

REGION FOCUS: WORLDWIDE

The Business Value of Cisco HyperFlex



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Executive Summary

Hyperconverged infrastructure (HCI) has grown in importance as enterprises seek to replace their legacy IT systems with cost-effective modern technology that affords them the agility and scalability they need for the digital transformation initiatives their business leaders are increasingly demanding. Software-defined HCI products such as Cisco HyperFlex combine virtualization, compute, storage, and network technology to reduce the complexity of deploying, operating, and managing IT infrastructure and free IT personnel to focus on more innovative business-critical projects. HCI clusters expand through the addition of industry-standard server hardware to keep down costs and ease scaling over traditional three-tier infrastructure that separates the compute, storage, and networking components.

IDC conducted research on the value and benefits that organizations are achieving through the use of Cisco HyperFlex systems to run and manage important business applications and workloads. The study included interviews with seven organizations that had experience with and/or knowledge about the benefits and costs of using Cisco HyperFlex.

Based on the survey data, IDC calculated that each study participant would see average annual benefits of \$3.4 million per organization and achieve a 405% five-year return on investment (ROI) by, in part:

- **Cost-effectively optimizing core IT infrastructure** with an agile and scalable hyperconverged platform that supports business-critical workloads
- **Enabling IT teams to work more efficiently and productively** and reduce the time needed to deploy and manage storage, compute, and network resources
- **Enhancing business operations and results** by improving application and database performance and curbing unplanned downtime

Business Value Highlights

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

- ↑ **\$3.4M**
average annual benefits per organization
- ↑ **\$85,700**
average annual benefit per Cisco node
- ↑ **405%**
five-year ROI
- ↑ **10.6**
months payback period
- ↑ **92%**
quicker to deploy storage resources
- ↓ **95%**
less staff time required to deploy new storage resources
- ↑ **92%**
quicker to deploy new compute infrastructure
- ↓ **71%**
less staff time required to deploy new compute

Situation Overview

Enterprises of all sizes have been turning to hyperconverged infrastructure as they refresh aging IT systems designed for a three-tier IT architecture with discrete compute, storage, and network resources. The HCI market has grown at a steady pace for appliances and rack-scale solutions, as well as software running on certified reference hardware. After a slowdown during the early stages of the COVID-19 pandemic in 2020, the HCI market returned to double-digit growth in 2021. IDC expects the upward trajectory to continue, driven by the increasing demand for edge computing and the expanding use of HCI in core datacenters. IDC's 2022 *HCI Survey* showed that 74% of the polled enterprises have migrated one or more workloads from traditional storage area networks (SAN) or network attached storage (NAS) systems to consolidated HCI, and close to 60% of the enterprises were running mission-critical workloads on HCI.

The benefits of moving to HCI systems tend to accumulate in short order. Organizations can consolidate their datacenter footprint and save money with HCI systems that are designed to run on industry-standard hardware. They can also reduce deployment time and staffing resources since converged HCI systems are generally easier to deploy, operate, and manage and don't require IT staff with special skill sets, as their legacy systems typically did. Shifting to HCI also makes sense for IT organizations that are undertaking digital transformation initiatives to try to gain greater business value from the data they've been amassing. Digital-first enterprises need IT infrastructure that offers the agility, performance, and ease of scaling to enable them to respond to business demands under shorter time frames than they were accustomed to in the past. IDC survey data shows that HCI is becoming a common platform for running production workloads in containers. Enterprises building new cloud-native applications often prefer less complicated infrastructure options such as HCI. Reducing complexity is also critical for the increasing numbers of IT generalists tasked with keeping the infrastructure up and running. Organizations facing IT staffing challenges also find that converged HCI systems can help address infrastructure needs at remote and branch offices and edge sites.

Hyperconverged infrastructure is also well suited to the hybrid and multicloud approaches that most enterprises now favor. HCI systems often serve as an on-ramp to the public cloud and let enterprises oversee their IT environments through cloud-based management consoles. The vast majority of HCI users that IDC surveyed indicated they connect their HCI clusters to the public cloud. IDC research shows that the top workloads running on HCI include business intelligence/analytics, security applications, Internet of Things (IoT) databases, and business applications such as enterprise risk management, customer relationship



IDC expects the HCI market's double-digit growth of 2021 to continue, driven by the increasing demand for edge computing and the expanding use of HCI in core datacenters.

management, and system control management. HCI systems have become especially helpful at edge sites, where they can handle the processing and analysis closer to the devices that generate the data and eliminate the need to migrate large amounts of data to a core datacenter.

Cisco HyperFlex Overview

A pioneering vendor of converged infrastructure, Cisco moved into the hyperconverged market subset in 2016 with the introduction of its HyperFlex product family. At the heart of the HyperFlex system is Cisco's Unified Computing System (UCS) server technology, which functions as the central point of connectivity and hardware management. Cisco designed the HyperFlex system to automatically sense new components and add them to the HCI cluster. The HyperFlex system can span multiple server chassis and racks of blade server and rack server-based nodes. A HyperFlex cluster requires a minimum of three storage-equipped nodes for data protection, although Cisco also supports HyperFlex Edge options in simplified two- to four-node clusters. HyperFlex offers customers a wide range of storage choices, including hybrid nodes with flash- and disk-based drives, all-flash nodes, and all-NVMe nodes, for organizations with the highest performance needs. Customers can vary the amount of compute and storage capacity in a HyperFlex cluster by adjusting the number of central processing unit (CPU)-intensive Cisco UCS blade and rack servers and storage-intensive Cisco HyperFlex capacity nodes they use. Cisco also supports GPU-based acceleration for performance-sensitive workloads such as artificial intelligence and virtual desktop infrastructure.

Other key components of the Cisco HyperFlex system include:

- **Compute:** Cisco HyperFlex supports VMware's vSphere and Microsoft's Hyper-V, the two most popular hypervisors, to run applications on virtual machines (VMs). HyperFlex also enables customers to deploy containerized applications and offers an integrated Kubernetes orchestration engine through the Cisco Intersight cloud operations platform. HyperFlex also supports containers deployed with native Kubernetes, Google Cloud's Anthos, and Red Hat OpenShift Container Platform.
- **Storage:** The Cisco HyperFlex HX Data Platform software is a scale-out file system that provides a variety of enterprise storage and data management features, including compression, deduplication, replication, snapshots, stretch clusters spanning geographic regions, and logical availability zones, to enhance scalability and availability. HyperFlex also lets customers incorporate external storage into HX clusters and integrate major third-party backup products. HyperFlex supports the iSCSI-based Container Storage Interface (CSI) plug-in for container-based workloads.

- **Network:** HyperFlex connectivity is based on Cisco's Unified Fabric technology, including the Nexus and MDS switch lines. Customers also have the option to use Cisco Application Centric Infrastructure (ACI) to deploy policy-based, software-defined networking technology that can attach directly to virtual machines and physical servers and provide real-time monitoring, telemetry, and automated performance optimization.
- **Management:** Cisco Intersight serves as a cloud-hosted central control point to help customers deploy, monitor, and update HyperFlex clusters and other Intersight-connected physical or virtual infrastructure spanning on-premises datacenter, edge, and public cloud sites. The software-as-a-service platform gives HyperFlex customers the option for modules such as the Intersight Cloud Orchestrator, Intersight Virtualization Service, and Intersight Workload Optimizer.

The Business Value of Cisco HyperFlex

Study Demographics

IDC conducted research to explore the value and benefits of using Cisco HyperFlex as a hybrid infrastructure platform to run and manage important business applications and workloads. The project included in-depth interviews with seven organizations that use Cisco HyperFlex and have knowledge about the product's impact from an operational, business, and cost standpoint.

Table 1 (next page) presents study demographics. The organizations that IDC interviewed had an average of 1,930 employees and \$757 million in revenue. On average, they employed IT staffs with 60 professionals that supported 120 business applications and 1,840 internal end users. In terms of geographic distribution, two companies were based in the United States and two in Australia, with the remainder in Angola, Germany, and the United Kingdom. Represented vertical markets included professional services, healthcare, manufacturing, government, education, finance, and utilities.

TABLE 1
Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	1,930	1,650	150–4,000
Number of IT staff	60	40	12–120
Number of employees using IT services	1,840	1,650	150–3,800
Number of external customers	511,520	13,000	1,100–3.0M
Number of business applications	120	80	20–250
Annual revenue	\$757.0M	\$346.0M	\$13.0M–\$2.2B
Countries	United States (2), Australia (2), Angola, Germany, United Kingdom		
Industries	Professional services, healthcare, manufacturing, government, education, finance, utilities		

Source: IDC’s Business Value Research, October 2022

Choice and Use of Cisco HyperFlex

Interviewed organizations cited significant improvement to IT operations with the use of Cisco HyperFlex to run and manage important business applications and workloads. They thought the deployment of HyperFlex had provided them with a more cost-effective, agile, and scalable infrastructure than other solutions they considered in the selection process. The use of Cisco HyperFlex also resulted in IT team efficiencies, with fewer staff needed to control and manage the overall environment. IT personnel had more time free to pursue business-related tasks or projects beyond routine, “keeping the lights on” maintenance.

Additional advantages that interviewed organizations highlighted include the HyperFlex product’s contributions to datacenter modernization and stateless data retention.

They also appreciated that with HyperFlex, they were less reliant on IT specialists to keep their systems running smoothly. Study participants elaborated on the benefits as follows:

Performance improvements for aging datacenter:

“We had a large amount of legacy hardware in an old datacenter. We went into a newer, modern facility and replaced that aging hardware. We needed to see some performance improvements for a number of applications that we’re running and consolidated our datacenter footprint at the same time. We left all the legacy environment behind and shut it down.”

Seamless fit into existing portfolio:

“We chose Cisco over the other products because the technology fit very well into our portfolio. We run Cisco at the edge, our core infrastructure [is] wireless, and all of our switching [is Cisco based], so Cisco HyperFlex fit very well in that. Also, their HyperFlex platform is hyperconverged infrastructure. We were going after hyperconverged infrastructure. It was a good organizational fit and less expensive than their competitors.”

Less need for specialists to run the environment:

“My organization has an operations team that are more generalists, so having a hyperconverged environment, that single pane of glass, was appealing. We don’t have a storage expert, and we don’t have a server expert. So the environment of a hyperconverged environment was appealing and, I think, also met our business continuity requirements of having an active solution.”

Clever cable management for limited space:

“What I can tell you is that when we look at hyperconverged solutions, everybody came very much on top, Cisco included. It was pretty much a neck and neck competition between Cisco and one of their competitors. The reason why we chose Cisco is because of the clever management of cabling. Our datacenter has a limited amount of space and limited amount of connectivity and power.”

Table 2 (next page) provides a snapshot of Cisco HyperFlex usage showing that the interviewed organizations use significant levels of nodes and clusters. They run more virtual machines per HCI cluster on average than the norm, according to a 2021 IDC survey of 561 HCI users. The broader IDC survey showed that 77% of IT respondents run 70 or fewer VMs per cluster, whereas the interviewed Cisco HyperFlex customers were running 660 VMs per cluster on average. The interviewed organizations store 550TB of data in HyperFlex and use 340TB of flash storage, on average, and they associate 50% of their total revenue with Cisco HyperFlex.

TABLE 2

Organizational Usage of Cisco HyperFlex

	Average	Median
HyperFlex nodes	40	30
HyperFlex clusters	6	4
Non-HyperFlex Cisco servers	5	5
Virtual machines (VMs)	660	540
Remote/branch locations supported	30	15
Business applications	100	85
Terabytes	550	185
Terabytes of flash	340	250
Organizational revenue	50%	47%

Source: IDC's Business Value Research, October 2022

Business Value and Quantified Benefits

Interviewed organizations attributed improvements in running and managing important business applications and workloads to their use of Cisco HyperFlex. Cisco HyperFlex provided companies with a mechanism to cost-effectively optimize core IT infrastructure with an agile and scalable converged platform in support of their business-critical workloads. In addition, Cisco HyperFlex enabled IT teams to work more efficiently and productively and reduce the time needed to deploy storage and compute resources. Combined, these benefits helped companies significantly enhance their business operations and results through improved application and database performance.

Interviewed HyperFlex customers spoke to the most significant impact as follows:

Trusted supplier with a simplified process:

“Cisco HyperFlex is a technology from a known supplier and trusted supplier. It’s a single-box solution, and that’s the whole point of the hyperconverged solution. There’s one supplier to talk [to] if something goes wrong.”

Simple to manage environment:

“I think the most important benefit is the simplicity in managing Cisco HyperFlex. The other thing is the flexibility. The solution actually delivers on what it promises.”

Platform speed and density:

“A significant benefit of Cisco HyperFlex is the speed of the platform as well as the density. We have many clusters because of network zones. The biggest cluster we have is around 60 VMs per host, so the density is quite superb. Also, flexibility of scaling and resilience is a good fit. We have had no major problems with HyperFlex since we started using it.”

Efficiency and availability:

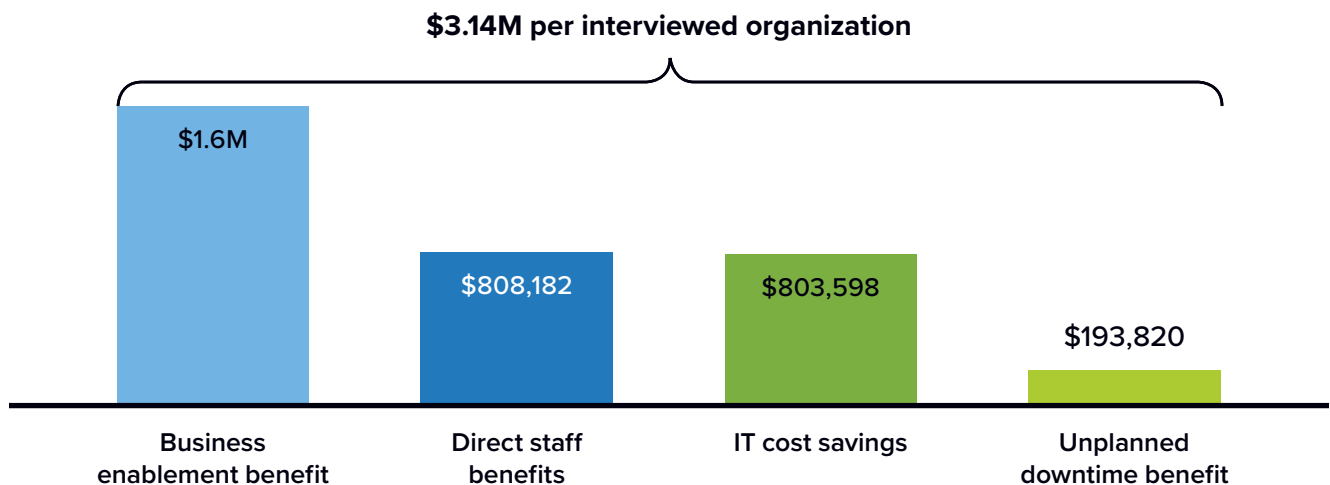
“The efficiency and availability of Cisco HyperFlex is the largest benefit. It’s a single solution that everything runs on. It’s efficient. My engineers are able to focus on other work because of the efficiency and availability of the system.”

Reduced cost and complexity to manage:

“The biggest benefit of Cisco HyperFlex is reduced management cost. It is less complex to use and gives us the ability to scale on demand as the business requires.”

IDC’s business value analysis and calculations show that the HyperFlex benefits described previously provided significant business value for interviewed organizations. IDC calculated that the Cisco customers interviewed for this study will achieve average annual benefits worth \$3.4 million per organization, or \$85,700 per Cisco node, broken down by four categories (see Figure 1).

FIGURE 1
Average Annual Benefits per Organization
 (% per organization)



n = 7; Source: IDC’s Business Value Research, October 2022

IDC also evaluated how the adoption and use of Cisco HyperFlex represented a cost-effective approach for deploying and managing converged IT infrastructure in their organizations. **Table 3** quantifies the impact, showing the substantive post-deployment benefits in lower cost of infrastructure (54% less) and IT staff time (50% less) for a 52% total reduction in cost over five years.

TABLE 3
Total Five-Year Operational Costs

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Total cost of infrastructure	\$5.6M	\$2.6M	\$3.0M	54%
Total cost of IT staff time	\$5.0M	\$2.5M	\$2.5M	50%
Total five-year cost	\$10.6M	\$5.1M	\$5.5M	52%

Source: IDC's Business Value Research, October 2022

Staff Efficiency Impacts of Cisco HyperFlex

Successful digital transformation involves modernizing core IT infrastructure. An increasingly common way to address the challenge has been to shift from a traditional three-tier architecture separating compute, storage, and network resources to an agile, scalable, and secure hyperconverged infrastructure that simplifies operation and management. Moving beyond the traditional siloed approach to consolidated HCI, enterprises are often better able to support the development and use of next-generation, mission-critical applications. HCI systems such as Cisco HyperFlex can enable them to speed the deployment of compute and storage resources needed for applications and services that may span core datacenter, edge, and hybrid cloud environments.

In comments to IDC, Cisco HyperFlex customers identified a variety of benefits, including improved scalability and staff efficiency bolstered by strong Cisco support. They also appreciated the Cisco HyperFlex Intersight cloud operations and management platform and specifically noted automated platform updates and the self-managing desktop environment as significant advantages.

Study participants reported the following benefits:

Better scalability due to strong Cisco support:

“We’re able to scale much quicker and easier than before. The whole buying process is shorter for our staff, and we have great support from Cisco at all stages. When informing, buying, deploying, and troubleshooting, Cisco is always at our side.”

Cisco support decreasing team size:

“We used to have a six-member team managing the legacy environment. Now, we comfortably have one person, mainly because of the support that Cisco provides.”

Cisco support for software updates:

“Cisco has been really good in helping us manage the HyperFlex platform. They help us walk through software upgrades and things like that. Being able to have that vendor support has been big for us.”

Automated platform updates:

“We used to have a managed service provider that looked after the legacy hardware, and my team came in and took over and started managing from the HyperFlex environment and moved what we could from the legacy infrastructures to the HyperFlex environment. The service provider really struggled with keeping the platform up to date. Now it’s all automated through Intersight. We can go in and click through a workflow, and the platform will take care of that for us, so it’s much easier for us to keep current with our software updates and patches and maintain that kind of patch level so we take care of any security vulnerabilities.”

Self-managing desktop environment:

“Cisco HyperFlex has provided a scalable desktop environment for the university, which requires no input. It’s self-managing, which has allowed some staff to spend time working on other things.”

Simplified environment management:

“We appreciate that with hyperconverged infrastructure, we can just call Cisco and say: ‘I need another four servers.’ That’s it Everything comes ready, packed, and to go. You just unpack it, put it on the rack, connect the cables, apply the profile, and it’s done.”

Study participants identified a variety of staff benefits and efficiencies related to their use of Cisco HyperFlex. Interviewed organizations stated that Cisco HyperFlex was easier to manage, deploy, and upgrade when compared with their previous IT infrastructure. As the aforementioned comments illustrate, they especially appreciated the high level of support they received from Cisco to help their own teams work more efficiently.

Table 4 quantifies the impact. After Cisco HyperFlex adoption, storage and compute teams were 57% more efficient, and network teams were 42% more efficient, measured by full-time employee (FTE) count. Incorporating data from both teams to calculate improved staff productivity, the use of Cisco HyperFlex resulted in an annual business value of \$494,170 for each organization.

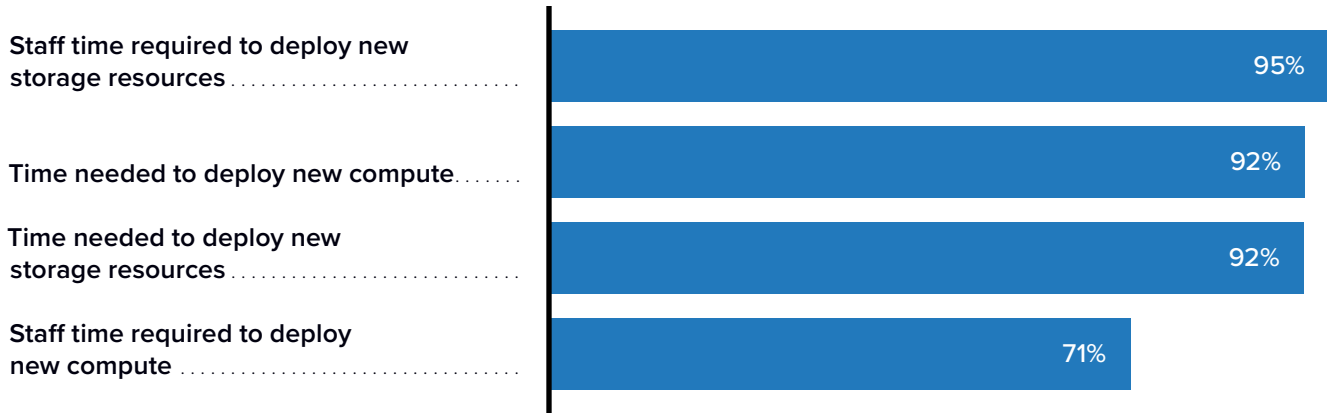
TABLE 4
Infrastructure Team Efficiency Gains

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Storage and compute administration and management efficiency gains				
Total FTE count	5.1	2.2	2.9	57%
Value of staff time per year	\$512,900	\$220,830	\$292,070	57%
Network administration and management efficiency gains				
Total FTE count	4.8	2.8	2.0	42%
Value of staff time per year	\$482,625	\$280,525	\$202,100	42%
Total value of infrastructure team time per year	\$995,530	\$501,360	\$494,170	50%

Source: IDC's Business Value Research, October 2022

IDC then evaluated the impact on the deployment of new compute and storage resources. Interviewed organizations made it clear that Cisco HyperFlex helped them deploy and upgrade storage with far greater agility and efficiency than they could previously do. As shown in **Figure 2** (next page), the interviewed organizations required 95% less staff time to deploy new storage resources, and they needed 92% less time to deploy new compute resources.

FIGURE 2
Deployment of New Compute and Storage Resources
 (% quicker)



n = 7; Source: IDC's Business Value Research, October 2022

Application development teams at the interviewed organizations achieved similar productivity gains. Developers valued the scalability and converged environment provided by Cisco HyperFlex and were able to produce robust applications that could better accommodate the needs of end users and customers.

Table 5 quantifies the impact. After Cisco HyperFlex adoption, developers experienced a 20% boost in productivity. This amounted to the equivalent of adding 1.7 FTEs to staff and resulted in an annual productivity-based business value of \$170,000 for each organization.

TABLE 5
Development Team Productivity Gains

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Equivalent productivity level, FTEs	8.5	10.2	1.7	20%
Value of staff time per year	\$850,000	\$1.0M	\$170,000	20%

Source: IDC's Business Value Research, October 2022

Similarly, security staff also saw positive post-adoption impacts. The security teams benefited from the reduced risk that came from deploying Cisco HyperFlex. The hyperconverged infrastructure created a smaller footprint for organizations in comparison with their previous environments, with fewer appliances to manage and monitor. Security staff experienced a 29% uptick in productivity after Cisco HyperFlex adoption (see **Table 6**). This resulted in an annual productivity-based business value of \$163,430 for each organization.

TABLE 6
Security Staff Efficiency Gains

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Total FTE count	5.6	4.0	1.6	29%
Value of staff time per year	\$564,760	\$401,330	\$163,430	29%

Source: IDC's Business Value Research, October 2022

Cisco HyperFlex also reduced the frequency of unplanned downtime and reduced the time required to resolve an outage. As a result, interviewed organizations saw benefits from overall greater staff productivity. Interviewed Cisco HyperFlex customers saw a 56% decrease in the number of annual outages and 99% reduction in remediation time (see **Table 7**, next page). Combined, these benefits resulted in an annual productivity-based business value of \$198,480.

TABLE 7

Unplanned Downtime Impact

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Number of outages per year	1.5	0.6	0.8	56%
Time to resolve per outage, hours	6.4	0.1	6.3	99%
Users impacted by downtime	763	763	–	–
Productivity loss	75%	75%	–	–
Lost productivity, hours per user	2.9	0.0	2.8	99%
Value of lost productive time per year	\$199,510	\$1,040	\$198,480	99%

Note: totals may not sum to 100% due to rounding. Source: IDC’s Business Value Research, October 2022

Business Enablement Benefits

Interviewed organizations reported that Cisco HyperFlex had a positive impact on their business operations and results. Benefits they cited include improved user experience, better application response time for customers, and faster system performance. Study participants also noted that, with Cisco HyperFlex, they were better able to meet contractual commitments and reduce their risk profiles, through better demand planning.

The following comments illustrate the benefits:

Improved user experience:

“Cisco HyperFlex has been really easy to manage. We get great visibility through the Intersight platform. It’s been really good for our reputation. When we migrated the workloads from our old legacy infrastructure, we got immediate, extremely positive feedback about how well the applications were running. The improvement was big for business users.”

Better customer response time:

“Cisco HyperFlex has enabled better response times for our clients. For example, with internet banking right now, it’s close to a millisecond response time if you use our application, which is a text-based service on phones for transactions via SMS. The response time used to take seconds. Everything improved ... the business, more transactions, better client service. This had actual revenue impacts.”

The ability to meet contractual commitments:

“Cisco HyperFlex has allowed us to provide remote resources to staff and students that were not available in the past. This is a big deal especially in the light of lockdowns and our ability to meet our contractual commitments.”

Deeper understanding of resources:

“Right now, our business comes to us and says, ‘Listen, we need this project.’ We understand straight away whether we have the resources or don’t, whether we can do it or not. In the past, it was like, ‘Give me three days and let me look at it.’ Right now, it’s instantaneous. We look at it and say, ‘Yeah, we still have resources, and it will cost this much to the bank basically.”

Reduced risk through better demand planning:

“The demand planning solution has been our biggest win in using HyperFlex. It enables us to run and execute quickly and consistently. In the past, this was a big issue for the business and obviously came with the risk that we don’t know what products that we needed to manufacture to supply to our customers, because we wouldn’t have the data to back it up. We have more consistency and faster execution of that system; it’s really helped us reduce the risk.”

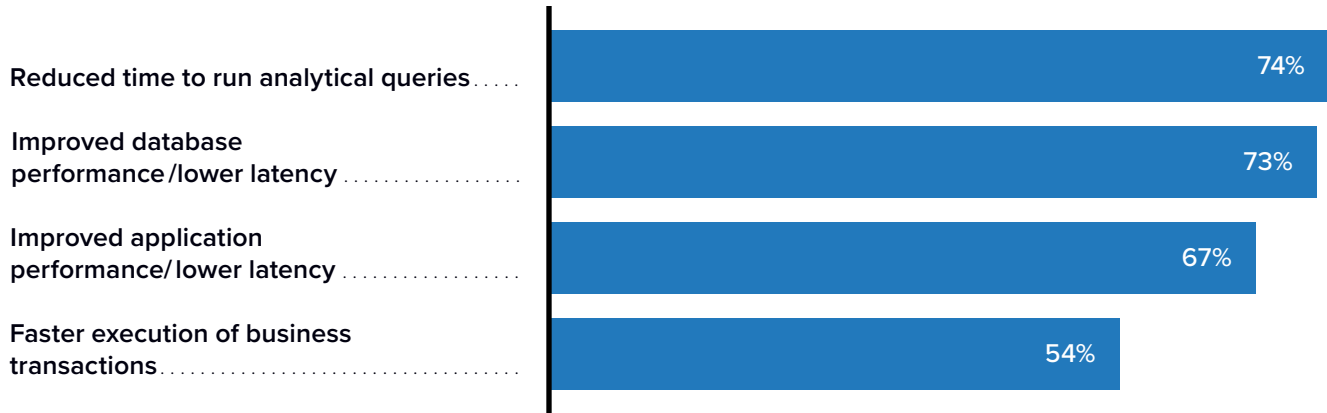


The demand planning solution has been our biggest win in using HyperFlex. It enables us to run and execute quickly and consistently.”

As the previous comments illustrate, these and other improvements translated to less friction and better efficiencies in business operations. Cisco HyperFlex optimized the performance of important business applications and supporting databases used for Big Data analytical queries.

Interviewed organizations reduced the time needed to run analytical queries by 74% after deploying Cisco HyperFlex (see **Figure 3**, next page). In addition, database performance improved 73%, with lower latency, while application performance increased by 67%.

FIGURE 3
Database/Application Performance KPIs
 (% quicker/improvement)



n = 7; Source: IDC's Business Value Research, October 2022

Interviewed organizations noted that with Cisco HyperFlex enhancing operations, end users could work with greater productivity, experience less downtime, and reap the benefits of better performing core applications and database queries. **Table 8** shows the impact of the improvements. IDC calculated that each organization could achieve a benefit of \$1.3 million in productivity-based business value per year.

TABLE 8
Business Enablement — End-User Productivity

	Before Cisco HyperFlex	With Cisco HyperFlex	Difference	Benefit
Equivalent productivity level, FTEs	875	996	121	14%
Total FTE count, net	875	890	18	2%
Value of staff productivity per year	\$61.3M	\$62.5M	\$1.3M	2%

Note: totals may not sum to 100% due to rounding. Source: IDC's Business Value Research, October 2022

Combined, these business benefits translated into higher revenue for interviewed companies and a strong validation of the business value they received (see **Table 9**). After Cisco HyperFlex adoption, companies experienced total additional gross revenue of \$2.5 million per year per organization and \$62,762 per HyperFlex node.

TABLE 9
Business Enablement—Higher Revenue

	Per Organization	Per Cisco Node
Total additional gross revenue per year	\$2.5M	\$62,762
IDC operating margin	15%	15%
Total additional net revenue—IDC model	\$375,000	\$9,414

Source: IDC's Business Value Research, October 2022

ROI Summary

Table 10 presents IDC's return on investment and analysis for study participants' use of Cisco HyperFlex. As shown, IDC projects that they will achieve five-year discounted benefits worth an average of \$12.5 million per organization through better IT staff efficiencies, resource allocation, and business performance, as described previously. These benefits compare with total five-year discounted costs of \$2.5 million per organization. IDC projects that for the interviewed organizations, these levels of benefits and investment costs will result in an average five-year ROI of 405% and a break-even point in investment occurring in approximately 10.6 months.

TABLE 10
Five-Year ROI Analysis

	Per Organization	Per Cisco Node
Discounted benefits	\$12.5M	\$314,044
Discounted investment	\$2.5M	\$62,224
Net present value (NPV)	\$10.0M	\$251,819
ROI	405%	405%
Payback period (months)	10.6	10.6
Discount factor	12%	12%

Source: IDC's Business Value Research, October 2022

Challenges/Opportunities

IT organizations have signaled their preference for a hybrid cloud approach, and as they extend their HCI usage beyond core datacenters to edge and public cloud sites, some have encountered scaling issues. IDC survey data has shown that HCI users face challenges as they try to maintain a single view of HCI clusters in a multivendor environment, guarantee application performance, and achieve sufficient storage performance without excessive cost. Many HCI users also struggle to sustain consistent performance between cluster nodes with large data sets.

Vendors must keep in mind the evolving needs of HCI users as they develop new features and capabilities. Cisco would do well to add software-only and public cloud HyperFlex deployment options, as other major hyperconverged vendors have, and has stated its intention to begin supporting a software approach in 2023. Cisco also has addressed key challenges that HCI users cited by making performance a major area of focus with HyperFlex. Cisco offers options for compute and storage nodes with the latest CPU, graphics processing unit (GPU), flash, and non-volatile memory express (NVMe) technology. Organizations that participated in this study reported that they are able to run more VMs per node on HyperFlex systems than most HCI users do. Also, Cisco Intersight provides a hybrid cloud operations platform designed to support the deployment, monitoring, and management of physical and virtual infrastructure — including Cisco UCS servers, HyperFlex HCI, and third-party devices and systems — through a single operating model across datacenter, edge, and public cloud sites.

Conclusion

Enterprises pursuing digital transformation initiatives have increasingly shifted away from traditional three-tier IT architectures that separate compute, storage, and network resources and generally require skilled IT staff to operate. Hyperconverged infrastructure products that consolidate and virtualize the technologies under a common management plane have become a popular alternative for organizations seeking to modernize and simplify IT environments that may span core datacenter, edge, and cloud sites. Software-defined HCI systems, such as Cisco HyperFlex, enable customers to expand capacity through the addition of industry-standard servers, lower costs, and ease scalability. They are particularly useful for IT departments facing IT staffing challenges, especially at remote locations, since HCI tends to be easier to operate, manage, and maintain. They can also help boost the productivity of modern application development teams that may lack sophisticated knowledge about legacy storage infrastructure.

IDC interviewed seven organizations to explore and quantify the benefits they achieved through the use of Cisco HyperFlex systems. IDC determined those HyperFlex customers saw a payback on their investment, on average, within 10.6 months and could expect a five-year ROI of 405%. The average annual benefit for each organization is \$3.4 million, factoring in business enablement improvements, IT cost savings, direct staffing advantages, and unplanned downtime reductions. The interviewed Cisco HyperFlex customers reduced the staff time required to deploy storage resources by 95% and compute resources by 71%. The total value of the time saving for infrastructure teams to administer and manage storage, compute, and network resources is 50%. The advantages of using Cisco HyperFlex also extended to development teams and security staff. IDC calculated that the interviewed organizations saved, on average, \$170,000 from improvements in developer productivity and \$163,430 from gains in security staff efficiency. End users also saw HyperFlex-related productivity benefits that translated to \$1.27 million per year, as the interviewed organizations reduced the number of outages by 56% and the time to resolve them by 99%.

Appendix: Methodology

IDC used its standard Business Value/ROI methodology for this project. This methodology is based on gathering data from organizations currently using Cisco HyperFlex as the foundation for the model.

Based on interviews with organizations using Cisco HyperFlex, 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 using Cisco HyperFlex.** In this study, the benefits included employee productivity gains, staff time savings, and reduced costs.
2. **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Cisco HyperFlex 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 Cisco HyperFlex over a five-year period. ROI is the ratio of the NPV and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

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

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

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

About the IDC Analysts



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Megan Szurley is 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, Megan 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.

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Carol Sliwa is a Research Director for Storage Systems in IDC's Enterprise Infrastructure Practice. Her core research area spans block, file, and object storage, with a special focus on the storage of unstructured data. With more than 25 years of experience as a technology journalist, including 13 years covering enterprise storage, Carol gained extensive insight into the ways in which the industry has adapted systems over time to address the evolving needs of IT customers.

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