



White Paper

Modernizing IT Infrastructure to Empower Business

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Today’s IT Challenges and Opportunities

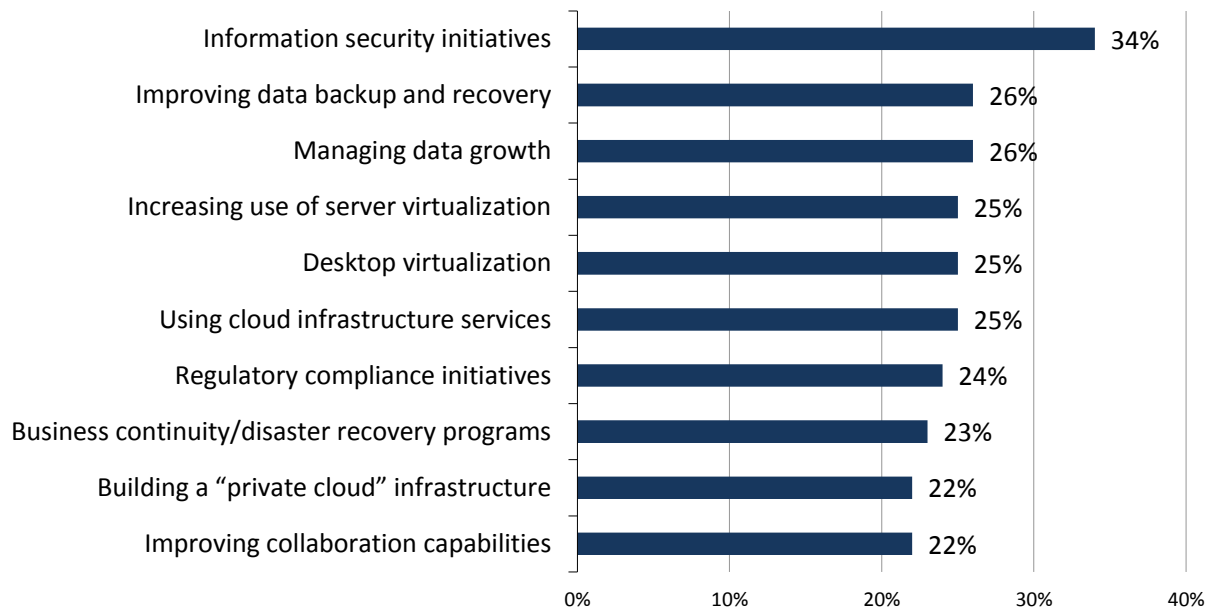
The ever-rising tide of demands on IT organizations is creating constant pressure on their leaders to upgrade or replace their outmoded legacy systems with new infrastructure technologies that will allow them to keep pace with the speed of business. It is no longer sufficient to manage basic business applications and resources such as ERP, e-mail, and silos of heterogeneous data. The bar has been raised higher than ever, and the role of IT is evolving to meet it. As a result, IT must support applications and services that make it possible for the business to provide new, diverse customer experiences while generating expanding revenues via the emergent crown jewels of business: big data, cloud, and mobility.

Top IT Priorities

ESG research makes it clear in Figure 1 that many of the top-ten most-cited IT priorities reflect the infrastructure complexities IT currently faces and the paramount importance of big data, cloud, mobility, and security. Information security is cited by 34% of respondents as a top priority.¹ This is followed by a closely-packed cluster of additional IT efforts, all cited nearly equally by respondents as being top priorities for supporting business initiatives. These include improving data backup and recovery (26%), and managing data growth (26%), which are both related to the issues surrounding big data. Organizations remain challenged to harness their data and turn it into business insights that help identify revenue and growth opportunities. Server virtualization (25%) is deep-seeded in the data center and provides the foundation for cloud-infrastructure services. An increasingly large number of people view cloud infrastructure services (25%) as a key vehicle for ‘IT-as-a-service initiatives.’ Cloud infrastructure services allow developers and line-of-business owners to carry out projects in a more service-oriented fashion by enabling them to consume from both the private and public cloud. Cited by 25% as a top priority, desktop virtualization has shown consistent resiliency and is now finding favor with organizations that are taking on larger mobility initiatives inside their organizations and centralizing the management of applications and desktops to increase user productivity.

Figure 1. Top Ten Most Important IT Priorities for 2015

Top 10 most important IT priorities over the next 12 months. (Percent of respondents; N=601; ten responses/respondent accepted)



Source: Enterprise Strategy Group, 2015.

¹ Source: ESG Research Report, [2015 IT Spending Intentions Survey](#), February 2015.

Business Demands Create IT Challenges

The challenging news is that IT is still largely in a situation where static infrastructures are designed for single processes and applications—not for today’s more complex applications. These heterogeneous infrastructures are designed to work independently in silos and are managed individually as well. For instance, even though IT has achieved highly successful virtualization rollouts, if it has to make any changes, different teams must be brought together—such as networking, storage, server, operating system, application, and security teams. This is excessively time consuming, riddled with complexity, and requires staff with different priorities to agree on important decisions, which is always a challenge.

The situation is further aggravated in environments where these heterogeneous infrastructures must now operate together with disparate management tools. Elements of these infrastructures may be unaware of the events happening adjacent to them. For instance, storage deployed in one environment may not be aware of servers that are also deployed in that same environment.

IT Modernization can help organizations respond to business requirements. However, meeting new business requirements goes beyond just virtual machine creation to automation and orchestration of IT infrastructure, enabling IT to respond in a timely manner.

Too much IT time and staff is dedicated to maintaining existing infrastructure as opposed to researching new technologies and building new infrastructure that enable IT’s mandate to respond quickly to the needs of the business. Until these obstacles are overcome, enterprises will struggle to respond quickly to changing business requirements, which will ultimately lead to missed opportunities to gain more market share and revenues.

New Business Opportunities Created by Modernization

In this new era, where innovative ideas and fastest time-to-market, and time-to-revenue determine who leads in the industry, megatrends like cloud, mobility, and big data offer vast business opportunities for revenue generation. IT must support these priorities. Migrating to hybrid cloud environments can accelerate IT application and service delivery on an as-needed basis. IT needs to ensure that they have the required platforms in-house and readily available for engineers and application developers. Currently, these groups tend to side-step IT and pursue public cloud services where they can gain easy, quick access to platforms and tools more advanced than anything provided by their in-house IT organizations.

However, in this new reality, cloud-designed (or born-in-the-cloud) applications still require access to an organization’s current systems—including sensitive customer data, mission critical applications, and proprietary information required for corporate governance—which many companies are unwilling to maintain on public clouds. If internal IT organizations were able to offer specific development platforms in-house to meet the needs of their development teams—including technologies such as Chef, Puppet, and Docker—it would be much easier to sync their work with the enterprise’s security, IT, and business processes. By engaging these teams, IT enables more rapid development to meet business requirements, which ultimately creates new business revenue.

Mobile technology has revolutionized the IT landscape in a short period of time. No longer locked down in their offices or constrained by the devices they use, employees work smarter and faster. Integrated mobility infrastructures enable efficient virtual application delivery, which has become critical to competitive companies that are driven by their need for improved productivity and real-time decision-making to gain business agility and innovation.

Big data, business intelligence, and advanced analytics provide game-changing benefits, but the overwhelming velocity, volume, and variety of data also taxes the infrastructure platforms of organizations. There is value embedded in all this incoming data, and it’s waiting to be mined and refined so it can help businesses significantly improve their outcomes. Modern infrastructure offers an integrated, simplified, and powerful approach that allows companies to effectively manage their data, move it to the cloud, and scale as needed. They can extract business intelligence and customer insights that enable them to make key business decisions and promptly take action for better customer experiences.

Modernizing IT Infrastructure

Modernizing IT infrastructure offers many benefits to organizations. It enables them to remain highly competitive and to better serve their external customers while providing improved IT service delivery to internal customers.

Accelerating the Deployment of New Products and Services

IT can expedite the rollout of new products and services by leveraging automation and templated deployments that do not rely on dedicated IT personnel. For standard service offerings, it makes no sense to spend valuable IT resources on learning exact parameters and details for an environment. Creating templates to do that creates an “easy” button for IT by automating common processes—everything from the time-consuming stacking, wiring, and cabling of equipment, down to setting and configuring specific details inside applications for the hardware itself. In many cases, these templates automate the entire process of implementing applications or environments, enabling IT to spend time on more value-added initiatives. The end result is transparent IT infrastructure managed intelligently through a federated view of their environment.

Taking Advantage of End-to-end Monitoring and Management Tools

Optimizing utilization and application performance calls for the use of advanced, end-to-end monitoring and management tools. These tools are designed to identify bottlenecks before problems occur and accelerate the troubleshooting process when they do. Deployed via dashboards, these tools provide visibility and insight into environments as well as a single, unified view of the platform including hypervisor, server, storage, and network infrastructures along with the intelligence to analyze and report on their conditions.

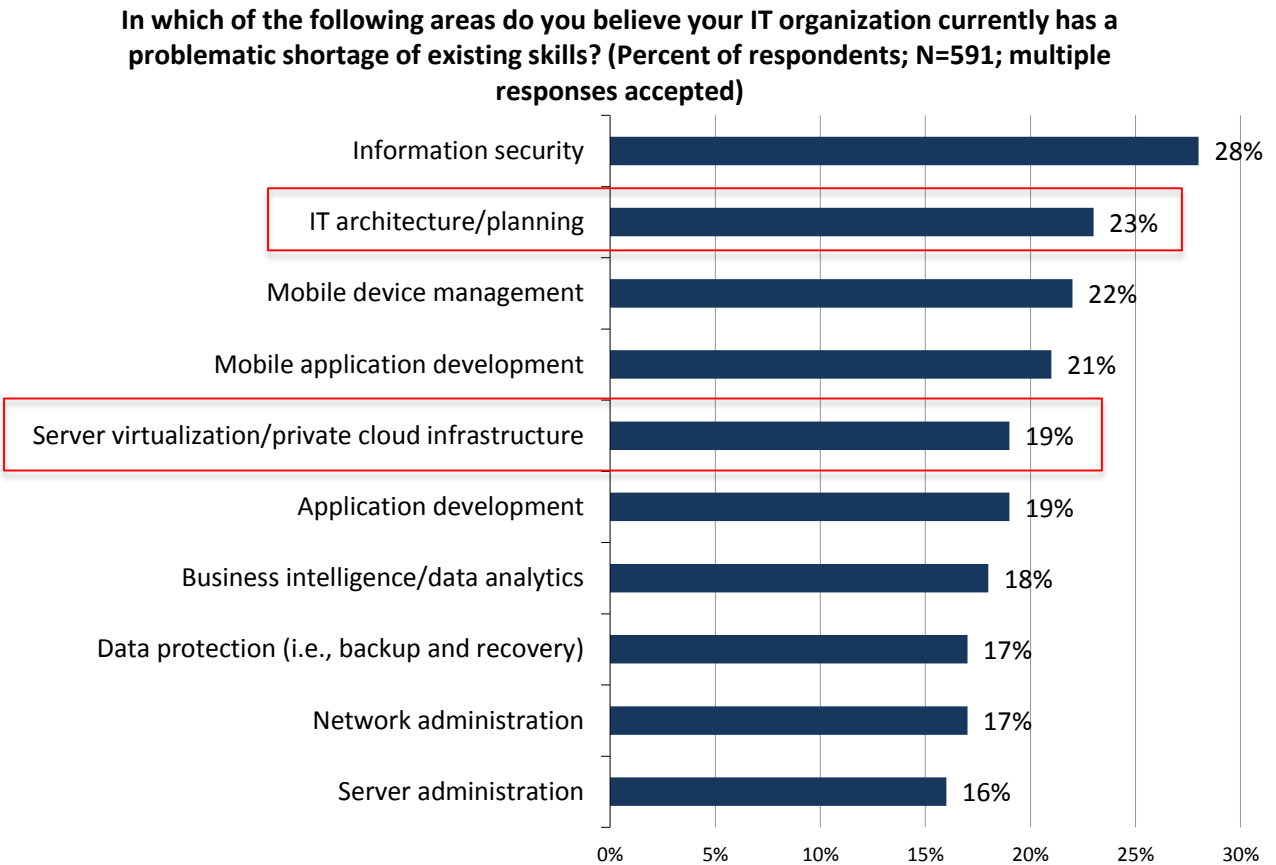
This provides a productivity boost to IT and the business. IT is freed from manually tracking and maintaining spreadsheets, relying on best-guess scenarios, and sorting through myriad tools to resolve problems. Risk to the business is reduced because problems are recognized and addressed before they happen, thereby decreasing outages and downtime and lowering the mean time to repair when incidents do occur.

Enabling IT to Become More Productive

Modernizing infrastructure and monitoring performance enables businesses to meet financial objectives and reduce operating costs. Given the fact that IT budgets are tight and additional hires are hard to come by, IT is looking for ways to address growing business needs and streamline daily IT operations. ESG research in Figure 2 clearly shows there is a shortage of skills in IT architecture/planning and server virtualization/private cloud infrastructure.² Given this deficiency, businesses are turning to management tools and automated tasks to improve application uptime and performance. Through federated management views and processes, IT has better visibility into the environment, and can respond in a timely manner to quickly anticipate and troubleshoot problems before they create application degradation and downtime. This benefits the business and solidifies investment protection by significantly reducing operating expenditures.

² Source: ESG Research Report, [2015 IT Spending Intentions Survey](#), February 2015.

Figure 2. Top Ten Areas of Technology with Problematic Skill Shortages



Source: Enterprise Strategy Group, 2015.

Upgrading aging infrastructure also leverages vendors’ expertise, which empowers IT to shift from routine tasks and expend more effort on strategic, value-added activities that focus on innovating around business priorities. This shift is critically important at a time when IT organizations are seeking to slash time-to-value while optimizing the value of their employees.

Adopting an Infrastructure that Supports a Flexible Consumption Approach

Modernizing infrastructure allows IT to adopt a flexible consumption approach which avoids designing for and investing in infrastructure for peak capacity and worst-case scenarios. With this approach, infrastructure is designed for the average operating conditions of the business, but has the reserve capacity to immediately expand to handle more workloads on demand, and pay only for what they actually use. This creates an efficient, high-utilization IT operating environment that transparently offers developers and other users access to additional capacity as needed in-house. It also uses the same set of management tools, orchestration, and migration capabilities that IT is already familiar with. In such an environment, service delivery and responsiveness to business requirements is improved in a cost-effective manner.

Maximizing Investments via Optimized Consumption Models

IT organizations and their businesses are realizing that while they will continue to deliver and consume on-premises IT services, they also need to be plugged in to public cloud resources. In so doing, they are looking for economic advantages as well as opportunities for flexibility and expedited time to resources.

The on-premises and cloud infrastructures must be designed and deployed to work together. Businesses are seeking commonality across both their on- and off-premises delivery of IT services, which makes management easier because the same policies apply across the board. For example, if a company has a virtual machine on-premises, and wants to add a backup and retention policy to it, that same backup and retention policy should apply automatically to off-premises virtual machines as well.

Other consumption models for integrated private/public domains include expanding to cloud for peak capacity needs and providing the right models for compliance and corporate governance. This makes it critical to have the right data in the right place. Applications and data that are highly regulated would typically be kept on-premises, whereas public-facing applications—where the data is neither at risk nor strictly regulated—might be stored in an external cloud.

Getting Started with HPE Solutions for Modernizing IT Infrastructure

HPE has a variety of products, tools, and services that enable IT organizations to anticipate and plan for the dynamic infrastructure changes necessary for their businesses today and into the future. HPE provides a broad portfolio of HPE ProLiant Gen9 servers and HPE 3PAR StoreServ flash-optimized storage designed for the modern IT environment. A wide array of server and data center management tools, like HPE OneView, are available to monitor performance and automate tasks. Complementary assessments, consulting, and financial services can help businesses achieve specific modernization outcomes.

HPE ProLiant Gen9 Servers: Optimized for Differing Workloads

HPE ProLiant Gen9 servers are purpose-built to enable service-oriented IT that is converged, software-defined, cloud-ready, and workload-optimized to lower the costs and amount of time needed to deliver IT services while increasing business value. When deployed in data centers, HPE ProLiant Gen 9 Servers accelerate service delivery through extensive automation capabilities and enhance SLA performance. HPE ProLiant servers efficiently utilize capacity and have the built-in agility to work with other, heterogeneous data center servers through common management by HPE OneView.

HPE OneView: Improving Infrastructure Management

This intelligent management platform features system automation and streamlines the management of integrated servers, including HPE ProLiant Gen9 rack servers. It allows data center administrators to accelerate IT service delivery through automated configuration and lifecycle management, faster virtual machine provisioning, and accelerated transition to hybrid-cloud environments. Using graphically oriented dashboard interfaces, administrators can easily find information and complete operational tasks such as server deployments and management.

HPE OneView effectively manages across server, storage and networking infrastructure and provides businesses with the efficient utilization and rapid agility that are critical to success. Key features include automation, configuration, simplified provisioning, better visibility into IT environments, and a single, consistent view across hybrid cloud.

Flash-optimized HPE 3PAR StoreServ Storage

Today, organizations are using flash for more of their applications—and with good reason. More compact, more energy-efficient, more predictable, and with lower latency than spinning drives, flash-based storage is ideal for highly virtualized, performance-intensive, latency-sensitive workloads that are the hallmark of modern IT environments. Falling drive prices and lower-cost make flash more affordable than ever. HPE 3PAR StoreServ Storage offers an architecture that is flash-optimized without being flash-limited so you won't have to make business-limiting decisions when it comes to implementing flash, such as inserting a new silo into your environment or undergoing painful hardware replacement. To lower business risk and ensure application availability, HPE StoreOnce Systems and Recovery Manager Central software offer backup designed for flash that works seamlessly

with HPE 3PAR StoreServ flash arrays, so your data protection solution is as robust and high-performance as your primary storage.

HPE Services Eases the Transition from Today's Infrastructure to Modern Technology

- HPE Datacenter Care is a customizable suite of data center management services that helps IT manage their heterogeneous, on-premises data centers. Available in modular formats, Datacenter Care enables customers to tailor the services they choose to specific, mandatory business outcomes.
- HPE Flexible Capacity is designed to improve time to market by providing a pay-as-you-grow, on-premises infrastructure solution. It provides a “buffer” of resources to augment existing data center infrastructures, enabling quick scaling of workloads to meet urgent business demands.
- HPE Consulting Services and its global partner network bring extensive expertise to the advanced server infrastructure marketplace in the form of professional services that help IT comprehensively manage and optimize every aspect of the server environment—including the effects of security, big data, mobility, and hybrid cloud. The company and its consulting partners have a proven track record of satisfying the needs of customers who are looking for experienced, trusted partners to help them make difficult decisions.

The Bigger Truth

In order to keep up with the relentless pace of business, companies need to innovate constantly, but they also need to continuously optimize their existing infrastructure. This situation is particularly crucial in companies where heterogeneous infrastructures that were designed to operate independently must now work together. If businesses are to capitalize on big data intelligence, mobility, and cloud, it's not enough to simply be compatible with virtualized compute environments. Frameworks for other key technologies such as storage and networking must also be integrated in order to ease system installation and management and enable IT to add value to strategic business endeavors. This integration is predictable, more manageable, and offers better time to value. In doing so, it empowers businesses to capitalize on business intelligence and make better informed decisions in this time of tremendous transformation.

As is almost always the case, challenges lead to opportunities. For example, IT has been challenged by developers to create more sophisticated platforms and tools that are equal to those they are already using from public cloud vendors. By turning this challenge into an opportunity, IT organizations can add value to their developers and businesses by offering development platforms in-house that streamline and expedite development projects. Delivering a continuous delivery strategy is challenging, but it also creates an opportunity for IT through the use of templates and sophisticated management tools that operate without human intervention—or human error.

HPE optimizes its servers, software, and services to create infrastructure and management tools that add value to customers' software-driven data center environments. Continuing efforts to enhance the customer experience through modern infrastructure opens up proprietary silos of data and breaks down walls between isolated technologies across servers, storage, networking, management tools, and cloud infrastructure. Through continual innovation in emerging technology categories such as software-defined computing and SSD-based flash storage, and flexible consumption models, HPE is meeting business-critical demands across the infrastructure and services spectrum.



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