Accelerate Business Agility with Faster Server Refresh Cycles

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Business Value Highlights

Server operating costs in years 4–6 of deployed life are more than 10x higher than the initial acquisition cost of the server.

Compared with continuing to operate installed servers, refreshed servers deliver:

59%
lower three-year cost of operations

$4.66M
additional revenue per year per organization ($123,400 per server)

Potential benefits of regular, faster refresh cycle (two three-year life cycles versus one six-year life cycle):

33%
lower net cash flow

$14.6M
cash flow over six years per 300 servers

<1 YEAR
return on investment

EXECUTIVE SUMMARY

A fundamental people-process-technology transformation enables businesses to remain competitive in today's innovation economy. Initiatives such as advanced security, fraud detection services, connected consumer Internet of Things (IoT) devices, augmented or virtual reality experience, machine and deep learning, and cognitively enabled applications drive superior business outcomes such as predictive marketing and maintenance.

Superior business outcomes require businesses to consider IT a core competency. For IT, an agile, elastic, and scalable IT infrastructure forms the crucial underpinning for a superior service delivery model. The more up to date the infrastructure, the more capable it is of supporting the scale and complexity of a changing application landscape. Current-generation applications must be supplemented and eventually supplanted with next-generation (also known as cloud-native) applications — each with very different infrastructure requirements. Keeping infrastructure up to date makes it easier for IT to support both types of applications while delivering public cloud–like economics with the benefits of private cloud. It also makes it easier for businesses to combine the synergies of public cloud and on-premises infrastructure.

Via a recent study, IDC sought to measure the business value of refreshing the server infrastructure in enterprise IT departments and therefore the impact on business outcomes. By refreshing servers in a timely fashion, IT can avoid operating costs that increase significantly in years 4-6 of a server's life span and substantially outweigh the initial cost of buying a new server while benefiting from improved performance and agility. Study participants described specific, recent server refreshes that have:

» **Enabled the business to convert opportunities into revenue streams.** Interviewed organizations are winning additional business, thanks to improved performance and greater agility of new servers, worth an average of $4.66 million per year (an average of $123,400 per server).

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Thus prolonged refresh cycles expose organizations to much higher costs and diminished ability to support core business operations, let alone transformational business and IT initiatives that can drive improved business results and make IT more agile and adaptive to business needs.

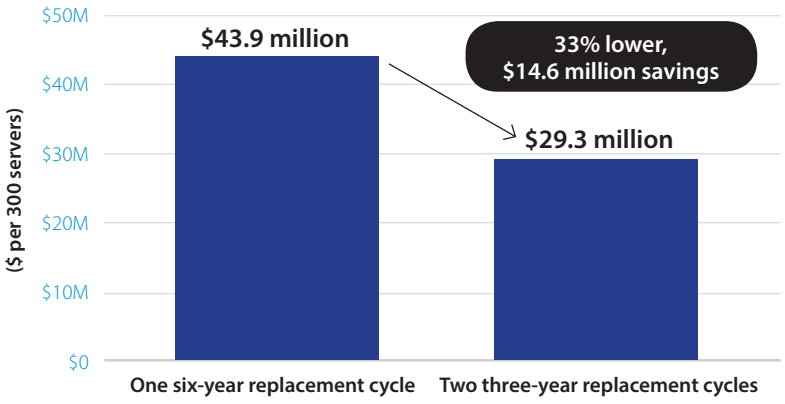
» **Strengthened their credibility as the trusted and cost-effective partner for the business.** Study participants will reduce the cost of operating refreshed servers by 59% over a three-year period compared with continuing to operate servers at the time of their replacement (5.8 years on average). This includes direct server-related and staff time costs and indirect productivity-related costs caused by unplanned downtime. Further, IT can recover the initial capex hit of acquiring new server infrastructure within a year.

On the other hand, the cumulative costs of not upgrading servers quickly add up when organizations wait to upgrade their servers. Importantly, costs increase exponentially rather than in a linear fashion. Operating expenses in years 4–6 of a server life cycle can exert a cost of more than 10 times the cost of purchasing a new server ($83,713 versus $7,946). Thus, for every year that IT chooses not to upgrade servers, an organization ends up incurring higher costs while exposing its business to more risk and potentially missing out on being able to fully address business opportunities. This means that an organization maintaining a three-year server life cycle will have a 33% lower net cash flow over six years than an organization with a single six-year server replacement cycle.

Figure 1 shows that when one takes into account efficiencies of refreshed servers and benefits of consolidation, a faster three-year refresh cycle can save organizations up to $14.6 million in net cash flow compared with a single six-year refresh cycle. Thus prolonged refresh cycles expose organizations to much higher costs and diminished ability to support core business operations, let alone transformational business and IT initiatives that can drive improved business results and make IT more agile and adaptive to business needs.

FIGURE 1

Net Cash Flow and Savings from Faster Replacement Cycle: Median Server Deployment



Note: Figure 1 accounts for cash flow savings and efficiencies associated with server refreshes as well as benefits of server consolidation with newly deployed servers. Figure 1 demonstrates net cash flow for 300 servers in the one six-year replacement cycle and the first of the two three-year replacement cycles and 247 servers for the second three-year replacement cycle.

Source: IDC, 2017

To accelerate this transformation, businesses depend on new and emerging applications — also known as next-generation or cloud-native applications — which themselves require a new breed of infrastructure.

Situation Overview

Thriving in the innovation economy requires businesses to undergo a fundamental transformation. This transformation is multifaceted and occurs both internally (i.e., how the business operates) and externally (i.e., how the business interacts with its users and partners). It requires that all business units and organizations — and this includes IT as a core competency — operate as the cogs of a well-oiled machine (i.e., operate as a trusted partner to the business).

Businesses that are ahead of this transformation curve are delivering or planning to deliver products and services that provide them with competitive differentiation in this new era. To accelerate this transformation, businesses depend on new and emerging applications — also known as next-generation or cloud-native applications — which themselves require a new breed of infrastructure. At the same time, businesses also need to depend on current-generation applications that are essential for day-to-day business operations.

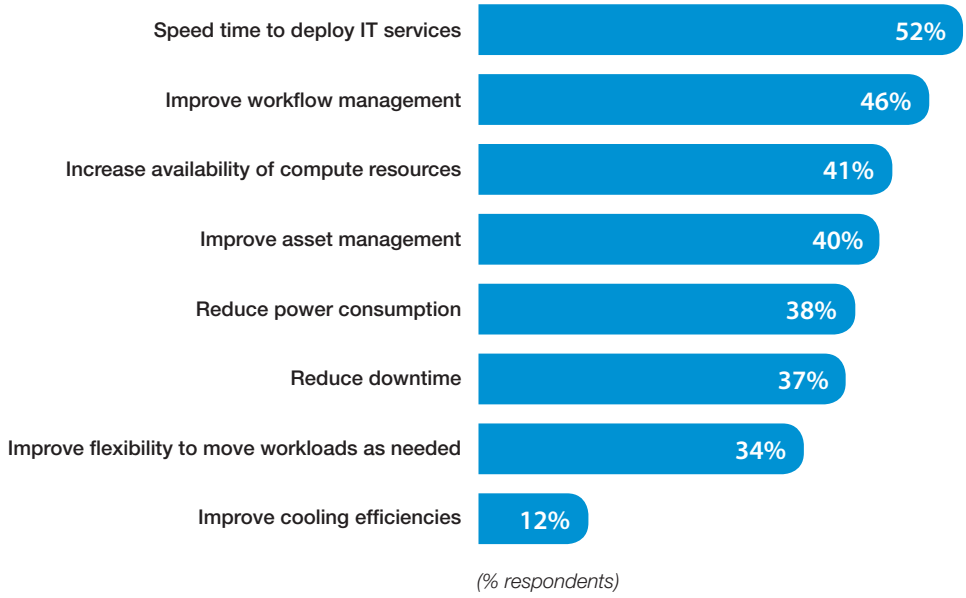
Business transformation cannot happen without a fundamental people-process-technology transformation, and enterprise IT organizations are at the center of the change. As Figure 2 illustrates, the top 3 datacenter initiatives for IT organizations center around agility, efficiency, and availability. To support the scale and complexity of a changing but nevertheless demanding application landscape — which is a mainstay of businesses undergoing digital transformation — IT is mandated to build and maintain an infrastructure that can:

- **Meet stringent service-level agreements for current-generation application environments.** Such environments are stable and often support business operations.
- **Help accelerate the development of next-generation applications and workloads.** Such environments are often implemented for new business initiatives.
- **Combine the agility, cost, and efficiency of public cloud with the benefits of a private cloud.** Key benefits of up-to-date infrastructure managed via automated processes and policies, with an optimum number of IT people resources, include significant capital and operations cost savings.

FIGURE 2

Top Datacenter Initiatives for 2016

Q. Thinking of the challenges in your organization's datacenters, please rank the top 3 most important initiatives.



n = 321

Source: IDC's Enterprise Datacenter Survey, December 2015

These interviews demonstrated that carrying out regular server infrastructure upgrades can help IT organizations solidify their positions as trusted partners for their businesses by reducing IT cost of operations while still ensuring that they provide the performance, agility, and scalability required by evolving business conditions.

The Business Value of Regular Server Infrastructure Upgrades

IDC conducted interviews with organizations around the world that have recently upgraded x86 servers to understand the benefits of server refreshes and costs associated with aging server infrastructure. These interviews demonstrated that carrying out regular server infrastructure upgrades can help IT organizations solidify their positions as trusted partners for their businesses by reducing IT cost of operations while still ensuring that they provide the performance, agility, and scalability required by evolving business conditions.

IDC's Methodology for This Study

To understand the benefits of server refreshes and costs associated with aging server infrastructure, IDC conducted two analyses based on interviews with study participants that inform this study:

- A before/after analysis of costs for study participants of their refreshed server environments compared with continuing to operate the servers they replaced (at operational cost levels at the time of replacement) as well as an analysis of the impact in terms of additional business supported and metrics pertaining to agility and performance ("before/after server refresh" analysis) (For this analysis, the "before" costs are calculated at the end of server life cycles based on the average replacement cycle for server refreshes discussed during interviews — 5.8 years.)
- An analysis of projected net cash flow over six years for an organization that refreshes its servers after three years (i.e., has two three-year server life cycles in six years) and an organization that does not refresh its servers (i.e., buys and keeps a server for a single six-year server life cycle in six years) ("two three-year life cycles versus one six-year life cycle" analysis)

This study references results from both analyses and uses the identifiers noted previously to indicate which analysis provides the basis for the data being discussed.

Demographics of Study Participants

The 14 organizations interviewed for this study varied in size, location, and vertical. They operate a significant number of physical servers — 1,930 on average with a median of 300 — to support their business operations, generating revenue into the billions of dollars per year. As Table 1 shows, the organizations reflect a broad range of geographies and cover a mix of experiences by industry.

TABLE 1

Demographics of Interviewed Organizations

	Average	Median
Number of IT users	16,000	3,125
Number of IT staff	1,748	175
Total number of physical servers	1,930	300
Revenue per year	$8.0 billion	$1.8 billion
Countries	United States, France, Germany, Norway, China, Hong Kong	
Industries	Education, financial services (multiple), financial technology services provider, healthcare, logistics, manufacturer, media, technology, telecommunications	

n=14

Source: IDC, 2017

Drivers of Server Infrastructure Upgrades

IDC asked organizations about their specific and recent experience in deploying new x86 servers to refresh older x86 servers. Interviews included questions designed to compare the new and refreshed servers in terms of costs, IT staff time management and support requirements, reliability, and performance. Study participants cited compelling reasons for trying to refresh with regularity, including the following:

- **Making their IT operations more efficient.** An IT manager at a United States–based media company running database and industry-specific applications noted: "*We refresh our servers at a regular cadence because of power consumption, operational efficiency, dependability, serviceability, warranty coverage, and space factors.*"
- **Supporting their businesses.** An IT manager at a United States–based science and technology company running web server, database, and other enterprise workloads explained: "*We refresh servers regularly because of hardware failures, performance issues, and compatibility issues with new applications.*"

These reasons align with IDC's predictions, which state that:

- By the end of 2017, more than 60% of IT organizations that are building hybrid clouds will purchase new or updated workload-centric cloud management solutions.
- By 2018, more than 85% of IT organizations will commit to multicloud architectures, driving up the rate and pace of change of their IT infrastructure.

Study participants reported running a variety of production and development workloads on these servers. Production workloads included current-generation applications such as relational databases, on-premises collaboration suites, CRM applications, and core industry-specific workloads. Some respondents indicated that the next-generation applications they are developing on public cloud infrastructure will eventually run on-premises for cost and security reasons. IDC sees this trend becoming increasingly dominant over the next few years as enterprises undertake digital transformation initiatives, thereby transforming their IT departments and their entire business.

Almost all interviewed organizations reported that they strive to maintain regular refresh cycles for all servers, with an objective of 4.7 years. However, as Table 2 indicates, organizations upgrade an average of 38 physical servers (median of 21) every five to six years. Much of it has to do with perception. For example, an IT executive at an EMEA-based financial services

"It can be a bad bet to just keep extending the life of a server repeatedly because sometimes, as we found out in this last refresh, you end up at a point where you simply have nowhere else to go."

organization explained how his views on the frequency of refreshing have changed over time: *"There was a school of thought, and I was part of this, that felt that we should try to extend server life as much as possible because it was drummed into me from [when I was] very young in this industry that that would represent a significant savings for business. But you weigh that against competitiveness, you weigh that against the changing platform and environment, hardware or software, and it can be a bad bet to just keep extending the life of a server repeatedly because sometimes, as we found out in this last refresh, you end up at a point where you simply have nowhere else to go."* An APAC financial institution that maintains a production server refresh cycle of three years commented: *"After three years, we have to start thinking about upgrading the operating system, BIOS upgrades, patching, and whether the vendor will change its support."*

TABLE 2

Server Upgrade Environments

	Average	Median
Number of physical servers upgraded	38	21
Age of servers at time of upgrade (years)	5.8	5.8

Source: IDC, 2017

The Value of Upgrading Server Infrastructure

Organizations achieved significant value with their server upgrades in terms of reduced operational costs and by better supporting business operations. Study participants reported that as servers age, they exact a greater cost in terms of IT staff time required to manage and support them and in terms of lost productive time due to unplanned outages. Thus it becomes increasingly inefficient to use aging servers, leaving aside performance and agility limitations that also increase as servers age. In short, aging servers limit the ability of IT organizations to provide a cost-effective, efficient, and high-performing platform for next-generation business applications their businesses require.

Cost of operations savings associated with server upgrades that inform this study's analysis relate to three areas: server infrastructure-related operating costs, the cost of IT staff time needed to manage and support server infrastructure, and the productivity cost of unexpected application outages related to server infrastructure.

Figure 3 shows how these organizations achieved these savings — by retiring servers that had become increasingly inefficient and costly to operate as they moved into years 5 and 6 of their life cycles.

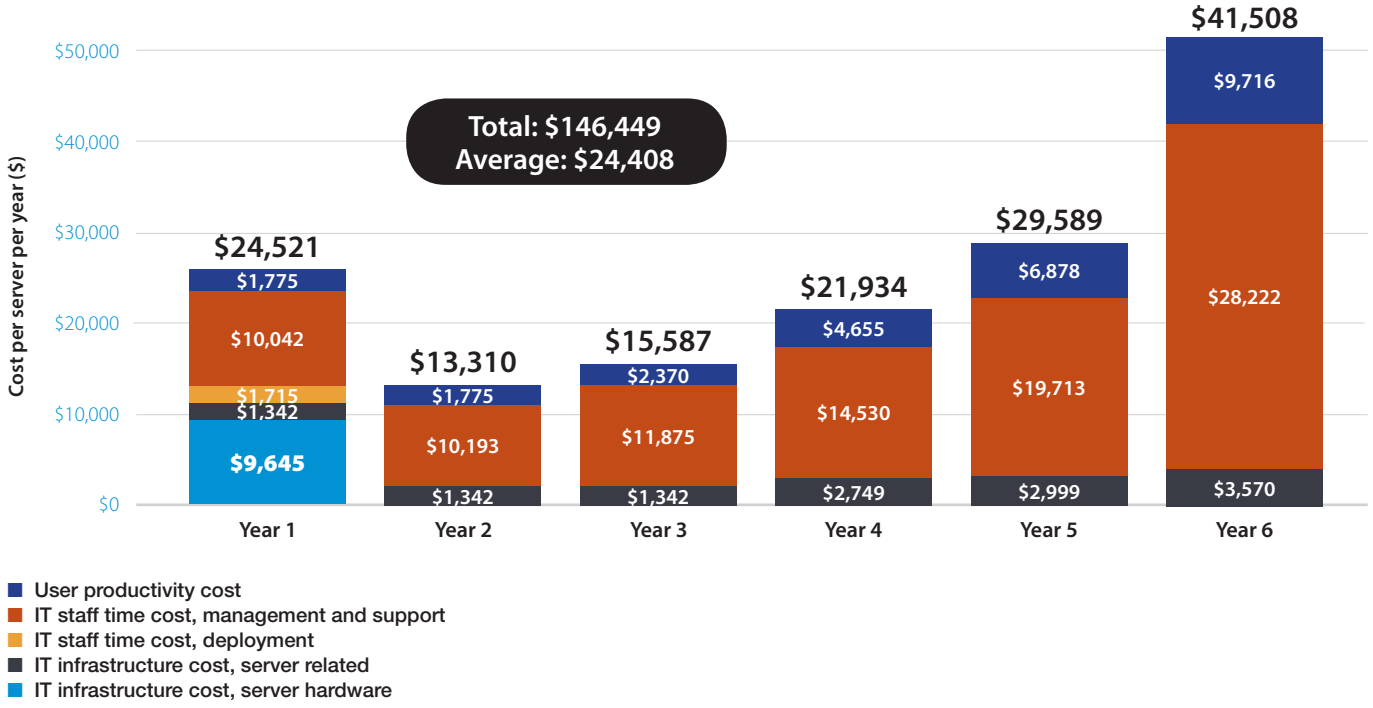
The Value of Server Refreshes for Study Participants ("Before/After Server Refresh" Analysis)

Analysis I

IDC's analysis shows that study participants achieved significant operational efficiencies with their most recent x86 server upgrades. These efficiencies can be grouped into infrastructure, IT staff, and user productivity. The more efficient the infrastructure, IT staff, and user base, the more mature the IT organization. Figure 3 shows how these organizations achieved these savings — by retiring servers that had become increasingly inefficient and costly to operate as they moved into years 5 and 6 of their life cycles.

FIGURE 3

Rising Cost of Operations: Six-Year Replacement Cycle



Source: IDC, 2017

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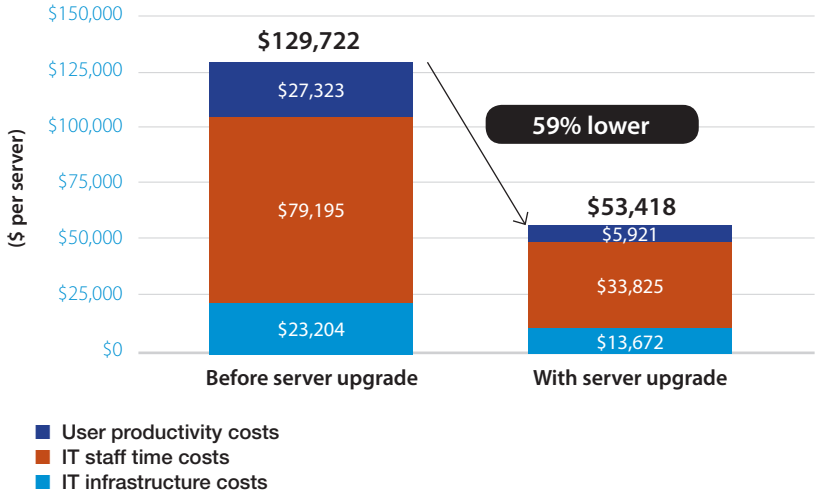
Figure 4 demonstrates that the new servers cost 59% less to operate over three years compared with continuing to run replaced servers at the time of their replacement by study participants (i.e., 5.8 years) because they are more cost effective, operationally efficient, and reliable.

Figure 4 compares the average cost of operating a newly deployed physical server over three years with the servers that surveyed organizations refreshed. It demonstrates that the new servers cost 59% less to operate over three years compared with continuing to run replaced servers at the time of their replacement by study participants (i.e., 5.8 years) because they are more cost effective, operationally efficient, and reliable. On a per-server basis, the new servers result in operational cost savings of $76,000 over three years compared with the servers they replaced.

FIGURE 4

Three-Year Cost of Operations per Server



Source: IDC, 2017

1. IT Infrastructure Costs

IDC's analysis shows that study participants will reduce their server infrastructure-related costs, including maintenance, power, and facilities costs, by 61% ($4,027 versus $10,343 per server) via their refreshes. Furthermore, the new servers are more powerful and offer new functionality that enable organizations to reduce the cost of server resources on a per-workload basis. Newer servers are also more power efficient as a result of improved hardware and power management features. In addition, refreshes enable many organizations to stop paying annual warranty or maintenance fees to vendors. Study participants attributed these cost efficiencies to factors shown in Table 3, such as:

With a three-year refresh cycle, IT organizations not only can slash costs but also can double the performance and efficiency of their compute infrastructure.

- **Consolidating server environments.** An IT executive at an EMEA financial services organization running .NET workloads explained: *"We wanted to deploy fewer physical servers, get more VMs and power out of them, and reduce operational costs …. [W]e reduced the number of servers by about 30% in the end, and we got increased capacity as well."*
- **Supporting higher levels of virtualization.** An IT manager at a United States–based supplier running business and ecommerce workloads reported: *"Server consolidation was a factor for us because the new servers can support more workloads … at least 50% more VMs per host."*
- **More power efficient servers.** An infrastructure manager at an EMEA financial services organization running CRM and human resources applications noted that new servers help meet stringent green energy regulatory requirements: *"A smaller server footprint also works into the regulatory requirement for power consumption, which is crucial for us, working in a society that's very green minded."*
- **Lower maintenance and warranty costs.** The vice president of IT at an APAC financial institution running core banking workloads commented: *"Once we go past three years with a server, we end up going into third-party support and maintenance …. A major thing for us is to ensure that we do not push maintenance into third party for production workloads."*

As Table 3 illustrates, a smaller number of more powerful servers can easily replace older servers. Newer servers are powered by newer processors (with more cores and threads and performance that nearly doubles every two or so years), faster memory, faster interconnects, and data persistence media (like NVMe-based Flash). Furthermore, newer servers are also more resilient and can thus host double the number of business applications per server. With a three-year refresh cycle, IT organizations not only can slash costs but also can double the performance and efficiency of their compute infrastructure.

TABLE 3

Impact of Server Upgrades: Server Infrastructure

	Before Server Upgrade	With Server Upgrade	Difference	% Benefit
Number of physical servers (upgrade environment)	57	38	19	34
Number of virtual machines per physical server	6.0	12.2	6.2	104
Number of business applications per physical server	0.3	0.6	0.3	73
Number of terabytes per physical server	1.0	5.1	4.1	397

Note: Data in Table 3 is based on a "before/after server refresh" analysis.

Source: IDC, 2017

IDC's analysis shows that interviewed organizations will reduce IT staff time (and costs) needed to manage and support servers by 59% over three years with their server upgrade, including growth enabled by consolidation and increased virtualization (see Table 4).

2. IT Staff Time Costs

IDC's analysis shows that interviewed organizations will reduce IT staff time (and costs) needed to manage and support servers by 59% over three years with their server upgrade, including growth enabled by consolidation and increased virtualization (see Table 4). The older the infrastructure, the more time that IT staff must spend on tactical provisioning, operations, and break-fix activities. These tasks add up over time. With a refreshed infrastructure, IT staff gain better systems management capabilities in addition to better efficiency and resiliency. The "free" time that IT staff gain can be utilized for strategic activities and better position IT to serve as a business partner. Interviewees cited the following in explaining more efficient operations of their newer servers:

- **New management features.** An IT manager at a United States–based logistics company running core enterprise applications said: *"The management tools and administration have gotten better with the new servers, so we support about 30–40% more VMs per server administrator."*
- **Faster deployment and configuration.** The IT manager at the United States–based media company running database and industry-specific applications said: *"Our process for deploying a new physical server is more streamlined with the new servers — one day instead of two days"* This directly makes the case for next-generation converged and hyperconverged infrastructure and enables the collapsing of traditional three-tier architectures into single-tier architectures.
- **Improved performance and reliability.** An IT executive at an EMEA financial services company running .NET workloads commented: *"I think the main efficiency is from having shiny new servers, and servers are getting more and more reliable all the time."*

TABLE 4

Impact of Server Upgrades: IT Staff

Hours per Server over Three Years	Before Server Upgrade	With Server Upgrade	Difference	% Benefit
Server deployment	46	32	14	30
Server management	608	247	362	59
Server support (help desk)	881	357	524	59
Total hours per server	**1,535**	**636**	**899**	**59**

Note: Data in Table 4 is based on a "before/after server refresh" analysis.
Source: IDC, 2017

IDC's analysis shows that interviewed organizations will reduce productivity losses associated with unplanned application outages by 78% over three years with their server upgrade, as shown in Table 5.

3. User Productivity Costs

IDC's analysis shows that interviewed organizations will reduce productivity losses associated with unplanned application outages by 78% over three years with their server upgrade, as shown in Table 5. Their new servers are more reliable, have better and more effective patching and updates, and can better support new business applications. Thus the impact of unplanned application and system outages on study participants is minimized, which can have a substantial impact on their business operations. This directly supports IDC's assertion that by treating IT as a core competency, businesses can accelerate outcomes of strategic initiatives. IT can partner with the line of business to make such outcomes a shared activity.

An IT executive at an EMEA-based financial services organization that refreshes its servers every three to five years explained how the company's server refresh cycle relates to downtime: *"The whole network is impacted significantly [when we have outages] and the downtime is just way too much for a small operation like ours. This explains why the whole concept of server refresh life cycle is so important for us. We have to get it right."* The IT manager at the United States–based media company running database and industry-specific applications explained: *"The new servers have improved everything — system uptime, reliability, and our ability to work on other things, instead of having to do break-fix stuff."* The IT manager at the United States–based logistics company running core enterprise applications noted: *"With the new servers, we've had zero outages so far and before we'd have at least a dozen per year …. Per incident, in the worst case, it could be $2,500 per minute, so you can calculate the potential impact of a four-hour outage."*

TABLE 5

Impact of Server Upgrades: User Productivity Cost of Unplanned Downtime

	Before Server Upgrade	With Server Upgrade	Difference	% Benefit
Frequency per year	7.4	2.1	5.3	71
MTTR (hours)	4.3	3.6	0.7	17
Hours of lost productivity per server per year	245	53	192	78

Note: Data in Table 5 is based on a "before/after server refresh" analysis.
Source: IDC, 2017

IDC found that study participants will realize an average of $4.66 million of additional revenue per year ($123,438 per refreshed server) with their server refreshes by taking advantage of higher performance, agility, and scalability (see Table 6).

"We've added quite a bit of business, and the server upgrade helps because we have more capacity and we can deploy more quickly."

4. Improved Business Results

In addition to cost of operations efficiencies, deploying new servers also helps organizations achieve better business results. IDC found that study participants will realize an average of $4.66 million of additional revenue per year ($123,438 per refreshed server) with their server refreshes by taking advantage of higher performance, agility, and scalability (see Table 6). Examples of improved business results included:

- The IT manager at the United States–based logistics company running core enterprise applications explained: *"We've added quite a bit of business, and the server upgrade helps because we have more capacity and we can deploy more quickly. What this boils down to is more agility — two to three weeks makes a big difference, and we're now extremely fast. Our business is very competitive, so the quicker we can deliver, the more likely we are to win the business."*
- An IT manager at a United States–based company serving customers in the educational arena running production application and database workloads commented: *"Our firm generates more revenue with the new servers because our development process is shorter. Because of this upgrade, we've been able to win a couple of contracts worth millions of dollars per year."*

TABLE 6

Impact of Server Upgrades: Additional Revenue

	Per Organization	Per Server
Additional revenue per year	$4.66 million	$123,438
Operating margin assumption	15%	15%
Increased operating margin per year	$699,600	$18,516

Note: Data in Table 6 is based on a "before/after server refresh" analysis.
Source: IDC, 2017

The Value of Shorter Server Refresh Cadences ("Two Three-Year Life Cycles Versus One Six-Year Life Cycle" Analysis)

Analysis II

Organizations may balk at faster refresh cycles because of the cost of buying new server hardware, but escalating costs in terms of IT staff time needed to manage and support aging servers and the increased toll outages expend on employee productivity, as well as the need to incur additional warranty costs as servers age, can quickly exceed the cost of new server hardware.

IDC's analysis shows that study participants themselves would benefit from a faster refresh cadence, with operating costs increasing quickly after year 4 of server life cycles. Study participants noted that costs associated with IT staff time for management/support and productivity loss due to unplanned outages increase quickly as servers age. Thus, by year 6 of its life cycle, a server requires 181% more staff time to manage and support and exerts a productivity cost of 447% more than in year 1. Importantly, study participants stressed that increasing costs are not linear; instead, they jump significantly as servers move later in their life cycles. Study participants explained why this occurs:

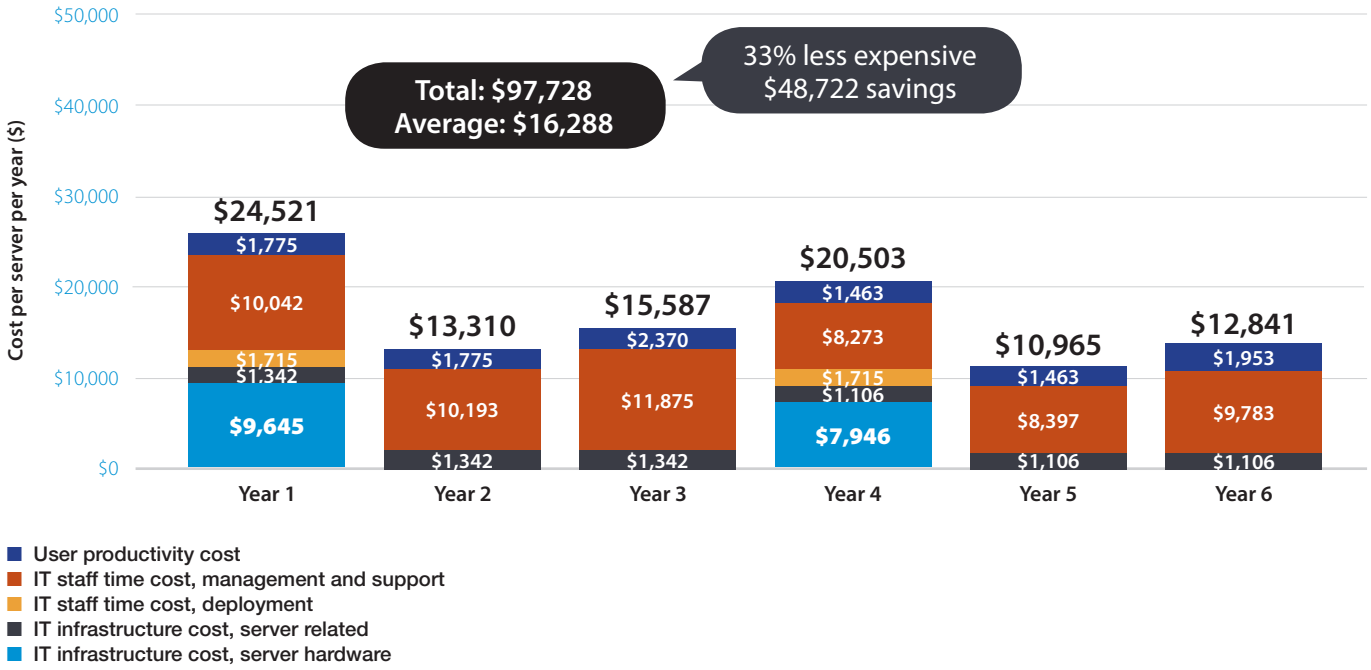
- **IT staff management and support time.** An IT manager at a United States–based telecommunications company running database workloads noted: *"By the time we get to years 3, 4, and 5, the servers are getting old and we need more staff time to support them."*
- **Frequency and impact of unplanned outages.** An IT manager at a United States–based manufacturer running virtualized business workloads said: *"We go from three outages per year in years 1-3 to about six per year by year 5. We do keep our servers that long, and that's when the concerns really arise."*

The result is that the cost of running workloads increases to a significant degree as servers move deeper into life cycles, especially in terms of operational costs related to management, support, and performance. While IDC's research shows that organizations are aware of these escalating costs, they may not always understand the scale of these costs in proportion to the costs of buying and deploying new servers. Interviews with these organizations demonstrate that higher incremental operational costs soon outweigh even the costs associated with buying and deploying new server hardware.

Organizations may balk at faster refresh cycles because of the cost of buying new server hardware, but escalating costs in terms of IT staff time needed to manage and support aging servers and the increased toll outages expend on employee productivity, as well as the need to incur additional warranty costs as servers age, can quickly exceed the cost of new server hardware. For example, as Figure 5 demonstrates, study participants would save $48,722 per server in cash flow related to IT staff time, user productivity costs, and lower server warranty and operating expenses over six years with a faster server refresh cycle, despite incurring additional costs related to buying and deploying new servers.

FIGURE 5

Net Cash Flow: Two Three-Year Server Replacement Cycles

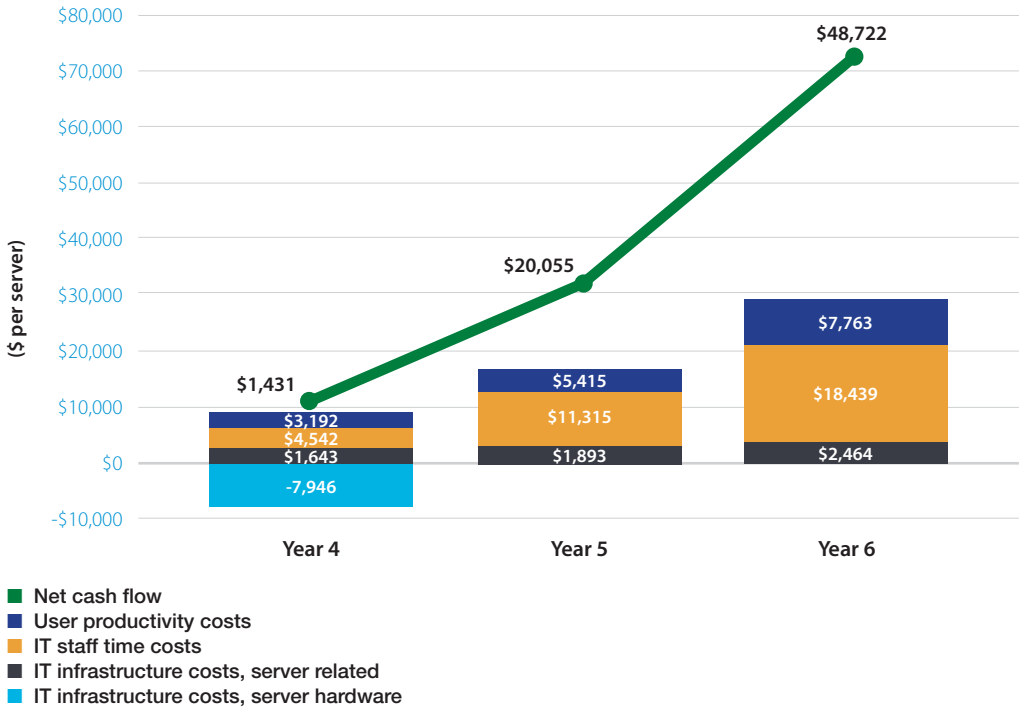


Source: IDC, 2017

Figure 6 portrays how organizations benefit by replacing servers after three years rather than continuing to operate servers for six years. It demonstrates how operational costs for IT staff management and support and user-impacting downtime quickly add up when organizations keep older servers in operation, leading to the 33% lower cash flow for an organization that pursues the three-year refresh cycle.

FIGURE 6

Net Cash Flow Savings, Years 4–6: Two Three-Year Replacement Cycles Versus One Six-Year Replacement Cycle



Notes: Figure 6 is based on "two three-year life cycles versus one six-year life cycle" analysis.

"Overall net cash flow analysis" represents the cumulative additional cost/savings at the end of years 4, 5, and 6 by refreshing a server after three years rather than having a single six-year server life cycle. It is negative in year 4 because of the cost to organizations of buying and deploying new server hardware, despite operational savings in terms of IT staff time and user productivity costs.

Source: IDC, 2017

Cost of operations savings quickly accumulate for organizations with many servers. For example, an organization with 300 physical servers (the median number from study participants) would realize $14.6 million in operational cost savings (refer back to Figure 1) over six years by having a three-year refresh cycle rather than a six-year refresh cycle (i.e., two three-year life spans compared with one six-year life span), including the benefits of server consolidation (requiring 247 servers to replace 300 servers). These cost savings are in addition to the performance benefits that an organization realizes by replacing servers more frequently and in sum reflect the extent to which more frequent server upgrades ensure that IT organizations are viewed as business partners that act proactively to make IT operations as cost effective, efficient, and high performing as possible.

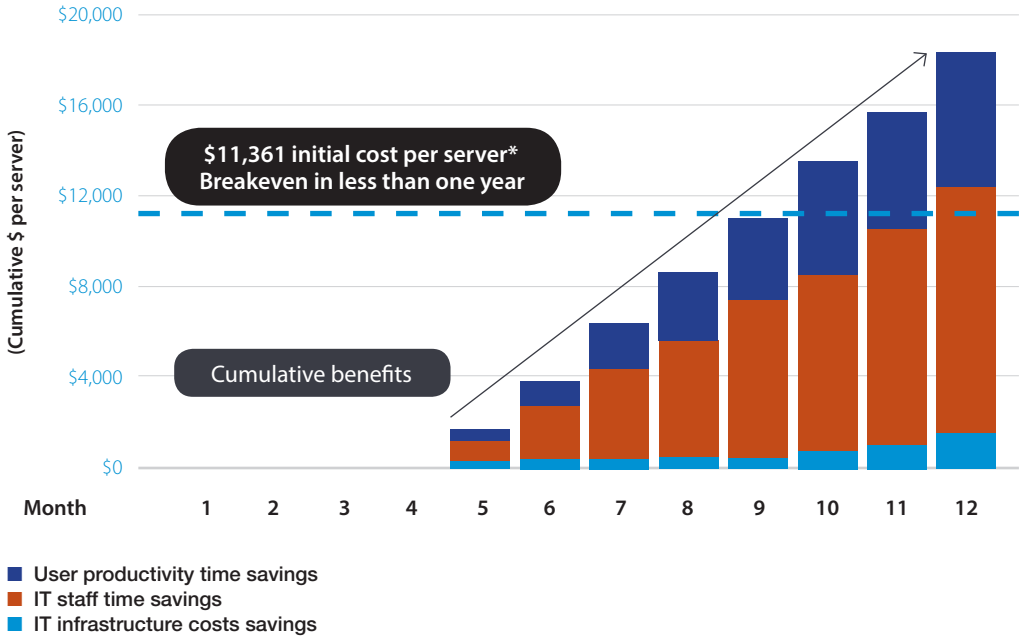
IDC's analysis shows that interviewed organizations could repay their initial investments in new server hardware in less than one year (see Figure 7).

Justifying Server Infrastructure Upgrades

While the benefits of upgrading server infrastructure are often apparent, investment in new server hardware still must be justified from a financial perspective. IDC's analysis shows that interviewed organizations could repay their initial investments in new server hardware in less than one year (see Figure 7). Once these organizations have fully deployed servers, they begin accruing benefits in the areas discussed in this study, including lower server operational costs, IT staff time savings, and reducing the impact of unplanned outages on employee productivity levels. Thus the cumulative benefits exceed initial investment costs in month 9 of the analysis, showing the speed with which these organizations break even on their server infrastructure investments.

FIGURE 7

Server Payback Time: Server Upgrades



** The $11,361 initial cost per server includes the cost of the server hardware and the cost of staff time to deploy the server infrastructure, as shown in Figure 5.*

Source: IDC, 2017

Supporting the Business with Agility and Performance

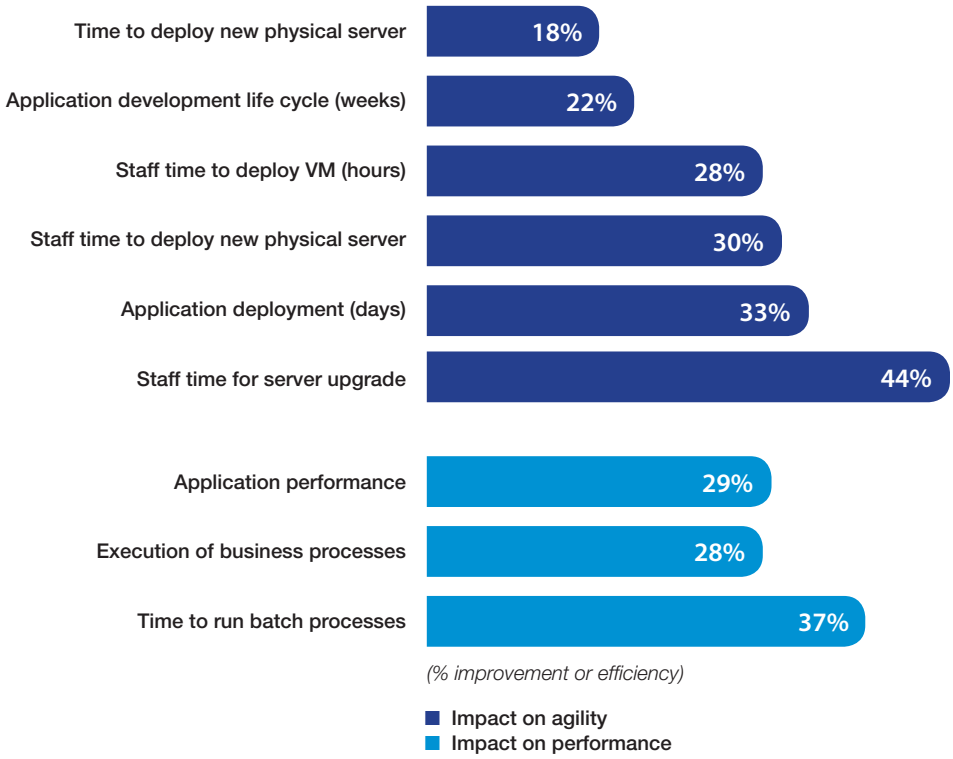
Study participants also cited various ways that server upgrades have helped their IT organizations better support business operations and assume more robust roles as business partners. These days, most businesses have the option to procure public cloud resources or to work with their internal IT organizations. When IT organizations can better support their business, they often are the preferred choice. Operational efficiencies enable IT organizations to maximize their cost effectiveness and agility and create opportunities for reinvestment and innovation. In addition, server upgrades ensure that organizations have the infrastructure required to provide the performance and agility to support evolving and escalating requirements from their lines of business. They reported that upgraded servers:

- **Offer more scalability and agility**. The IT manager at the United States–based telecommunications company running database workloads explained: *"We're more agile with the new servers because the new servers have higher CPU, so we can build VMs faster. To do a VM on a new server takes less than two hours, whereas it took two to three hours on the older servers."*
- **Better support application development.** The IT manager at the United States–based telecommunications company running database workloads noted: *"For this group of 20 servers … that group has four developers. I'd say that they are like 25% more productive with the new servers. The performance difference is dramatic."*
- **Perform better.** The IT manager at the United States-based logistics company running core enterprise applications said: *"Performance is related to the better hardware. We did testing after our consolidation, and applications were running 50% faster — it was dramatic. This impacts the users also, and their productivity has been improved."*

Figure 8 shows the extent to which study participants reported benefiting on average from server refreshes in terms of agility and performance.

FIGURE 8

Server Upgrade Impact on IT and Business Agility and Performance



Note: Data in Figure 8 is based on a "before/after server refresh" analysis.

Source: IDC, 2017

Challenges/Opportunities

Despite being sold on the tangible financial and technical benefits of upgrading their IT infrastructure on a cadence, many IT organizations are still reluctant to upgrade on a cadence. There are several reasons for this reluctance:

- Lack of a financial modeling process for determining the ROI of infrastructure
- Lack of rigor in determining the cost of unplanned downtime and performance penalties
- The way budgets are allocated for new infrastructure
- New infrastructure, which is procured only for new projects that are sanctioned by the line of business
- An ad hoc, case-by-case evaluation of server upgrades only when there are significant outages

On paper, it is easy to prescribe that all IT organizations must adopt best practices for infrastructure upgrades, which includes determining ROI, retiring servers when their usable life has ended, and ensuring that all infrastructure components are on a rolling upgrade cadence. However, many IT departments struggle to make a data-driven case for such activities. This is where buyers can make a compelling case to suppliers to arm them with tools to provide relevant telemetry and performance data. Financial and technical data collectively makes a solid case for infrastructure upgrades.

Summary And Conclusion

To serve as a catalyst of superior business outcomes, IT needs to take a systems approach to innovation and transformation. This means:

- Partnering with the line of business to drive superior outcomes for initiatives such as advanced security, fraud detection services, connected consumer IoT devices, augmented or virtual reality experience, machine and deep learning, and cognitively enabled applications
- Building a sustainable mechanism for IT service delivery, application modernization, and managing hybrid IT, enabling the business to quickly transform itself digitally (This requires maintaining an up-to-date infrastructure that can handle global deployments of current as well as next-generation applications.)

This study shows that organizations can increase agility, improve efficiency, and reduce operational costs — all by refreshing their infrastructure on a faster cadence. An up-to-date infrastructure enables IT to serve as a trusted partner that works together with the line of business to drive superior business outcomes. Faster infrastructure refresh can create a virtuous cycle in which IT teams free up financial and staff resources — that would have been otherwise consumed to maintain an aging infrastructure — to support broader and more strategic business initiatives.

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