White Paper

SimpliVity Hyperconvergence Drives Operational Efficiency and Customers are Benefitting

Sponsored by: SimpliVity

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IN THIS WHITE PAPER

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

SITUATION OVERVIEW

IT departments have long leveraged new infrastructure enhancements to improve core datacenter metrics such as performance, utilization rates and levels of resiliency. Indeed, decades of compounded technological advances that can be tied back to Moore's Law, multi-core 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 clearly beneficial, such improvements have tended to result in greater efficiency gains within capital expenditures (capex) than within operational expenditures (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 ten 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 versus the amount spent to manage, power, and cool this infrastructure. Using servers as an example, IDC research shows that every $1.00 spent on a physical server in 1995 resulted in just $.050 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 last 20 years. This capex to opex ratio actually flipped in favor of opex by 2005 when every $1.00 spent on a server resulted in $1.50 of spending on power, cooling, and management. IDC's most recent estimates tell us that every $1.00 spent on a server in 2015 results 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 refreshes. One common event has been related to a drive among organizations to incorporate 3rd Platform applications into their portfolio of workloads. 3rd Platform applications (which can be grouped into four broad categories of social, mobile, cloud, and analytics) 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 converged systems 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 also offering centralized management and increased the 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 inefficiency out of the datacenter, most have been built with the same type of infrastructure that required silos of experts. Further, their average selling prices 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 to deliver many of the proven benefits of early converged systems (e.g., reducing complexity and inefficiency), but do so 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 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.

SimpliVity Overview

SimpliVity is a privately held firm founded in 2009, with headquarters in Westborough, Massachusetts. SimpliVity offers OmniStack hyperconverged infrastructure software that enables organizations to simplify IT. OmniStack runs on x86 industry-standard servers to deliver turnkey hyperconverged infrastructure. Clustering multiple OmniStack-powered hyperconverged infrastructure units forms a shared resource pool and delivers high availability, mobility, and efficient scaling of performance and capacity.

The company offers OmniCube, a complete hardware-software solution that is designed, built, and supported by SimpliVity. Customers that wish to run OmniStack on other hardware platforms can purchase the OmniStack Integrated Solution with Cisco UCS or the OmniStack Integrated Solution with Lenovo System X. All three provide the same features and all are fully supported by SimpliVity.

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

- **Data efficiency.** Fine-grained deduplication and compression of all data in real time at inception to ensure that the data remains deduplicated and compressed throughout its lifecycle, as well as through all media layers of a single SimpliVity hyperconverged infrastructure system, and across multiple systems, datacenters, geographies, and the public cloud in which SimpliVity runs its software version, OmniStack.

- **WAN optimization.** WAN optimization ensures that data transferred between sites or from one 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 RPO on a per-VM basis, enabling automated, high-frequency backup and replication of VMs to any SimpliVity hyperconverged infrastructure node in a Federation, including on Amazon EC2. The Federation is a collection of nodes managed across multiple sites through a single administrative interface and common APIs.

- **Global scale-out.** SimpliVity systems can be added simply and efficiently, in local or remote data centers, and instantly become members of the global Federation.

- **Unified global management.** Resources, policies and workloads, are managed via VMware vCenter, facilitating movement of data and VMs across SimpliVity hyperconverged infrastructure units and datacenters without a need to configure IP addresses, controllers, LUNs, and so forth.

- **VM centricity.** The 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.

- **Seamless cloud integration.** SimpliVity can constitute an instance of its system on Amazon EC2 or to other cloud service providers and run it as a member of the Federation.

- **Caching and tiering.** To accelerate read performance and assist with read spikes and other IO bursts, SimpliVity uses caching and tiering.

- **Openness to existing legacy servers.** Non-hyperconvergence 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 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 OmniStack Data Virtualization Platform is the underlying technology within SimpliVity hyperconverged infrastructure systems — an assimilated IT infrastructure platform solution that can run on dedicated hardware as well as on private, public, and hybrid clouds. OmniStack 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 SIMPLIVITY CUSTOMERS

The following sections of this paper will provide insights into a sample of SimpliVity customers. This information comes from two sources:

- An IDC Web survey of 135 end users who have purchased and deployed one of the SimpliVity solutions mentioned above. 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 SimpliVity customers who are using SimpliVity in production environments. Each interview was one hour long and 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, Europe accounted for 33% and the rest were evenly split between MEA and Asia Pacific.
- On average, respondents had virtualized 85% of their physical servers.
- The average number of data centers in use was 4.77.

Survey Results

Figure 1 provides an indication of how broadly SimpliVity's solutions are used within their customers' production workloads. On average, respondents (i.e., SimpliVity customers) are currently running 66% of their production workloads on SimpliVity systems. This is a significant increase from just 12 months ago, when 25% of all production workloads ran on SimpliVity systems. The percent from a year ago 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. Digging into company sizes (data not shown), tells us that SimpliVity's smaller customers currently run a much larger share of production workloads than their larger counterparts. Respondents with fewer than 500 employees leverage SimpliVity systems (on average) for 81% of their production workloads, whereas the respondents with 500+ employees on average run 49% of production workloads on SimpliVity. At these larger organizations, SimpliVity's average share of production workloads is expected increase again over the next 12 months, but at a more moderate rate (74% of total).

FIGURE 1

Share of Production Workloads Running on SimpliVity by Company Size

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

(% of Total Workloads)

■ 500+   ■ <500   ■ All Responses
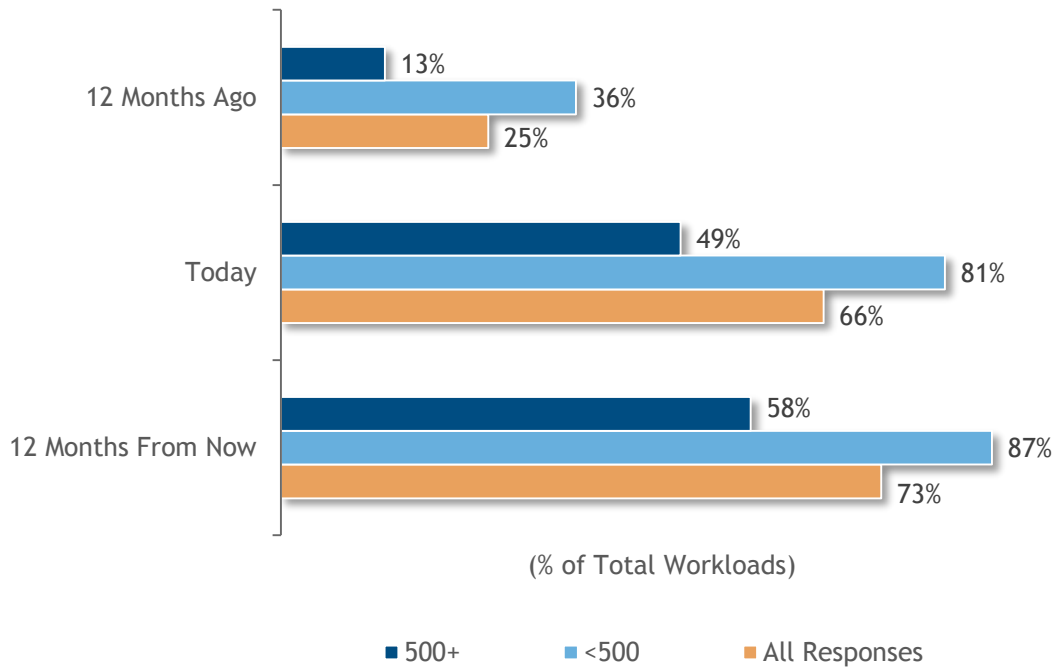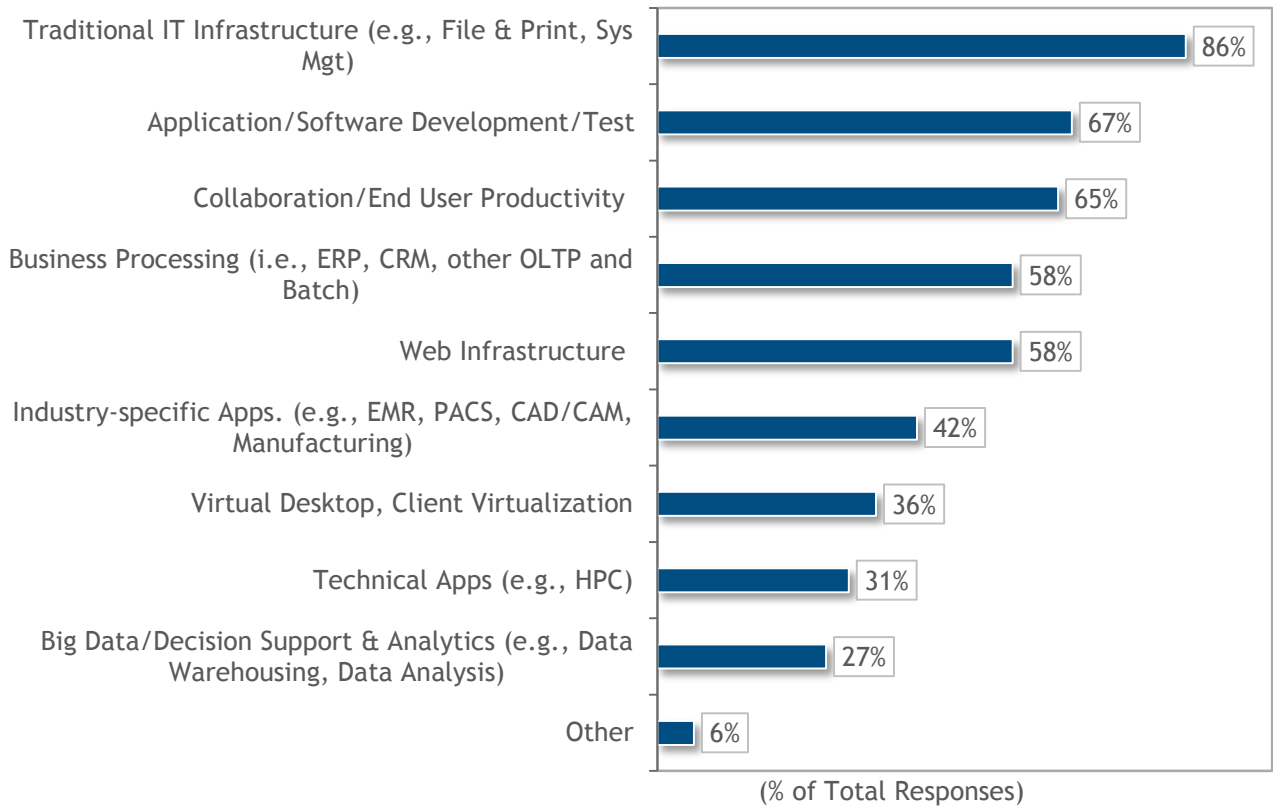
N = 135

Source: IDC, 2016

Figure 2 offers insight into the types of workloads currently running on SimpliVity systems. The most common workload type from the pool of SimpliVity customers is traditional IT infrastructure, which is a broad term for things like file/print, systems management, network management, security, and other workloads. This was followed by application or software development/testing, and collaborative applications, which are similar in their share of total responses. These workloads are 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 SimpliVity

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

(% of Total Responses)

N = 135, Multiple responses allowed

Source: IDC, 2016

Figure 3 explores the challenges respondents sought to address when deploying SimpliVity. The figure ranks their "primary" challenge against all challenges they were looking to address. Results for primary challenges reflect just one choice per respondent whereas results for all challenges reflect multiple responses. The primary challenge SimpliVity customers are looking to address is infrastructure migration and/or technology refresh. This represents 24% of all respondents, which is 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. When looking at results for all challenges, one response stands out among all others: improving backup and recovery. Indeed, improving backup and recovery was listed as a challenge by 77% of all respondents. While backup/recovery may not be the most common "primary" challenge companies are turning to SimpliVity to help solve, it is clear that the vast majority view it as a valued feature. Figure 4 dives deeper into the use of SimpliVity's data protection features and their impact on
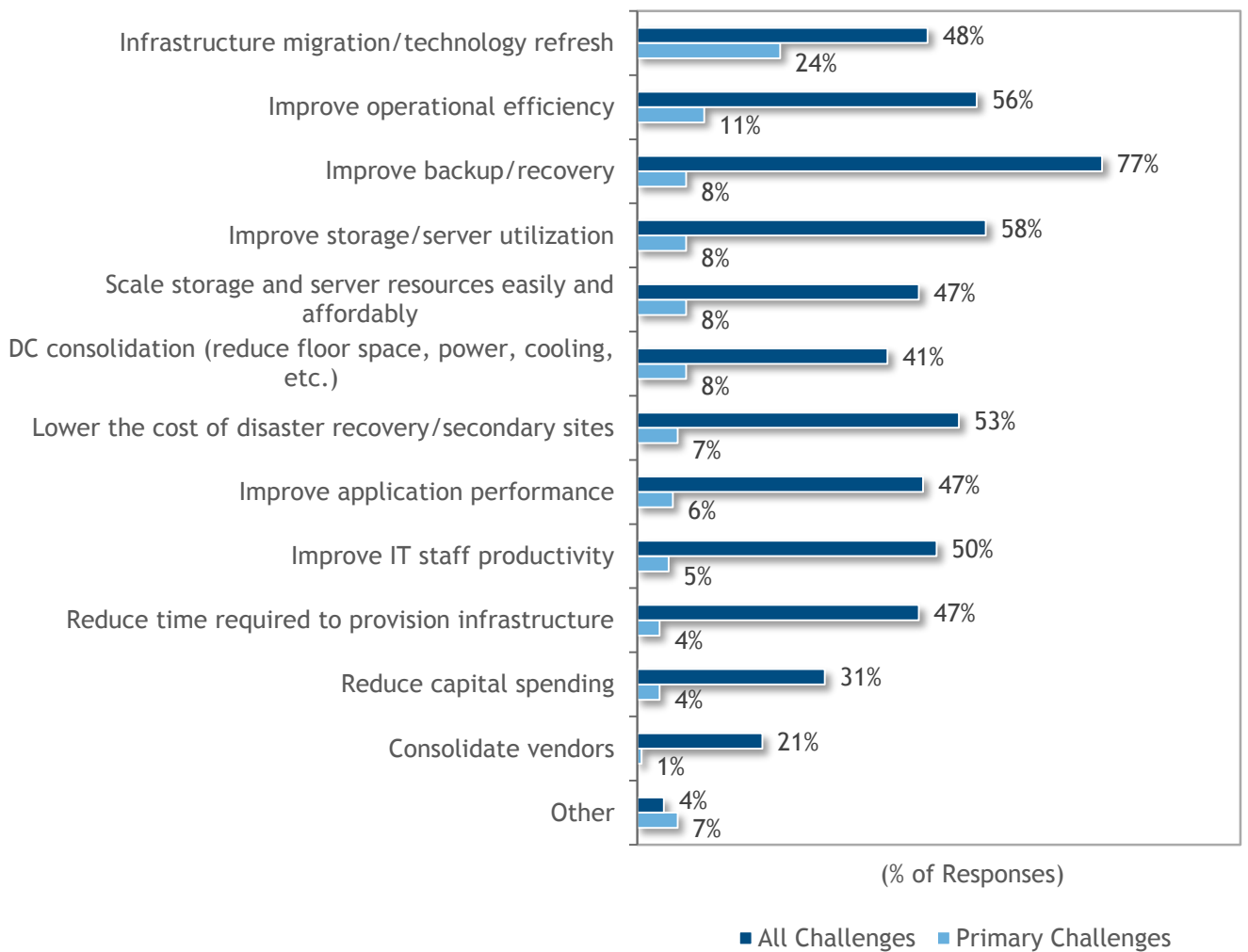
existing, established offerings. Ninety percent of the SimpliVity customers surveyed are currently using the built-in data protection features — a frequent result is a reduction in the use of existing data protection software. Indeed, more than 50% of survey respondents retired their existing third-party backup or replication software in lieu of SimpliVity's data protection features (see Figure 4).

FIGURE 3

Challenges Addressed with SimpliVity Deployment

Q. What are all challenges that your organization sought to address with the use of a SimpliVity hyperconverged infrastructure?

Q. What is the primary challenge that your organization sought to address with the use of a SimpliVity hyperconverged infrastructure?

Challenge	All Challenges	Primary Challenges
Infrastructure migration/technology refresh	48%	24%
Improve operational efficiency	56%	11%
Improve backup/recovery	77%	8%
Improve storage/server utilization	58%	8%
Scale storage and server resources easily and affordably	47%	8%
DC consolidation (reduce floor space, power, cooling, etc.)	41%	8%
Lower the cost of disaster recovery/secondary sites	53%	7%
Improve application performance	47%	6%
Improve IT staff productivity	50%	5%
Reduce time required to provision infrastructure	47%	4%
Reduce capital spending	31%	4%
Consolidate vendors	21%	1%
Other	4%	7%

(% of Responses)

■ All Challenges   ■ Primary Challenges

N = 135, Multiple answers allowed for "All Challenges."

Source: IDC, 2016

FIGURE 4

SimpliVity's Impact on Backup and/or Replication Software

Q.   Are you currently using SimpliVity's 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 SimpliVity hyperconverged infrastructure in lieu of SimpliVity's built-in data protection?

Using Data Protection Features

No (10%)

Yes (90%)
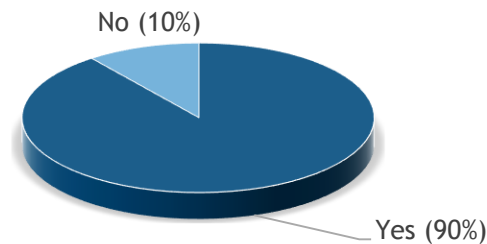
n = 135

Retired 3rd BU/Replication Software

No (49%)

Yes (51%)
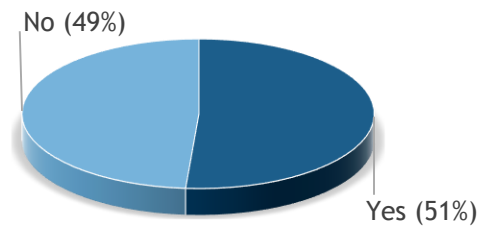
n = 135

Source: IDC, 2016

Areas of Realized Improvements

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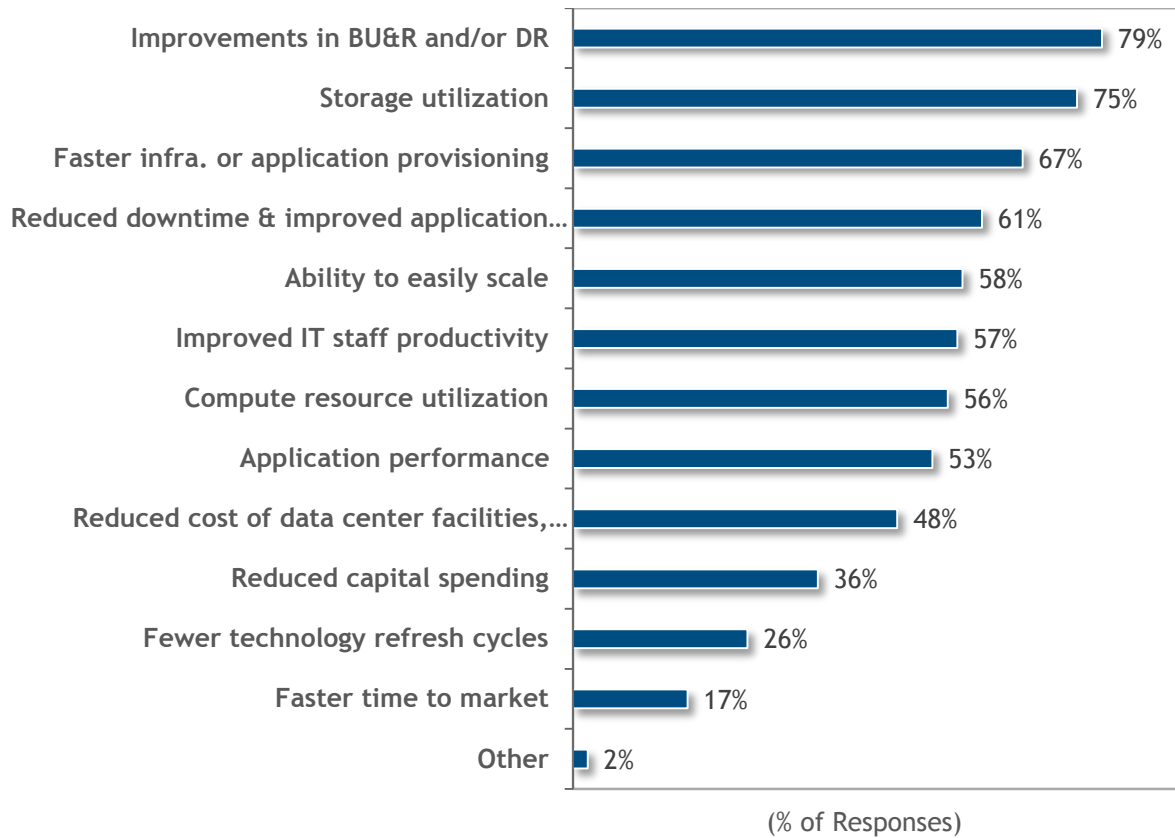
reduces capacity requirements. An important aspect of the results shown in Figure 5 is how widespread the improvements can be. Indeed, all but four of 12 choices provided in the survey (excluding 'Other') were listed as areas improved by more than 50% of survey respondents.

FIGURE 5

Areas of Improvement Realized Through SimpliVity

Q. *In which of the following areas has your organization experienced improvement from the use of SimpliVity hyperconverged infrastructure?*

	%
Improvements in BU&R and/or DR	79%
Storage utilization	75%
Faster infra. or application provisioning	67%
Reduced downtime & improved application…	61%
Ability to easily scale	58%
Improved IT staff productivity	57%
Compute resource utilization	56%
Application performance	53%
Reduced cost of data center facilities,…	48%
Reduced capital spending	36%
Fewer technology refresh cycles	26%
Faster time to market	17%
Other	2%

(% of Responses)

N=135, Multiple responses allowed
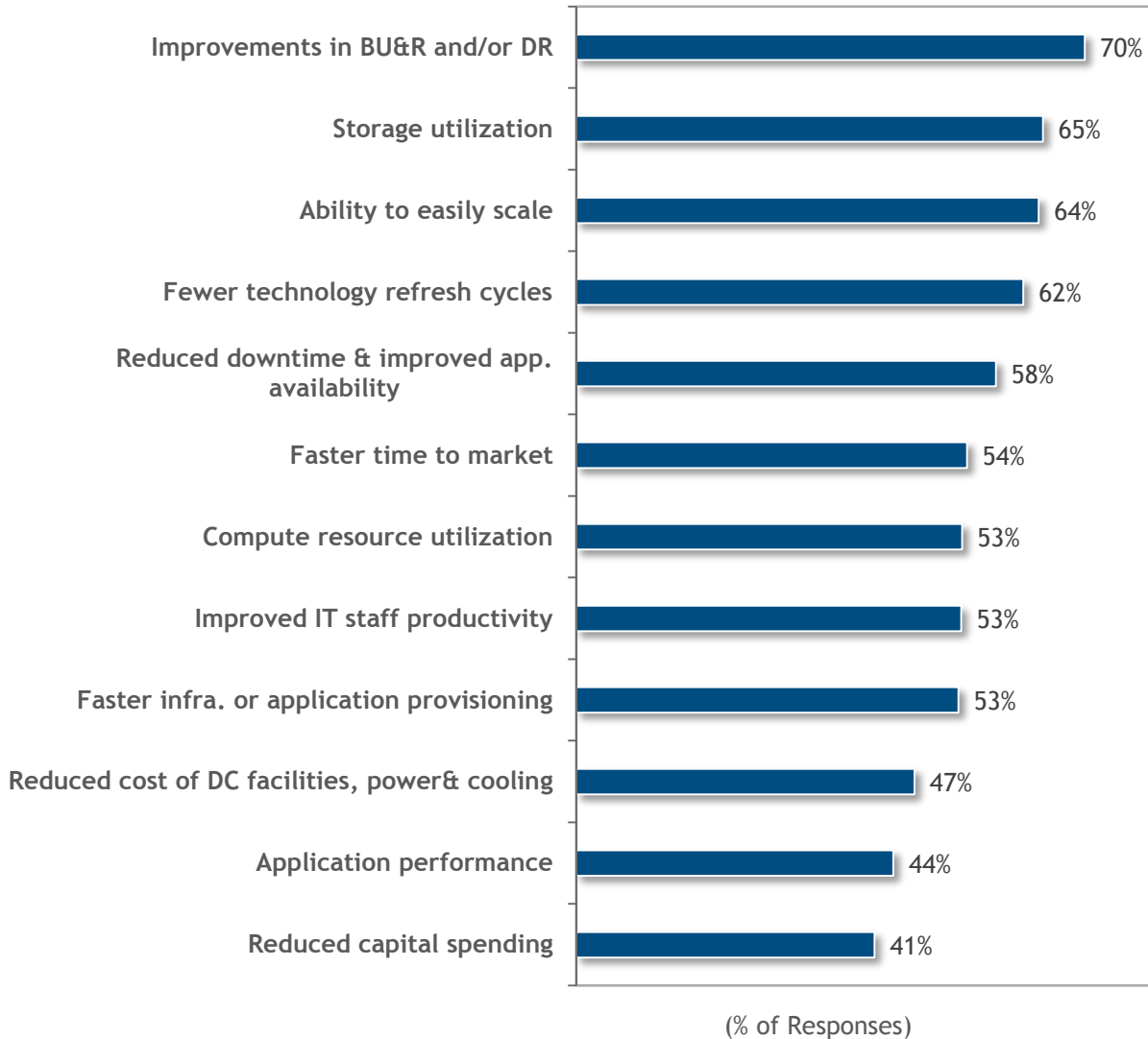
Source: IDC, 2016

Figure 6 explores the amount of improvements experienced by SimpliVity customers. The rates of improvements are quite high for all of the areas listed. Once again, backup/recovery and/or disaster recovery scores very high, with an average of 70% improvements over pre-SimpliVity environments. This is likely tied to SimpliVity's simplified approach to backup/recovery and disaster recovery, its ability to meet stringent recovery point and recovery time objectives, as well as a reduction in the use of third-party software. It's also likely tied to SimpliVity's global deduplication and replication features,

which have allowed many of its customers to implement disaster recovery more cost efficiently than prior solutions. It should be noted that the results within Figure 6 are much higher than results of past market-wide surveys where improvements are (on average) well below 30%.

FIGURE 6

Amount of Improvement Realized Through SimpliVity

Q. What percentage improvement has your organization experienced from the use of SimpliVity hyperconverged infrastructure in any of these areas?

| Category	%
Improvements in BU&R and/or DR	70%
Storage utilization	65%
Ability to easily scale	64%
Fewer technology refresh cycles	62%
Reduced downtime & improved app. availability	58%
Faster time to market	54%
Compute resource utilization	53%
Improved IT staff productivity	53%
Faster infra. or application provisioning	53%
Reduced cost of DC facilities, power& cooling	47%
Application performance	44%
Reduced capital spending	41%

(% of Responses)

N=135

Source: IDC, 2016

Figure 7 provides results from the portion of the survey that asked respondents to allocate how much time IT staff tend to spent on typical projects or tasks. The results represent a 'before and after' view for SimpliVity customers. The most striking change shown in Figure 7 comes within the highly coveted

time spent on innovation and new projects. The sample of SimpliVity customers went from spending 15.8% of their time on innovation and new projects to 28.7%, an 81% gain. 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 (a 44% improvement), and less time spent troubleshooting.

FIGURE 7

Percent of IT Staff Time Spent on Select Projects/Tasks

Q.   *Percentage of total time before deploying SimpliVity: 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 SimpliVity: 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?*
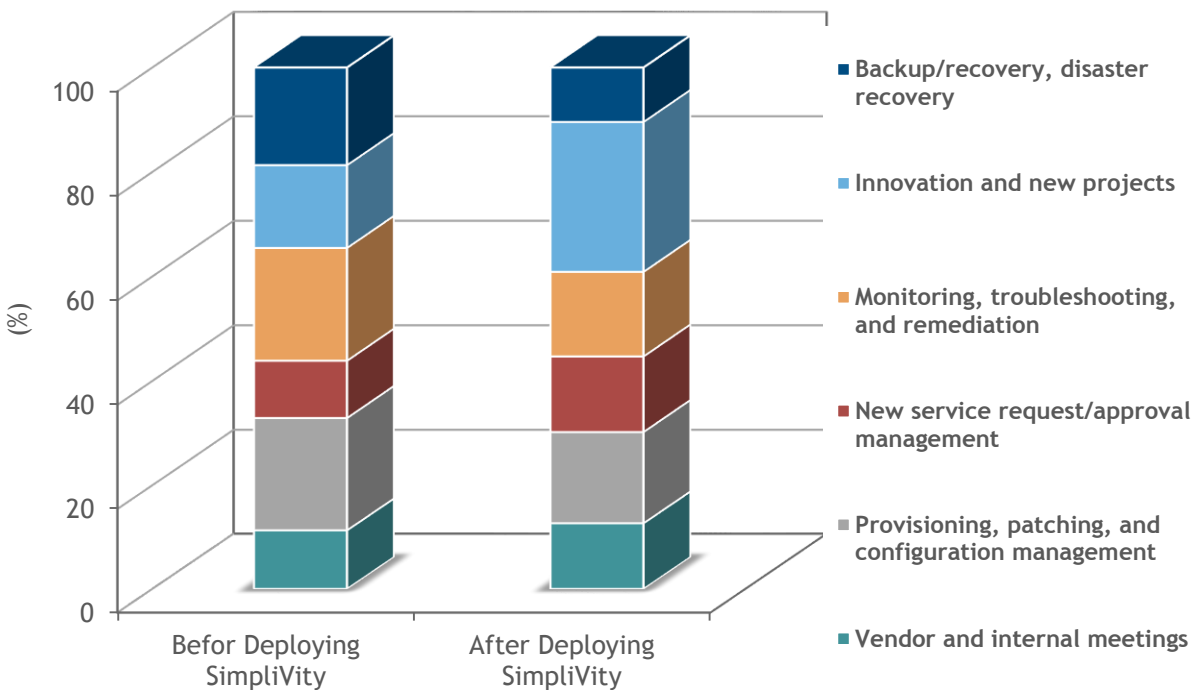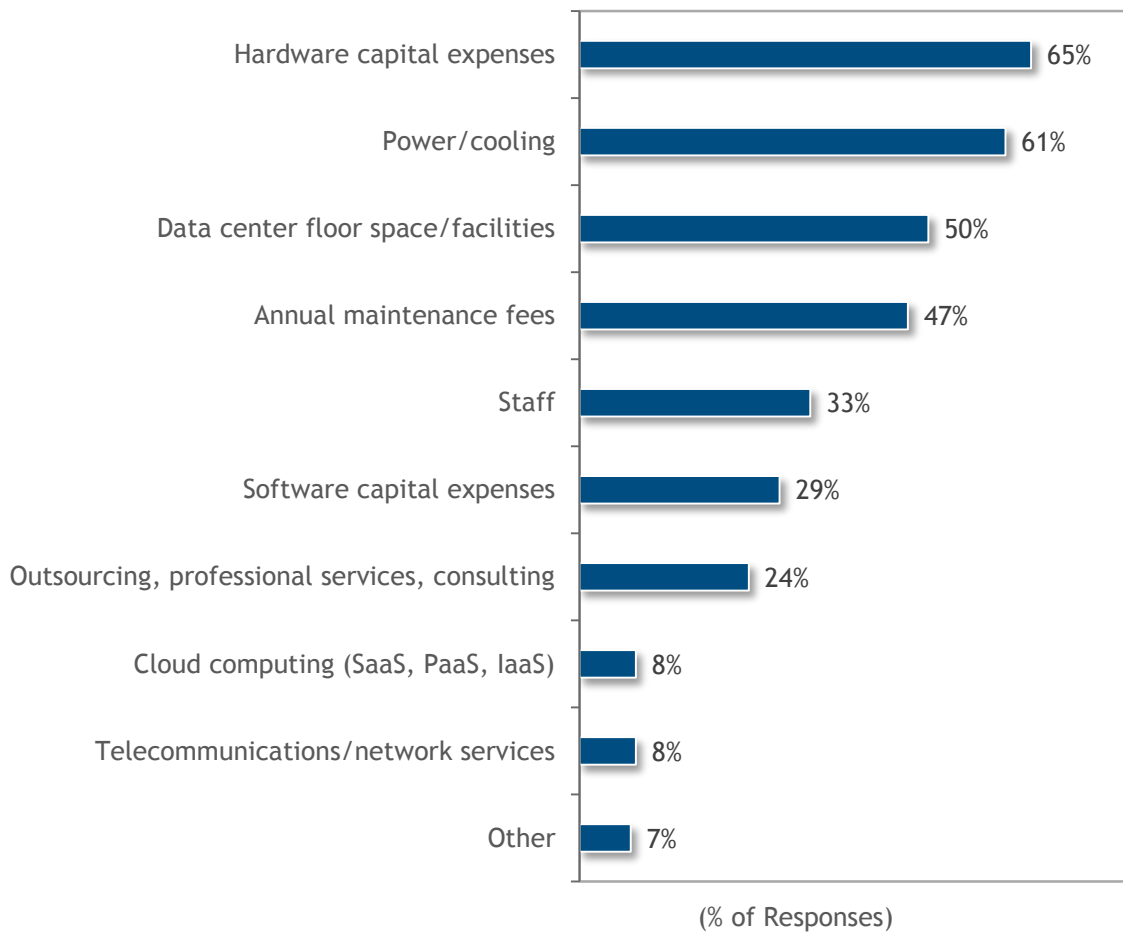

N=135

Source: IDC, 2016

Figure 8 identifies where survey respondents achieve budget savings by deploying SimpliVity. While hardware capital expenses ranked first, savings were achieved across many operational expenses, with power and cooling, data center 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 7, Figure 9 reveals that SimpliVity customers increased the share of their total IT budget spent on new technology projects/purchases (versus IT budget spent on maintaining existing infrastructure) from 43% to 57% — equivalent to a 33% increase. *(Data is rounded to nearest whole number.)*

FIGURE 8

Areas Where SimpliVity Deployments Drive Budget Savings

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

(% of Responses)

N=135, Multiple answers allowed

Source: IDC, 2016

FIGURE 9

IT Budget Spent on New Projects versus Maintaining Existing Infrastructure

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

% of IT Budget
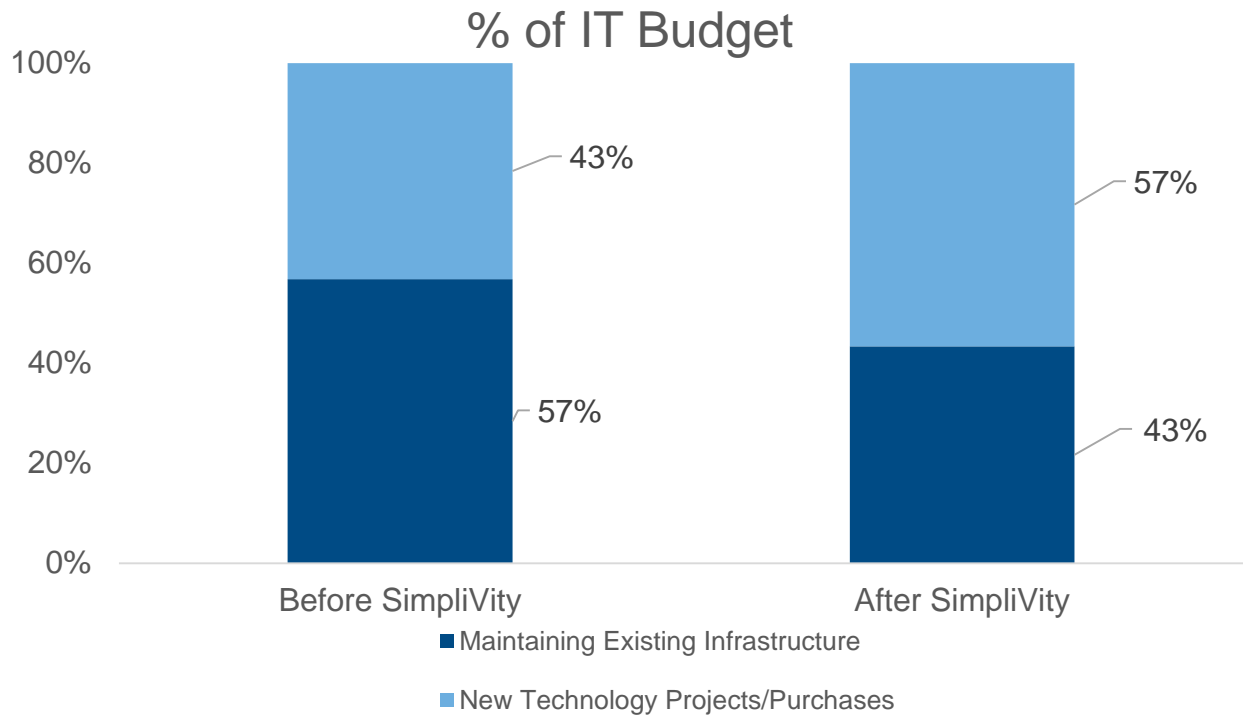
N=135,

Source: IDC, 2016

Highlights from In-Depth Interviews with Three SimpliVity Customers

IDC's interviews with three SimpliVity customers revealed how they use the technology and how they are benefiting from SimpliVity solutions.

Interview #1: A Large Liberal Arts College in the Northeast United States

This large liberal arts college has an IT staff of 30, of whom only three are responsible for managing the IT infrastructure. The college runs more than 100 business applications, of which 95% are virtualized. The college runs five SimpliVity OmniCube systems at its campus datacenter and four OmniCube systems at an off-site hosted datacenter for disaster recovery. More than 90% of all applications are running on SimpliVity systems. The applications that have not been migrated to SimpliVity hyperconverged infrastructure are running on scale-out file-based systems used for large video files. SimpliVity hyperconverged infrastructure replaced servers, external storage, backup software, and appliances from a single large infrastructure supplier.

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

Investment in SimpliVity reduced the need to expand staff:

- "I would say prior to SimpliVity, we were desperately in need of one or two more people."
- "I don't foresee that 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 [work on] in the past."

Investment in SimpliVity 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 SimpliVity."
- "With 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 SimpliVity 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. [OmniCube] doesn't have to do a time delay on multi-read, multi-write 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

This SimpliVity customer has 30 OmniCube systems; the focus of the interview was on the 18 OmniCube systems deployed within six of the company's 15 distributed financial centers – each 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 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 six sites now run its file server, print server, domain controllers and backup management on two OmniCube systems. The two nodes run as a fault tolerant pair. All of the data within these remote sites is replicated to an OmniCube cluster at the company's central datacenter.

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

SimpliVity'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 [OmniCube 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 SimpliVity [OmniCube system] here."

Application reliability improved greatly with SimpliVity due to resiliency at each site and efficient replication to data center.

- "[Prior to 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 a 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 reduced time spent on maintenance and upgrades.

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

Ultimately, the move to SimpliVity provided a wide range of benefits that spanned many aspects of operational and capital costs while also improving resiliency. The company plans to expand its use of 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

This large international organization is based in Europe and has 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; seven manage infrastructure globally. The company has 60 business applications, 90% of which are virtualized and 40% of which are running on eight SimpliVity OmniCube systems. All 40 applications running on 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 SimpliVity comes into play."
- "vCenter is our central tool for VM management on SimpliVity workloads. We don't need another tool for hardware monitoring."

SimpliVity 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."

SimpliVity 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 SimpliVity, but it was never rolled out due a lack of staff needed to implement and manage it. With SimpliVity, the company was able to connect two OmniCube 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 SimpliVity's 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 like SimpliVity 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 like SimpliVity to stand out within the market. Focusing on technology differentiation will remain critical for SimpliVity during this time. Looking forward, there will be increased opportunities for hyperconverged systems to support greater scale, and more granular SLAs within mixed/diverse workload environments.

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. As a result, IT departments are increasingly looking for infrastructure that improves resource utilization rates while also 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 SimpliVity's OmniCube and OmniStack 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 the vast majority (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.
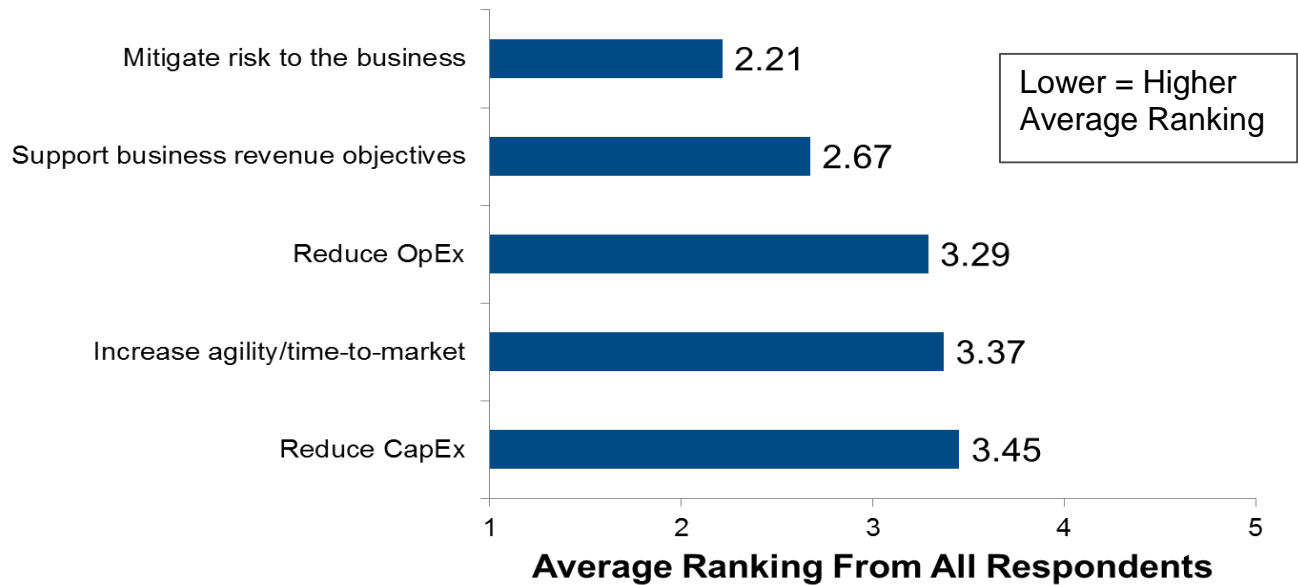
ADDENDUM

FIGURE 10

Most Important Business Outcomes Achieved Through IT

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

Business Outcome	Average Ranking
Mitigate risk to the business	2.21
Support business revenue objectives	2.67
Reduce OpEx	3.29
Increase agility/time-to-market	3.37
Reduce CapEx	3.45

Lower = Higher Average Ranking

Average Ranking From All Respondents

N=135,

Source: IDC, 2016

FIGURE 11

FTEs Needed to Manage Infrastructure

Q. *What is the total number of full-time equivalent (FTE) IT staff required to manage SimpliVity hyperconverged infrastructure?*

Q. *How many FTEs were required to manage solutions replaced by SimpliVity hyperconverged infrastructure?*
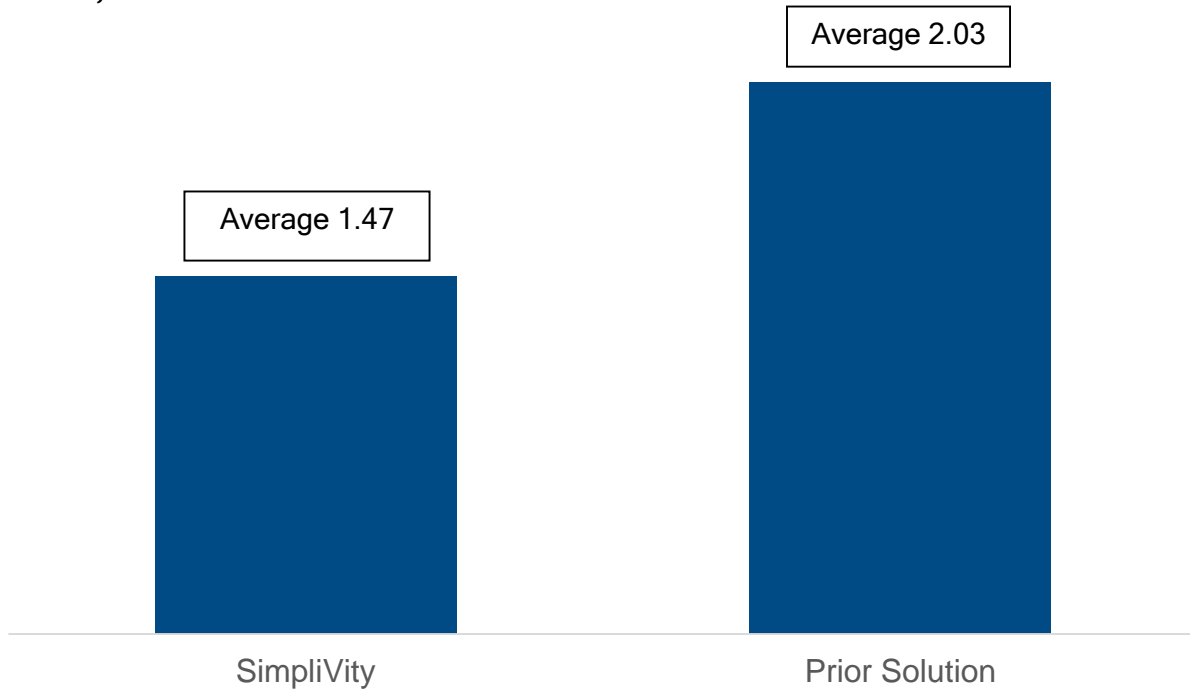
N=135,

Source: IDC, 2016

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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