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AI Is Fueling Data Center Modernization Investment

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Abstract: The rise of artificial intelligence is accelerating on-premises modernization investment. As businesses seek to maximize the value of their local private data, they are shifting their budgets toward data centers, where they expect they can better control infrastructure, data, and costs.

AI Is Fueling Increased Data Center Construction and Investment Among Enterprise Environments

In a recent research study, the Enterprise Strategy Group surveyed 380 organizations in North America on their future plans regarding their IT infrastructure. The responses not only reaffirm the role of hybrid cloud environments as the de facto standard for modern application environments for the foreseeable future but also highlight the strategic value that organizations expect to receive from their data center infrastructure.

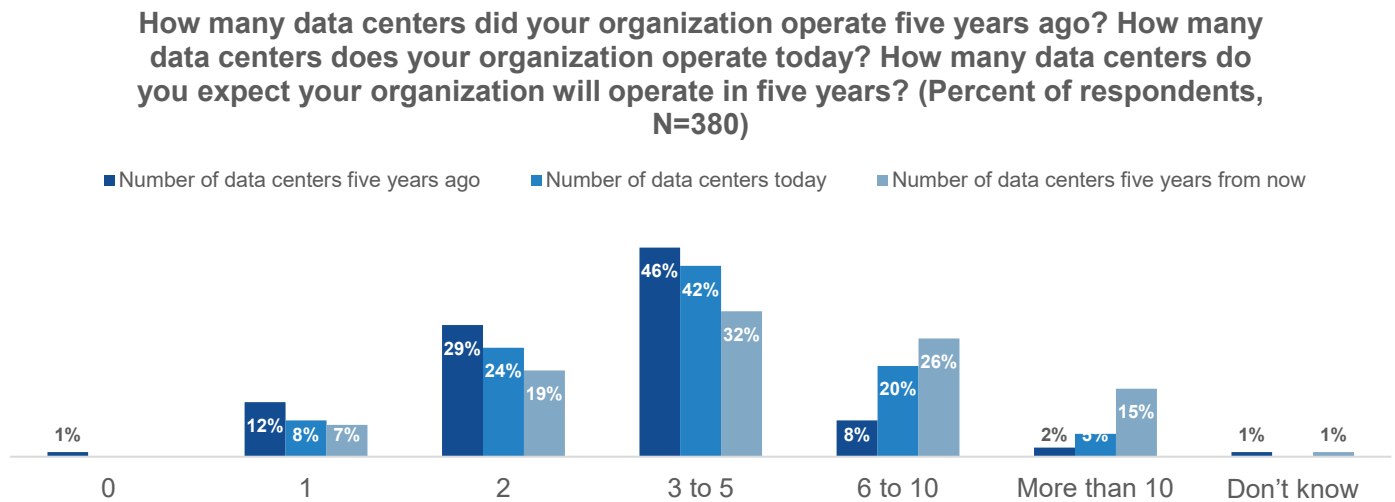
For most, the idea of a “public cloud only” future is no longer a realistic or even desirable goal. The rise of artificial intelligence (AI) initiatives and the importance of local, private data to support those AI projects has increased the premium that IT decision-makers place on control over both data and infrastructure.

The research showed that over the next five years, the percentage of organizations that own and operate six or more data centers is expected to increase from 25% to 41% (see Figure 1). At the industry level, the largest expected areas of investment in new data center locations is within the technology industry. For example, only 5% of respondents reported operating more 10 data centers today, but in five years’ time, that percentage will likely increase to an incredible 26% of technology industry organizations expecting to support more than 10 data centers. A similar trend is occurring within the communications and media industry, where the percentage of such businesses managing more than 10 data centers is expected to increase from 5% to 20% over the next five years.

Key Highlights

- 92% of organizations are actively pursuing or exploring private AI on premises.¹
- 84% agreed: “Data center modernization is a top IT priority.”
- 76% agreed: “The rising cost of cloud infrastructure has caused us to re-evaluate our hybrid cloud strategy.”

¹ Source: Enterprise Strategy Group Research Report, [Private AI, Virtualization, and Cloud: Transforming the Future of Infrastructure Modernization](#), July 2025. All data in this brief has been taken from this study.

Figure 1. Four in 10 Organizations Expect to Manage Six or More Data Centers in Five Years

Source: Enterprise Strategy Group, now part of Omdia

Across all industries, the most commonly identified drivers behind this increase in physical data center locations were support for new on-premises AI initiatives (cited by 66%) and support for business growth (63%).

The data also revealed an interesting phenomenon that is taking place in the technology industry, where 57% of respondents indicated that their expected increase in data center locations stemmed from a movement of workloads back from the public cloud. Money is one possible factor behind this repatriation movement in the technology sector: 90% of technology organizations agreed that rising cloud infrastructure costs have caused them to reevaluate their hybrid cloud strategy.

Near-term AI Investments Are Shifting Budgets Toward Data Center Modernization

When organizations were asked to project their budget allocations for the next two years, 24% expected their data center spending to outpace that of other locations such as public cloud, SaaS, colocation facilities, and edge locations. When organizations that expected to increase their budget-percentage investment in data centers were asked to identify the factors behind that increased investment (see Figure 2), the most commonly reported reasons were to support AI initiatives on on-premises infrastructure (60%) and to scale on-premises infrastructure to support data locality or compliance requirements (54%).

Figure 2. AI and Data Locality Shift IT Budgets on Premises

Source: Enterprise Strategy Group, now part of Omdia

Analyst Take

The advent of artificial intelligence is only amplifying the importance of hybrid cloud and data center infrastructure, but it is a trend that has been ongoing for several years now. The race to maximize the value of private local data via private AI is the primary catalyst of data center growth. However, other factors—such as the cost of public cloud services and improvements in on-premises and private cloud infrastructure—have already been driving a need for hybrid cloud environments.

While the increased interest in on-premises infrastructure is notable, it would be incorrect to assume that the rise in data center investment comes at the expense of the public cloud at a macro level. Although pockets exist in which businesses chose between on- and off-premises options, and some organizations repatriated applications from the public cloud, in aggregate, data center and public cloud investments do not represent a zero-sum game where there is only one “winner” at the expense of the other. Rather, businesses demand access to multiple infrastructure options to increase their flexibility and choice, thereby ensuring that they can leverage best-of-breed infrastructure wherever it resides.

“ AI is poised to change the game. Businesses are increasingly deploying AI on premises; if your infrastructure can’t scale to keep pace, your business will be left behind.”

- **Scott Sinclair**, Practice Director, Enterprise Strategy Group

For IT decision-makers, these research findings reaffirm the importance of data center modernization investment. When trying to address the management burden presented by modern IT hybrid cloud infrastructures, the ability to simplify via massive consolidation to a single cloud provider or a single location does not appear to be a practical solution. Therefore, IT decision-makers must seek to modernize their on-premises and hybrid cloud management operations as a means to significantly reduce the burden on internal administrative resources.

Without significant simplification, the burden of legacy infrastructure and technical debt will eventually lead to competitive deficiencies and hinder future execution. AI is poised to change the game. Businesses are increasingly deploying AI on premises—if your infrastructure can't scale to keep pace, your business will be left behind.

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