Google Cloud

NOVEMBER 2026

The Innovation Paradox

How legacy technology, maintenance burden, and provider dependence are shaping enterprise AI readiness



Executive summary

Enterprises in Fall 2026 are focused on scaling agentic AI to deliver measurable results for their investment. Pragmatic execution and deployment at scale have replaced early hype and the belief that off-the-shelf models will automatically drive productivity gains. Enterprise decision-makers remain skeptical. In fact, PwC's annual Global CEO Survey found that 56% said they've realized neither revenue nor cost benefits from AI investments.

Google Cloud partnered with Hypothesis Group to conduct an online survey among 1,250 enterprise IT and business decision-makers in the US to understand how existing enterprise technology environments shape an organization's ability to operationalize AI.

The study uncovered a foundational contradiction at the heart of enterprise modernization: legacy software meant to deliver AI often functions as an innovation tax, muzzling the very AI leaders count on to transform their businesses.

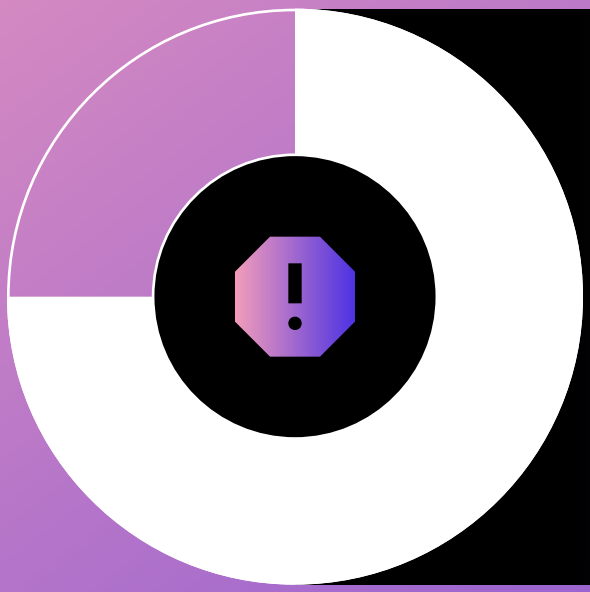
For decades, legacy systems have persisted because the perceived risk and cost of replacement felt higher than the burden of staying put. AI has broken that equation. Layering AI onto fragmented systems, insecure software, and aging IT architectures compounds tech debt rather than solving it. Today, organizations find themselves trapped between two competing forces: paying an escalating maintenance tax to keep legacy systems afloat, while racing to scale AI without the modern data readiness, architectural freedom, or governance foundations required to succeed.

METHODOLOGY NOTE: The research included a 20-minute online survey among 1,250 U.S. enterprise IT and business decision-makers, fielded in August 2026 with priority industry cuts across Financial Services/Insurance, Healthcare, Retail & CPG, and Legal Services, supported by qualitative interviews with senior decision-makers.

"Legacy" software is defined in the survey as "locally hosted or on-premises enterprise software—software that organizations run and manage on their own desktops, laptops, servers, or data centers, rather than software hosted and managed in the cloud."

Legacy tech debt blocks AI progress.

Existing software is limiting AI value and delaying initiatives, making modernization a prerequisite for AI scale.



75%

agree that existing software limits organizations' ability to take full advantage of AI



83%

agree that modernizing the tech foundation is essential to scaling AI

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Legacy software threatens to suffocate AI adoption and expansion.

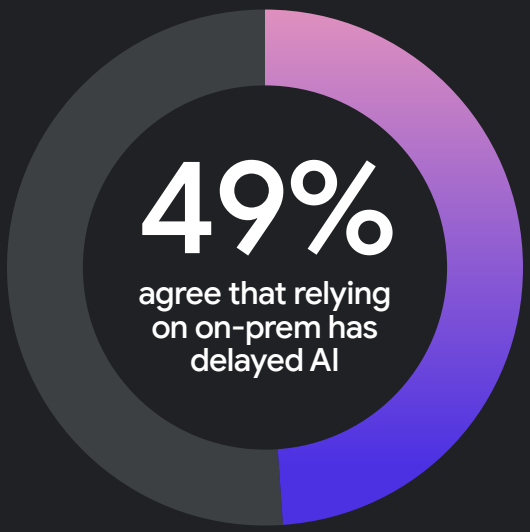
AI is placing new demands on technology foundations that many legacy environments were never designed to meet. Data needs to be accessible across systems, governance needs to extend to new applications and models, and infrastructure needs to accommodate use cases that are evolving faster than traditional technology cycles.

As those demands grow, yesterday's technology decisions can become today's AI constraints. Organizations are finding that the systems they already have in place can determine how quickly—and how broadly—they are able to put AI to work.



"Legacy platforms are not AI-native. When we define the data structure, we cannot just point the model to an existing legacy database when we have thousands of fields in these databases."

HEAD OF DATA, ANALYTICS & REGULATORY TECHNOLOGY PROGRAMS,FINANCIAL SERVICES



"Legacy systems have been creating this data, which has not been governed, and now you want to throw AI on top of it. The data is not clean so garbage in, garbage out."

CISO, FINANCIAL SERVICES

Modernization is about creating room to adapt.

AI is changing too quickly for technology foundations to remain static. Modernization is not simply about replacing older systems, it is about building an environment that can evolve as new models, capabilities, and use cases emerge.

That raises the bar for enterprise technology. Organizations need a foundation that can support rapid innovation without forcing tradeoffs on reliability, security, or governance. It's critical that technology partners are equipped for what comes next, not just what worked before.

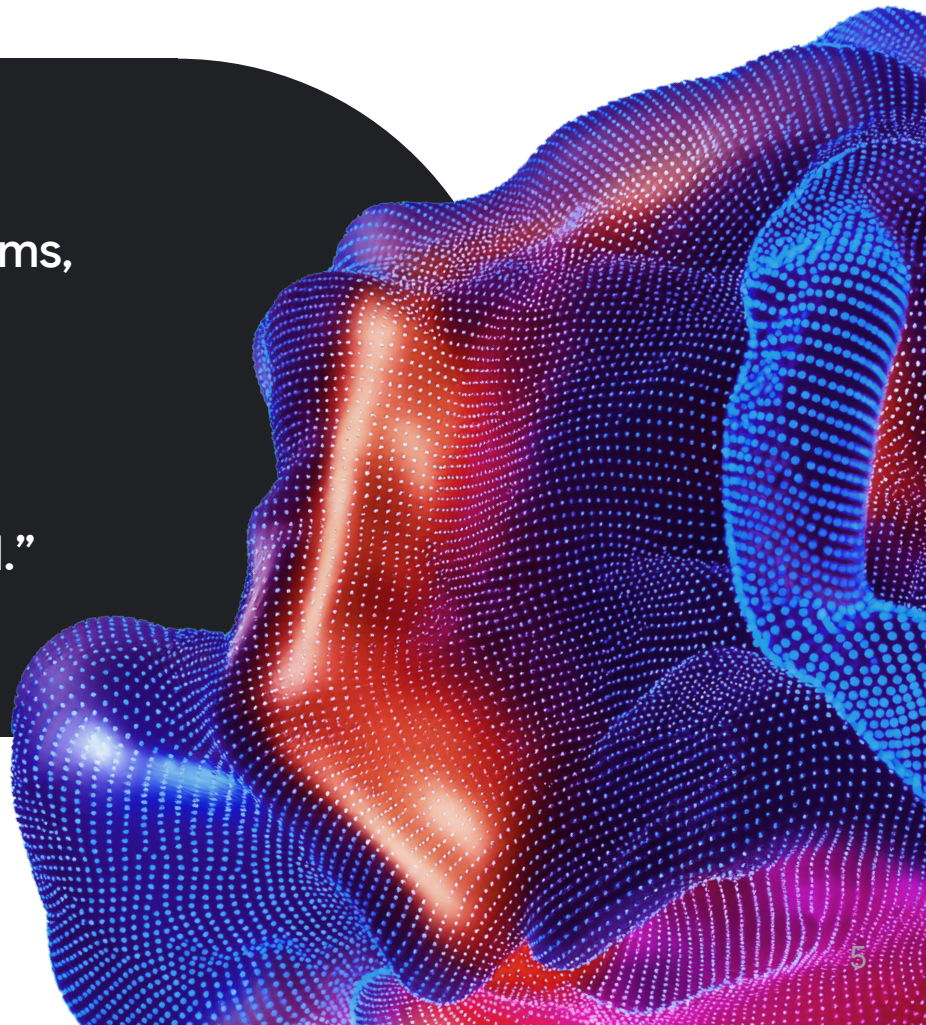
83%
agree that modernizing the tech foundation is essential to scaling AI

82%
agree that organizations need enterprise reliability and security without sacrificing innovation

78%
agree that providers that led the last era may not be positioned to lead the AI era

"We have hospitals running on expired operating systems, which hampers our efforts to modernize. Our biggest challenge is moving away from what we know, but it's a great opportunity to introduce something novel."

DIRECTOR OF CYBERSECURITY, HEALTHCARE



78%

agree that tech maintenance diverts resources away from AI

ONLY

48%

believe their tech stack is ready to deploy AI at scale

Maintenance is starving innovation.

The “patch tax” is consuming IT capacity that could otherwise go towards data readiness, cloud migration, and AI development.

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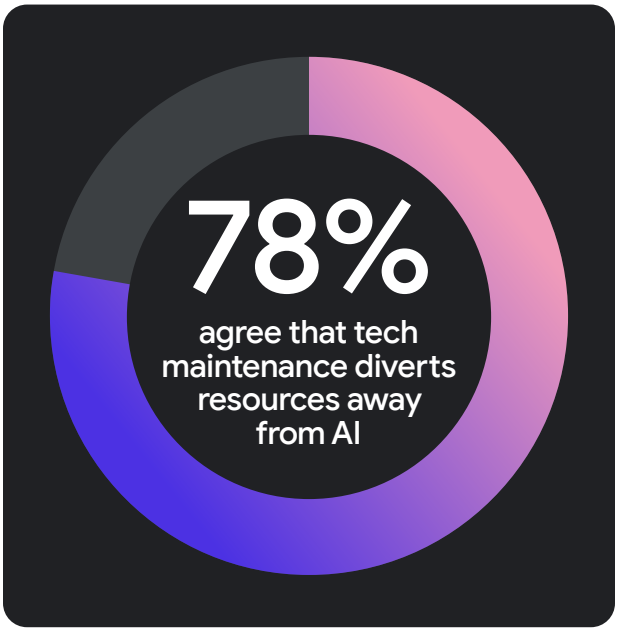
The “patch tax” of legacy software takes time and resources away from AI.

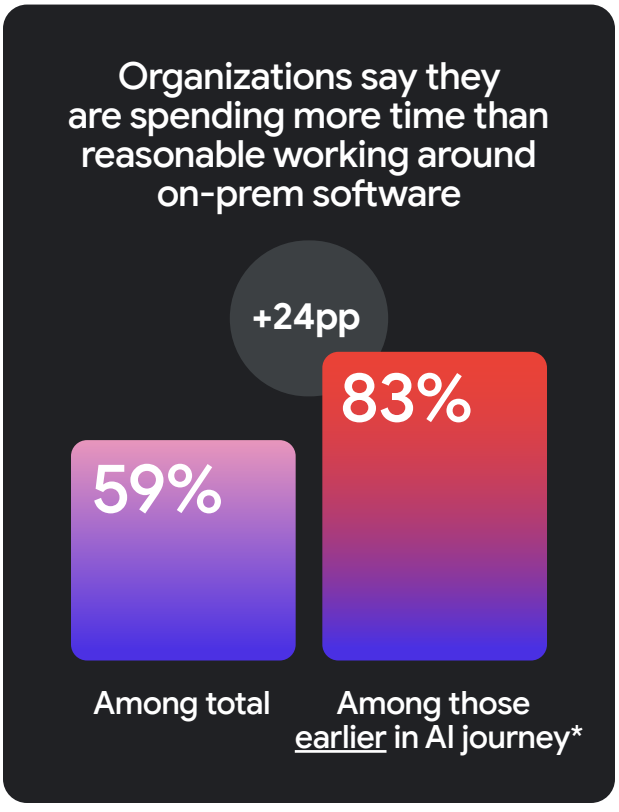
Legacy systems create a hidden tax on AI transformation. Time spent maintaining, patching, securing, and working around older systems is time teams cannot spend modernizing infrastructure, preparing data, or building new AI capabilities.

Over time, that burden becomes a constraint on readiness. Organizations cannot move as quickly toward AI at scale when critical resources remain tied to keeping legacy environments operational.

“Managing our infrastructure is becoming more difficult. We have a very short window to take down the business to patch. And so, as these emergency patches are coming through, it is becoming more disruptive to our business.”

CISO, FINANCIAL SERVICES



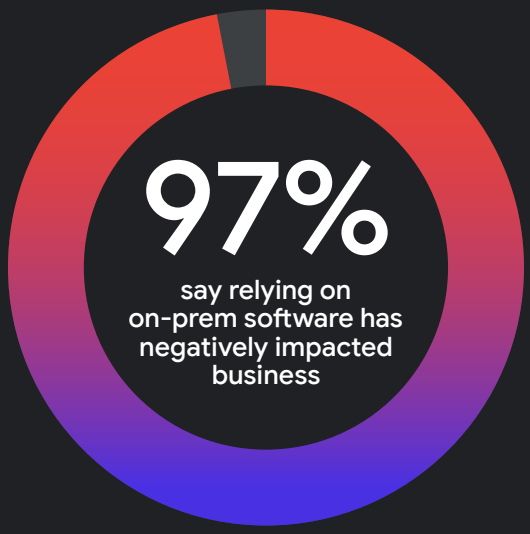


*Defined as organizations who are using AI by a few teams/ use cases or running proofs of concept or pilots only.

AI readiness suffers when IT capacity is trapped in maintenance.

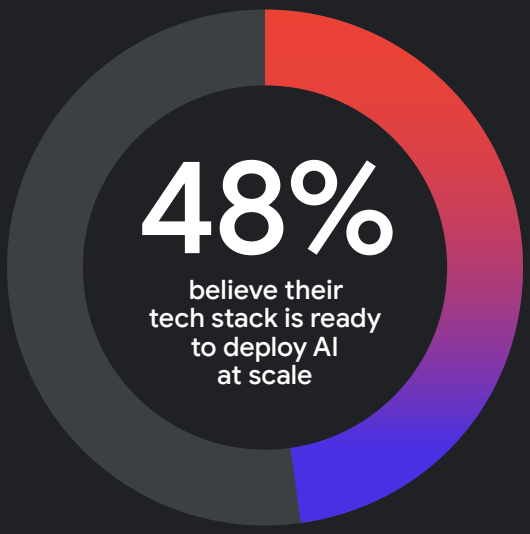
The impact of legacy technology is nearly universal, but readiness for what comes next is not. Nearly every organization reported negative business impacts from relying on or maintaining on-premises software and fewer than half believe their technology stack is ready to deploy AI at scale without significant additional investment.

This is the readiness gap at the center of enterprise AI: organizations are entering the AI era while still carrying technology constraints from the last one. Readiness will require moving resources beyond maintaining legacy environments and toward the modern foundations needed to support AI at scale. Human review and approval controls will remain critical alongside other capabilities like protection of sensitive data.



"The key to leveraging AI tasks is access to data. Because we natively can't connect to these legacy systems, we're dependent on middleware to extract what we need. This takes time and money."

DIRECTOR OF IT, RETAIL

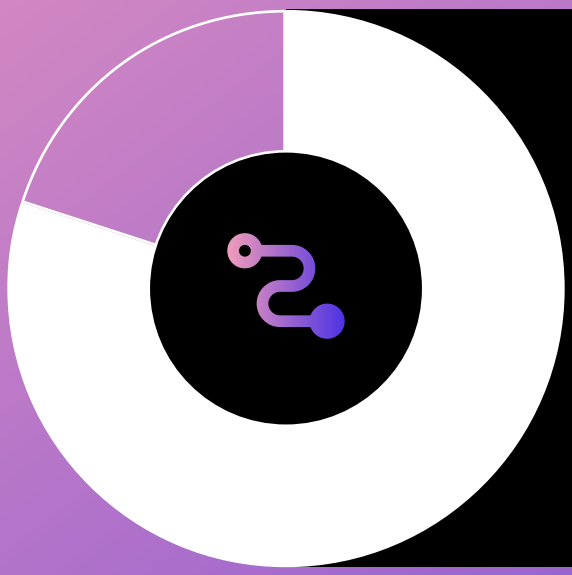


"Legacy infrastructure keeps a lot of legacy skill sets as a crucial part of the team. Until we get off the data centers we can't start hiring more DevOps engineers, change infrastructure to cloud, or improve automation."

CISO, FINANCIAL SERVICES

Provider choice shapes AI freedom.

In the AI era, provider choice becomes a strategic capability as vendor lock-in threatens to handcuff organizations into a system that doesn't work for them.



80%

agree that a provider's installed base should not determine which AI technology an organization uses



78%

agree vendor lock-in limits organizations' ability to choose the best AI

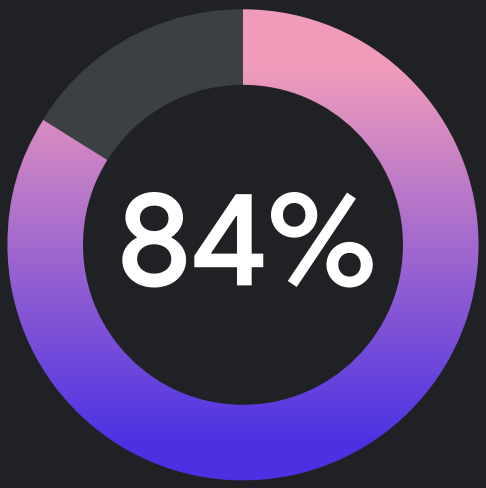
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AI makes provider choice more important than ever.

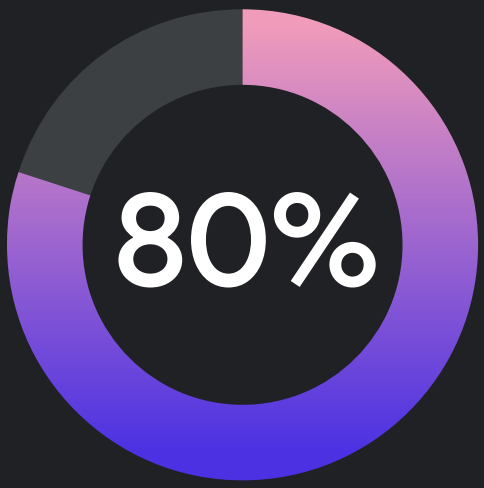
As AI becomes more central to the enterprise, the technology provider organizations rely on will shape what they can build, how quickly they can adapt, and which capabilities they can access. This means decision-makers are putting established provider relationships under new scrutiny.

Decision-makers increasingly recognize that the providers already embedded in their tech stack should not automatically determine their AI future. As new capabilities emerge, leaders need the flexibility to choose the technologies best suited to their AI ambitions rather than defaulting to the providers already embedded in their environment.

Organizations agree AI adoption makes technology-provider choice more important than ever



Organizations agree that a provider's installed base should not determine which AI technology an organization uses



"We want to be multi-cloud, because we want to have the ability to grab innovation when it comes. I don't want to be locked down to one provider and at their mercy."

DIRECTOR OF IT, RETAIL

Vendor lock-in is becoming an AI constraint.

AI is increasing the need for flexibility at the same time many organizations remain deeply tied to existing technology ecosystems. Complex licensing, contracts, and provider dependencies can make it harder to evaluate alternatives or choose the AI capabilities best suited to the business.

That constraint is sharper for organizations earlier in their AI journey. As AI evolves, flexibility is becoming less of a procurement preference and more of a requirement for keeping pace.



"I think a lot of people are thinking about leaving Microsoft because their response to the poor development of Copilot is to offer E7, which is even more expensive than an E5. It feels like they want to charge us more money for more Copilot services that nobody wants."

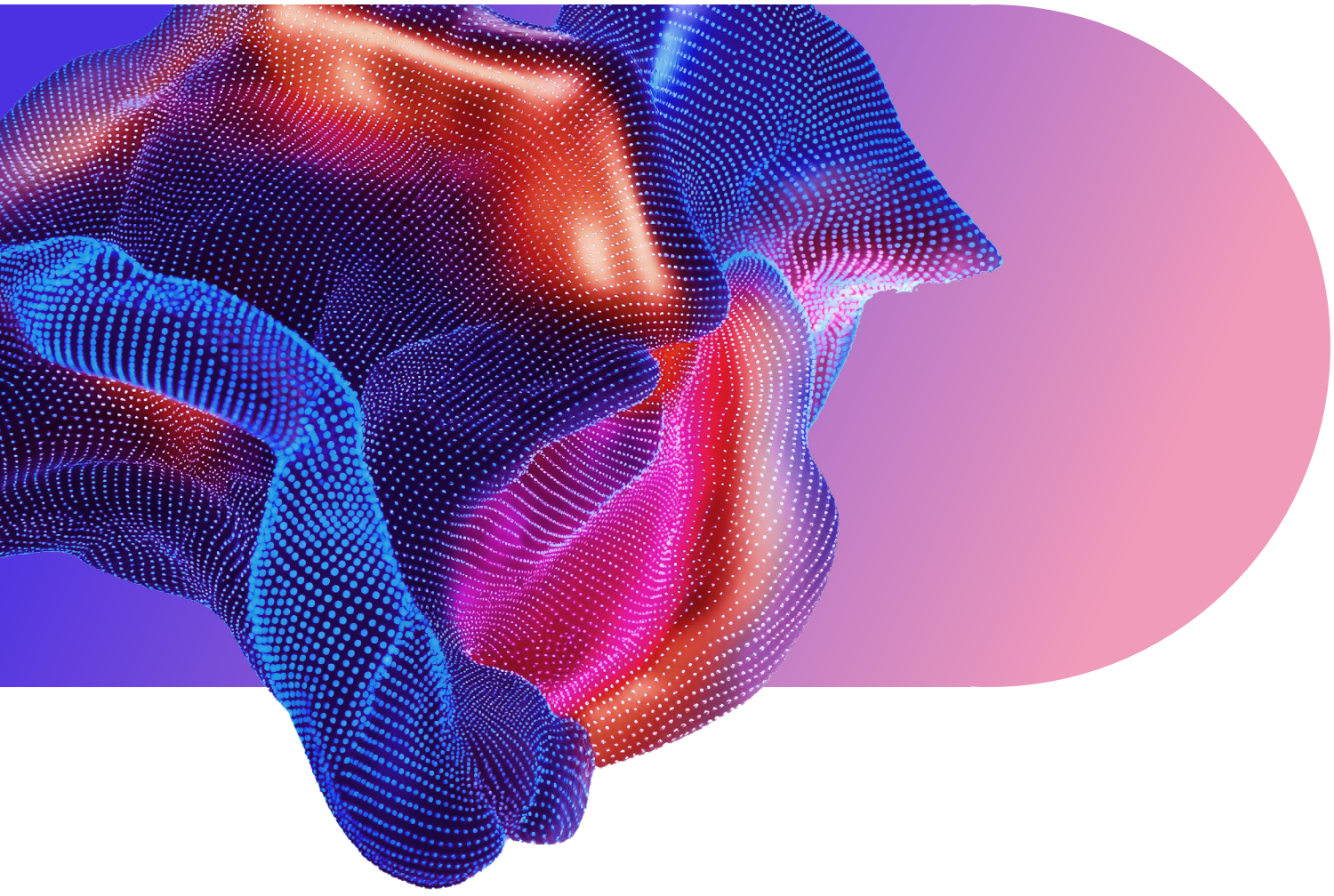
CISO, FINANCIAL SERVICE



And that dependence can introduce a real security risk.

The consequences of provider dependence extend beyond limiting choice. As organizations connect more data, applications, and AI capabilities across the enterprise, concentrating those systems within a single provider can also concentrate risk.





Spotlight on Healthcare

AI cost harms razor thin margins.

Healthcare has broadly adopted AI and moved further into advanced cloud architectures than the market overall. But migration, integration, portability, and unpredictable operating costs are creating friction as organizations try to take AI further.

90%

have strong AI deployment across the organization

-13pp

in scaling advanced/agentic AI within the organizations

30% vs. 43% Total

58%

have faced integration and deployment challenges moving enterprise AI into production

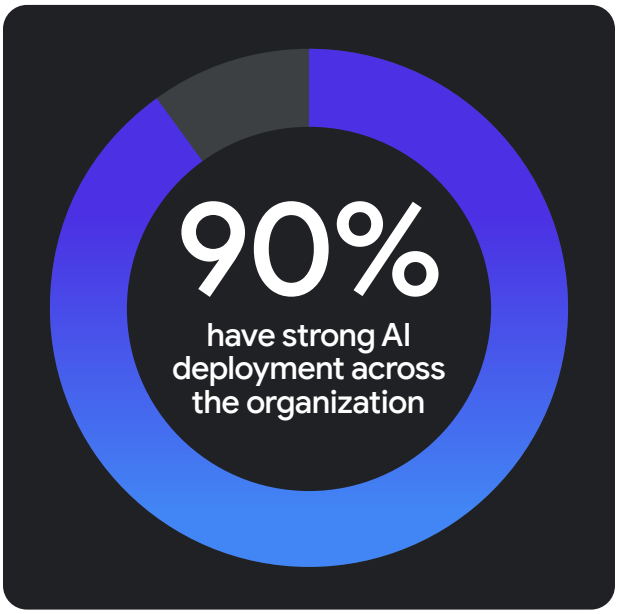
40%

cite unpredictable operating costs as a reason why AI initiatives could be paused

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Healthcare is advancing AI & cloud—but complexity is mounting.

Healthcare has moved well beyond AI experimentation and into increasingly sophisticated cloud environments. The challenge is whether organizations can manage the complexity that comes with that progress.



+10pp
operate advanced hybrid, strategic multi-cloud or fully/nearly cloud-native environments
(38% vs. 28% Total)

Even as Healthcare organizations expand AI and adopt more advanced hybrid and multi-cloud architectures, migration, integration, and operating costs create friction. These challenges can make it harder to move workloads, reduce provider dependence, and push AI further into production.

82%
say cost/effort make it difficult to reduce provider dependence

58%
have faced integration and deployment challenges moving Enterprise AI into production

40%
cite unpredictable operating costs as a reason why AI initiatives could be paused

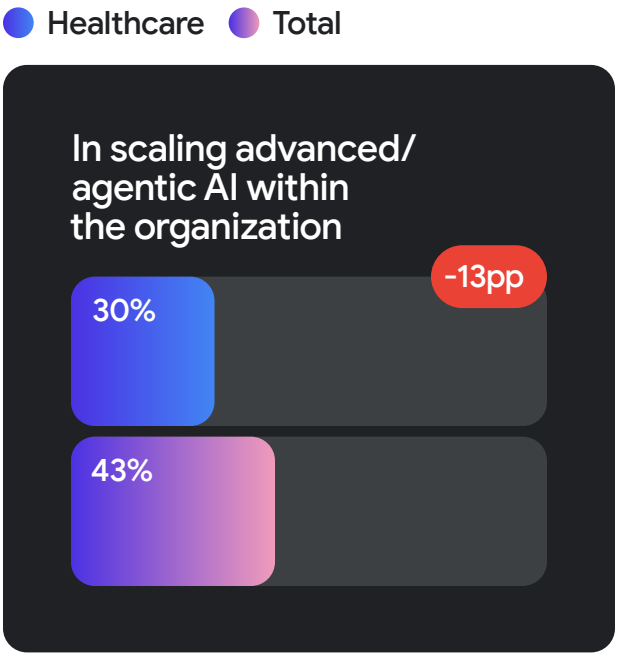
"We have not rolled out enterprise-wide AI capability. Right now, AI is in little pockets, and those little pockets are highly guarded and controlled."

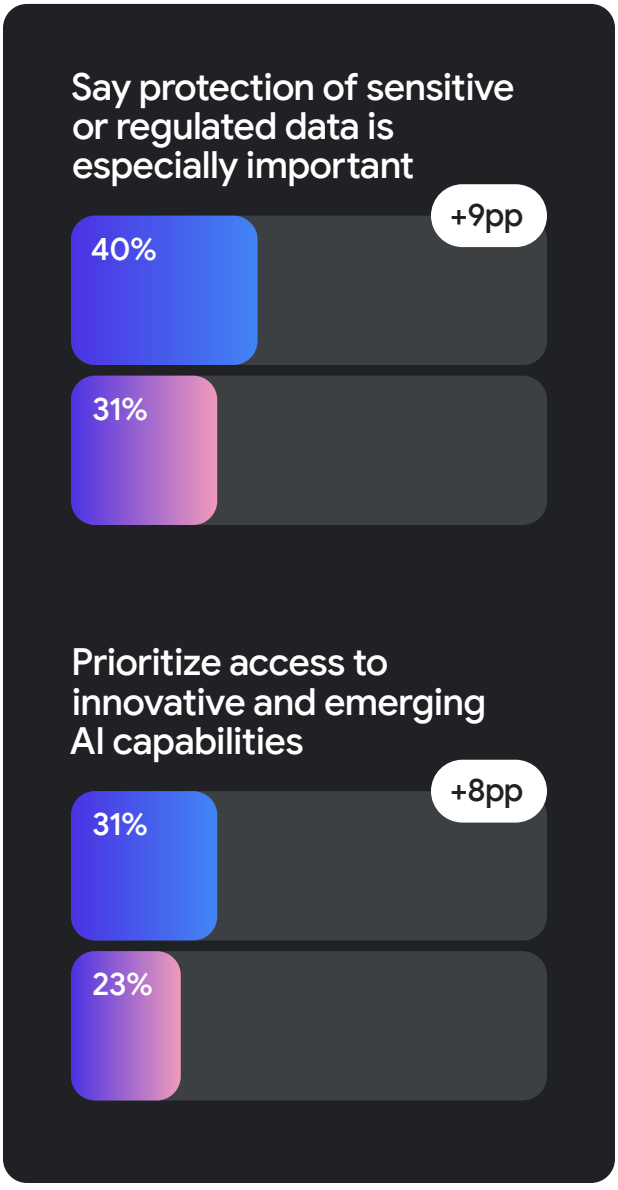
DIRECTOR OF CYBERSECURITY, HEALTHCARE

Healthcare has a higher bar for what AI needs to deliver.

Healthcare has broadly adopted AI, but fewer organizations have reached the most advanced stage of enterprise-wide deployment. The challenge is not simply expanding access to AI—it is making AI work within a highly demanding operating environment.

Healthcare leaders place greater emphasis on protecting sensitive data while also prioritizing industry-specific integration, specialized workflows, and access to emerging AI capabilities. Moving further will require AI platforms that can combine innovation with the controls and customization Healthcare needs.





"There'd be a ton of value if platforms could show they have the tools, so you've got control over your AI environment, and you can see what's going on, ensure it's secure, and not getting out in the wild."

DIRECTOR OF INFRASTRUCTURE AND DEVELOPMENT OPERATIONS, HEALTHCARE

Build a foundation ready for what AI demands next

Scaling AI takes more than adding new models and applications. It requires a technology foundation that can evolve with them. These resources can help organizations modernize legacy environments, make data more accessible and usable, strengthen security and governance, and create the flexibility to adopt new AI capabilities as they emerge.

- AI Learning Hub
- AI-ready cloud migration guide
- Beyond AI Optimism
- Escaping Data Gravity and Infrastructure Debt (Futurum)
- From Tokenmaxxing to ROI
- Leader's playbook for Gemini at work adoption
- Learn more about AI Modernization
- Scaling AI agents with trustworthy data (MIT Technology Review Insights)



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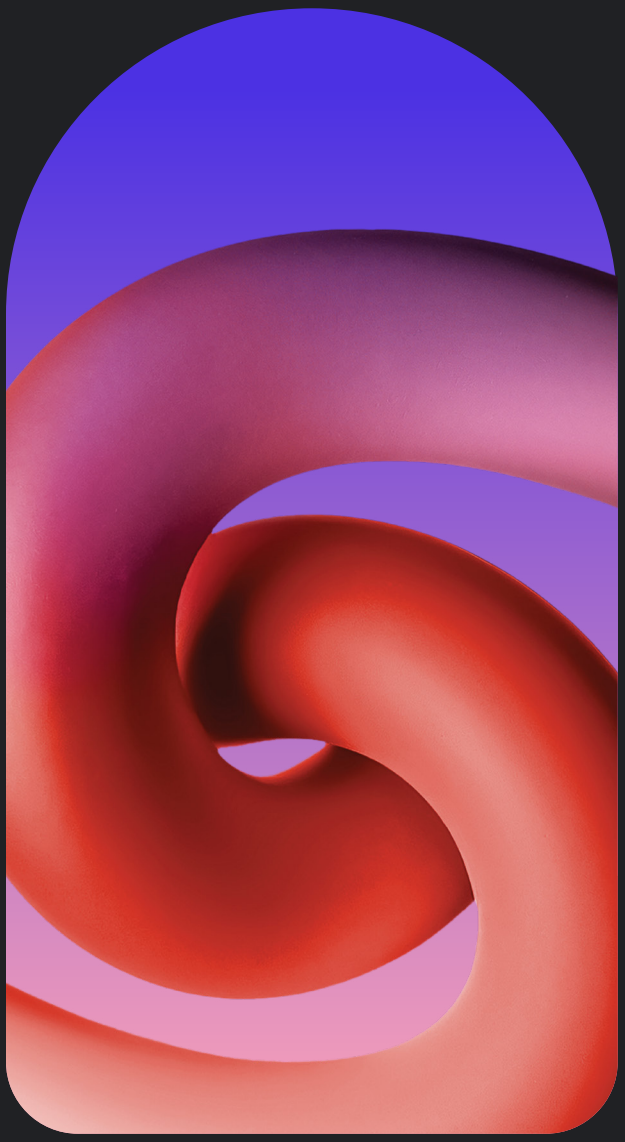
Methodology

Quantitative survey

Google Cloud partnered with Hypothesis Group to conduct a 20-minute online survey in August 2026 among 1,250 U.S. enterprise IT and business decision-makers.

To qualify, respondents were manager-level or above in relevant IT or enterprise functions, had meaningful influence over AI decisions, worked at organizations using both cloud and Enterprise AI, and had made a significant cloud or AI decision within the past 24 months. The study included organizations from across industries, but there was specific focus on four priority industries: Financial Services, Healthcare, Retail & CPG, and Legal Services

INDUSTRIES	(n=)
Financial Services	311
Healthcare	253
Retail & CPG	274
Legal Services	127
Other Industries	285
TOTAL	1,250



Qualitative interviews

To add context and real-world customer language to the quantitative findings, the research also included 10 60-minute virtual in-depth interviews with US-based enterprise AI IT and business decision-makers.

The qualitative work explored participants' current cloud and AI environments, legacy infrastructure, provider relationships, switching and lock-in dynamics, security and governance requirements, and what they need from providers in the AI era.

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Research & design by hypothesis

Appendix

Page 3

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Existing software limits organizations' ability to take full advantage of AI
– Modernizing the technology foundation is essential to scaling AI

Page 4

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Existing software limits organizations' ability to take full advantage of AI

How would you characterize the amount of time your organization's IT team spends maintaining, patching, integrating, securing, administering, or working around locally hosted or on-premises enterprise software? Choose one response.

– AI or other technology initiatives are delayed
– AI or other technology initiatives are reduced in scope
– AI or other technology initiatives are paused or cancelled

Page 5

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Modernizing the technology foundation is essential to scaling AI
– Organizations need enterprise reliability and security without sacrificing innovation
– Providers that led the last era of enterprise technology may not be best positioned to lead the AI era

Page 6

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Technology maintenance demands divert resources away from AI innovation

For each pair of statements below, which statement is closer to your organization's point of view when it comes to AI at your company? Please read each statement and decide which one describes you best for each row.

1. << Agree much more
2. < Agree somewhat more
3. Agree somewhat more >
4. Agree much more >>

– Our organization's technology stack is ready to deploy AI at scale today without significant additional investment
– Our organization will need to make significant investments to modernize its technology stack before it is ready to deploy AI at scale

Appendix

Page 7

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Technology maintenance demands divert resources away from AI innovation

How would you characterize the amount of time your organization's IT team spends maintaining, patching, integrating, securing, administering, or working around locally hosted or on-premises enterprise software? Choose one response.

– Somewhat more time than is reasonable
– Much more time than is reasonable
– Exceptionally more time than is reasonable

Page 8

Which of the following effects, if any, does your organization experience because you rely on / need to maintain locally hosted or on-premises enterprise software? Please select all that apply.

– AI or other technology initiatives are delayed
– AI or other technology initiatives are reduced in scope
– AI or other technology initiatives are paused or cancelled
– More custom engineering, integrations, or workarounds are necessary
– Security vulnerabilities or inconsistent security controls arise; too much time spent on applying updates
– Governance, compliance, or regulatory management is more difficult
– There's reduced ability to choose the best technologies, AI models, or providers
– Data is fragmented or difficult to access and use
– IT staff spending time on security and other maintenance instead of innovation or strategic work
– Opportunities outside of technology are slowed
– Our organization is at a competitive disadvantage due to our reliance on legacy technology
– Higher prices because of inflexible contractual or licensing terms
– Other (specify)

For each pair of statements below, which statement is closer to your organization's point of view when it comes to AI at your company? Please read each statement and decide which one describes you best for each row.

1. << Agree much more
2. < Agree somewhat more
3. Agree somewhat more >
4. Agree much more >>

– Our organization's technology stack is ready to deploy AI at scale today without significant additional investment

Page 9

How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– A provider's installed base should not determine which AI technology an organization uses
– Vendor lock-in limits organizations' ability to choose the best AI

Appendix

Page 10 How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– AI adoption makes technology-provider choice more important than ever
– A provider's installed base should not determine which AI technology an organization uses

Page 11 How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Vendor lock-in limits organizations' ability to choose the best AI

Which limitations, if any, do organizations experience with your reliance on software and cloud providers? Select all that apply.

– Complex licensing, contracts, or limited negotiating flexibility

Page 12 How much do you agree or disagree with each statement?
Please select one response for each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

– Dependence on a single provider can increase cybersecurity risk

Page 13 Which of the following best describes your organization's current stage of AI adoption?
Choose one response.
Enterprise Wide/At-Scale (net)

– Scaling advanced or agentic AI across the organization
– AI embedded in core operations/products
– AI deployed across multiple functions

Which of the following best describes your organization's current stage of AI adoption? Choose one response.

– Scaling advanced or agentic AI across the organization

Thinking about your organization's experience using Enterprise AI to move AI initiatives into production, which of the following, if any, were challenges you faced? Please select all that apply.
Integration and Deployment (net)

– Integration with existing data or business systems was difficult
– Deployment took longer than expected
– Significant custom engineering was required

Why did / might your organization pause or abandon AI initiatives? Please select all that apply.

– The cost of operating is too unpredictable

Appendix

Page 14

Which of the following best describes your organization's current stage of AI adoption? Choose one response.
Enterprise Wide/At-Scale (net)
- Scaling advanced or agentic AI across the organization
- AI embedded in core operations/products
- AI deployed across multiple functions

Which of the following best describes your organization's overall approach to cloud adoption? Choose one response.
- Advanced hybrid-cloud environment
- Fully or nearly fully cloud-native

Thinking about your organization's reliance on software and cloud providers, how much do you agree or disagree that each of the following factors, if any, make it difficult for your organization to change or reduce its dependence?
- The cost and effort required to migrate data or workloads to another provider

Thinking about your organization's experience using Enterprise AI to move AI initiatives into production, which of the following, if any, were challenges you faced? Please select all that apply.
Integration and Deployment (net)
- Integration with existing data or business systems was difficult
- Deployment took longer than expected
- Significant custom engineering was required

Why did / might your organization pause or abandon AI initiatives? Please select all that apply.
- The cost of operating is too unpredictable

Page 15

Which of the following best describes your organization's current stage of AI adoption? Choose one response.
- Scaling advanced or agentic AI across the organization

Which capabilities are especially important for successful AI deployment in your industry? Please select up to 5 responses.
- Protection of sensitive or regulated data

Think about evaluating a provider as an Enterprise AI platform.
Which factors are most important in choosing a provider? Choose up to 5.
- Access to innovative and emerging AI capabilities