Reimagining cloud strategy for AI-first enterprises

Preface

"Reimagining cloud strategy for AI-first enterprises" is an MIT Technology Review Insights report in partnership with Infosys. This report, based on survey research and executive interviews, seeks to assess enterprises' cloud and data readiness as they prepare to launch AI initiatives at scale. Stephanie Walden was the author of the report, Michelle Brosnahan was the editor, and Nico Crepaldi was the producer. The research is editorially independent and the views expressed are those of MIT Technology Review Insights.

We would like to thank the following individuals for providing their time and insights:

Anant Adya, Executive Vice President and Head, Infosys Cobalt

Balakrishna D.R. (Bali), Executive Vice President, Global Services Head, AI and Industry Verticals, Infosys

Keisha Garcia, VP Digital Foundations, Technical Program Management and Head of Discipline, bp

Raimundo Martinez, Global Digital Solutions Manager of Procurement and Supply Chain, bp

Methodology

In April and May 2024, MIT Technology Review Insights, in collaboration with Infosys, surveyed 500 senior executives and directors across industries including consumer goods and retail; banking, insurance, and financial products; hospitality, travel, and leisure; electricity and energy; IT, telcos, and technology; manufacturing; media and marketing; pharmaceuticals; and professional services.

Respondents to this survey are from different regions spanning North America, Asia, Australia and New Zealand, and Europe and the U.K. Each organization surveyed has at least $500 million in annual revenue.

In addition to the quantitative insights gleaned from the survey, this report has been supplemented by a series of interviews with executives who have firsthand knowledge of cloud and AI strategy at their organizations.

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Foreword

We live in an era where technology is at the helm, steering the transformation of businesses. With the dominance of cloud computing and the acceleration of generative AI in the last two years, we are now witnessing a convergence between cloud and AI that is offering unimagined ways of how we engage with and experience our work and lives. AI continues to intrigue and amaze us, as is evident from the speed at which enterprises are adopting it; yet they are treading cautiously for fear of losing control over their data and processes, and in an effort to implement AI in a responsible manner. Over the past decade, enterprises have relied on the cloud to do things that we now take for granted, such as achieving agility and speed in delivering digital initiatives, storing vast amounts of data and mining them for insights at scale, or experimenting with new ideas without committing to large investments.

At this juncture, as we dive into a new AI-first world, we believe that digital, data, and cloud are the foundations on which businesses will leapfrog into the AI era. Cloud computing will help accelerate this with the foundational AI infrastructure and the frontier models that AI initiatives require by offering the computational power, scalability, and accessibility to open and closed large language models as well as mid-sized models.

For the scaling of AI initiatives within enterprises, it's important to get four things right.

1. Simplify and modernize existing systems and strengthen the cloud foundation to support AI development, deployment, and scaling.

2. Prepare data and user-generated content for AI development.

3. Transform talent and operating models to leverage AI assistants and AI capabilities.

4. Reimagine the processes and experiences to deliver maximum value.

This report, "Reimagining cloud strategy for AI-first enterprises," delves into the questions around the intersection of AI and cloud, offering timely and essential insights for today's business leaders. The survey of global-suite executives shows a strong belief in AI's potential to revolutionize industries. However, widespread AI adoption is still in its early stages, as evidenced by the key findings of the study, which reveal that while nearly half (48%) of the executives say their firms are experimenting with AI, only 8% say they've comprehensively integrated AI into their business.

This report aims to guide enterprises on their journey toward becoming AI-first organizations, as it found just 13% of the executives have a "detailed roadmap" on how cloud investments will advance AI adoption beyond data and computational power/scale. By leveraging the cloud and adopting responsible AI practices, businesses can navigate this transformation and achieve sustainable growth.

Together, let's confidently and clearly navigate the next phase of enterprise evolution.

Mohammed Rafee Tarafdar
Chief Technology Officer, Infosys

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Executive summary

The rise of generative artificial intelligence (AI), natural language processing, and computer vision has sparked lofty predictions: AI will revolutionize business operations, transform the nature of knowledge work, and boost companies' bottom lines[1] and the larger global economy[2], by trillions of dollars.

Executives and technology leaders are eager to see these promises realized, and many are enjoying impressive results[3] of early AI investments. Balakrishna D.R. (Bali), executive vice president, global services head, AI and industry verticals at Infosys, says that generative AI is already proving game-changing for tasks such as knowledge management, search and summarization, software development, and customer service across sectors[4] such as financial services, retail, health care, and automotive.

Realizing AI's full potential on a mass scale will require more than just executives' enthusiasm; becoming a truly AI-first enterprise[5] will require a significant, sustained investment in cloud infrastructure and strategy. In 2024, the cloud has evolved beyond its initial purpose as a storage tool and cost saver to become a crucial driver of innovation, transformation, and disruption. Now, with AI in the mix, enterprises are looking to the cloud to support

large language models (LLMs) to maximize R&D performance[6] and prevent cybersecurity attacks[7], among other high-impact use cases.

A 2023 report[8] by Infosys looks at how prepared companies are to realize the combined potential of cloud and AI. To further assess this state of readiness, MIT Technology Review Insights and Infosys surveyed 500 business leaders across industries such as IT, manufacturing, financial services, and consumer goods about how their organizations are thinking about—and acting upon—an integrated cloud and AI strategy.

This research found that most companies are still experimenting and preparing their infrastructure landscape for AI from a cloud perspective—and many are planning additional investments to accelerate their progress.

Key findings for this report include the following.

About two-thirds (67%) of respondents say they have a "developed" or "advanced" cloud infrastructure, while about one-third (33%) classify their cloud infrastructure as "growing" or "nascent." In addition, about one in five executives

report having a "seamless" cloud management system, and half are using the cloud to reduce costs and bolster productivity.

Less than 10% of executives have fully integrated AI into their operations. While nearly half (48%) of executives say their firms are experimenting with AI, only 8% say they've comprehensively integrated AI into their business. Firms that are actively experimenting with or have already integrated AI are doing so with high hopes for a wide spectrum of use cases, including enhancing cybersecurity and streamlining data sharing.

Companies have varied strategies for optimizing their cloud systems to support AI initiatives. When queried about how they describe their organization's cloud strategy and infrastructure in the context of AI, half of executives report using cloud services only to integrate data for AI purposes. Another 30% use cloud infrastructure for computing capacity, and just 13% report having a "detailed roadmap" on how cloud investments will advance AI adoption beyond data and computer power and scale.

Complexity, security, safety, and data challenges are all hurdles to cloud-ready AI systems. When asked about the factors limiting their organization's cloud

readiness for AI, 45% of respondents cite "concerns about data security and ethical use of data, privacy, and overall safety." Another 45% selected "complexity of AI projects," and 36% noted data challenges. About one-third of respondents see room for improvement when it comes to preparing their IT teams to manage cloud infrastructure for AI projects.

Spending on cloud systems is expected to rise. A significant percentage (71%) of executives expect spending on cloud infrastructure for AI will increase by at least 25% in the next two years. More than one-quarter (27%) predict it will increase by 50% to 100%. Only 5% of respondents believe their companies' investment in cloud infrastructure will stay the same, and none anticipate a decrease in spending in this arena.

These findings align with larger industry forecasts: Gartner predicts[9] worldwide end-user spending on public cloud services will rise more than 20%—to a nearly $679 billion market—by the end of 2024. Further, a recent study by the Infosys Knowledge Institute[10] found that nearly three-quarters (72%) of surveyed executives in the United States and Canada plan to ramp up investments in AI by a total of about $2.3 billion during the next 12 months.

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No AI without cloud

Cloud and AI go hand in hand, says Infosys' executive vice president and head, Anant Adya. "Without cloud, there is no AI. Without AI, there is no cloud. Cloud is creating a robust technology foundation, and AI, which is sitting on top of that, is now helping clients accelerate the business value they can get from their data," he says.

Bali echoes this point: "Cloud maturity is intricately linked with overall AI maturity in an organization," he says. Strong cloud infrastructure supports AI initiatives in specific ways:

• Provides scalability and flexibility, particularly for computationally intensive model training.

• Establishes systems for data management and governance, such as cloud-based data lakes, data warehouses, and data cataloging services, all of which help facilitate data integration, data quality management, and data lineage tracking—essentials for reliable AI models.

• Enhances collaboration and sharing capabilities across a wide spectrum of cross-functional teams that often need to work together to develop AI projects.

• Provides a foundation for security and compliance via data encryption, access controls, and compliance monitoring, ensuring AI projects adhere to security and regulatory standards.

• Enables continuous integration and deployment (CI/CD) processes via automated testing, versioning, and deployment of AI models, which helps streamline the AI lifecycle management process.

Bali adds that today, most enterprise-level AI applications are developed and deployed by services from hyperscalers. "Having a strong data and cloud

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Anant Adya, Executive Vice President and Head, Infosys Cobalt

backbone accelerates this," he says. "If the entire core enterprise applications stack and data infrastructure is already in the cloud, integrating with advanced AI is much easier, as those applications can simply consume AI services. There is a free flow of critical resources to ensure rapid experimentation, prototyping, and deployment."

The state of AI adoption and cloud readiness

This research assessed enterprises' infrastructural preparation through three main lenses:

- **Cloud readiness:** An organization's preparedness to migrate its infrastructure, applications, and workloads to the cloud.

- **Data readiness:** The state of an organization's data assets and suitability for AI and analytics initiatives. This includes having high-quality data, streamlined data integration, strong data governance, and the availability of tools and processes for efficient data preparation and management.

- **AI readiness:** Both cloud and data readiness levels are interconnected in the context of AI implementation, as computing power and data handling capacities enable and enhance the performance of AI applications. This encompasses preparedness from the standpoints of responsibility, compliance, and ethics.

First, the survey asked respondents to rate their organization's current maturity levels of cloud infrastructure. About half (49%) say they have a "developed" cloud infrastructure, but just 18% consider their infrastructure "advanced" – defined as having different workloads residing in different clouds, seamless management, and active use cases for advanced innovation and business transformation (see Figure 1).

The cloud has been a vital contributor to enterprise digital transformation. At multinational energy firm bp, cloud has proven instrumental on a number of fronts. "Our cloud migration helped us optimize bp's technology stack and increase operational resilience. It introduced new network and data architectures, accelerated our technology adoption, helped to push the modernizing of our estate and keep those evergreen; it also assisted in

Figure 1: About half of surveyed executives consider their cloud infrastructure "developed"
Please rate the maturity of your cloud infrastructure.

18% Advanced
30% Growing
3% Nascent
49% Developed
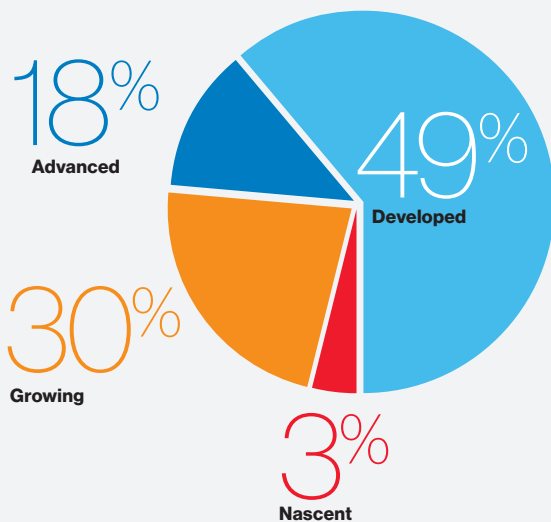
Source: MIT Technology Review Insights survey, 2024

Figure 2: Nearly half of respondents say they are "actively experimenting with AI"
Please rate your organization's AI adoption and delivery capabilities.

28% Developed
8% Advanced
16% Evaluating
48% Experimenting
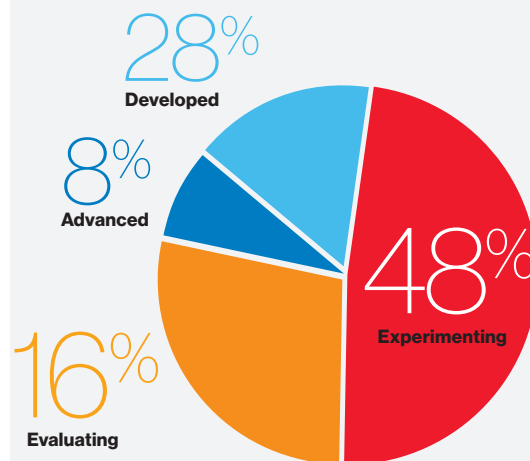
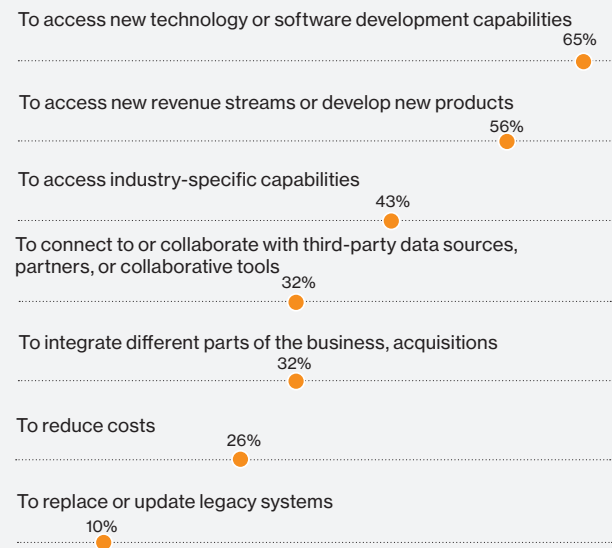Source: MIT Technology Review Insights survey, 2024

the reduction of our CO_2 emissions from our data centers," says Keisha Garcia, the company's vice president of digital foundations, technical program management and head of discipline.[11]

The survey also assessed how far along participants' organizations are in their AI adoption journeys and delivery capabilities. Poll data shows that 48% of organizations are actively experimenting with AI, while 28% have developed AI capabilities across functions. However, only 8% consider AI "part of our organization's fabric," indicating there's still significant room for growth. About 16% of respondents report they're still in the "evaluating" phase of integrating AI into operations (see Figure 2).

Even in these nascent days, there's clear potential for AI to drive innovation and optimization across industries. Garcia says the convergence of edge computing and AI presents multifaceted potential for the energy sector. "This convergence presents an exciting opportunity for real-time, low-latency processing and decision-making

Figure 3: Most firms' top AI priorities focus on new opportunities

What are the top three business priorities for cloud currently in your organization?

To access new technology or software development capabilities — 65%

To access new revenue streams or develop new products — 56%

To access industry-specific capabilities — 43%

To connect to or collaborate with third-party data sources, partners, or collaborative tools — 32%

To integrate different parts of the business, acquisitions — 32%

To reduce costs — 26%

To replace or update legacy systems — 10%

Source: MIT Technology Review Insights survey, 2024

Building a better supply chain with AI and cloud

Leaders are tasked with improving operational efficiencies and keeping an eye on the bottom line, so for many, the journey toward building a better supply chain starts with data. "Everybody talks about AI, ML, and all these tools," says Raimundo Martinez, global digital solutions manager of procurement and supply chain for bp. "But I think your journey really starts a little bit earlier. What you really need to focus on is the foundational layer of your data." For example, all of bp's data has been migrated to the cloud and its multiple procurement departments have been consolidated into a single global procurement organization. Having a centralized, single data source can reduce complexities and avoid data discrepancies. And having a good digital foundation is critical when facing new and existing challenges. A recent World Economic Forum report identified five trends that will change global supply chains:

- Creating globally connected multi-local value chains
- Evolving to "being" digital across end-to-end operations
- Embracing economies of skill
- Focusing on innovative sustainability
- Becoming customer-value-driven

The report explains, "Leading manufacturers do not 'do' digital through high-profile, small-scale projects and one-off initiatives; instead, ingraining digitalization into how they operate enables them to 'be' digital. When designing their value chains, they will naturally look to technology and select the digital solutions that best fit their needs."

That's in line with what Martinez has found at bp. He emphasizes the importance of a strong data foundation, before adopting emerging technologies like AI and machine learning. "Moving a supply chain from a transactional item to a much more strategic item with the leverage of this technology, I think, that, to me, is the ultimate vision for the supply chain," says Martinez.

Source: MIT Technology Review Insights, and the report, "A Global Rewiring: Redefining Global Value Chains for the Future," World Economic Forum, January 2023.[12]

Figure 4: Executives say AI investment will have a wide range of uses

What are the top areas in which your company expects AI investments (existing or planned) to affect business?

Making data and data intelligence universal (e.g., internal and/or external data sharing)
36%

Enhance cybersecurity safety and privacy
34%

Risk assessment and governance
32%

Accelerating growth and increasing revenue
31%

Getting enterprise data ready for AI
31%

Streamlining processes
28%

Improving productivity and efficiency at scale
27%

Enhancing user experience and personalization
23%

Process re-engineering with AI-first approach
23%

Niche skills and capabilities through acquisition of AI startup(s)
18%

Talent and skills development
17%

Source: MIT Technology Review Insights survey, 2024

at the network edge, which is extremely critical for us, given all of the platforms and rigs that we have out across the globe," she says, elaborating on the technology's potential to be transformative for sustainability. "I'm excited about that because this technology helps enable and develop our innovative applications in our industry to optimize the energy consumption of smart grids and enhance predictive maintenance and our operations."

Top investment priorities for cloud-ready AI

When it comes to top business priorities for cloud and AI investments, the poll data aligns with the Infosys Knowledge Institute's 2023 Cloud Radar report[13], which found executives are turning to cloud for access to emerging technologies and other growth-oriented initiatives. The MIT Technology Review Insights survey found the top areas of priority for cloud include accessing new technology or software development capabilities, enabling new revenue streams or developing new products, and accessing industry-specific capabilities (see Figure 3).

Adya says these findings track with his experience. "When we launched Cobalt in 2020, the whole value proposition [of the cloud] was about saving and optimizing; it was about getting out of data centers or migrating workloads and legacy transformation. It catered predominantly to the CIO, the CTO, the head of infrastructure, those kinds of stakeholders," he says. "But fast forward to 2024, and the role of cloud has

"This convergence presents an exciting opportunity for real-time, low-latency processing and decision-making at the network edge, which is extremely critical for us."

Keisha Garcia, VP Digital Foundations, Technical Program Management and Head of Discipline, bp
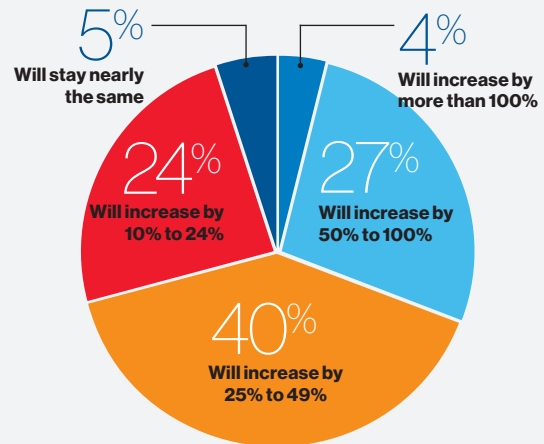
moved from 'save and optimize' to 'grow and disrupt.'"
Poll data also reveals the top areas where companies
expect AI investments to affect their business, including
enhancing cybersecurity safety and privacy, making data
and data intelligence universal (such as internal and/or
external data sharing), getting enterprise data ready
for AI, and accelerating growth and increasing revenue
(see Figure 4).

Notably, 71% of organizations plan to increase their
investment in cloud infrastructure for AI by 25% or
more during the next two years (see Figure 5). This
underscores a growing recognition of the critical role of
cloud infrastructure in enabling successful AI adoption.

Figure 5: Spending on cloud ecosystems is expected to climb

How much will your company's investment in cloud infrastructure for AI change during the next two years?

- **5%** Will stay nearly the same
- **4%** Will increase by more than 100%
- **24%** Will increase by 10% to 24%
- **27%** Will increase by 50% to 100%
- **40%** Will increase by 25% to 49%

Source: MIT Technology Review Insights survey, 2024

Finding a single point of truth in the cloud

For Raimundo Martinez, the global digital solutions
manager of procurement and supply chain at bp, the
cloud allows a homogenization across data
transformation efforts and locations, whether in North
America, South America, or anywhere else. Martinez
explains, "This data transformation happened in a
single spot. And what that does is also allow our users
that need this data to go to a single source of truth and
not be pulling data from multiple systems."

This is a change for bp, considering the data used to be
spread across different areas. He continues, "So, what
we have done is all the data now has been migrated to
the cloud." This provides a single source of data, which
then further reduces complexity in the system.

The importance of having a strong data strategy in
place means that "we can have a data set that is really,
really powerful, that is easy, and [lets us take
advantage of] all of these amazing technologies."
After all, bp has some pretty big goals, including
creating a semi-autonomous supply chain, which will be
powered with a strong data foundation to take
advantage of emerging technologies like AI.

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Current challenges and key areas of opportunity

Our research also examined the most common challenges enterprises experience with cloud, data, and AI readiness. Key areas of concern include safety and compliance considerations, strategic hurdles, and IT talent limitations.

Despite widespread enthusiasm for AI, technical challenges and resource constraints abound. Concerns about ethics, trust, privacy, security, and compliance top the list, with 39% of respondents indicating these factors are impediments. About one-third also struggle with developing use cases (36%) and creating an overall AI strategy (33%), as well as with data governance and management (33%) (see Figure 6).

In addition, respondents identify factors including complexity, security, ethics, and safety as limitations to the organization's cloud readiness for AI (see Figure 7).

> "Cloud maturity is intricately linked with overall AI maturity in an organization."
>
> Bali, Executive Vice President, Global Services Head, AI and Industry Verticals, Infosys

Figure 6: Ethics, trust, privacy, security, and compliance together are top challenges for AI deployment

What are your company's top three challenges with deploying AI?

Ensuring ethics, trust, privacy, security, and compliance
39%

Developing use cases
36%

Creating an overall AI strategy
33%

Data governance and management
33%

Implementing culture changes needed to accommodate AI
30%

Transitioning from concept to production and scaling AI
27%

Preparing data for AI in the context of breaking data silos
25%

Partnering with integrators, technology providers, and AI consultants
24%

Infrastructure challenges
21%

Hiring talent or upskilling employees
17%

Gaining support from executive team and board
14%
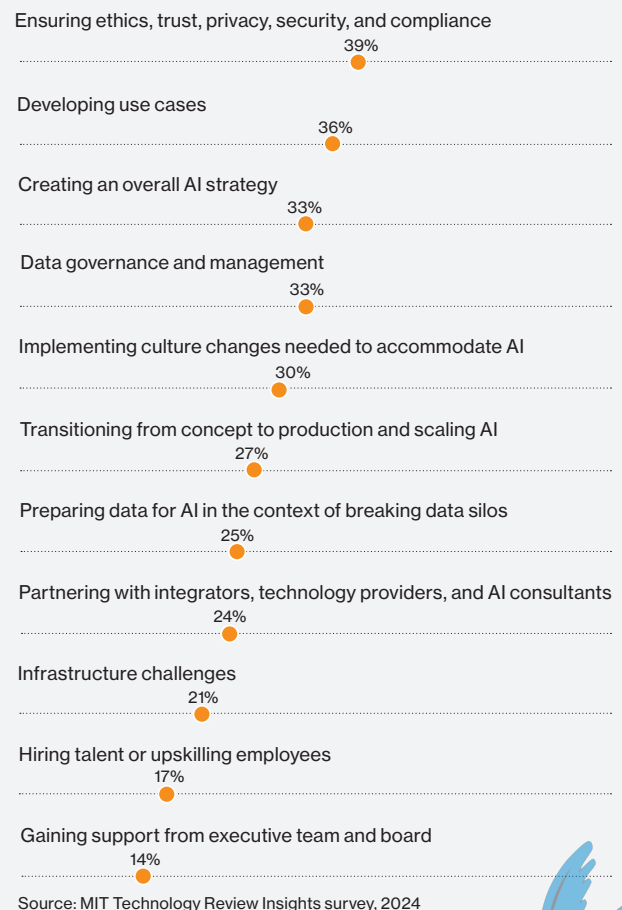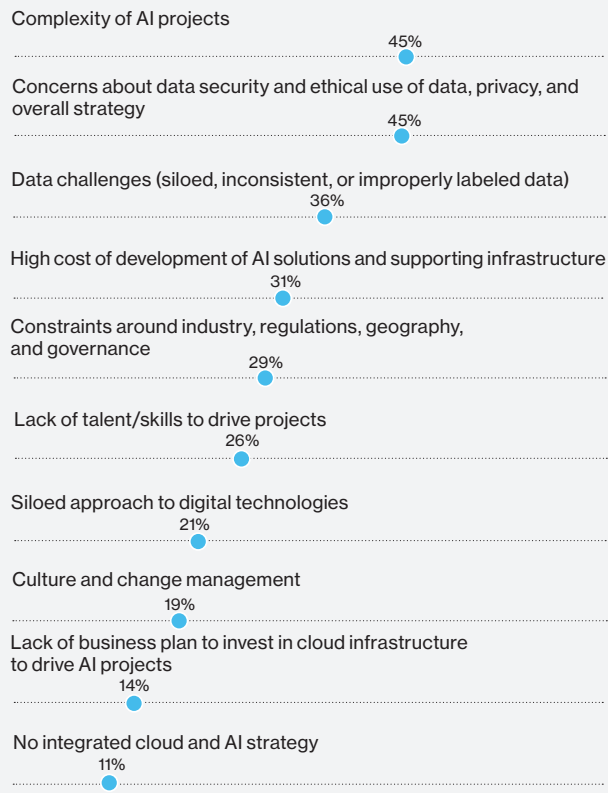
Source: MIT Technology Review Insights survey, 2024

Figure 7: Complexity, security, ethics, and safety may impose limitations

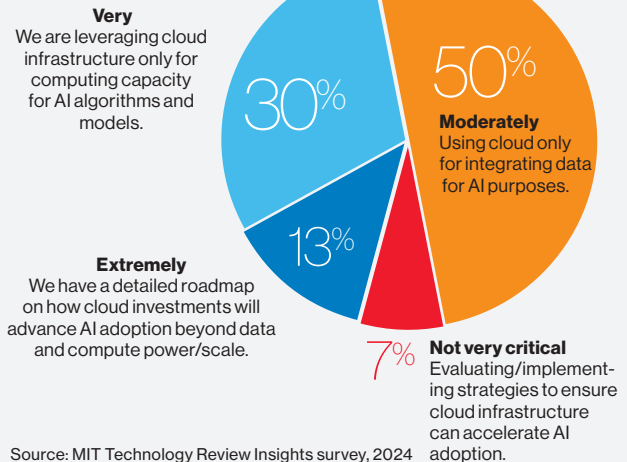Which aspects of your organization are limiting cloud readiness for AI?

Complexity of AI projects
45%

Concerns about data security and ethical use of data, privacy, and overall strategy
45%

Data challenges (siloed, inconsistent, or improperly labeled data)
36%

High cost of development of AI solutions and supporting infrastructure
31%

Constraints around industry, regulations, geography, and governance
29%

Lack of talent/skills to drive projects
26%

Siloed approach to digital technologies
21%

Culture and change management
19%

Lack of business plan to invest in cloud infrastructure to drive AI projects
14%

No integrated cloud and AI strategy
11%

Source: MIT Technology Review Insights survey, 2024
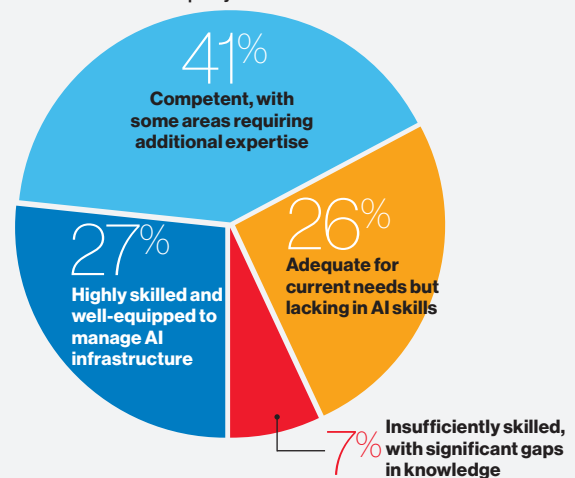
Figure 8: Half of respondents say they use cloud only to integrate data for AI

Which of the following best describes how integral your cloud strategy and cloud infrastructure is to AI adoption?

Very
We are leveraging cloud infrastructure only for computing capacity for AI algorithms and models.

30%

50%

Moderately
Using cloud only for integrating data for AI purposes.

Extremely
We have a detailed roadmap on how cloud investments will advance AI adoption beyond data and compute power/scale.

13%

7%

Not very critical
Evaluating/implementing strategies to ensure cloud infrastructure can accelerate AI adoption.

Source: MIT Technology Review Insights survey, 2024

Figure 9: One in four executives say IT is "fully ready" for cloud-based AI

Rank your IT team's expertise in managing cloud infrastructure for AI projects.

41%
Competent, with some areas requiring additional expertise

26%
Adequate for current needs but lacking in AI skills

27%
Highly skilled and well-equipped to manage AI infrastructure

7%
Insufficiently skilled, with significant gaps in knowledge

Source: MIT Technology Review Insights survey, 2024
Due to rounding, numbers don't add up to 100.

The survey also assessed how companies are integrating their cloud strategies and readying their cloud infrastructures for AI. When asked about how integral respondents consider cloud strategy and infrastructure to AI adoption, just 13% said they have a "detailed roadmap" on how cloud investments will advance AI adoption beyond data and computer power and scale. About half said they use cloud services exclusively to integrate data for AI use. A mere 7% cited cloud strategy and infrastructure as "not very critical" to accelerating AI adoption (see Figure 8).

The survey identified a few areas of opportunity for organizations seeking to enhance cloud, data, and AI readiness, including upskilling talent, implementing ground-up responsible AI practices, and fostering collaboration and partnerships.

One challenge area involves the need to upskill and reskill existing tech talent to work with AI and cloud technologies. According to the survey, a little more than one-quarter (27%) of executives say their companies' IT teams are fully ready for cloud-based AI projects, while another 41% believe their IT teams are competent but need some additional expertise or training. About one-third (33%) report that their IT teams are underprepared when it comes to AI skills (see Figure 9).

04

Implementing responsible AI practices from the ground up

There's also a significant opportunity for companies to invest in and prioritize safety and security mechanisms for cloud and AI systems, including building customizable guardrails for different AI use cases. Most firms (57%) are in the planning phase of this task, with 28% noting "some implementation" of safeguards, and a minority reporting they've either "fully integrated" (8%) or are "not addressing" (7%) these factors at all (see Figure 10).

Additionally, 70% of respondents say they've implemented "fully" (12%) or "somewhat" (58%) when it comes to protecting all data types and all types of AI; another 25% are in the planning phase.

Bali says implementing frameworks and data readiness assessments are part of building a strong foundation for responsible AI. "To address the multiple concerns on security, data privacy, and responsible AI, all enterprise

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Figure 10: Most executives report data protection work is underway

To what extent has your organization implemented the following features and processes for its cloud data?

	Fully implemented	Some implementation	Planning implementation	Not addressed
Customizable guardrails for different AI use cases, models, and data types	8%	28%	57%	7%
Protection of all data types and for all types of AI	12%	58%	25%	6%
Responsible AI by design to ensure ethics, trust, privacy, security, and compliance	17%	41%	37%	5%
AI applications built in compliance with responsible AI guidelines and regulatory/legal compliance	22%	40%	35%	4%

Source: MIT Technology Review Insights survey, 2024

data and content – including transactional, historical analytical, syndicated, and training data, both user-generated and machine-generated – must be managed under a responsible data and cloud management framework," says Bali. He adds that an efficient framework meets the following stipulations:

• Organizes and fingerprints data.

• Establishes vertically integrated control functions to manage permissions and rights based on business needs.

• Ensures compliance and governance across data at rest, in motion, and for consumption.

At Infosys, Adya points out, the company helps clients run point solutions with third parties such as Zscaler, Palo Alto, CrowdStrike, and other suppliers to ensure a strong security posture. "We have these solutions in place to protect the workloads that reside on cloud, protect the data that resides on cloud via encryption, data loss prevention solutions, and data protection solutions," he says.

> "We have these solutions in place to protect the workloads that reside on cloud, protect the data that resides on cloud via encryption, data loss prevention solutions, and data protection solutions."
>
> Anant Adya, Executive Vice President and Head, Infosys Cobalt

Responsible AI: The AI3S framework

As companies look to accelerate their AI initiatives, many are evaluating how to do so in a way that aligns with ethical principles – a growing trend championing responsible AI.

Balakrishna D.R., Infosys' executive vice president, global services head, AI and industry verticals, says, "At Infosys, our Infosys Topaz Responsible AI Suite is built around the scan, shield, and steer framework (or AI3S). It monitors and protects AI models and systems from risks and threats." He elaborates further:

Scan
Continuous scanning for security threats to AI investments, the impact of new technologies, and changes in regulatory landscape across geographies. "This pillar helps us understand how we need to react and adapt in this rapidly changing environment," explains Bali.

Shield
Protecting AI applications using codified process, legal, and technical guardrails to ensure responsible AI by design, embedding ethical consideration throughout the AI lifecycle, from data preparation and training to inferencing.
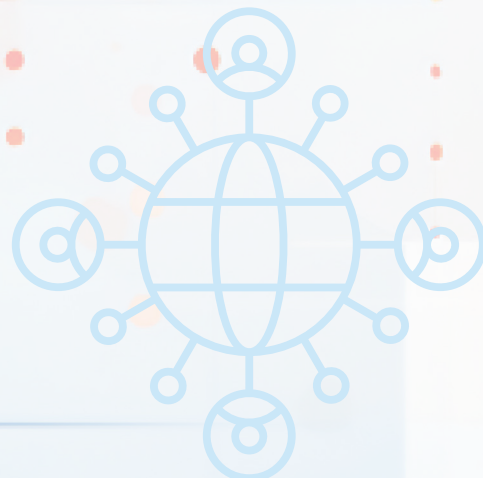
Steer
Guiding the way as a thought leader, exerting influence over global AI governance. For instance, Infosys is among the first companies globally to be certified in ISO 420001:2023 for AI management systems.

05

Understanding regional differences

This research found some variation in results among respondents in four distinct regions: North America, Asia, Australia and New Zealand, and Europe and the U.K. (see Figure 11).

Regarding the pace of cloud investment, executives in North America and Europe and the U.K. expect faster growth during the next two years, while those in Asia and Australia and New Zealand express a higher likelihood of level spending.

When asked to rate the maturity of their organization's cloud infrastructure, about three in four executives in North America and Europe and the U.K. ranked theirs as "developed" or "advanced." In Asia and in Australia and New Zealand, the number of executives indicating similar levels of maturity was closer to half (see Figure 12).

Executives across different regions also express differing ideas about the challenges ahead for deploying AI. Leaders in Asia are less concerned about breaking

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Figure 11: Cloud investment is expected to grow faster in North America, Europe, and the U.K.

How much will your company's investment in cloud infrastructure for AI change during the next two years?

	North America	Asia	Australia/ New Zealand	U.K. and Europe
Will increase by more than 100%	3%	7%	5%	2%
Will increase by 50% to 100%	27%	27%	24%	27%
Will increase by 25% to 49%	48%	29%	28%	47%
Will increase by 10% to 24%	20%	26%	31%	23%
Will stay nearly the same	3%	11%	8%	1%

Source: MIT Technology Review Insights survey, 2024

Figure 12: North America, Europe, and the U.K. report strong cloud maturity

Please rate the maturity of your cloud infrastructure.

	North America	Asia	Australia/ New Zealand	U.K. and Europe
Advanced	24%	19%	16%	13%
Developed	51%	38%	35%	63%
Growing	25%	37%	45%	23%
Nascent	1%	6%	4%	1%

Source: MIT Technology Review Insights survey, 2024

Figure 13: Regions face different challenges deploying AI

What are your company's top three challenges with deploying AI?

	North America	Asia	Australia/ New Zealand	U.K. and Europe
Creating an overall AI strategy	31%	28%	27%	42%
Developing use cases	35%	33%	30%	45%
Preparing data for AI in the context of breaking data silos	31%	15%	19%	31%
Data governance and management	35%	46%	35%	21%
Transforming from concept to production and scaling AI	22%	30%	22%	31%
Gaining support from executives and board	16%	12%	18%	13%
Implementing culture changes needed to accommodate AI	31%	31%	32%	27%
Infrastructure challenges	20%	27%	34%	12%
Partnering with integrators, technology providers, and AI consultants	22%	26%	26%	24%
Ensuring ethics, trust, privacy, security, and compliance	44%	33%	34%	43%
Hiring talent or upskilling employees	14%	20%	24%	13%

Source: MIT Technology Review Insights survey, 2024

data silos, for instance, but are more focused on the challenges of data governance than respondents in other regions (see Figure 13).
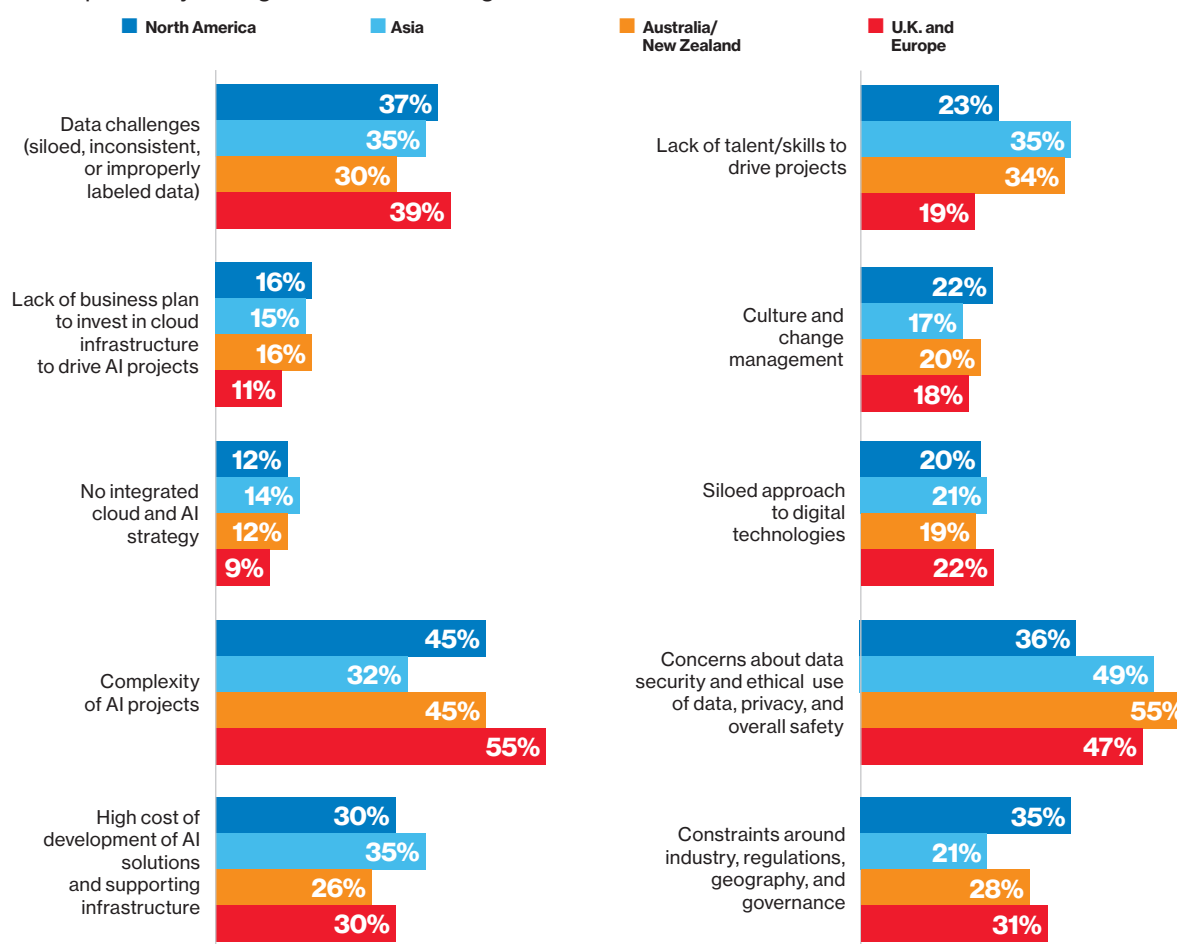
Leaders express different views of limitations to cloud readiness for AI, too (see Figure 14).

Executives across different regions also report varying arenas where they lag and lead in cloud implementation (see Figure 15).

Executives across different regions express varying levels of confidence that their current IT talent have the skills and expertise to manage cloud infrastructure for AI projects (see Figure 16).

Figure 14: Regions differ about what limits cloud readiness for AI

Which aspects of your organization are limiting cloud readiness for AI?

■ North America   ■ Asia   ■ Australia/New Zealand   ■ U.K. and Europe

Data challenges (siloed, inconsistent, or improperly labeled data)
- North America: 37%
- Asia: 35%
- Australia/New Zealand: 30%
- U.K. and Europe: 39%

Lack of talent/skills to drive projects
- North America: 23%
- Asia: 35%
- Australia/New Zealand: 34%
- U.K. and Europe: 19%

Lack of business plan to invest in cloud infrastructure to drive AI projects
- North America: 16%
- Asia: 15%
- Australia/New Zealand: 16%
- U.K. and Europe: 11%

Culture and change management
- North America: 22%
- Asia: 17%
- Australia/New Zealand: 20%
- U.K. and Europe: 18%

No integrated cloud and AI strategy
- North America: 12%
- Asia: 14%
- Australia/New Zealand: 12%
- U.K. and Europe: 9%

Siloed approach to digital technologies
- North America: 20%
- Asia: 21%
- Australia/New Zealand: 19%
- U.K. and Europe: 22%

Complexity of AI projects
- North America: 45%
- Asia: 32%
- Australia/New Zealand: 45%
- U.K. and Europe: 55%

Concerns about data security and ethical use of data, privacy, and overall safety
- North America: 36%
- Asia: 49%
- Australia/New Zealand: 55%
- U.K. and Europe: 47%

High cost of development of AI solutions and supporting infrastructure
- North America: 30%
- Asia: 35%
- Australia/New Zealand: 26%
- U.K. and Europe: 30%

Constraints around industry, regulations, geography, and governance
- North America: 35%
- Asia: 21%
- Australia/New Zealand: 28%
- U.K. and Europe: 31%

Source: MIT Technology Review Insights survey, 2024

Figure 15: Implementing AI for cloud data by region

- ■ Fully implemented
- ■ Some implementation
- ■ Planning implementation
- ■ Not addressed

To what extent has your organization implemented the following features and processes for its cloud data?

Customizable guardrails for different AI use cases, models, data types

North America

| 11% | 27% | 57% | 5% |

Asia

| 11% | 37% | 37% | 15% |

Australia/New Zealand

| 9% | 35% | 43% | 12% |

U.K. and Europe

| 3% | 17% | 79% | 1% |

Protection of all data types for all types of AI

North America

| 14% | 64% | 21% | 1% |

Asia

| 16% | 39% | 35% | 10% |

Australia/New Zealand

| 7% | 51% | 34% | 8% |

U.K. and Europe

| 9% | 69% | 15% | 6% |

Responsible AI by design to ensure ethics, trust, privacy, security, and compliance

North America

| 22% | 38% | 37% | 3% |

Asia

| 17% | 40% | 37% | 7% |

Australia/New Zealand

| 18% | 36% | 41% | 5% |

U.K. and Europe

| 10% | 47% | 37% | 7% |

AI applications built in compliance with responsible AI guidelines and regulatory/legal compliance

North America

| 27% | 44% | 25% | 3% |

Asia

| 23% | 43% | 28% | 6% |

Australia/New Zealand

| 18% | 38% | 43% | 1% |

U.K. and Europe

| 18% | 34% | 45% | 3% |

Source: MIT Technology Review Insights survey, 2024

Figure 16: North America leads in AI skills, but more training is needed

Rank your IT team's expertise in managing cloud infrastructure for AI projects.

	North America	Asia	Australia/ New Zealand	U.K. and Europe
HIghly skilled and well-equipped to manage AI infrastructure	31%	30%	18%	23%
Competent, with some areas requiring additional expertise	46%	28%	38%	47%
Adequate for current needs but lacking in AI skills	20%	28%	31%	28%
Insufficiently skilled, with significant gaps in knowledge	3%	12%	14%	2%
Not applicable/we outsource management of AI	0%	1%	0%	0%

Source: MIT Technology Review Insights survey, 2024

06

Best practices for cloud-accelerated AI adoption

Partnerships can be fruitful for more than just strengthening cybersecurity. Strategic collaborations are critical given the breakneck pace of technological advancement that has so far defined the AI era.

From a platform perspective, Bali suggests that companies employ a "poly AI" approach, which allows for flexibility and customization as companies weigh priorities. "It's important to build an abstraction layer that allows enterprises to select and integrate AI providers, models, micro-AI platforms, and tooling that best suit their unique requirements," he says. "This empowers organizations to tailor their AI ecosystem precisely, according to their goals, preferences, and existing infrastructure."

Internal collaboration is equally critical. Bali says the journey toward becoming an AI-first enterprise is a team effort that touches nearly every department. "AI pursuits can no longer be solely driven by data scientists and ML engineers in silos," he says. "These projects are increasingly multifaceted; use-cases are cross-cutting with critical social, legal, privacy, and IP considerations. Harmonious cross-functional, interdisciplinary, multi-level collaboration is needed to build resiliency and scale beyond the PoC and pilot phase."

Building an action plan for enterprises
As enterprises continue their AI and cloud journeys, there are several best practices they can follow to maximize their investments.

1. **Clearly define use cases.** One of the first steps is to clearly define use cases and applications for AI. These should be as specific, granular, and realistic as possible. "A lot of customers are today [experimenting with] generative AI in a mode of FOMO, as we call it — fear of missing out. So, they have to recognize what's actually important for their enterprise, what's responsible for their organization, and where the most bang for the buck is," says Adya.

2. **Conduct a thorough audit of all existing data.** There are several fundamental issues to address when modernizing the data estate, including managing unstructured data and getting all that data under one roof. "This is easier said than done. But there are solutions in the market today which can help customers to solve this problem," says Adya. He adds that the process often involves working with a combination of third-party SaaS providers such as Databricks and Snowflake, as well as hyperscalers such as AWS or Azure.

3. **Implement a "secure by design" strategy.** Security must be a top priority, baked in from the beginning. Infosys employs such an approach, considering security aspects early on in the design phase of data, cloud, or AI strategies.

"Everything that we do with respect to either AI or cloud or data in general, we want to make sure that we bring our reference architectures, so that whatever gets designed is secure by default," says Adya. This process involves creating security blueprints for major cloud providers such as AWS, Azure, and Google, and educating customers on the built-in security components as well as any necessary add-ons.

Conclusion: What's in store for cloud and AI on the horizon

The survey's insights illustrate the critical interplay between cloud infrastructure maturity, data readiness, and successful adoption of AI technologies. While most companies have a "developed" or "advanced" cloud infrastructure, they're employing varied strategies to optimize their cloud systems for AI initiatives.

Ultimately, AI integration remains in early stages. Nevertheless, companies are optimistic about the potential of AI to enhance various aspects of their business, such as cybersecurity and data sharing. Most companies anticipate an uptick in spending on cloud and AI in the coming two years, indicating a strong commitment to emerging technologies to drive business growth and innovation.

The study also highlights significant hurdles in the journey toward cloud-ready AI systems, including concerns about data security, privacy, and the ethical use of data, as well as the complexity of AI projects and data-related challenges. About one-third of respondents believe their IT teams need additional support to prepare for this coming shift.

As companies navigate the new AI-enhanced world, a strong foundation in cloud infrastructure — coupled with strategic investments, an ethos of collaboration, and a focus on responsible data management — will be essential for realizing the technology's full potential.

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