IT modernization: Simplify and optimize IT

Gain immediate benefits through streamlined operations, lower costs and increased agility during changing business conditions

IT modernization
This series explores
ways to lower costs
and complexity, increase
speed, and improve agility
and security through
IT modernization.

• Simplify and optimize IT

• Modernize applications
  and data

• Operate and secure
  multicloud at scale

Immediate benefits on the modernization path

During rapidly changing business conditions, legacy systems can be inflexible and impact the ability of the business to evolve quickly. While applications running on legacy infrastructure often provide key points of differentiation for the business, they can be prone to outages, capacity issues and high maintenance demands.

While enterprises are seeking ways to lower costs and achieve greater agility, security and resiliency, most will maintain on-premises workloads for years to come in a multicloud environment spread across data centers and private and public clouds.

To address these business needs, organizations can take these important steps to simplify and optimize their IT environments: Rationalize and align application portfolios, refresh platforms, deploy infrastructure-as-a-service (IaaS) solutions, optimize workloads and implement intelligent automation **(Figure 1)**.

These steps can create a lower-cost and simplified IT environment during changing business conditions. Immediate savings can then fund innovation and application modernization initiatives. And employees freed from mundane, repetitive legacy tasks can spearhead digital transformation efforts.

Quick ways to simplify IT

Application rationalization	**Reduce cost and release budget for innovation** • Rationalize redundant and underused applications • Modernize and optimize legacy application portfolios
Technology refresh	**Improve security and compliance, performance and cost of operations** • Refresh to modern technology platforms and architectures • Eliminate unused or underused IT systems and services
Infrastructure-as-a-service solutions	**Streamline operations; reduce technical debt** • Deploy consumption-based solutions for storage, backup, networking and disaster recovery
Continuous workload optimization	**Continuously optimize provisioned resources to demand** • Optimize workload placement (on-premises or on public cloud) • Optimize workload and application performance
Intelligent automation	**Avoid recurring operational issues, downtime and risk; deliver new releases faster** • Automate and optimize application development and management, and IT operations • Incorporate greater insights, speed and efficiencies into IT operations

Figure 1. Enterprises can take important steps to quickly simplify and optimize their IT environment.

An infrastructure health check identifies immediate problems such as outages, scalability and performance issues.

Consider an infrastructure health check

To help reduce costs, regularly analyze the costs and performance of your legacy applications and hardware. An annual infrastructure health check identifies the gaps, performance degradation, outages and service interruptions that inevitably crop up in complex technology environments.

The resulting analytics highlight areas that need to be modernized to improve the performance, availability and supportability of the IT estate. They also establish a baseline inventory of the assets in place.

Many organizations do not have an accurate accounting of their own IT estate. How many and what types of servers? How many and what types of applications? How well utilized is the IT estate? Are there redundancies in application licenses and maintenance? How much of the estate is at the end of service life (EOSL)? Can the estate be consolidated based on newer infrastructure?

Automated tools and processes can streamline the inventory process to make it simple, fast and cost-effective. The health check also serves as an audit of the IT environment to assess whether processes and operations are properly linked and documented and whether the infrastructure is aligned to business needs.

> **Telecom firm finds issues with 60 percent of its hardware**
>
> An infrastructure health check at a global telecommunications company pinpointed 75 "must-fix" items to avoid service interruption. The firm found nearly 60 percent of its hardware was out of support and many operating systems were at end of life.

Rationalize applications and align portfolios

Rationalizing applications is a key first step toward simplifying the IT estate. Enterprises can better understand what applications they are running, who is using them and the demand on IT capacity and resources. Modern application discovery tools can paint an accurate, detailed, real-time picture of how an organization uses its IT infrastructure. The discovery process can identify zombie servers hosting applications that are no longer being used, over- and under-utilized servers, and cases where the organization is running multiple applications that all do the same thing.

Applied in a systematic, data-driven manner, application rationalization simplifies operations, drives down costs and serves as a key step on the road to cloud migration.

In situations where multiple apps should be consolidated into one, the most important factor is getting buy-in and authority from business leaders to retire redundant apps. The decisions on which applications to retain and which to retire can be relatively straightforward based on cost, number of impacted users, strategic relationship with the software vendor or strategic value to the business.

End-of-life applications present unique challenges. While business leaders may be reluctant to abandon a familiar application that has served the company well for many years, IT leaders should make the case that EOSL software that is no longer eligible for support is expensive to run, might violate regulatory requirements and could pose security risks.

Refresh technology to virtual platforms

Organizations also have to grapple with the fate of aging data center hardware and networking gear that no longer support the agility and flexibility required in a mobile-first, multicloud environment.

Fundamentally, organizations should upgrade to the latest operating systems to avoid security vulnerabilities and improve quality and performance. In addition, server consolidation, server virtualization, containerization and cloud-based approaches such as serverless computing can help companies streamline and optimize their server landscape. Platform-as-a-service providers deliver a virtualized environment for running core enterprise applications such as SAP, providing a more agile platform for spinning up and modifying core business functions.

Application rationalization can slash the number of applications in the portfolio by more than 60 percent.

> **Server consolidation helps global insurer free up 100TB**
>
> Through server consolidation and optimization, a global insurer saved $1.4 million by avoiding the purchase of two data center servers, reallocating 100TB of SAN space for new growth and reducing data center maintenance costs.

Based on DXC's experience with clients, about 10 percent of the average IT budget is spent on networking technology. One way to reduce network costs and improve network performance is to deploy software-defined networking (SDN) — for both WAN and LAN — to get off the hardware-upgrade treadmill and improve security.

With SDN, companies install a software overlay that manages and orchestrates the underlying hardware. Networking gear is virtualized, allowing companies to eliminate custom hardware appliances and replace them with software running on standardized, high-volume servers or in the cloud.

Upgrading the IT infrastructure to modern tech platforms and architectures provides the underlying foundation to support a multicloud environment. In addition, any application being considered for cloud migration needs to be upgraded to the latest version.

Deploy IaaS to drive out costs quickly

A key upgrade that will help enterprises respond to sudden changes in the business is deploying IaaS solutions for core infrastructure functions such as backup, storage, business continuity and disaster recovery. For example, many enterprises use only about half of the storage they've already purchased. All of that unused storage not only costs money to buy, but is also expensive to maintain.

By switching to consumption-based storage, enterprises can replace a fixed-capacity storage environment with a flexible, cloud-based storage solution that offers continuous improvement and can scale up or down depending on changing business needs.

Backup is another critical area that is fraught with complexity and high cost. Enterprises struggle to develop a streamlined solution that encompasses recording equipment, backup tapes, storage, handling and physical security. By pivoting to consumption-based backup services, organizations can eliminate the need for tape backup, provide a centralized, scalable solution for critical and noncritical data, and ensure they are deploying the latest data protection technologies.

Disaster recovery (DR) demands a level of commitment that is hard for do-it-yourself programs to sustain. Many enterprises find their DR plans are incomplete and untested when disaster hits.

But thanks to virtualization and cloud, enterprises can deploy an affordable and manageable DR plan. Consumption-based DR as a service enables an organization to maintain a full replica of data and applications that functions as the business environment while primary systems are being repaired. The switchover to the replica system can happen in hours, minimizing the impact of a disaster.

In each case, as core infrastructure moves to the cloud, enterprises can drive down costs, reduce maintenance demands and free up capital to invest in higher-value projects.

About 10 percent of the average IT budget is spent on networking technology. SDN helps firms save money and get off the hardware-upgrade treadmill.

Optimize workloads

Workload optimization is key to making sure multicloud IT environments are running at peak efficiency. Workload optimization automatically allocates resources to the workloads that need them the most, optimizing application performance. Toolsets automatically maximize workload density and resource utilization, minimizing costs no matter where the application is running.

In addition, workload optimization tools can place, size and move workloads while maintaining compliance with regulations and policies. And, they deliver business agility by providing all workloads the necessary resources in real time, so new services can be provisioned to meet business demand **(Figure 2)**.
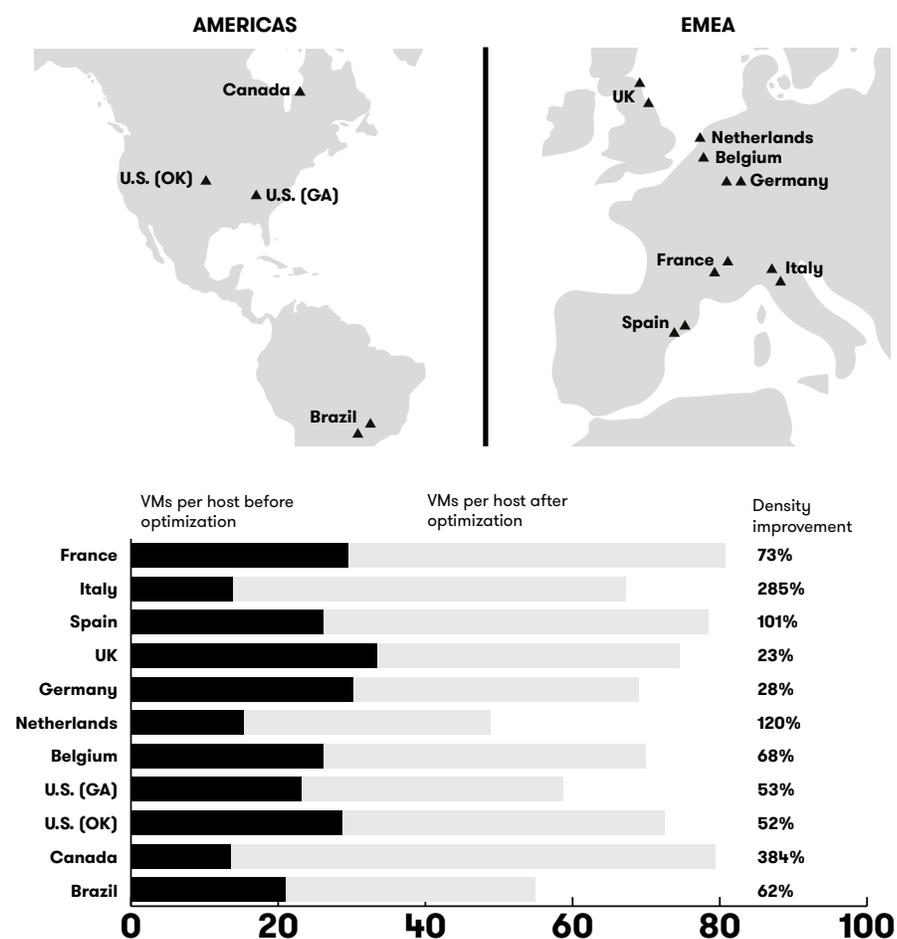

Figure 2. Maximizing capacity and performance through continuous optimization

Workload optimization tools are vendor- and environment-independent, and analyze the storage and network layers at a granular level to identify bottlenecks across the stack. However, they also encompass strong capacity planning and modeling capabilities to reduce manual work and allow faster planning for refreshes, capacity changes and migrations.

> **Consumer goods firm improves performance up to 92 percent**
>
> A large consumer goods firm faced performance issues with its legacy systems, requiring many hours of IT staff intervention. DXC automated up to 14,000 actions per month, improving workload performance up to 92 percent across its applications, and freeing up staff for cloud- and mobile-first initiatives.

Implement intelligent automation

Another key driver of efficiency is IT automation. Enterprises can deploy tools that gather telemetry data streams on the performance of devices, services and applications. As operational constraints are identified, intelligent AI-based analytics recommend ways to improve processes through a cycle of data collection, analysis, modeling and experimentation.

Lean processes can eliminate inefficiencies and continually improve delivery, optimizing workflows and team performance for better quality and outcomes. Robotic process automation can slash transaction time by 65 percent, reduce operational time by 50 – 80 percent, and cut application deployment from 3 hours to 15 minutes.

Automated processes such as rules-based filtering of requests and grouping requests under a single incident help resolve most trouble tickets without human intervention. In times of high demand, digital agents and chatbots can function as virtual contact centers, eliminating the need for working from one physical location.

Data mining, machine learning and predictive analytics also can identify ways to reduce costs and deliver innovation in areas such as applications management, IT delivery operations, DevSecOps enablement and self-service.

Robotic process automation can slash business process transaction time by 65 percent and cut app deployment time from 3 hours to 15 minutes.

> **Insurer eliminates 129,000 alerts through automation**
>
> A global insurance company automated IT processes and solved 129,000 alerts related to CPU, memory and storage — eliminating manual intervention and accelerating time to market for new products.

Modernize enterprise security

Virtualization of networks and IT infrastructure also provides a more simplified approach to security. Software-defined networks abstract controls from traditional hardware devices to the network, allowing the implementation of tools that simplify security across each network layer — data, applications and architecture. Automated monitoring helps manage risk more effectively and ensures faster incident response.

Centralizing identity management across the environment controls access to important data for customers, partners, employees, machines, connected devices and cloud-based services. Unifying access control not only protects against unauthorized access, but also improves the overall user experience, increases loyalty and builds trust.

Many legacy systems still have traditional security controls that are no longer fit for purpose. Installing antivirus software on servers used to be a best practice, but today's threats can circumvent antivirus software that relies on signature-based technologies to detect malware.

Today, adversaries are more likely to compromise systems through phishing and locally installed tools using techniques that cannot be detected by signatures. Upgrading endpoint security controls with machine learning technologies can help identify anomalous behavior inside the system.

Conclusion: Next steps to modernization

Simplifying and optimizing existing systems and infrastructure can create immediate benefits for IT operations and the business. These key strategies help maximize returns on investment:

- **Assess your end-to-end technology environment.** Most IT simplification efforts focus on data center and resource consolidation, but enterprise IT organizations should also focus on optimizing availability and performance for current operations — and future growth. Assessments should cover underlying business processes for managing incidents, configurations, changes, assets and even employee skills.

- **Rethink traditional approaches to infrastructure management.** Consider moving to a more consumption-based model to control costs and increase flexibility. In many cases, the practical approach to modernization is moving applications to the cloud or a software-as-a-service provider. Modern IT environments must establish strong service-integration policies, governance and security across on-premises IT and suppliers in the cloud, providing complete visibility into operations and business processes. This will enable further optimization of IT activities and resources.

- **Invest savings in digital initiatives.** For most large organizations, simplifying and optimizing IT could generate millions of dollars in immediate savings by eliminating assets, streamlining operations and reducing staff time needed to maintain legacy environments. Rather than just cutting costs, organizations should develop a long-range plan for managing a multicloud environment with both on-premises legacy applications and cloud-native applications.

By focusing on simplifying and optimizing IT, enterprises can take immediate steps to streamline operations, lower costs and increase agility during changing business conditions.

About the author

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• Manage 750+PB of storage data in virtualized cloud environments

• Migrate more than 60,000 workloads to the cloud annually

• Achieve a 100% success rate recovering more than 1,000 disaster declarations

• Respond to more than 1 million security incidents a month

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