Energy-efficient, performance-intensive computing and resilient, optimized infrastructure solutions form the foundation of modern datacenters. The right infrastructure stack enables businesses to accelerate their business transformation journey.

Datacenter Modernization

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Introduction

Digital transformation (DX) — the adoption of technology-driven and data-centric business models — enables businesses to drive competitive differentiation by improving operational efficiencies, embracing new business models, delivering improved customer experiences, and releasing new or better products and service on a faster cadence.

Information technology (IT) plays a crucial, strategic role in delivering the data-driven insights necessary for businesses to accelerate their DX journey in the post-pandemic era. A hybrid IT strategy — delivered via modern datacenter infrastructure — provides the means to gain timely and actionable insights.

Modern datacenter infrastructure can host a variety of current and next-generation workloads (applications and their data sets) that deliver business outcomes necessary for successful DX initiatives, from artificial intelligence (AI) and virtualization to cloud-native applications and database analytics. Datacenter modernization — investments in modern, energy-efficient, optimized IT infrastructure — enables businesses to:

» Realize the economics of deploying hyperconverged infrastructure (HCI) for compute-intensive workloads

» Deliver business outcomes by increasing the speed, agility, and scale with which workloads can be deployed

» Lower maintenance overhead while helping defend against security threats to outdated infrastructure

» Protect against rising energy costs by reducing energy consumption within the datacenter

» Gain the benefits of cloud-like financial choices with the advantage of on-premises infrastructure

AT A GLANCE

KEY STATS

According to recent IDC studies:

» Within the next 12 months, the average IT spend is expected to increase by 50%.

» 49% of respondents said that IT cost increase stemming from inflation will have the greatest impact on their organizations' IT spending plans in 2022.

» 34% of respondents indicated that across various technology areas, infrastructure costs including hardware, software, and IaaS will see the greatest impact from inflation.

WHAT'S IMPORTANT

Across the board, IDC found that IT spend for server infrastructure and HCI is expected to increase, offsetting the decline in IT spend for public cloud infrastructure services. The IT initiatives driving increases in IT spending strongly correlate with organizational goals of optimizing IT and business efficiencies. Most respondents reported additional investments in optimized infrastructure for data analytics and high-performance computing environments.

For IT organizations, the most compelling benefit of a modern datacenter infrastructure is that they can seamlessly implement a hybrid cloud operating strategy. It offers businesses the flexibility to choose the right cloud deployment for their workloads, with on-premises deployments following the same economics of public cloud infrastructure services, thus reducing IT complexity and risk, improving agility and performance, and enabling faster technology adoption.

Investing in Digital Infrastructure Is a Strategic Choice

In a recent study conducted as part of Future of Digital Infrastructure research, IDC determined that businesses that are ahead of the curve in terms of digital transformation recognize the critical importance of digital infrastructure in achieving business objectives. When asked about their key business objectives, and how digital infrastructure helps them achieve those objectives, businesses cited:

- » **Regulatory compliance.** Businesses that are party to a global economy must ensure that they are adhering to laws and regulations on proper ways to collect, analyze, store, and retain data on their end users.

- » **Revenue and profits.** Businesses are acutely aware of the fact that DX initiatives should directly influence business differentiation, which in turn should lead to increased revenue and profits.

- » **Cost reduction.** Businesses are always seeking to reduce capital and operating expenses. The lack of a holistic IT infrastructure strategy can lead to runaway costs; an aging IT infrastructure can be expensive to maintain.

- » **Improved sustainability.** Collectively, datacenters are one of the leading contributors to greenhouse emissions. Businesses are constantly looking for ways to align their IT infrastructure strategy with their sustainability goals.

- » **Increased business agility and digital business innovation.** Digital infrastructure — housed in modern datacenters — directly supports the ability of the business to respond quickly to market needs, and to innovate internally and externally.

- » **Improved employee productivity.** An aging IT infrastructure can be a drag on IT employee productivity, resulting in a drag on business end-user productivity.

Business Objectives and Datacenter Modernization

A modern datacenter strategy — combined with a digital transformation vision — enables businesses to leverage digital infrastructure for hosting current and future revenue-generating workloads. A recent IDC study found that within the next 12 months, the average IT spend is expected to increase by 50%. The amount spent on IT will depend on the size of the organization; the larger the organization, the more funds that will be allocated to IT spending.

- » Small enterprises (2,500–4,999 employees) expect to prioritize AI, IT automation, and IT modernization initiatives, which will provide the technological innovation for improving scalability for workloads. As a result, small organizations with the smallest amounts allocated to IT spend ($639,000 now; $1.2 million in 12 months) expect to continue to improve their return on investment (ROI) as well as reduce costs and streamline IT infrastructure and staff.

- » Midsize enterprises (5,000–9,999 employees) expect their increased funding will also help optimize both their business and IT operations. With more funds ($1.2 million now; $2.3 million in 12 months) allocated to IT spend, they can implement new workloads and invest in data protection and cyber-resiliency initiatives. This enables these organizations to have the technological innovation that leads to improved business operations, new business opportunities, and better compliance, which result in improved ROI and cash flow.

» Large enterprises (10,000+ employees) on the other hand make IT investments with a focus on improving product and service experience. Allocating the largest amount to IT spend ($2.2 million now; $3.2 million in 12 months), these organizations are more concerned about effective application development and having the agility and speed to meet business demand. As a result, these organizations expect AI and cyber-resiliency initiatives to drive increases in IT spending. These organizations anticipate lowering the overall cost of compute resources (primarily in the form of operating costs and software licensing costs) and reducing IT staff management while improving cost flows.

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Considering AMD EPYC-Powered Solutions from Lenovo

Lenovo and AMD help businesses with their datacenter and hybrid cloud modernization strategy. The strength of the Lenovo-AMD technology partnership lies in the fact that it is global, engineering led from both sides, and focused on delivering innovative solutions for dramatically accelerating enterprise digital transformation initiatives. Lenovo ThinkSystem and ThinkAgile servers powered by AMD EPYC processors are designed to be building blocks of secure, reliable, and sustainable infrastructure solutions, to help provide better business value, with features optimized for edge-to-cloud datacenter deployments.

Getting More Business Value from IT with Optimized Solutions

Lenovo and AMD develop infrastructure solutions designed to be reliable, highly performant, and agile to serve as building blocks of modern datacenter infrastructure. Businesses can procure these servers via traditional capex methods or leasing models or via Lenovo's TruScale as-a-service model, giving IT organizations outstanding value.

In September 2022, Lenovo introduced a new V3 portfolio of ThinkSystem and ThinkAgile servers powered by AMD EPYC processors — agile platforms designed to deliver high performance, enhanced security features, and exceptional manageability from edge to cloud. By deploying these servers, businesses can seek to gain fast time to insights, better economics, rapid provisioning, and enhanced productivity. Highlights of Lenovo's V3 server portfolio include:

» **Infrastructure for compute-intensive hyperconverged and virtualization workloads.** Lenovo ThinkAgile VX and ThinkAgile HX solutions with AMD EPYC processors support significantly more virtual machines per server, with more processing power per virtual machine. This enables customers to consolidate their infrastructure and/or expand their on-premises IT capacity within existing power, cooling, and space constraints.

» **Software license, deployment services, and a single support point.** Lenovo ThinkAgile VX and ThinkAgile HX solutions with AMD EPYC processors help improve administrator productivity using Lenovo XClarity Integrator and simplified life-cycle management with VMware vCenter and vSAN integration. As a centralized resource management solution, Lenovo XClarity Administrator is designed to reduce complexity, speed response, and enhance the availability of Lenovo server systems and solutions.

» **Cloud-like financial choices with the advantage of on-premises infrastructure.** Lenovo ThinkSystem servers powered by AMD EPYC processors are designed to enable customers to deploy critical workloads with high efficiency, requiring fewer servers for similar tasks. Lenovo ThinkAgile VX systems with AMD EPYC processors help ensure that data analytics workloads operate at full enterprise efficiency, providing financial flexibility thanks to Lenovo TruScale.

» **Noteworthy performance.** Lenovo servers with AMD EPYC processors drive energy efficiencies by meeting application performance demands with fewer physical servers than competitive solutions, thereby delivering impressive performance and lower energy consumption. Having achieved more than 100 benchmark world records, Lenovo ThinkSystem servers powered by AMD EPYC processors offer organizations the power to gain rapid new data insights, accelerate business transactions, and exceed their customers' expectations.

» **Sustainable IT infrastructure consolidation and ease of management with Lenovo TruScale as a service.** Lenovo's as-a-service solution is designed to reduce the time and resources organizations require for deploying and maintaining server infrastructure. This offering frees IT resources to focus on providing applications and to drive innovation, greater efficiency, and agility for their business. Lenovo delivers sustainable, energy-efficient solutions, providing noteworthy performance, reducing energy costs, and helping minimize environmental impact.

» **Solutions for performance-intensive computing workloads.** Optimized solutions for high-performance computing, data analytics, AI, and SQL and/or in-memory databases help businesses transform data into insights faster. Lenovo servers deployed as part of a comprehensive business solution enable IT organizations to scale the environment and support sustained growth with a cost-effective yet powerful solution that is reliable, secure, and simple to handle.

Challenges and Opportunities for Lenovo

Lenovo's technology partnership with AMD has yielded one of the most comprehensive computing infrastructure portfolios in the industry. Lenovo must now ensure that businesses understand how the partnership can help them differentiate their datacenter modernization initiatives. This is not just a business value and performance story; it also has an important sustainability angle. Further, Lenovo must highlight the value of its TruScale offerings, which can provide businesses with a cost-effective resource when implementing a hybrid cloud operating strategy.

> IT organizations are embracing datacenter modernization initiatives as part of their hybrid cloud operating and digital transformation strategies.

Conclusion

IT organizations are embracing datacenter modernization initiatives as part of their hybrid cloud operating and digital transformation strategies. With a hyperfocus on business resiliency, faster time to insights, business value, and sustainability, IT organizations must explore solutions from vendors such as Lenovo and AMD. The two companies have a rich history of innovation, building on extensive engineering collaboration. Lenovo introduced a new portfolio of ThinkSystem and ThinkAgile servers powered by AMD EPYC processors, delivering robust security features within a reliable infrastructure for running the most demanding, compute-intensive workloads. These platforms are designed to help businesses experience fast time to insights, improved application performance, enhanced security, and better manageability from edge to cloud.

About the Analyst

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Ashish Nadkarni is Group Vice President and General Manager within IDC's Worldwide Infrastructure Practice. He leads a team of analysts who engage in delivering qualitative and quantitative research on computing, storage, and data management infrastructure platforms, technologies, and deployments via syndicated research programs (subscription services), data products (IDC Trackers), and custom engagements.

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