies at the time of the interviews. On average, there were 1,254 virtual servers and 791 x86 servers supporting 294 business applications. There was an average of 6,382 internal users of the business applications running on FlashStack. In addition, the FlashStack platform supported 81% of the total annual revenue, indicating broad usage. **Table 2** also presents additional metrics.

TABLE 2

Organizational Usage of FlashStack

FlashStack Environment	Average	Median
Sites	5	3
x86 servers	791	100
Virtual servers	1,254	700
Total TBs (flash and other)	856	250
Total SSD/flash TBs	827	250
Containers	35	13
Business applications	294	15

Table 2 continued ➤

Table 2 continued

FlashStack Environment	Average	Median
Internal users of business applications running on FlashStack	6,382	1,250
Revenue supported	81%	95%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Business Value and Quantified Benefits

IDC's *Business Value Research* (January 2025) evaluated and quantified the benefits for companies with experience in adopting FlashStack to support their networking, storage, and compute operations. IDC applied the interview data from FlashStack customers to this model to arrive at an array of quantified post-deployment benefits. Using this methodology, IDC found that these customers realized significant value and were able to maximize their ROI in the platform.

The data that IDC gathered from the study participants confirmed that the FlashStack platform added value by improving overall IT infrastructure performance. Organizations accomplished this in part by fully integrating computing, networking, and storage resources; streamlining datacenter operations; and reducing the time needed to deploy key IT resources. In addition, FlashStack enhanced IT resource delivery by boosting the performance of a variety of IT teams, including those dedicated to infrastructure, storage, help desk, and security operations. It also served to foster a more robust and productive application development process to optimize the delivery of high-quality applications to internal users and customers. IDC also found that FlashStack better managed business risk by improving security and compliance, minimizing the occurrence of unplanned downtime to improve end-user productivity, and quickly restoring service when events occurred. Finally, and importantly, the platform improved business results through the combined synergies of these improvements and better cross-organization IT performance.

Study participants offered these comments on the most significant benefits of FlashStack:

Greater staff and environment efficiency (Higher Education):
"FlashStack has reduced FTE time committed to managing and maintaining our environment by a large percentage. It has very high performance and reliability. We have gained a lot of efficiency in our storage and have reduced data needs as a result."

High performance (Government):
"The most significant benefit of FlashStack is the absolutely jaw-dropping performance."

Budgeting accuracy (Retail):
"A large benefit of FlashStack is that we use its Evergreen route for our primary array. FlashStack Evergreen makes it easier to budget. It gives us the flexibility to scale in smaller increments."

Exceptional support (Healthcare):
"The most significant benefits of FlashStack for my organization are the speed and reliability of the arrays. It was also super easy to implement. Additionally, the support is very good. They are an amazing bunch. We love working with them."

Increased performance and scalability (Insurance):
"A big benefit of FlashStack is that it has improved the reliability, availability, and scalability of our environment."

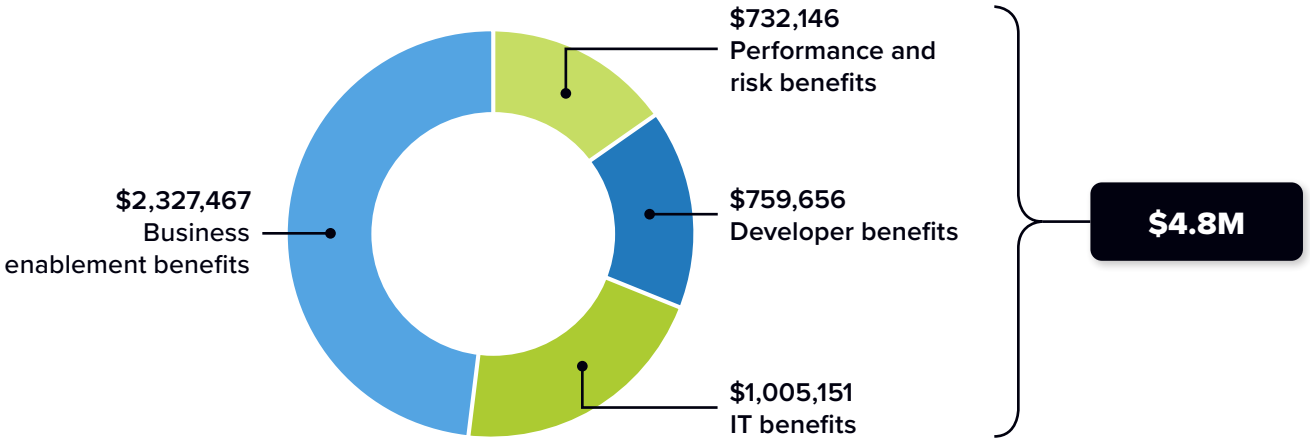
Figure 1 (next page) presents IDC's calculations of cumulative customer benefits after the adoption of FlashStack. As shown, the average annual benefits were $4.8 million per organization.

Figure 1 breaks down these benefits further in terms of staff efficiency gains in the following areas:

- **Business enablement benefits:**
  Improving IT performance meant that companies could improve business operations and results.
- **IT benefits:**
  FlashStack improved overall IT infrastructure and staff performance by fully integrating computing, networking, and storage resources and streamlining datacenter operations.
- **Developer benefits:**
  FlashStack helped application developers roll out applications faster and more efficiently.
- **Performance and risk benefits:**
  FlashStack improved system reliability and lessened the impacts of unplanned downtime.

FIGURE 1

Average Annual Benefits Per Organization and 100 Flash TBs



n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

IT Staff and Cost Benefits of FlashStack

IDC used its Business Value methodology to evaluate a series of specific benefits related to cost and IT staff performance from the adoption of FlashStack. The platform's design allows it to cost-effectively provide an intelligent infrastructure combining computing, networking, and storage components to simplify datacenter operations and enhance performance. Interviews with study participants confirmed the core benefits of FlashStack's offerings. In their detailed comments to IDC, interviewed companies noted that FlashStack's ability to provide immutable snapshots for ransomware and malware protection was an important aspect of their choice. They also mentioned the platform's ability to provide better security and reduce help desk volume.

Respondents also appreciated FlashStack's ability to speed up data refresh and cloning processes. Study participants elaborated on these and other benefits:

Immutable snapshots and staff efficiency (Healthcare):

"FlashStack saves time and effort managing our arrays in comparison to our previous environment. Additionally, FlashStack has provided peace of mind regarding our security. The immutable snapshots for ransomware and malware protection are very important to us."

Streamlined, automated processes (Government):

"My organization has been able to streamline our IT processes with FlashStack so that not only are we running on a more performant system, but with all of the time we've gotten

back, we've been able to trim down our processes so that we can run with more agility. For example, the last FlashStack we've deployed, because we built such a streamlined process for it, we've automated about 98% of the deployment process and we can turn much quicker."

Quicker cloning processes (Retail):
"Our IT team has used FlashStack to work on data refresh and cloning processes. They used to take a long time to churn through that data — we would have to wait for hours. With FlashStack and what we are doing on the storage side, it now takes seconds."

Greater infrastructure control (Insurance):
"FlashStack has given the IT team more control over our infrastructure resources. This has made them more prompt in their response, delivery, and operations."

Reduced help desk volume (Higher Education):
"FlashStack has reduced our volume of help desk requirements because the system responds faster, and we've been able to evolve the system to match customer needs."

Security snapshots (Government):
"The snapshots provided by Purse Storage and FlashStack have impacted our security efforts because they have improved our agility in providing protection to our data."

IDC applied its Business Value methodology to validate this anecdotal reporting by quantifying FlashStack benefits, beginning with server performance. Interviewed companies reported that the higher server density and virtualization support that FlashStack provides reduced their server requirements. **Table 3** quantifies these benefits, showing a 4% reduction in the number of servers required to support IT infrastructure and compute needs after FlashStack adoption. This improvement led to an annual average saving of $99,048 in total server expenditures.

TABLE 3
Server Requirement Impact

Requirement Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Number of servers required	820.9	**791.1**	29.7	4%

Table 3 continued ▶

Table 3 continued

Requirement Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Total server cost	**$2,185,036**	**$1,887,893**	**$297,143**	**14%**
Total annualized cost (3 years)	**$728,345**	**$629,298**	**$99,048**	**14%**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

IDC then looked at post-adoption impacts for storage resources. Interviewed organizations found that FlashStack provided efficient storage utilization, the ability to scale storage with growth, and higher overall performance. This ultimately reduced overall TB requirements. Compared with previous environments, they needed 26% fewer TBs of storage capacity with FlashStack, leading to a total annualized three-year cost of $40,900 (**Table 4**).

TABLE 4

TB Requirement Impact

Requirement Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Number of TBs required	1,162.5	**855.7**	306.8	26%
Total TB cost	**$464,986**	**$342,286**	**$122,700**	**26%**
Total annualized cost (3 years)	**$154,995**	**$114,095**	**$40,900**	**26%**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

IDC then looked at sustainability benefits, which involve the management of IT resources in a way that minimizes environmental impacts and includes factors such as power, cooling, and facilities costs. Interviewed organizations appreciated that FlashStack enabled them to meet sustainability goals by reducing these needs and requirements. As shown in **Table 5** (next page), companies experienced a 25% reduction in sustainability-related costs, ultimately leading to an average annual saving of $236,384.

TABLE 5

Sustainability Impact

Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Power and cooling costs	$593,228	**$467,803**	$125,425	21%
Facility costs	$348,302	**$237,343**	$110,959	32%
Total annual sustainability-related IT costs	**$941,530**	**$705,146**	**$236,384**	**25%**

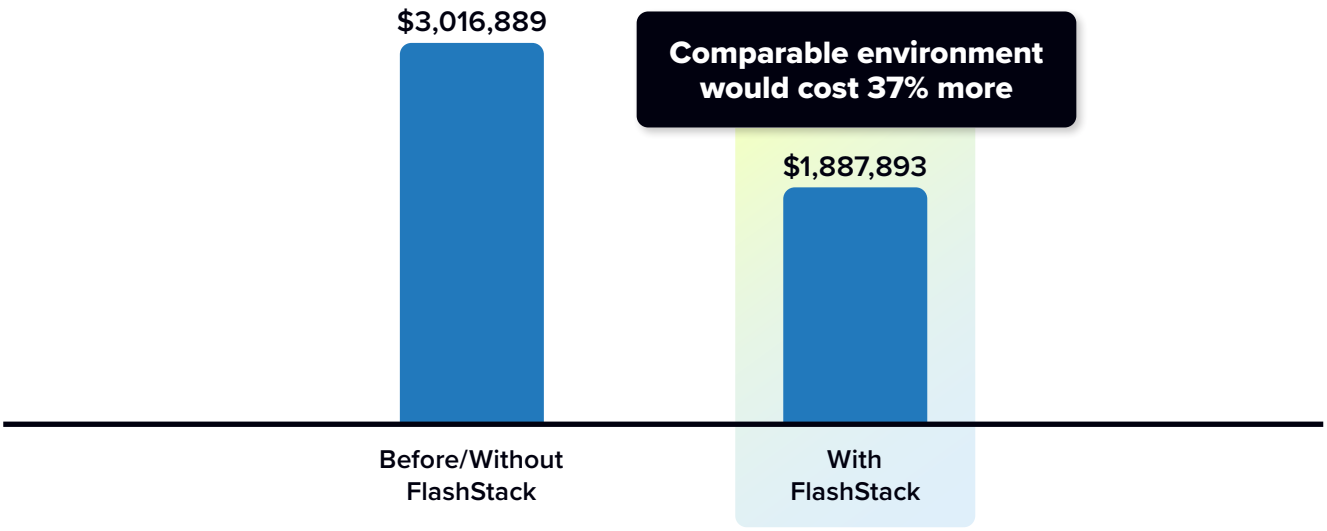
n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

IDC quantified the total infrastructure costs, including servers, storage, and sustainability outlays. Summing up these cost savings, IDC calculated the combined projected IT infrastructure costs and determined that a comparable environment would cost 37% more over a three-year period compared to previous or alternative converged infrastructure solutions (**Figure 2**).

FIGURE 2

Total Three-Year IT Infrastructure Costs

($)



n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

IDC used its Business Value methodology to focus on adoption impacts with respect to various IT teams engaged in managing one or more aspects of IT resources. Interviewed companies reported that FlashStack enabled IT infrastructure management teams to work with greater agility by enabling quicker deployments, streamlining and automating workflows, and creating more scalable environments. As a result, **these teams spent 25% more time innovating or supporting business goals.**

Table 6 provides additional calculations. After adoption, the companies interviewed saw a 54% efficiency boost for their infrastructure teams. This meant that these teams needed 3.8 fewer FTEs with FlashStack to manage the equivalent environment of their previous approach, thereby enabling staff to better scale with organizational growth. This 54% improvement resulted in an annual staff-related business value of $377,745 for each organization.

TABLE 5

Infrastructure Team — Administration and Management Efficiency Gain

Efficiency Gain	Before/Without FlashStack	With FlashStack	Difference	Benefit
Total FTE count	7.0	**3.2**	3.8	54%
Value of staff time per year	$695,583	**$317,838**	$377,745	54%

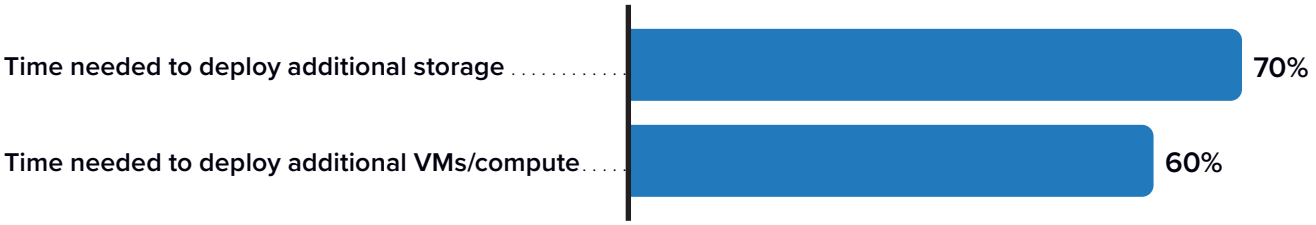
n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Study participants also reported that FlashStack enabled IT staff to provide new compute and storage resources faster and more effectively. IDC developed performance data by measuring key performance indicators associated with typical operations. As shown in **Figure 3** (next page), post-adoption improvements are apparent in two major areas. The time necessary to deploy additional storage decreased by 70%, and the time needed to deploy additional VMs/compute decreased by 60%.

FIGURE 3

IT Agility Impact on Resource Deployment

(Percentage quicker)



n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Other IT teams also experienced efficiency gains. As a result of FlashStack's high performance and reliability, help desk teams responded to significantly fewer tickets annually (**Table 7**). After adoption, the number of tickets declined substantially (65%), while average resolution time increased by 69%. This improvement resulted in an annual business value of $324,452 for each organization.

TABLE 7

Help Desk Team Efficiency Gains

Efficiency Gains	Before/Without FlashStack	With FlashStack	Difference	Benefit
Number of help desk tickets	1,056 annual	**372 annual**	684 annual	65%
Average resolution time	6.5 hours	**2.0 hours**	4.5 hours	69%
FTEs impacted	3.6	**0.4**	3.2	89%
Value of staff time per year	$364,329	**$39,878**	$324,452	89%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Table 8 (next page) shows the impacts for security teams that benefited from FlashStack, effectively patching the environment, providing reliable snapshots, and helping with security assessments. After adoption, interviewed companies saw a 5% efficiency boost as the direct result of built-in automated security features. For example, IDC calculated that security staff needed 38% less time to update security patches. This and other improvements resulted in an annual business value of $21,375.

TABLE 8

Security Team Efficiency Gains

Efficiency Gains	Before/Without FlashStack	With FlashStack	Difference	Benefit
Total FTE count	4.5	**4.3**	0.21	5%
Value of staff time per year	$450,000	**$428,625**	$21,375	5%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

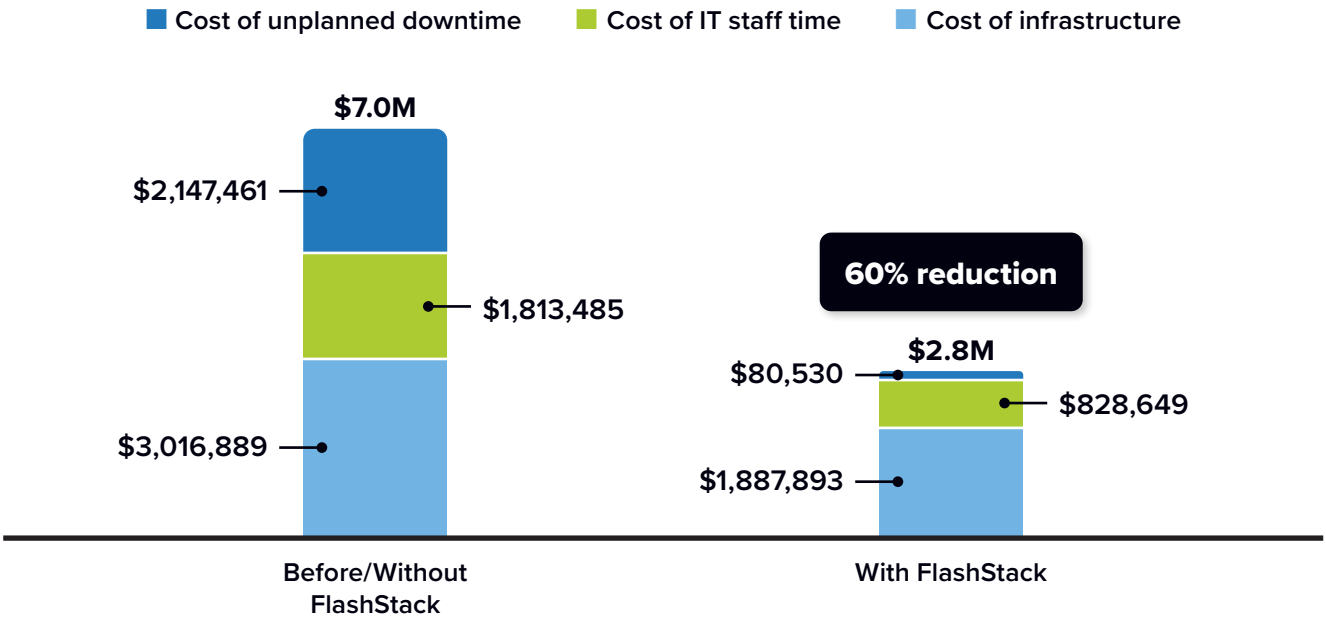
IDC then calculated the impact of the projected cost of IT operations for interviewed organizations after deployment. This calculation factored in IT staff management, unplanned downtime, and infrastructure costs for categories such as storage and compute. As shown in **Figure 4,** IDC calculated that the total annual three-year cost of operations was 60% lower overall after adoption.

FIGURE 4

Total Three-Year Cost of Operations

($)

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



n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Performance and Risk Benefits of FlashStack

Interviewed companies reported a series of performance and risk benefits, all of which were associated with improvements in reliability with the use of FlashStack. In their detailed conversations with IDC, study participants discussed how their organizations were able to use FlashStack to improve speed to market as a direct result of its higher performance features. They commented that, after deployment, instances of unplanned downtime were far fewer than those that occurred previously. In addition, they noted that overall reliability had improved significantly, while business benefits, such as being able to go faster to market, were also evident.

Study participants discussed these and other key benefits:

Significantly better performance (Higher Education):
"Compared to traditional solutions, my company is probably seeing at least 50% better performance than pretty much anything else we'd get dollar for dollar match to FlashStack."

Faster to market (Utilities):
"We're getting better at going faster to market with FlashStack; that is related to the fact that the speed is better on FlashStack than it was on spinning disks. We are having probably 30% better performance."

Increased reliability (Insurance):
"The quality of the underlying technology and support of FlashStack has had a positive impact on the reliability and robustness of our overall IT environment."

Less unplanned downtime (Retail):
"I honestly can't remember the last time my company had unplanned downtimes that impacted our applications with FlashStack; it is very rare in comparison to our old environment."

IDC applied its Business Value methodology to quantify FlashStack adoption benefits, beginning with performance metrics. By measuring key performance indicators associated with typical operations (**Figure 5,** next page), improvements are visible for a variety of tasks, including application latency, which improved by 49%, and the ability to run analytical queries (38% faster). This data confirms that FlashStack significantly improves the performance of applications and time requirements for business processes.

FIGURE 5

Performance Impact

(Percentage of reduction)

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Because FlashStack improved the performance and reliability of the environments that hosted their applications, the frequency of unplanned application downtime outages and the time needed to resolve outages decreased. This enabled greater end-user productivity levels. **Table 9** presents the calculated data on these improvements. It's noteworthy that, after adoption, the frequency of unplanned downtime outages related to application performance significantly reduced by 83%. Further, when outages did occur, they took 78% less time to resolve. For interviewed companies, this enabled greater end-user productivity levels and an average annual business value of $792,795. **Table 9** also provides additional metrics.

TABLE 9

Application Unplanned Downtime — End User Impact

End-User Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Number of outages per year	10.9	**1.8**	9.1	83%
MTTR, hours	6.8	**1.5**	5.3	78%
Users impacted by downtime	860	**860**	N/A	N/A

Table 9 continued

Table 9 continued

End-User Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Productivity loss factor	34%	**34%**	N/A	N/A
Number of FTEs impacted by downtime per year	11.8	**0.4**	11.3	96%
Value of lost productive time per year	$823,684	**$30,888**	$792,795	96%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Prior to FlashStack deployment, unplanned downtime involving applications also had significant financial repercussions. Interviewed organizations noted that because FlashStack improved the performance and reliability of the environment that hosted their applications, the revenue impacts of outages decreased. **Table 10** shows unplanned downtime revenue impacts based on the 83% reduction in outages shown in **Table 9.** Applying a 15% operating margin, IDC calculated a total revenue loss avoidance of $32,236 per organization.

TABLE 10

Unplanned Downtime — Revenue Impact

Revenue Impact	Before/Without FlashStack	With FlashStack	Difference	Benefit
Number of outages per year	10.9	**1.8**	9.1	83%
Outages revenue impacting	40%	**40%**	N/A	N/A
Revenue loss per outage	$58,333	**$58,333**	N/A	N/A
Total revenue loss value per organization	**$257,887**	**$42,981**	**$214,906**	**83%**
Total revenue loss value, IDC Model	**$38,683**	**$6,447**	**$32,236**	**83%**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Interviewed organizations also noted another risk-related benefit related to compliance operations. As a result of having a higher-performing environment that received regular patching, compliance teams could more easily demonstrate that their organizations were keeping current with regulatory demands. As one study participant working in the insurance sector noted: *"FlashStack makes the administration of our environment easier, especially patching critical infrastructure. This is important because patching is one of our very high-profile activities that we must do to stay in compliance. We have SLAs around that, and we also have to report to regulators."*

As shown in **Table 11,** with FlashStack, the companies interviewed saw a 12% productivity boost, resulting in an annual average business value of $17,438.

TABLE 11

Compliance Team Productivity Gain

Productivity Gains	Before/Without FlashStack	With FlashStack	Difference	Benefit
Equivalent productivity level, FTEs	2.1	**2.4**	0.2	12%
Value of staff time per year	$150,000	**$167,438**	$17,438	12%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Application Development Benefits

Interviewed companies reported significant levels of improvement related to the timely development and delivery of business-critical applications to end users, business partners, and customers. The deployment and use of FlashStack meant that application development teams were able to build and release more applications and features than with previous converged infrastructure solutions.

Interviewed companies appreciated how FlashStack helped to keep application development teams lean without needing to add staff, and that, in general, applications ran faster using the platform. They also highlighted the platform's high level of built-in automation functionality, the increased visibility it offered in terms of visibility into various application development processes, and better real-world application implementation. In addition, they noted better productivity when coding and improved provisioning and management of application resources.

Study participants elaborated:

Quicker code migration and recoveries (Government):
"FlashStack has allowed developers to move much quicker through code migration and application recoveries."

Agile development operations (Retail):
"Applications run faster on FlashStack. Developers are gaining productivity when coding, provisioning, and monitoring or managing the applications."

Automated development processes (Insurance):
"FlashStack has made the lives of developers easier because of automation, increased visibility, and better application implementation."

Increased productivity (Higher Education):
"If my organization moved from FlashStack to a less productive traditional system, we'd probably have to hire 25% more developers to make up for lost productivity."

Keeping in mind the above quotes, IDC found that FlashStack enabled developers to release more applications and features annually because there were fewer provisioning requirements, easier code migrations, increased process automation, and improvements in visibility. IDC calculated that businesses could develop or deploy 19% more applications and 85% more features annually.

Table 12 further quantifies these improvements, with companies interviewed enjoying a 16% productivity boost. This means that, after adoption, 55 team members could work at the equivalent productivity level of having 8.7 additional FTEs on staff. This improvement resulted in an annual average productivity-based business value of $874,125 for each organization.

TABLE 12

Development Team Productivity Gains

Productivity Gains	Before/Without FlashStack	With FlashStack	Difference	Benefit
Equivalent productivity level, FTEs	55.5	**64.2**	8.7	16%
Value of staff time per year	$5,550,000	**$6,424,125**	$874,125	16%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Business Enablement Benefits of FlashStack

Improving IT infrastructure and staff operations had direct and indirect impacts on the business operations of the interviewed companies. Study participants reported that they were able to optimize key aspects of their business by improving customer interactions, enhancing their digital experiences, and improving the rollout and performance of business-critical applications. Study participants explained that they enabled more efficient business operations by providing line-of-business employees with higher-performing business applications and delivering enhancements more frequently.
Combined, these improvements meant that employees had the tools they needed to deliver maximum value, and customers had better interactions, thereby increasing loyalty and satisfaction. Companies noted that once they deployed FlashStack, they could transform digital interfaces more readily to meet changing market demands.
They appreciated that deployment had positive effects on customer response times and digital experiences and fostered moving from basic green screen–type applications to browser-based configurations.

Study participants offered these detailed comments:

Customer relationship improvements (Insurance):
"FlashStack has helped our business in that it improved our customer response time, created a better overall customer experience, increased the availability of the systems for the customers, and gave us scalability."

Higher end-user productivity (Higher Education):
"FlashStack has given our entire enterprise higher productivity on essential business activities. Basically, everyone gets important work done faster, and we can evolve our interface quicker to meet demands."

Improved customer experience (Utilities):
"FlashStack has helped my company improve our customer experience. It helped us go from a basic green screen–type application to this browser-based application. While there was a lot behind the application, FlashStack facilitated it."

IDC's calculations confirmed that end users were able to work with greater productivity due to better performance, speed, and availability of business-critical applications.
Table 13 (next page) quantifies these end-user productivity improvements.
On a per-organization basis and factoring in a 15% operating margin, IDC's calculations for end-user productivity-based business value amounted to $1,333,281 annually.

TABLE 13

Business Enablement — End-User Productivity Gains

Productivity Gains	Before/Without FlashStack	With FlashStack	Difference	Benefit
Equivalent productivity level, FTEs	1,325	**1,452**	127	10.0%
Total FTE count, net	1,325	**1,344**	19	1.4%
Value of staff productivity per year	$92,750,000	**$94,083,281**	$1,333,281	1.4%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Continuing with business enablement, FlashStack also facilitated better customer experiences and response times. IDC also found that organizations were 39% quicker to go to market with new products or services. This ultimately helped interviewed organizations generate additional net revenue.

IDC quantified improvements in business results for study participants after adoption. **Table 14** shows significant revenue gains through business enablement, with $8,966,000 in total additional gross revenue for each organization. For the purposes of IDC's financial model, we applied a 15% operating margin assumption, resulting in net revenue gains of an annual average of $1,344,900 per organization.

TABLE 14

Business Enablement — Higher Revenue

Higher Revenue	Per Organization	Per 100 VMs
Total additional gross revenue per year	**$8,966,000**	**$1,084,347**
Assumed operating margin	15%	15%
Total additional net revenue, IDC model	**$1,344,900**	**$162,652**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

ROI Analysis

Summing up these business benefits, as shown in **Table 15,** IDC projects that these companies will achieve three-year discounted benefits worth an average of $11,402,000 per organization through better IT operations, enhanced staff efficiencies, better application development, and improved business results. These benefits compare with total three-year discounted costs of $2,574,800 per organization. We project these levels of benefits and investment costs to result in an average three-year ROI of 343%, with a payback period of nine months.

TABLE 15

Three-Year ROI Analysis

Three-Year ROI Analysis	Per Organization	Per 100 Flash TBs
Discounted benefits	$11,402,000	$1,378,956
Discounted investment	$2,574,800	$311,396
NPV	$8,827,200	$1,067,560
ROI	**343%**	**343%**
Payback	**9 months**	**9 months**
Discount factor	12%	12%

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Challenges/Opportunities

The opportunity for IT infrastructure vendors in the era of digital business and AI transformation is significant — IDC forecasts the certified reference system and integrated infrastructure market to grow at a five-year compound annual growth rate of 7.7% from 2023 to 2028, or roughly double that of traditional enterprise storage infrastructure.

Adopting integrated infrastructure solutions presents several challenges for buyers, including:

- **Complexity of integration:**
  One of the primary challenges is the complexity involved in integrating solutions into existing IT environments. Despite the goal of modern infrastructure solutions to reduce complexity, many organizations have heterogeneous IT landscapes with legacy systems that may not seamlessly integrate with new solutions if it is not possible to consolidate them. This complexity can lead to extended deployment times and increased costs, as there is a requirement for specialized skills and additional resources to ensure smooth integration.
- **Scalability and future proofing:**
  Ensuring that the infrastructure can scale to meet future demands is another critical challenge. Organizations need to be confident that their investments will support their growth and evolving needs. The rapid pace of technological advancements, which can render even the most advanced solutions obsolete within a few years, amplifies this concern.

Pure Storage FlashStack aims to address these challenges with its integrated architecture, flexible financing options, and modular designs that ensure scalability. A decade-long partnership between Pure Storage and Cisco, with a commitment to innovation and service enhancement, is key to continued customer experience success. Communicating the advantages and business value of CI, as demonstrated in this paper, can present a compelling argument for customers without experience with this kind of infrastructure.

Conclusion

IT environments today face substantial pressures driven by the need to support application modernization, enhance operational efficiency, and manage costs while managing dependencies with existing legacy infrastructure. These demands often lead to the creation of complex, siloed systems that are expensive to maintain and lack the scalability necessary for modern applications, including AI and other data-intensive workloads.

To help address these challenges, Pure Storage offers FlashStack, a modern infrastructure solution that combines Cisco's compute and networking resources with Pure Storage's high-performance all-flash storage. FlashStack simplifies and streamlines the infrastructure ownership life cycle, speeds up the deployment of infrastructure and applications, consolidates workloads, and drives efficiencies in datacenter operations and IT management.

- Customers in this study indicated that the business value they derive from their use of FlashStack is significant, with **IDC's research showing an average annual benefit of $583,456 per 100 flash TBs deployed,** a three-year ROI of 343%, and a payback period of just nine months. Quantitative benefits include a 60% reduction in the three-year total cost of ownership, 54% more efficient IT management teams, and an 83% reduction in unplanned downtime.

Appendix 1: Financial Summary

Table 16 presents a summary of IDC's Business Value calculations, as fully described in the previous sections, with total average annual benefits of $4.8 million per organization accruing annually (**Figure 1**).

TABLE 16

Specific Calculations: Benefits from the Use of FlashStack

Category of Value	Average Quantitative Benefit	15% Margin Applied	Calculated Average Annual Value
Number of servers required	$297,143 annualized (3-year) cost savings	No	$99,048
Sustainability-related infrastructure costs	$236,384 annual cost savings	No	$236,384
Number of TBs required	$122,700 annualized (three years) cost savings	No	$40,900
IT infrastructure team — admin and mgmt. efficiency gains	54% more efficient, worth 3.8 FTEs, $100,000 salary	No	$328,279
Security team efficiency gains	5% more efficient, worth 0.2 FTEs, $100,000 salary	No	$18,576
Help desk team productivity gains	89% more efficient, worth 3.2 FTEs, $100,000 salary	No	$281,964
Unplanned downtime, end-user benefit	96% productivity loss avoidance, worth 11.3 FTEs, $70,000 salary	No	$688,977
Unplanned downtime, revenue benefit	$32,236 in annual revenue loss avoidance	Yes	$28,014
Compliance team productivity gains	12% higher productivity, worth 0.2 FTEs, $70,000 salary	No	$15,154

Table 16 continued ➤

Table 16 continued

Category of Value	Average Quantitative Benefit	15% Margin Applied	Calculated Average Annual Value
Development team productivity gains	16% higher productivity, worth 8.7 FTEs, $100,000 salary	No	$759,656
Business enablement — end-user productivity gains	1.4% higher productivity, worth 19 FTEs, $70,000 salary	Yes	$1,158,685
Business enablement — higher revenue	$1,344,900 in additional net revenue	Yes	$1,168,782
Total average annual benefits	**$4.8M per organization per year**	**N/A**	**N/A**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Appendix 2: Methodology

For this project, IDC utilized its standard ROI methodology. This methodology uses data gathered from current users of FlashStack as the foundation for the model.

Based on interviews with organizations using FlashStack, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of FlashStack:** In this study, the benefits included IT cost reductions and avoidances, staff time savings and productivity benefits, and revenue gains.
2. **Created a complete investment (three-year total cost analysis) profile based on the interviews:** Investments go beyond the initial and annual costs of using FlashStack and can include additional costs related to migrations, planning, consulting, and staff or user training.
3. **Calculated the ROI and payback period:** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of FlashStack over a three-year period. ROI is the ratio of the net present value and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

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

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For the purposes of this analysis, IDC has used assumptions of an average fully loaded $100,000 per year salary for IT staff members and an average fully loaded salary of $70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Further, because FlashStack requires 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 3: 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 4 SUPPLEMENTAL DATA

Total Three-Year Cost of Operations

Cost of Operations	Before/Without FlashStack	With FlashStack
Cost of unplanned downtime	$2,147,461	$80,530
Cost of IT staff time	$1,813,485	$828,649
Cost of infrastructure	$3,016,889	$1,887,893
Total	**$7.0M**	**$2.8M (60% reduction)**

n = 7; Source: IDC Business Value In-Depth Interviews, January 2025

Return to original figure

About the IDC Analysts

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Dave Pearson is research vice president within IDC's Worldwide Infrastructure Research organization and global research lead for the Storage and Converged Systems practice. Pearson is also the research lead for IDC Canada's Infrastructure Solutions practice. He manages a team of analysts that cover both research domains. For the Storage and Converged Systems practice, Pearson and his team provide global insights on storage, integrated, hyperconverged and composable infrastructure technology trends, vendor strategies, and market adoption. It includes storage for performance-intensive computing use cases such as high-performance computing, artificial intelligence, and analytics. It also includes cloud-enabled infrastructure and infrastructure used for cloud deployments.

More about Dave Pearson

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Megan Szurley is manager for the Business Value Strategy practice, responsible for creating custom business value research that determines the ROI and cost savings for enterprise technology products. Szurley's research focuses on the financial and operational impact of these products for organizations once deployed and in production. Prior to joining the Business Value Strategy practice, Szurley was a consulting manager within IDC's Custom Solutions division, delivering consultative support across every stage of the business life cycle: business planning and budgeting, sales and marketing, and performance measurement. In her position, Szurley partners with IDC analyst teams to support deliverables that focus on thought leadership, business value, custom analytics, buyer behavior, and content marketing. These customized deliverables are often derived from primary research and yield content marketing, market models, and customer insights.

More about Megan Szurley

Message from the Sponsors

Empowering Your Infrastructure

Traditional IT infrastructure can be challenging to integrate, costly to manage, difficult to scale, and too inefficient for power-hungry AI workloads. But "modernization" often means expensive forklift upgrades.

FlashStack from Pure Storage and Cisco eliminates forklift upgrades and addresses these challenges with software-defined infrastructure that scales as your needs grow. FlashStack can even be consumed as a service.

Managed via Cisco Intersight, our single-pane-of-glass, intelligent management layer, FlashStack integrates best of breed components that have been rigorously tested and documented with an extensive array of Validated Designs, including new AI use cases.

FlashStack deploys with the simplicity of an appliance, but scales without disruption, providing a powerful, secure, and reliable platform right out of the box!

Learn more about empowering your infrastructure with FlashStack:

Infrastructure Modernization for Dummies

FlashStack Delivers Intelligent Hybrid Cloud Infrastructure

Validated Designs for FlashStack

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