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ANALYZE THE FUTURE

Business Value Highlights

452%
five-year ROI

50% lower
cost of operations, five years

8 months
payback

91% less
unplanned downtime

50% faster
development life cycle, new features

71% more
efficient IT infrastructure teams

93% less
staff time to deploy new servers

Business Value of Improved Performance and Agility with Cisco HyperFlex

EXECUTIVE SUMMARY

Decisions made within IT departments have never been more important to the broader business than they are today. IT departments must react quickly to new business initiatives that are designed to drive bottom-line improvements and generate new revenue streams. It should be no surprise to learn that IT departments are increasingly looking for infrastructure that improves productivity and agility within the datacenter. Organizations around the world are turning to hyperconverged infrastructure (HCI) to achieve just such goals. Indeed, HCI offerings like Cisco's HyperFlex have become critical platforms for modernizing datacenter infrastructure, thanks to their ability to:

» Collapse silos of storage, compute, and data management services down to a cluster of x86 servers that can be deployed, managed, and supported as a single system

» Support IT organizational transformation through consolidation of roles that are focused on virtualization, compute, and storage at generalist level

» Reduce the need to deploy different types of siloed infrastructure within the data center, including data efficiency and data protection solutions

Although the market for hyperconverged infrastructure is at the early stages of its life cycle, it's becoming increasingly clear that these scale-out and feature-rich HCI systems are driving real capex and opex benefits within datacenters around the world.

IDC spoke with organizations about their experiences running various business workloads on the Cisco HyperFlex hyperconverged platform. These organizations reported that Cisco HyperFlex provides the performance and agility they need to better meet business demand while delivering a cost-effective and scalable infrastructure platform. These operational and cost benefits translate to strong value for study participants, which IDC projects will be worth $58,600 per 100 users ($1.98 million per organization) per year, through the following:

» **Strong performance and scalability** drive higher user productivity and support business expansion that generates additional revenue.

» **Reduced frequency and duration of unplanned outages** mean fewer business interruptions affecting users of applications and business operations.

» **Ease of management and agility** deliver efficiencies for IT infrastructure, IT support, and application development teams.

» **Infrastructure consolidation, high performance, and ease of scaling** allow for more cost-effective IT infrastructure.

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ANALYZE THE FUTURE

SITUATION OVERVIEW

Enterprises worldwide have become truly information-led businesses. In today's age of global business with an accelerated pace of digitization, reliable and flexible IT infrastructure means the difference between winning or losing customers and translating new concepts into revenue-producing products and services. The world's most admired and best-run businesses use IT in forward-looking ways to help drive competitive advantages.

Hyperconverged infrastructure has become a widely deployed architecture in recent years, thanks, in part, to HCI's ability to drive new levels of infrastructure agility needed to meet performance, availability, reliability, and timely response to business needs. HCI solutions deliver such benefits through a clustered, scale-out architecture built on x86 servers. A key difference between HCI and traditional converged infrastructure (CI) is the ability of HCI solutions to provide all compute, storage, and networking functions through a cluster of server-based nodes. Each node within a cluster contributes all of its resources to an abstracted pool of capacity, memory, and compute resources. This pool of resources provides the foundation for all server-centric workloads (e.g., the hypervisor, VMs, and applications) as well as storage-centric workloads (e.g., data persistence, data access, and data management).

Specifically, HCI solutions are driving benefits in the following key areas:

» **Lower capex.** Lower capex can be achieved through the elimination of SAN-based storage solutions in favor of industry-standard servers that offer fully virtualized compute and data services. The scale-out architecture of hyperconverged solutions further lowers capital costs by helping reduce the need to overprovision resources. Instead, customers can buy only the nodes required at the time of initial deployment and scale later as needed.

» **Reduced opex.** Reduced overprovisioning and elimination of storage silos have positive impacts beyond capex. In fact, these benefits can directly lead to lower costs of power, cooling, and floor space within the datacenter. HCI solutions often integrate management software that automates many of the complex tasks needed during initial deployment while reducing the number of steps required to provision new workloads. The results are improved IT staff productivity and increased agility within the datacenter.

» **Reduced risk.** The highly automated nature of HCI solutions also helps reduce the risk of downtime associated with common life-cycle management tasks (e.g., firmware upgrades, system refresh). The scale-out, software-defined nature of HCI solutions helps eliminate the need for complex and risky forklift upgrades, which have become all too common within the datacenter. Many companies leverage hyperconverged solutions as a way to improve their disaster recovery/high-availability (DR/HA) processes and costs in ways not possible just a few short years ago. HCI solutions also allow users to reduce the number of technology suppliers involved within a full solution, which helps better coordinate patches and upgrades while reducing the number of support calls needed for the solution.

Importantly, hyperconverged solutions are also increasingly supporting organizational transformation within the datacenter. Most commonly, IDC sees a consolidation of roles that have been dedicated to a single technology such as networking, storage, or server management. With the use of HCI, one administrator takes on the responsibility for virtualization, compute, and storage and operates at a more generalist level. This is helping free up time within the IT team for more innovative projects and ultimately helping shift capital to other critical parts of the datacenter like application development.

CISCO HYPERFLEX HYPERCONVERGED INFRASTRUCTURE

Keeping in mind that hyperconverged infrastructure is a subset of the larger converged infrastructure market, IDC notes that the genesis of Cisco's commitment to HCI can be tied to the very early days of infrastructure convergence. Indeed, Cisco is among a small number of technology suppliers responsible for the emergence of datacenter infrastructure convergence, driving an untold amount of savings and operational benefits over the past decade. Through deep partnerships with other suppliers and considerable R&D investments, Cisco is at the forefront of the rapidly growing converged infrastructure market. Organizations around the world have collectively invested more than $66 billion in converged infrastructure in 2012–2018. Nearly 30% of this considerably large amount of market value comes from systems that are built with Cisco Unified Computing System (UCS) servers, an amount unmatched by any other technology supplier. Cisco leveraged a decade of leadership and learning within infrastructure convergence when designing its HyperFlex portfolio of hyperconverged solutions.

Today, Cisco's HyperFlex HCI solutions enable very high levels of efficiency, agility, and resiliency within the datacenter by enabling tight integration of core infrastructure (compute, storage, networking, and system management), increased levels of automation, and simplified life-cycle management. HyperFlex solutions are fully engineered appliances built on their UCS servers (x86) that provide an abstracted pool of capacity, memory, and CPU cores that are used as the foundation for server-centric workloads (e.g., the hypervisor, VMs, and applications) as well as storage-centric workloads (e.g., data persistence, data access, and data management).

Important attributes of Cisco's HyperFlex portfolio are highlighted as follows:

» **HyperFlex Compute.** HyperFlex supports the two most commonly deployed hypervisors: VMware vSphere and Microsoft Hyper-V. HyperFlex clusters can be built with a mix of integrated appliances and with Cisco's broad portfolio of Unified Computing System servers. Users can scale their HyperFlex clusters linearly or choose to scale compute-only nodes. HyperFlex supports the use of containers through the integration of the Kubernetes-based Cisco Container Platform.

» **HyperFlex HX Data Platform.** Cisco's HX Data Platform provides native data services built from the ground up, specifically for HyperFlex. The HX Data Platform is an enterprise-grade, distributed filesystem designed with scalability, efficiency, application resiliency, data integrity, predictable performance, and high availability as core tenets. Hyperflex allows customers to incorporate external storage into their HX clusters, thus increasing flexibility and driving high levels of utilization rates for existing storage assets. The HX Data Platform provides the following services/capabilities:

- Native data protection (with features like asynchronous remote replication included free of charge), the ability to provide RF3-level protection with as few as three nodes, a fully striped architecture that minimizes rebuilds, automatic data rebalancing, automatic self-healing recovery from node and drive failures, optional Logical Availability Zones (LAZ) to increase fault tolerance as you increase cluster size, nondisruptive rolling upgrades, zero overhead and instantaneous snapshots, built-in block checksums to protect against media errors, support for stretched clusters, and native encryption for security.

» **HyperFlex Networking.** HyperFlex offers a complete HCI platform that includes compute, HCI software, and fully integrated network in a single stack — all engineered to work together and supported by a single company. The key network functionality is provided by a fully integrated network, resulting in predictable performance, reduced complexity, reduced cost, low latency, and unified system management. Users can deploy HyperFlex clusters in conjunction with Cisco ACI for highly automated, software-defined, policy-based, networking capabilities. Users that deploy Cisco's ACI within their HyperFlex clusters will gain policy-based, application-centric management and orchestration of the HCI network fabric.

» **HyperFlex System Management.** HyperFlex can be integrated into several Cisco management tools to provide advanced, holistic system management across multiple on-premises and off-premises platforms. HyperFlex fully integrates into Cisco's cloud-based systems management and monitoring software, Intersight. This ensures efficient management of HyperFlex, Cisco UCS servers, and Cisco networking through a unified, SaaS-based management suite. HyperFlex also fully integrates into Cisco's CloudCenter software, which supports integrated management functions across public clouds (e.g., AWS, Microsoft Azure, and GCP) and on-premises infrastructure.

THE BUSINESS VALUE OF CISCO HYPERFLEX

Study Demographics

IDC interviewed seven organizations that are running various business applications and workloads on Cisco HyperFlex hyperconverged infrastructure. These interviews were in-depth in nature and focused on understanding the operational and business impact for these organizations of using Cisco HyperFlex. The sample reflected experiences of relatively large enterprises and organizations with an average employee base of 12,900 and $21 billion in annual revenue (5,500 and $1.19 billion medians, respectively). As shown in Table 1, these organizations provided experiences from a mix of geographies (North America, EMEA, and APAC) and industry verticals.

TABLE 1

Demographics of Interviewed Organizations

	Average	Median
Number of employees	12,900	5,500
Number of IT staff	804	70
Number of business applications	19	40
Revenue per year	$21.01 billion	$1.19 billion
Countries	United States (3), Australia (2), United Kingdom, and Belgium	
Industries	Animal medicine, energy, healthcare, logistics, natural resources, and retail (2)	

n = 7
Source: IDC, 2019

Selection and Use of Cisco HyperFlex by Interviewed Organizations

Interviewed Cisco customers reported that they faced common challenges with their mostly three-tiered infrastructures before choosing and migrating to the HyperFlex platform. In particular, the interviewed organizations needed a more efficient infrastructure foundation to serve their businesses but also had to improve the flexibility, scalability, and performance of their IT infrastructures to meet changing demand from their businesses for IT resources. Study participants described reasons for choosing HyperFlex:

» **Security and efficiency:** *"When we selected Cisco HyperFlex, we didn't consider public cloud because we're risk averse and security conscious and 3 tier was too complex with too many vendors and too much management. We now manage the HyperFlex infrastructure with basically 1 FTE, and it would easily take 2 or 3 FTEs with another approach."*

» **Ability to start small and grow the environment:** *"Our legacy solution just didn't scale in the way we needed it to, so we looked at other solutions, knowing that we ultimately wanted to consolidate in our datacenter … We tried to find a solution that could start small on-premises and then move to a larger datacenter environment … Cisco HyperFlex gave us everything that we wanted from a performance and pricing standpoint."*

When these interviews were conducted, study participants were using an average of 13 Cisco HyperFlex clusters to run 98 business applications in main datacenters and for an average of 33 remote/branch locations. They reported running various business-critical applications, including database, VoIP video/telephony, analytics, VDI, and data warehousing workloads, as well as the customer-facing ecommerce website for one interviewed organization. On average, these applications are used by almost 3,400 employees, reflecting the significant role of Cisco HyperFlex in these organizations' IT and business environments (see Table 2).

TABLE 2

Cisco HyperFlex Use by Interviewed Organizations

	Average	Median
Number of HyperFlex clusters	13	12
Number of VMs	434	350
Number of remote/branch locations supported	33	30
Number of business applications	98	28
Number of terabytes (total/flash)	172/164	90/30
Number of users	3,382	1,700

n = 7
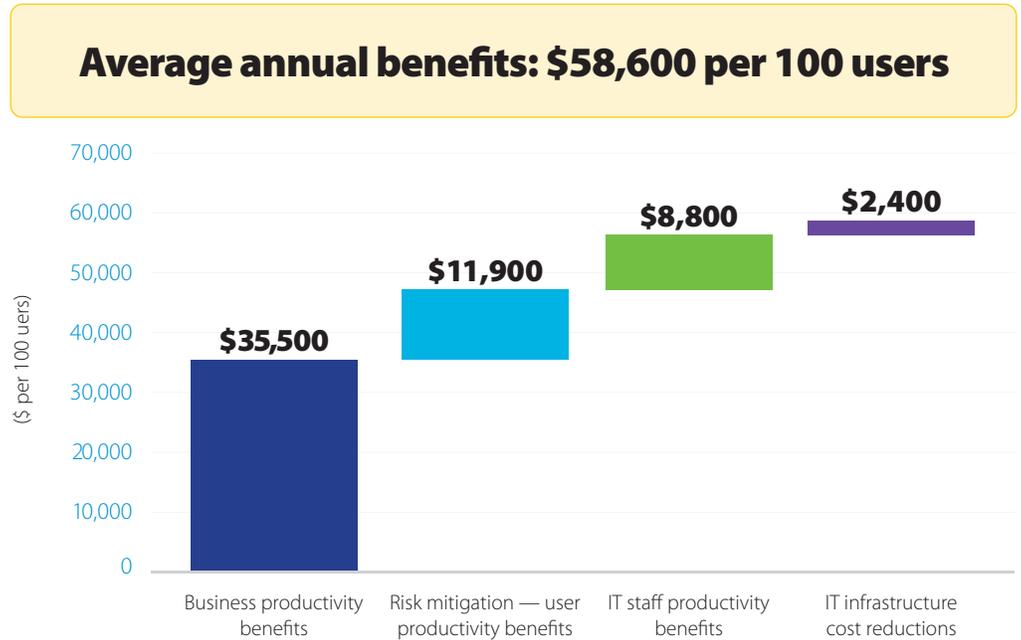*Source: IDC, 2019*

Business Value Results

Interviewed organizations reported that Cisco HyperFlex has enabled them to better support business operations while delivering more cost-effective and efficient IT operations. On the business side, users benefited from much improved application performance, while lines of business took advantage of scalability and more effective application development efforts to address customer demand. Meanwhile, on the IT side, interviewed organizations reduced costs even as they built out more robust and effective IT foundations. Study participants referenced benefiting on both the business and IT sides in explaining the impact of Cisco HyperFlex:

» **Benefit of efficiencies and higher performance:** *"Most of all, we benefit with Cisco HyperFlex from the manageability, the sheer speed of the all-flash storage, and lower costs because we have fewer nodes so we can save on licenses … Our business benefits from the fact that we are running on a faster system that is also more agile and more resilient."*

» **Benefit of having infrastructure capable of supporting business:** *"We had stopped deploying some new applications because of capacity limitations. Now, with Cisco HyperFlex, we're able to service the requests and applications as they come in."*

Through these IT and business-related improvements, IDC calculates that study participants will realize annual value worth $58,600 per 100 users ($1.98 million per organization) in terms of (see Figure 1):

» **Business productivity benefits.** Employees work more productively with higher-performing applications on Cisco HyperFlex. Meanwhile, organizations can better scale and deliver services to match customer demand. IDC quantifies the value of higher employee productivity and revenue at an annual average of $35,500 per 100 users ($1.20 million per organization).

» **Risk mitigation — user productivity benefits.** Interviewed Cisco customers suffer fewer user- and business-impacting outages because of the HyperFlex platform's resiliency and redundancy. IDC estimates that study participants will save lost employee time and revenue worth an average of $11,900 per 100 users per year ($402,200 per organization).

» **IT staff productivity benefits.** IT infrastructure and support teams benefit from having a consolidated and high-performing IT platform, while application development teams leverage lower friction in provisioning compute and storage resources to speed up delivery of new applications and features. IDC puts the value of efficiencies and productivity gains achieved by these teams at an average of $8,800 per 100 users per year ($298,300 per organization).

» **IT infrastructure cost reductions.** Study participants not only spent less in deploying Cisco HyperFlex than they would with their previous or alternative solution, including public cloud offerings for several interviewed customers, but also saved in terms of licensing and operational costs such as warranty, power, and facilities costs. IDC projects that interviewed organizations will buy and deploy Cisco HyperFlex at a 31% lower cost and achieve savings worth $2,400 per 100 users per year ($81,200 per organization).

FIGURE 1

Average Annual Benefits per 100 Users

Average annual benefits: $58,600 per 100 users

$35,500 — Business productivity benefits
$11,900 — Risk mitigation — user productivity benefits
$8,800 — IT staff productivity benefits
$2,400 — IT infrastructure cost reductions

Source: IDC, 2019

Providing the Business with Agility and Strong Performance

Study participants cited needing to ensure that their IT infrastructures could meet business demand, especially in terms of agility and performance, as a key driver of their selection of Cisco HyperFlex.

Like many organizations, their business success increasingly depends on having an IT foundation that they can scale cost effectively to address changing demand. Doing this requires provisioning IT resources quickly and efficiently. Study participants uniformly reported that Cisco HyperFlex has instilled their IT operations with much more agility. As shown in Table 3, these organizations require 85% less time to deploy new servers and 81% less time to deploy new storage with Cisco HyperFlex, ensuring the timely and efficient provisioning of IT resources needed by their businesses and development teams. One interviewed organization noted: *"We used to take two to three days to deploy a new VM, and with Cisco HyperFlex, in terms of the response to the business, we take a couple of hours. The VMs are now actually being deployed in seconds."*

Meanwhile, study participants cited the scalability of the Cisco HyperFlex platform as advantageous. Having more scalability allows them to not only extend their IT infrastructures to address business demand or support extended operations but avoid incurring costs to overprovision server and storage capacity. One interviewed organization commented: *"We have a more flexible architecture with Cisco HyperFlex that scales to smaller sizes. This means that if we run out of space, we don't have to go buy a whole new storage system, so we push that out … Whereas, with HyperFlex, we can add just a little more compute or storage, so we're putting off major capex investments because we don't have to replace everything at once and don't have to replace to scale."*

TABLE 3

Impact on IT Agility

Average per Organization	Previous/Other Solution	With Cisco HyperFlex	Difference	Change (%)	Range (%)
Deployment of servers					
Time to deploy new server (days)	10.7	1.6	9.1	85	50–99
Staff time to deploy new server per instance (hours)	21.0	1.6	19.5	93	50–98
Deployment of storage					
Time to deploy new storage (days)	1.2	0.2	1.0	81	44–99
Staff time to deploy new storage (hours)	7.5	1.4	6.1	81	83–98

n = 7
Source: IDC, 2019

Study participants also consistently described much improved application performance as a core benefit of the Cisco HyperFlex platform. Several organizations reported that inconsistent or insufficient performance of key applications on their legacy infrastructures hampered their businesses, leaving employees with suboptimal tools for doing their jobs and requiring valuable IT staff time to address performance issues. Interviewed Cisco customers reported resolving these concerns with HyperFlex.

One study participant said: *"The main benefit for us of Cisco HyperFlex is end-user performance. Users are more productive because they don't have to wait around for their slow systems. Then on the IT side, there's less strain on IT resources because things work better."* Another participant cited much improved application performance and resulting user feedback: *"HyperFlex just throws so much power at applications. In every instance when we migrate individuals onto our all flash HyperFlex, which is where we put our core applications, we get positive feedback. This means that issues that go to our service desk have dropped — I know that the feedback from that team is that we are getting consistently fewer tickets and complaints about application slowness and about performance in general."*

Driving Business Productivity Benefits Through Higher Productivity and Business Gains

Study participants have leveraged improved IT agility and performance with Cisco HyperFlex to positively affect how employees work as well as business results. Like many organizations, their business operations demand more from their IT operations: Employees need uninterrupted access to high-performing business applications, and expansion efforts cannot be slowed by inefficient IT processes. Interviewed Cisco customers reported that HyperFlex has helped them better match IT agility and performance to actual business needs.

From an operational perspective, interviewed organizations cited the scalability and performance of Cisco HyperFlex as beneficial to application users and the business. For employees, this results in higher across-the-board productivity as they benefit from better-performing and more functional business applications. As shown in Table 4, interviewed Cisco customers attributed an almost 8% higher gross productivity level to

over 3,000 users on average to the HyperFlex platform. One interviewed organization described the impact of improved performance and faster delivery of new features to VDI users: *"We can deploy new applications to our VDI environment a lot quicker with Cisco HyperFlex. This means that we can react and deploy, or if we need to make changes or deploy new systems, more quickly and easily than before … Our VDI users are probably saving from 10–60 minutes per day from having a faster solution."*

Cisco HyperFlex has also given study participants an IT platform that can handle business growth. One study participant described how it can process more transactions on HyperFlex than its legacy infrastructure, leading directly to higher revenue: *"Without changing anything else, we're getting 60% faster performance with Cisco HyperFlex … Improved performance allows us to process more transactions per hour, which means more sales that result from IT not bottlenecking like we experienced previously."* Another Cisco customer described how it can better leverage business intelligence operations: *"With Cisco HyperFlex, we have the power to process data to create metrics for marketing through the business intelligence team. As a result, we have indirectly given ourselves abilities with Cisco HyperFlex that can potentially increase revenue."* On average, interviewed organizations attributed $1.42 million per year in additional revenue to Cisco HyperFlex (see Table 4).

TABLE 4

Business Productivity Benefits: User Productivity and Revenue Gains

	Per Organization	Per 100 Users
Higher user productivity*		
Number of users impacted	3,382	100
Average gross productivity gain (%)	7.8	7.8
Equivalent net productivity gain (FTEs)	19.2	0.6
Total recognized value of higher productivity	$1.96 million	$39,800
Higher revenue*		
Additional revenue per year	$1.42 million	$42,000
Total recognized revenue per year	$212,800	$6,300

n = 7

*IDC model assumes a 15% margin assumption for recognizing user productivity and revenue gains.

Source: IDC, 2019

Reducing Risk Associated with Business Interruptions

Study participants reported enabling their businesses by reducing risk associated with application and system outages with Cisco HyperFlex. With their legacy infrastructures, they suffered too-frequent outages that affected their employees and business operations. However, with Cisco HyperFlex, they have significantly reduced the frequency and duration of unplanned outages — and therefore user and business impact — through higher performance and built-in redundancy. One interviewed organization commented: *"Our legacy servers were running non-virtualized workloads, but the speed of Cisco Hyperflex has allowed us to virtualize them. This means that those workloads are also now, from an infrastructure point of view, completely redundant … If there is an outage, we can switch over automatically, so there's zero user impact."* On average, study participants have reduced the amount of productive time lost per user by almost three hours per year, equating to a 91% reduced impact from unplanned outages in terms of lost employee productivity with Cisco HyperFlex (see Table 5).

TABLE 5

Impact on Unplanned Downtime

	Previous/Other Solution	With Cisco HyperFlex	Difference	Change (%)
Unplanned outages per year per organization	12.4	1.0	11.4	92
MTTR (hours)	9.2	2.6	6.6	71
Hours of lost productive time per user per year	3.2	0.3	2.9	91
Value of lost productive time per year in FTEs per organization	5.8	0.5	5.3	91
Value of lost productive time per year per organization	$407,400	$35,500	$371,900	91

n = 7
Source: IDC, 2019

Enabling IT Organizations

Study participants have also enabled their IT operations by reducing the burden on their infrastructure teams and better supporting application development efforts with Cisco HyperFlex. Infrastructure and support teams require less time to handle equivalent workloads as the result of software- and policy-driven capabilities, improved performance, and consolidating on a hyperconverged platform. Most study participants can thus reallocate staff time to focus on other projects and initiatives. One study participant reported: *"Because our IT team spends less time managing Cisco HyperFlex, they have more time to do other things, for example, asset management. This means we're better at managing our fleet."* Another study participant described how much improved agility with Cisco HyperFlex means far lower staff time requirements for infrastructure deployment: *"The migration to Cisco HyperFlex took a week. It was really just me working on it, probably 80% of my time for that week … If we had gone with a more traditional architecture, it would have been considerably longer; instead of a week it would have been a month and taken three to four people."* Table 6 presents IDC's findings regarding the impact of moving to Cisco HyperFlex for IT infrastructure and support teams. On average, these teams are 71% and 56% more efficient, respectively, with Cisco HyperFlex, representing a substantial efficiency for organizations seeking to maximize the value of their IT teams.

TABLE 6

Impact on IT Teams

| Average per Organization	Previous/Other Solution	With Cisco HyperFlex	Difference	Change (%)
Staff time to manage infrastructure per organization (FTEs)	2.4	0.7	1.7	71
Staff time to support workloads (helpdesk) per organization (FTEs)	0.6	0.3	0.3	56

n = 7
Source: IDC, 2019

Delivering a Cost-Effective IT Infrastructure Foundation

Study participants further credited Cisco HyperFlex with enabling them to build out a cost-effective IT infrastructure for their businesses. They noted cost efficiencies compared with both refreshing their legacy environments and using a public cloud solution for equivalent workloads. On average, they are building out and running Cisco HyperFlex at a 31% lower total cost over five years than building an alternative on-premises environment in terms of hardware, warranty, power, and datacenter costs. One study participant noted: *"Before Cisco HyperFlex, we had a three-tier approach that was ready for a refresh that would have cost us probably 50% more than HyperFlex."* Another Cisco customer compared the cost of deploying HyperFlex with refreshing its legacy environment: *"The servers we had were ready for a refresh, and we replaced them on about a three to one basis with Cisco HyperFlex. We've replaced 36 servers so far, and we plan on doing more."*

Meanwhile, several study participants considered public cloud solutions before choosing Cisco HyperFlex but concluded that HyperFlex was much more cost effective. One interviewed organization explained: *"We chose HyperFlex pricewise over public cloud. We've looked into public cloud, but we can't shut anything down because we run everything 24 x 7. As a result, we could buy a new HyperFlex almost every year for what we would have to spend on public cloud."* Another study participant reported: *"[F]or the resources we currently use with Cisco HyperFlex, we were looking at several times the cost per year to use public cloud."*

These cost efficiencies with Cisco HyperFlex combined with lower IT staff time requirements mean that, for interviewed Cisco customers, HyperFlex is a much more cost-effective IT foundation for their businesses. As shown in Figure 2, IDC projects that this group of Cisco customers will deploy and run Cisco HyperFlex at a 50% lower cost than their previous or alternative solutions.

FIGURE 2

Five-Year Cost of Operations
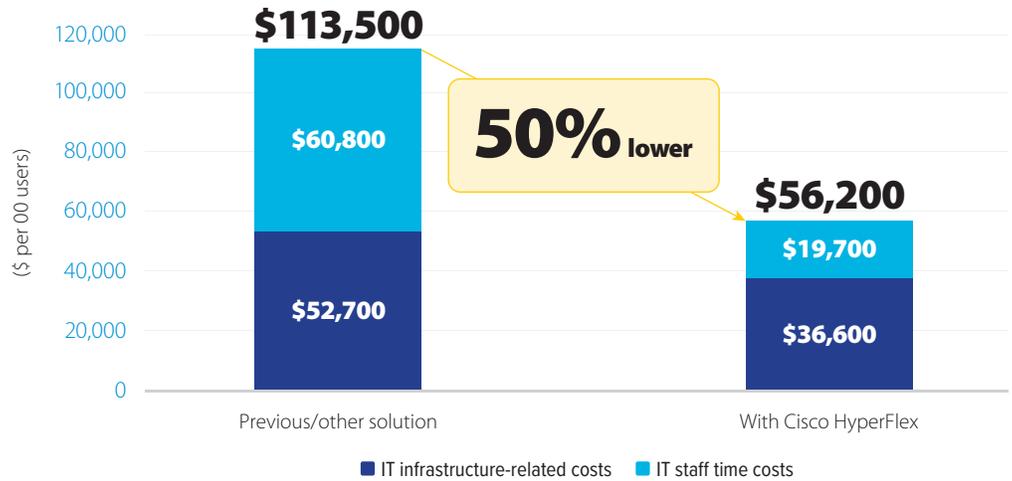
Source: IDC, 2019

ROI Analysis

Table 7 presents IDC's analysis regarding the benefits and investment costs for study participants related to their use of Cisco HyperFlex. IDC projects that the study participants will realize discounted benefits worth an average of $209,600 per 100 users over five years ($7.09 million per organization) based on discounted total five-year investment costs of $38,000 per 100 users ($1.28 million per organization). At this level of financial benefits and investment costs, this sample of Cisco customers will realize a five-year average ROI of 452% and breakeven on their investment in an average of eight months (see Appendix for additional details about IDC's Business Value methodology).

TABLE 7

Five-Year ROI Analysis

	Five-Year Average per Organization	Five-Year Average per 100 Users
Benefit (discounted)	$7.09 million	$209,600
Investment (discounted)	$1.28 million	$38,000
Net present value (NPV)	$5.81 million	$171,600
Return on investment (ROI) (%)	452	452
Payback period	8 months	8 months
Discount rate (%)	12	12

Source: IDC, 2019

CHALLENGES AND OPPORTUNITIES

Decades of innovation have brought us datacenter solutions that are undeniably more capable than anything offered just a few short years ago. That said, too many datacenter teams continue to buy and manage their infrastructure the same way they did 10 or 20 years ago. IDC believes that this process has become untenable. IT departments must look to modernize operations by adopting new datacenter infrastructure technologies like hyperconverged infrastructure if they want to keep up with the unprecedented changes occurring all around them. Indeed, businesses of all sizes are looking to transform their companies to find new revenue streams, create deeper connections with their customers, or simply compete more effectively against new competitors that are unburdened by legacy systems and practices.

The benefits and savings listed throughout this study are very real and represent important reasons why products like Cisco's HyperFlex solution are seeing adoption/deployment grow strongly. Those that are looking to take a measured approach to hyperconvergence will benefit from the scale-out, software-defined architecture, which allows IT teams to target a subset of workloads that have already been virtualized and scale over time. IDC has talked with many organizations that started working with hyperconverged solutions in a comparable way. Over time, the vast majority of these companies expanded their use of hyperconvergence by migrating an increasing number of workloads onto the solution.

CONCLUSION

Increasingly, business leaders depend on their IT departments to enable strategic initiatives designed to drive bottom-line improvements and better serve customers to generate new revenue streams that will ultimately give them a competitive edge in their industry. Reacting quickly to these demands is critical to success, so many organizations have turned to hyperconverged infrastructure solutions to deliver more infrastructure agility to meet performance, availability, reliability, and cost demands from their business operations. Cisco HyperFlex solutions are delivered as fully engineered appliances, which have shown to have numerous advantages, including simplified life-cycle operations, streamlined single source support, and allow users to quickly integrate emerging technologies with predictable and repeatable results. When deployed, these solutions provide an abstracted pool of capacity, memory, and CPU cores with unified networking and management to deliver greater infrastructure agility for server- and storage-centric virtualized workloads.

Interviewed organizations reported leveraging deployment of Cisco HyperFlex solutions to better support their business efforts while capturing IT cost and staff time efficiencies. In particular, their business teams benefit from much improved application performance on the Cisco HyperFlex platform, as well as being able to better address customer demand through the scalability of the platform and more effective application development efforts. At the same time, these organizations benefit from an IT operational perspective from deployment of an IT platform that is both more cost effective and more cost efficient in terms of IT staff time requirements for the variety of workloads they run on Cisco HyperFlex. Together, these benefits create substantial value relative to investment costs in Cisco HyperFlex for interviewed organizations, with IDC projecting that this group of Cisco customers will achieve a five-year ROI of 452%, as described in this study.

APPENDIX

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Cisco HyperFlex hyperconverged infrastructure as the foundation for the model. Based on interviews with these study participants, IDC has calculated the benefits and costs to these organizations of using Cisco HyperFlex. IDC used the following three-step method for conducting the ROI analysis:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Cisco HyperFlex hyperconverged infrastructure.** In this study, the benefits included staff time savings and productivity benefits and IT infrastructure-related cost reductions.

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 study participants' use of Cisco HyperFlex over a five-year period. ROI is the ratio of the net present value (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 a number of assumptions, which are summarized as follows:

» Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and 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).

» Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.

» The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.

» Lost productivity is a product of downtime multiplied by burdened salary.

» 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.

» Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each interviewed organization what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

» Further, 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.

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