



White Paper

HPE SimpliVity Hyperconvergence Drives Operational Efficiency, and Customers Are Benefiting

Sponsored by: Hewlett-Packard Enterprise

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IN THIS WHITE PAPER

This IDC white paper reviews important market trends that have driven a dramatic increase in real-world hyperconverged infrastructure deployments. This white paper also provides the results of in-depth interviews and a global IDC survey of Hewlett Packard Enterprise (HPE) customers, many of which have experienced considerable operational efficiency gains from the use of HPE SimpliVity hyperconverged infrastructure.

SITUATION OVERVIEW

IT departments have long leveraged new infrastructure enhancements to improve core datacenter metrics such as performance, utilization rates, or levels of resiliency. Indeed, decades of compounded technological advances that can be tied back to Moore's law, multicore processors, server virtualization, or storage efficiency (e.g., tiering, thin provisioning, deduplication, and compression) have driven unprecedented levels of availability, performance, and density throughout the datacenter. While such improvements are clearly beneficial, they have tended to result in greater efficiency gains within capex than within opex. This is partly due to the fact that while the vast majority of datacenters are now highly virtualized, few IT departments manage their datacenter infrastructure any differently than they did 10 years ago. Indeed, datacenters and IT departments remain structured in a way that leaves them reliant on inefficient (and expensive) silos of specialists and infrastructure.

This long-term trend of capex improvements outpacing improvements associated with opex has resulted in an ever-increasing gap between the amount spent to buy datacenter infrastructure and the amount spent to manage, power, and cool this infrastructure. Using servers as an example, IDC research shows that every \$1 spent on a physical server in 1995 resulted in just \$0.5 spent to power, cool, and manage that server. The amount of money spent to power, cool, and manage a server has continuously outpaced the actual cost of buying the server over the past 20 years. This capex-opex ratio actually flipped in favor of opex by 2005 when every \$1 spent on a server resulted in \$1.5 of spending on power, cooling, and management. According to IDC's most recent estimates, in 2015, every \$1 spent on a server resulted in \$3.91 of spending on power, cooling, and managing a server.

Not surprisingly, the rapid growth of spending on operational expenses has become untenable and has driven many companies around the world to rethink long-standing practices associated with the procurement and management of datacenter assets. Organizations actively addressing operational costs are focusing on reducing (or eliminating) their reliance on inflexible silos of datacenter infrastructure managed by silos of specialists. There are countless events that can trigger a company

to begin such transformations, including deployment of new applications, private cloud initiatives, and technology refresh. One common event has been related to a global drive to incorporate 3rd Platform applications (which can be grouped into four broad categories of social, mobile, cloud, and analytics) into the company's portfolio of workloads. 3rd Platform applications require new levels of scale, automation, and agility that do not align well with the practice of independently buying and managing discrete datacenter resources.

Enter Converged and Hyperconverged Systems

It's been more than five years since organizations began looking into converged systems to help deal with these important and often-transformational datacenter changes. While the architecture of the converged system has advanced over the years, its goal remains very similar. Specifically, converged systems provide a tight integration between core datacenter infrastructure (storage, compute, and networking) while offering centralized management and increased levels of automation.

Broadly speaking, the first generation of converged systems represent a consolidation of disparate datacenter technologies that can be acquired, deployed, managed, and supported as though they were a single system. Fundamentally, these systems are differentiated from traditional hardware platforms and architectures in that they are designed to be deployed quickly using a modular building-block approach to rapidly scale up resources and workloads. While these first-generation converged systems are driving vast amounts of waste out of the datacenter, most systems have been built with the same type of infrastructure that required silos of experts. Further, the average selling prices of these systems tend to make them more suitable for companies with larger datacenter budgets.

The relatively recent emergence of hyperconverged systems, which IDC considers a new generation of converged systems, is helping deliver many of the proven benefits of early converged systems (e.g., reducing complexity and inefficiency), but through a clustered, scale-out architecture that is built on x86-based servers. Hyperconverged systems leverage software-defined storage to provide enterprise storage services through the same x86 server resources that were also used to run hypervisors and applications. These systems eliminate shared, networked storage systems, thus further converging storage and compute resources. In addition to integrating storage and compute functions into a single node (or a cluster of nodes, each offering compute and storage functions), all hyperconverged systems employ:

- A distributed file system or an object store that serves as the data organization, management, and access platform
- A hypervisor that provides workload adjacency, management, and containerization in addition to providing the hardware abstraction layer (with the hypervisor also hosting essential management software needed to manage the platform)
- An (optional) Ethernet switch to provide scale-out and/or high-availability capabilities (However, switching and/or networking is not used to bridge the compute and storage layers together.)

Some hyperconverged systems also offer other data services (e.g., data efficiency and data protection) to further consolidate and simplify infrastructure elements in the datacenter.

HPE Overview

HPE is a technology company with a comprehensive portfolio spanning from cloud to the datacenter to workplace applications. HPE technology and services help customers around the world make IT more efficient, more productive, and more secure.

Early in 2017, HPE acquired SimpliVity and now offers HPE SimpliVity hyperconverged systems, complete hardware and software solutions that are designed, built, and supported by HPE. The HPE SimpliVity 380 is a turnkey hyperconverged infrastructure platform made up of HPE SimpliVity software on HPE's ProLiant DL380 compute platform. Customer interviews and the survey referenced in this white paper were conducted prior to the acquisition of SimpliVity and prior to the launch of the HPE SimpliVity 380.

The HPE SimpliVity hyperconverged technology enables organizations to simplify IT. Clustering multiple infrastructure units forms a shared resource pool and delivers high availability, mobility, and efficient scaling of performance and capacity.

The HPE SimpliVity hyperconverged infrastructure combines compute, storage services, and network platform in addition to traditional IT functions, including WAN optimization, unified global virtual machine (VM)-centric management, data protection, cloud integration, primary storage deduplication, backup deduplication, caching, and global scale-out:

- **Data efficiency.** Fine-grained deduplication and compression is conducted on all data, in real time and always at the point data is created. This is done to ensure that the data remains deduplicated and compressed throughout its life cycle. All HPE SimpliVity systems are globally aware of the compressed and deduplicated data – whether that data is in multiple systems, datacenters, geographies, or public clouds running HPE SimpliVity's software stack.
- **WAN optimization.** WAN optimization ensures that data transferred between sites or from a site to the cloud is moved in an efficient manner (this is especially helpful in ROBO scenarios or in situations with poor link latencies).
- **Enhanced data protection.** Built-in data protection includes tunable recovery point objective (RPO) on a per-VM basis, enabling automated, high-frequency backup and replication of VMs to any HPE SimpliVity hyperconverged infrastructure node in a federation. The federation is a collection of nodes managed across multiple sites through a single administrative interface and common APIs.
- **Global scale-out.** As HPE SimpliVity systems can be added simply and efficiently in local or remote datacenters, they instantly become members of the global federation.
- **Unified global management.** HPE SimpliVity systems' resources, policies, and workloads are managed via VMware vCenter, facilitating movement of data and VMs across HPE SimpliVity hyperconverged infrastructure units and datacenters without a need to configure IP addresses, controllers, LUNs, and so forth.
- **VM centricity.** The HPE SimpliVity system is designed around the logical unit of a VM. This means that all management, policies, commands, and information are provided on a per-VM basis. In addition, when a backup is performed for a VM, it does not include the other VMs that share a given data store.
- **Caching and tiering.** To accelerate read performance and assist with read spikes and other I/O bursts, HPE uses caching and tiering.
- **Openness to existing legacy servers.** Non-hyperconverged systems running VMs can be connected to hyperconverged nodes and resident VMs in the federation as a means for using the shared storage resources and services and/or enabling the simple migration of data and VMs from existing servers to the federation.
- **The HPE OmniStack Accelerator.** This PCIe module is responsible for all intensive algorithm processing in each hyperconverged infrastructure node and ensures that the deduplication and compression can run in real time with no impact on performance.

The HPE SimpliVity Data Virtualization Platform is the underlying technology within these hyperconverged infrastructure systems – an assimilated IT infrastructure platform solution that can run on dedicated hardware and on private, public, and hybrid clouds. The HPE SimpliVity Data Virtualization Platform includes a data architecture in which data is deduplicated and compressed at inception in very small data elements in a globally coherent manner – across nodes, datacenters, geographies, and clouds.

INSIGHTS INTO CURRENT HPE SIMPLIVITY CUSTOMERS

The sections that follow provide insights into a sample of HPE SimpliVity customers. This information comes from two sources:

- **An IDC web survey of 135 end users that have purchased and deployed one of the aforementioned HPE SimpliVity solutions.** Survey results were completed during the first two months of 2016 by companies located in all major regions around the world.
- **In-depth phone interviews with three customers that are using HPE SimpliVity in production environments.** Each interview was one hour long and was conducted by IDC in February 2016.

Survey Demographics

The following is a demographic overview of the survey respondents:

- North America accounted for 59% of respondents, followed by Europe (33%), and the remainder was evenly split between MEA and Asia/Pacific.
- On average, respondents had virtualized 85% of their physical servers.
- The average number of datacenters in use was 4.77.

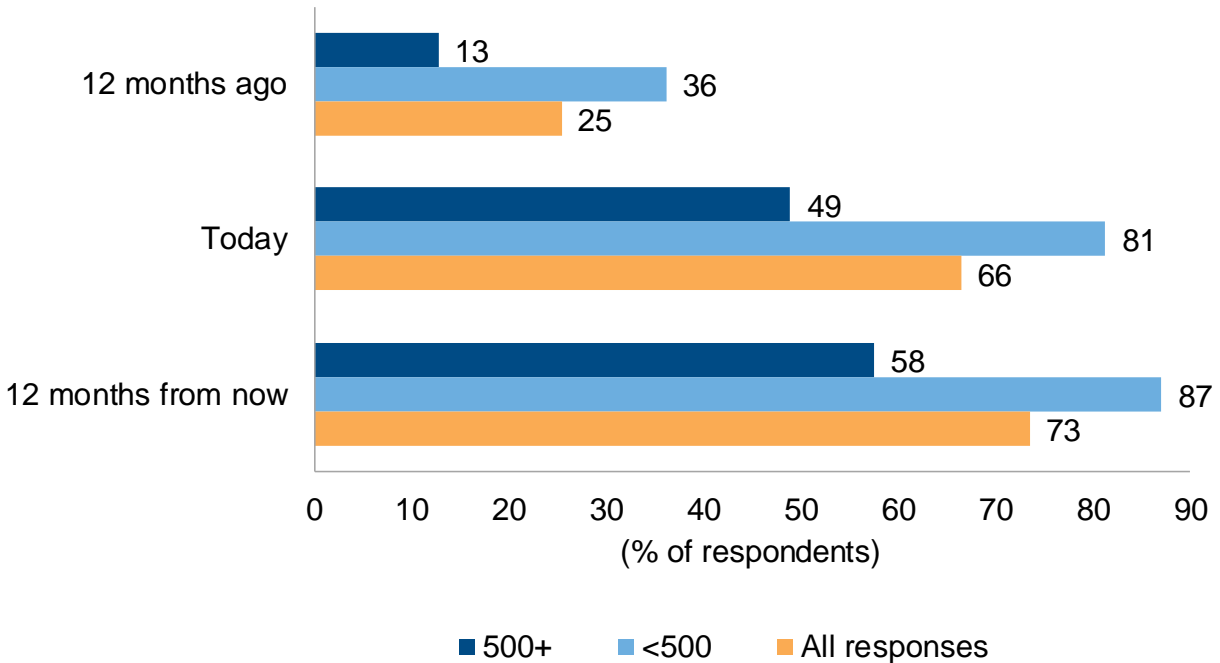
Survey Results

Figure 1 provides an indication of how broadly HPE SimpliVity hyperconverged solutions are used within survey respondents' production workloads. On average, respondents (i.e., HPE SimpliVity customers) are currently running 66% of their production workloads on HPE SimpliVity systems. This is up from a much smaller percentage (25%) of their production workloads running on HPE SimpliVity systems just 12 months prior. The 25% from the prior year isn't surprising, given the relatively limited time these products have been generally available. That said, the rapid jump to 66% is a striking share of production workloads. A look at company sizes (data not shown) tells us that respondents with fewer employees currently run a much larger share of production workloads than their larger counterparts. On average, respondents with fewer than 500 employees currently leverage HPE SimpliVity systems for 81% of their production workloads, whereas on average, respondents with 500+ employees run 49% of production workloads on HPE SimpliVity systems. The average share of customer production workloads on HPE SimpliVity systems is expected to increase again over the next 12 months, but at a more moderate rate (73% of total).

FIGURE 1

Share of Production Workloads Running on HPE SimpliVity by Company Size

Q. For your organization's total production workloads, please estimate the percentage currently running on HPE SimpliVity hyperconverged infrastructure.



n = 135

Source: IDC, 2016

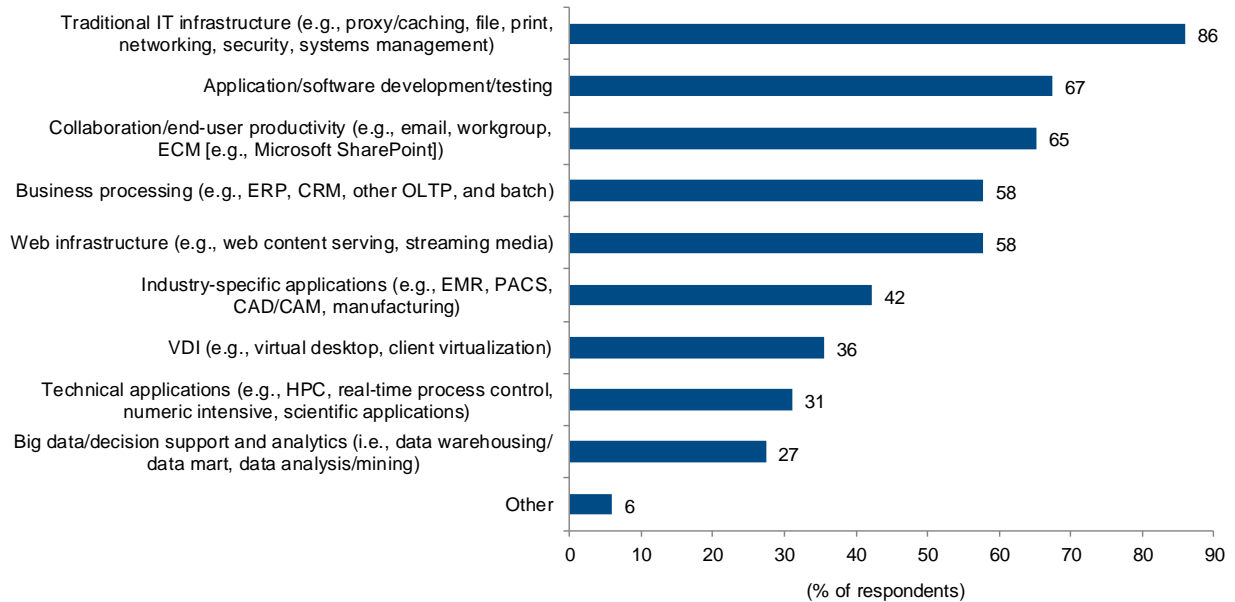
Figure 2 offers insight into the types of workloads currently running on HPE SimpliVity systems. The most common workload type from the pool of HPE SimpliVity customers was traditional IT infrastructure (which is a broad term for file/print, systems management, network management, and security), followed by application or software development/testing, and collaborative applications, which were similar in their share of total responses. These workloads were followed by business processing and web infrastructure, which also returned similar shares of total responses.

These rankings resemble past IDC surveys that have explored types of existing applications running on hyperconverged systems, which tend to place IT infrastructure, application/software development, and collaborative applications among the most common workloads.

FIGURE 2

Workloads Currently Running on HPE SimpliVity

Q. Which of the following workloads in your environment today are deployed on HPE SimpliVity hyperconverged infrastructure?



n = 135

Note: Multiple responses were allowed.

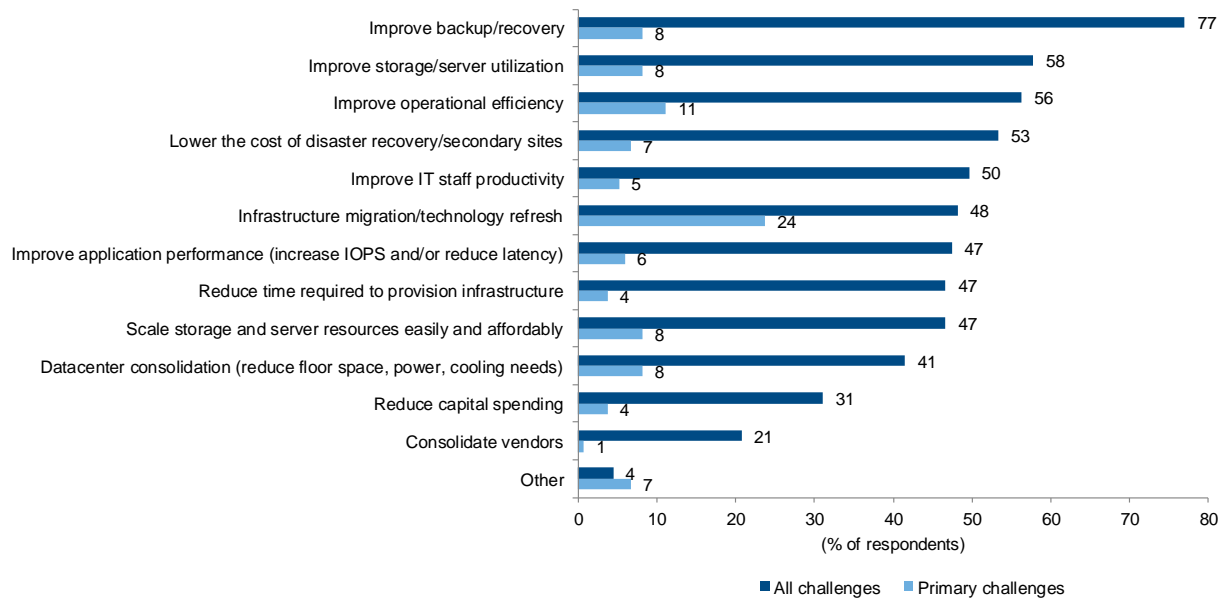
Source: IDC, 2016

Figure 3 explores the challenges respondents sought to address when deploying HPE SimpliVity. The figure lists their "primary" challenges against "all challenges" they were looking to address when deploying HPE SimpliVity. The results for primary challenges reflect just one choice per respondent, whereas the results for all challenges reflect multiple responses. The primary challenge HPE SimpliVity customers were looking to address was infrastructure migration and/or technology refresh. This challenge represented 24% of all respondents, which was double the second most common primary challenge of operational efficiency (11%). Although called out explicitly in this survey, it should be noted that other choices reflected here are often tied to gains in operational efficiency. One response that stands out among all others for "all challenges" is "improving backup and recovery," which was listed as a challenge by 77% of all respondents. While improving backup/recovery may not be the most common "primary" challenge companies are turning to HPE SimpliVity infrastructure to help solve, it is clear that the vast majority view it as a valued feature.

FIGURE 3

Challenges Sought to Address with HPE SimpliVity Deployment

- Q. *What are all challenges that your organization sought to address with the use of a HPE SimpliVity hyperconverged infrastructure?*
- Q. *What is the primary challenge that your organization sought to address with the use of a HPE SimpliVity hyperconverged infrastructure?*



n = 135

Note: Multiple responses were allowed for "all challenges."

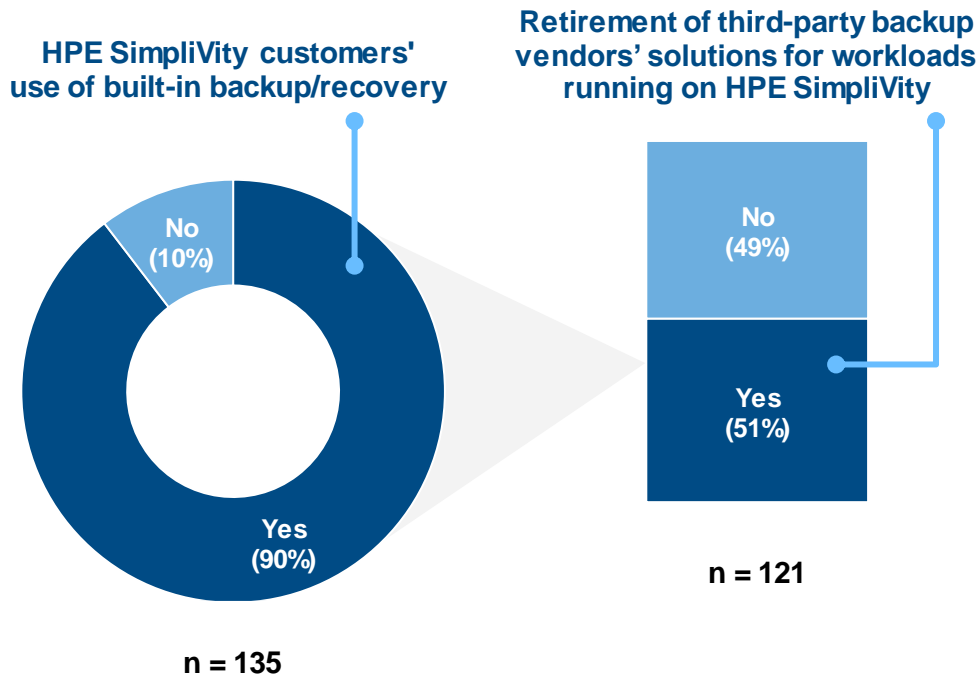
Source: IDC, 2016

Figure 4 dives deeper into the use of HPE SimpliVity data protection features and their impact on existing, established offerings. 90% of the surveyed customers are currently using the built-in data protection features. The impact of HPE SimpliVity data protection features frequently results in reduced use of existing data protection software. Indeed, more than 50% of survey respondents retired their existing third-party backup or replication software in lieu of HPE SimpliVity data protection features.

FIGURE 4

Impact of HPE SimpliVity Technology on Backup and/or Replication Software

- Q. Are you currently using HPE SimpliVity built-in backup and/or replication capabilities?
- Q. Have you retired the use of third-party backup and/or replication solutions for workloads running on HPE SimpliVity hyperconverged infrastructure in lieu of HPE SimpliVity built-in data protection?



Source: IDC, 2016

Areas of Realized Improvements

This section reviews the areas where survey respondents most frequently see improvements after deploying HPE SimpliVity infrastructure in their organization. As shown in Figure 5, improvements were experienced within backup/recovery and/or disaster recovery within 79% of all respondents – a capability previously called out as an area of value. This area was closely followed by improved storage utilization (75% of all respondents). This is likely the result of HPE SimpliVity technology's deduplication and compression of data, which reduces capacity requirements. An important aspect of the results shown in Figure 5 is how widespread the improvements can be. All but 4 of 12 choices provided in the survey (excluding the "other" category) were listed as areas improved by more than 50% of survey respondents.

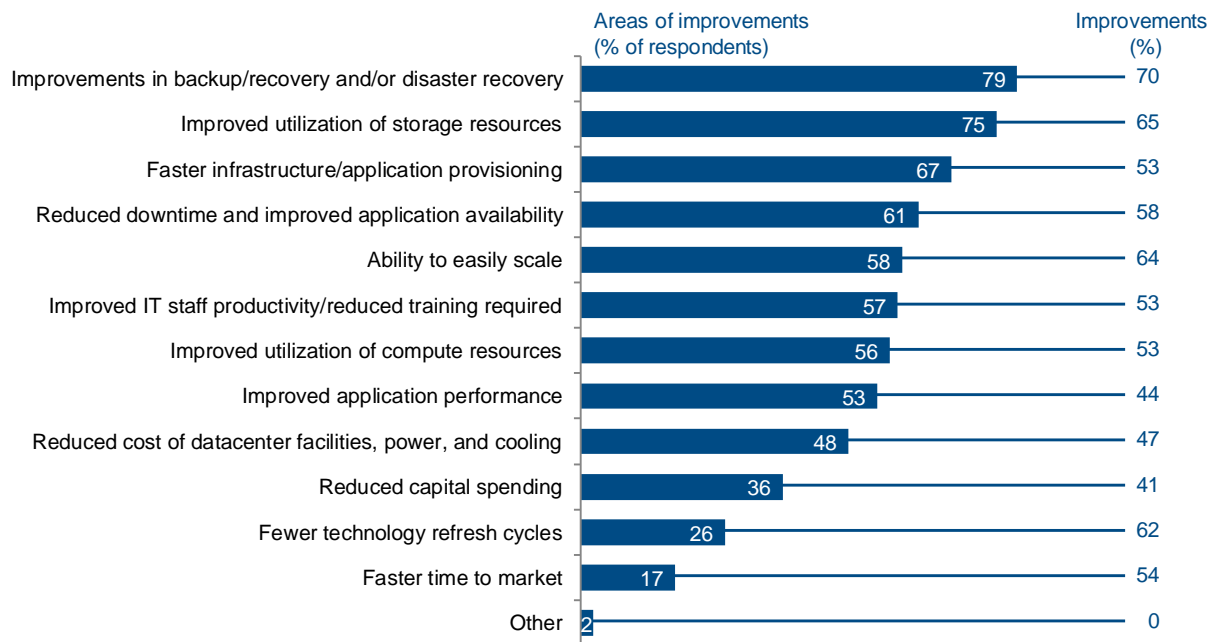
Figure 5 also explores the amount of improvements experienced by HPE SimpliVity customers. Rates of improvements are quite high for all the areas listed. Once again, improving backup/recovery and/or disaster recovery scores very high, with an average of 70% improvement with HPE SimpliVity over pre-HPE SimpliVity environments. This is likely tied to HPE SimpliVity platform's simplified approach to backup/recovery and disaster recovery, the platform's ability to meet stringent recovery point and

recovery time objectives, and a reduction in the use of third-party software. It's also likely tied to global deduplication and replication features, which have allowed many customers to implement disaster recovery more cost efficiently than prior solutions. It should be noted that the results within Figure 5 are much higher than the results of past marketwide surveys where improvements are (on average) well below 30%.

FIGURE 5

Improvement Realized Through HPE SimpliVity Infrastructure

- Q. *In which of the following areas has your organization experienced improvement from the use of HPE SimpliVity hyperconverged infrastructure?*
- Q. *What percentage improvement has your organization experienced from the use of HPE SimpliVity hyperconverged infrastructure in any of these areas?*



n = 135

Note: Multiple responses were allowed.

Source: IDC, 2016

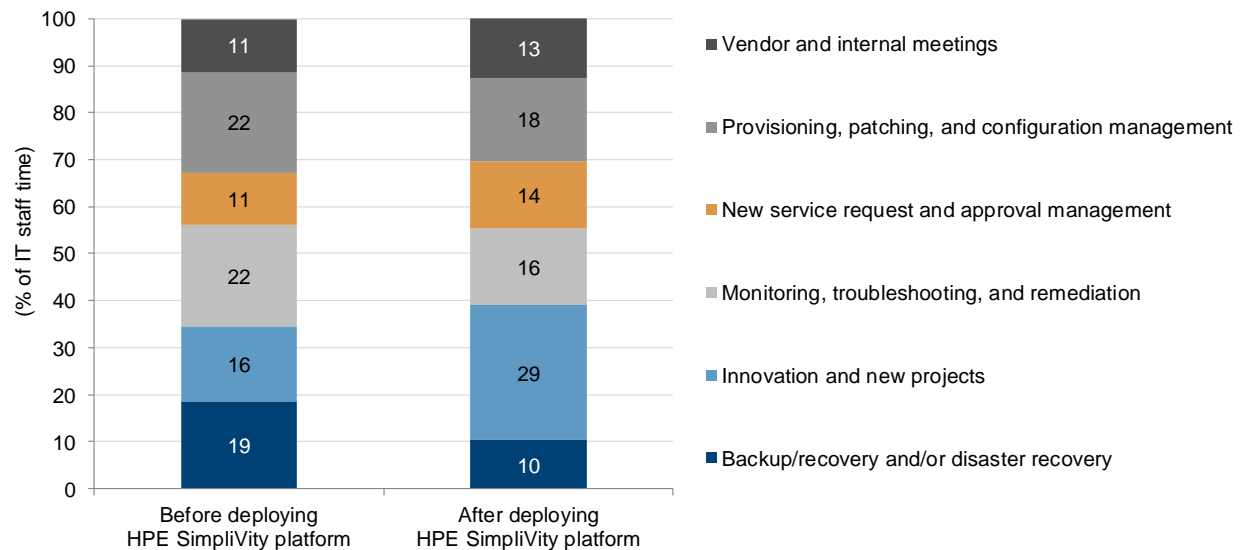
Figure 6 provides the results from the portion of the survey that asked respondents to allocate how much time IT staff tend to spend on typical projects or tasks. The results represent a "before and after" view for HPE SimpliVity customers. The most striking change shown in Figure 6 comes within the highly coveted time spent on innovation and new projects. The sample of HPE SimpliVity customers spent 15.8% of their time on innovation and new projects before deploying HPE SimpliVity compared with 28.7% of their time spent on innovation and new projects after deploying HPE SimpliVity, a gain of 81%. Broadly speaking, this was made possible from time savings associated with managing fewer

infrastructure components to support respondents' virtualized workloads, simplified backup/recovery and disaster recovery (an improvement of 44%), and less time spent troubleshooting.

FIGURE 6

Percentage of IT Staff Time Spent on Select Projects/Tasks: Before and After Deployment of HPE SimpliVity Platform

- Q. *Percentage of total time before deploying HPE SimpliVity platform: Considering the following mix of tasks, over a given week, what percentage of total IT administrator/operations staff time (across server, networking, and storage infrastructure) is spent on the following six general tasks?*
- Q. *Percentage of total time after deploying HPE SimpliVity platform: Considering the following mix of tasks, over a given week, what percentage of total IT administrator/operations staff time (across server, networking, and storage infrastructure) is spent on the following six general tasks?*



n = 135

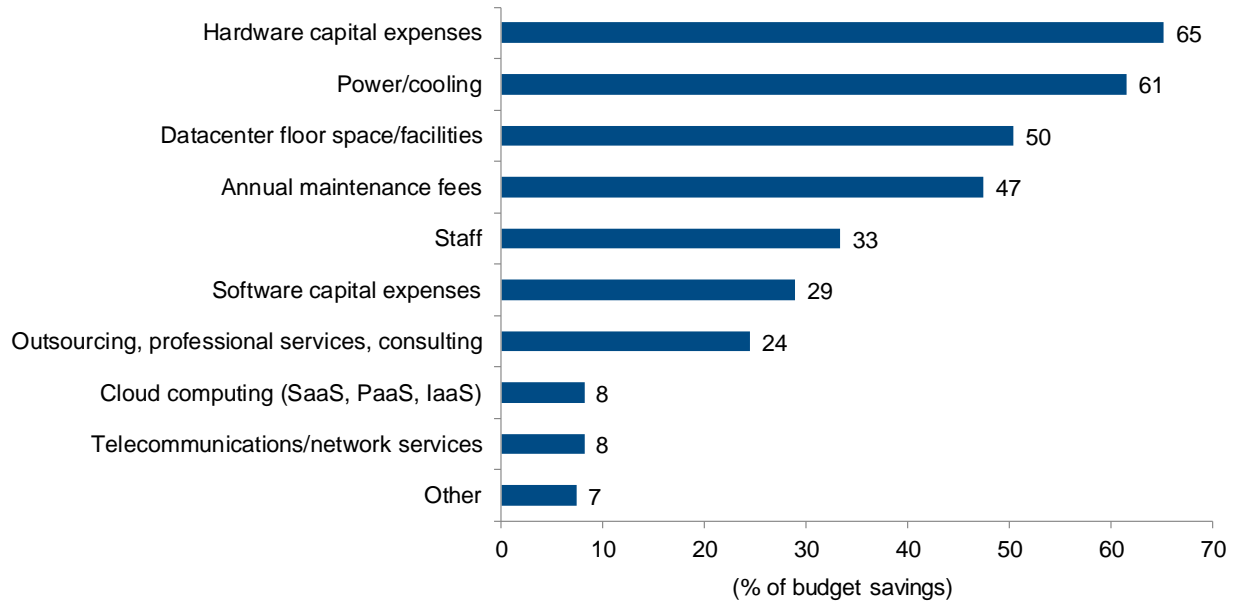
Source: IDC, 2016

Figure 7 identifies where survey respondents achieve budget savings by deploying the HPE SimpliVity platform. While hardware capital expenses ranked first, savings were achieved across many operational expenses, with power and cooling and datacenter floor space each called out as an area of budget savings for more than 50% of respondents. Similar to the "innovation" theme evident in Figure 6, Figure 8 reveals that HPE SimpliVity customers increased IT budget spent on new technology projects/purchases (from 43% to 57%, a 31% increase) compared with IT budget spent on maintaining existing infrastructure.

FIGURE 7

Areas of Budget Savings with HPE SimpliVity Deployment

Q. For the following budget line items, select where savings have been achieved by deploying HPE SimpliVity hyperconverged infrastructure.



n = 135

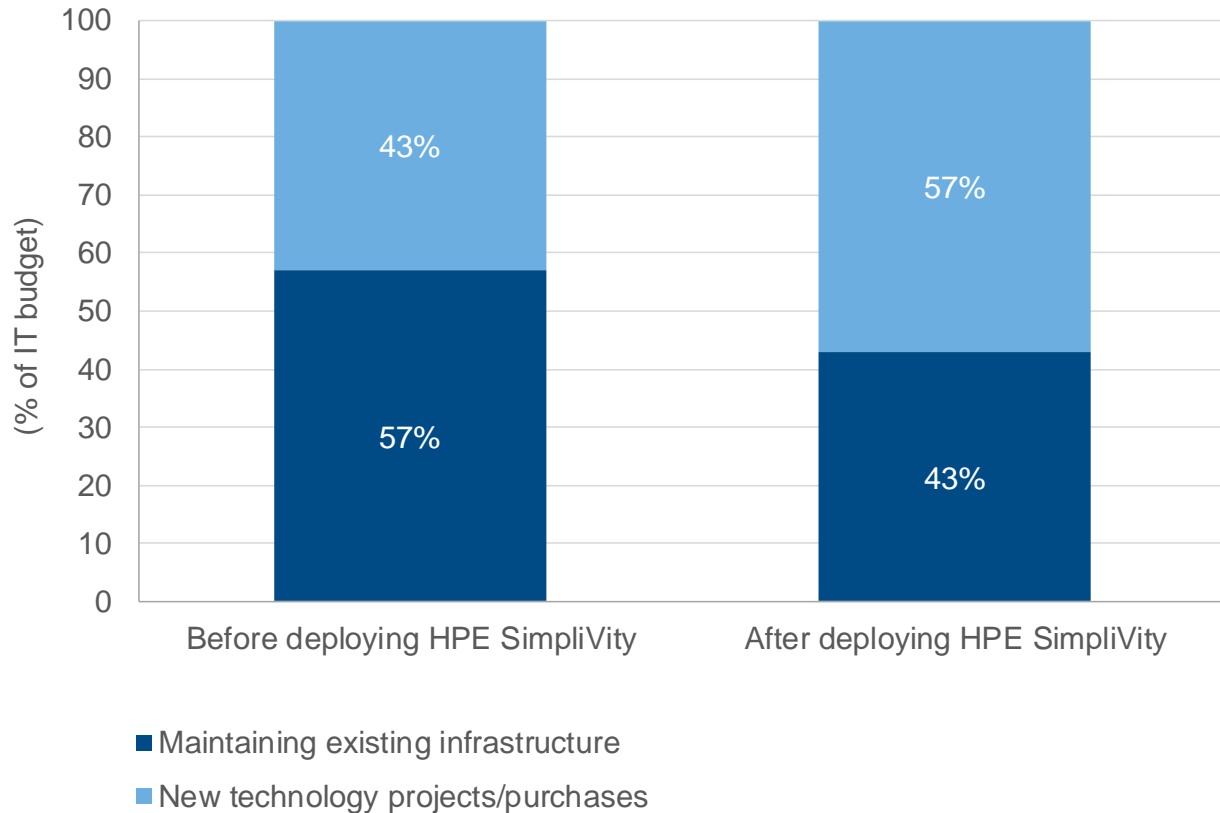
Note: Multiple responses were allowed.

Source: IDC, 2016

FIGURE 8

IT Budget Spending on New Projects Versus Maintaining Existing Infrastructure: Before and After Deployment of HPE SimpliVity

Q. *Approximately what percentage of your organization's IT budget will be spent on new technology projects and purchases, as opposed to the percentage of budget spent on maintaining existing infrastructure?*



n = 135

Source: IDC, 2016

Highlights from In-Depth Interviews with Three HPE SimpliVity Customers

As previously noted, IDC interviewed three HPE SimpliVity customers to better understand how they use the technology and how they are benefiting from HPE SimpliVity solutions. It should be noted that these interviews were conducted prior to HPE's acquisition of SimpliVity and prior to the launch of the HPE SimpliVity 380. IDC has updated any customer quotes that mention "SimpliVity" to reflect this acquisition for the purposes of continuity. Thus any customer quotes now show "HPE SimpliVity."

Interview 1: A Large Liberal Arts College Within the Northeastern United States

IDC interviewed a large liberal arts college with an IT staff of 30, of whom just 3 were managing the college's IT infrastructure. The college was running more than 100 business applications, of which 95% are virtualized. The college runs 5 HPE SimpliVity systems at its campus datacenter and 4 HPE SimpliVity systems at an offsite hosted datacenter for disaster recovery. More than 90% of all applications are running on HPE SimpliVity systems. The applications that have not been migrated to HPE SimpliVity hyperconverged infrastructure are running on scale-out file-based systems used for large video files. HPE SimpliVity hyperconverged infrastructure replaced servers, external storage, backup software, and appliances from a single large infrastructure supplier.

The following are highlights that were brought up during the interview, with select quotes from the customer:

Investment in HPE SimpliVity technology reduced the need to expand staff:

- "I would say prior to HPE SimpliVity, we were desperately in need of one or two more people."
- "I don't foresee that HPE SimpliVity will impact our FTE count. We'll evolve with it and repurpose those FTE resources towards better project management, towards meeting better goals."
- "And now we're finding this just runs, and because there's so much less complexity, so much less inventory and assets to manage, it gives us the ability to go work on other things that we had not had the time to in the past."

Investment in HPE SimpliVity technology reduced time and money spent on data protection:

- "It took us approximately three months to get [our previous data protection solution] up and running. We successfully did that in three hours with HPE SimpliVity."
- "With HPE SimpliVity, we sat down and found that setting up the policies was extremely easy. Once they were in place, it was really just a session of going down through and saying: Well, what policy does this server need? And then when you just did a right click and a restore and the box is there, and we were able to go in and grab a file or power one off, power one up, and it took minutes – seven minutes or less, five minutes or less, every time. We were able to zip right through all of our boxes extremely fast."

Investment in HPE SimpliVity technology reduced IOPS and boosted performance:

- "When we're looking at the IOPS that we've removed from our environment, [a] 10-terabyte file server easily could push a thousand IOPS by itself."
- "Our environment now, with all VMs, sits at about a thousand IOPS. A huge reduction with IOPS across our environment."
- "And, the second piece [is that] it's also speeding up performance ... [Our HPE SimpliVity system] doesn't have to do a time delay on multiread, multiwrite, if the disk is busy. The card says, 'I've got this data, the data has been written, move on.' So it's truly a performance tuner, as well, where it speeds up the rewrite acknowledgement."

Interview 2: An International Medical Care Company

IDC interviewed a customer that has 30 HPE SimpliVity systems. Our interview focused on the 18 HPE SimpliVity systems deployed within 6 of the company's 15 distributed financial centers, each center

with approximately 200-250 employees. Each remote site has a print server, a file server, a domain controller, and a backup server. Prior to deploying HPE SimpliVity, these virtualized workloads initially resided on 2U servers; however, this setup was difficult to manage and expensive to make truly resilient. Furthermore, rapid data growth at each site was pushing local storage capacity to its limits. Each of the 6 sites now runs its file server, print server, domain controllers, and backup management on 2 HPE SimpliVity systems. The two nodes run as a fault-tolerant pair. All the data within these remote sites is replicated to an HPE SimpliVity cluster at the company's central datacenter.

The following are highlights brought up during the interview, with select quotes from the customer:

HPE SimpliVity infrastructure's global deduplication and replication features help the company reduce capacity and replication costs at remote sites:

- "What has been really nice is the systems dedupe the data at the [remote] site, so [HPE SimpliVity systems with files that change frequently] don't fill up nearly as fast. So you see pretty big savings from a deduplication there, and then it's all replicated back to our datacenter, to another HPE SimpliVity [system] here."

Application reliability improved greatly with HPE SimpliVity technology due to resiliency at each site and efficient replication to datacenter:

- "[Prior to HPE SimpliVity], we tried to put as much resiliency into the design of the [remote] servers, but it was still only a single server. And, when something broke out in the field, it would be particularly difficult to fix. That's because often there wouldn't be an IT person there, or if the IT person was there, they might not be really familiar with taking apart servers."
- "If a device in an HPE SimpliVity location fails, the other one picks up the load. So we've got coverage locally. But then if both fail due to a disaster, then I bring up the server at corporate headquarters and ... we'll still have the data ready and available."

The company was able to reduce time spent on maintenance and upgrades:

- "Any given week, we might not spend any time on the HPE SimpliVity, but quarterly you pretty much need to update your firmware, and that [was historically] a pretty significant ordeal. [HPE SimpliVity systems] behave a lot better when it comes to that. [There are no] meetings with the SAN group, application owners, or networking group. [With HPE SimpliVity], we agree on the upgrade, inform the app owners and go."

Ultimately, the move to an HPE SimpliVity solution provided a wide range of benefits that spanned many aspects of operational and capital costs while improving resiliency. The company plans to expand its use of HPE SimpliVity hyperconverged infrastructure into its additional financial centers as current assets depreciate.

Interview 3: A Global Engineering and Services Company Within a Commodity Manufacturing Industry

IDC interviewed a large international organization based in Europe, with approximately 300 million euros in annual revenue and more than 700 employees around the world. The IT department has fewer than 30 full-time employees, of which 7 employees are managing infrastructure globally. The company has 60 business applications (90% of which are virtualized), 40 of which are running on 8 HPE SimpliVity systems. All 40 applications running on HPE SimpliVity hyperconverged infrastructure are mission critical.

The following are highlights brought up during the interview, with select quotes from the customer:

The IT department is able to manage corporate infrastructure with staff that have a universal knowledge of datacenter infrastructure rather than with silos of experts:

- "We don't have a server team and a storage team, and I'm very happy about this. And, this is where HPE SimpliVity comes into play."
- "vCenter is our central tool for VM management on HPE SimpliVity workloads."
- "We don't need another tool for hardware monitoring."

HPE SimpliVity infrastructure has driven operational savings associated with data protection and recovery tasks:

- "Before, we spent a day or more on provisioning and recovery operations. Now, provisioning and data recovery requests are done in minutes."
- "Before, we spent at least three hours per day analyzing failed backups, doing VM, and data restores, and these tasks required expert IT resources. Now, we spend maybe minutes per day, and these tasks are very simple to perform by any IT resource who knows VMware."

HPE SimpliVity infrastructure has allowed for the implementation of a modern, cost-effective disaster recovery plan:

- The company had a disaster recovery plan drawn up a year prior to deploying HPE SimpliVity, but it was never rolled out due a lack of staff needed to implement and manage it.
- With HPE SimpliVity, the company was able to connect two HPE SimpliVity clusters between its European headquarters and an office in India via a 2Mbit connection. The company was able to transfer 10GBs in one hour, thanks to HPE SimpliVity deduplication and compression bandwidth optimization.
- Setting up a new data protection policy requires very little effort. The company simply opens vCenter, creates a storage group, sets a policy, creates new copy, and the operation is done.

CHALLENGES/OPPORTUNITIES

Hyperconverged infrastructure is among the fastest-growing and most hotly competitive segments of the IT infrastructure market today. Much of the market adoption, education, and growth has been driven by smaller technology startups that have capitalized on gaps within the portfolio of established vendors. It should be noted, however, that these large, established suppliers have reassessed their participation in this fast-growing market and are now redirecting resources and attention to the hyperconverged market. This will make it challenging for smaller companies to stand out within the market. The recent acquisition of SimpliVity accelerates HPE's market position and creates valuable differentiation within the hyperconverged market. On the cost side, HPE's vast server supply chain and global network of channel partners should drive growth very quickly for the company. IDC notes the quick integration of SimpliVity's intellectual property on HPE servers as a sign of HPE's commitment to datacenter hyperconvergence.

CONCLUSION

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. The HPE SimpliVity customers surveyed by IDC for this white paper align with this trend. Indeed, HPE SimpliVity customers tell us that "mitigating risk to the business" and "supporting business revenue objectives" are the two most important business outcomes that can be achieved through the use of IT (see Figure 9 in the Addendum). It should be no surprise to learn that IT departments are increasingly looking for infrastructure that improves resource utilization rates while addressing productivity and agility within the datacenter. Organizations around the world have turned to converged systems to achieve just such goals and helped turn converged systems into a rapidly growing market segment.

IDC views hyperconverged offerings like HPE SimpliVity 380 as the next phase of the converged systems market development. Such hyperconverged systems are improving upon the realized benefits of first-generation converged systems by redesigning datacenter infrastructure and allowing customers to:

- Collapse silos of storage, compute, and data management services into standard nodes of x86 servers
- Collapse silos of IT experts by allowing customers to leverage common virtualization tools to manage most (if not all) of the infrastructure tasks required to support virtualized workloads
- Reduce the need to deploy many types of dedicated appliances and separately licensable infrastructure within the datacenter, including data efficiency and data protection solutions

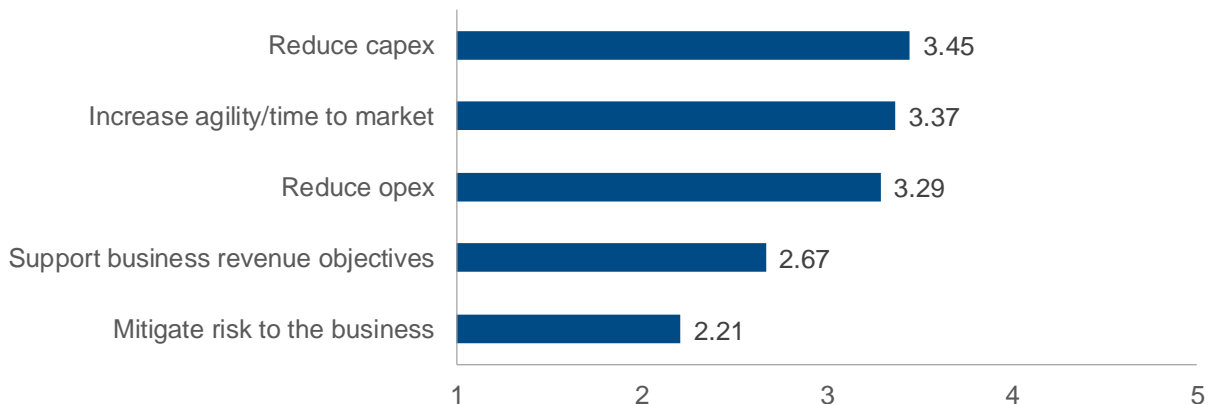
Although the market for converged and hyperconverged systems remains relatively young, it is becoming increasingly clear that these scale-out and feature-rich systems are driving real benefits within datacenters around the world, impacting capex and, more importantly, opex.

ADDENDUM

FIGURE 9

Most Important Business Outcomes

Q. For the following business outcomes that can be achieved through IT, rank them in the order of importance to your organization.



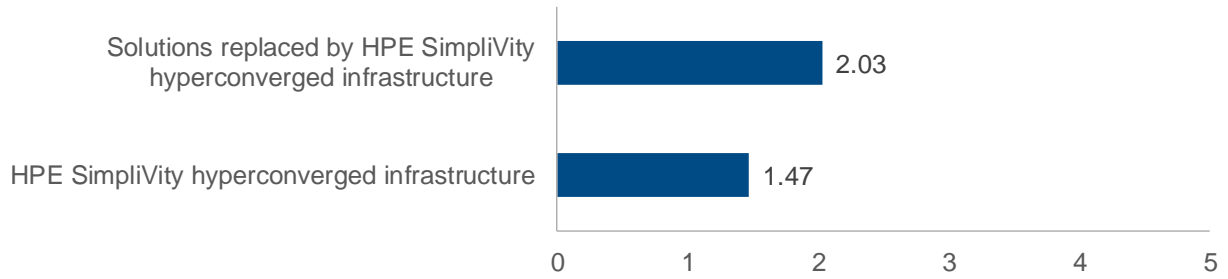
n = 135

Source: IDC, 2016

FIGURE 10

IT Staff Impact

Q. *What is the total number of full-time equivalent (FTE) IT staff required to manage HPE SimpliVity hyperconverged infrastructure? How many FTEs were required to manage solutions replaced by HPE SimpliVity hyperconverged infrastructure?*



n = 135

Source: IDC, 2016

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