MIT Technology Review Insights

Produced in partnership with

Telstra

Many enterprises aiming to disrupt their industries with generative AI underestimate the requirements for effective deployment of the technology.

# Generative AI: Differentiating disruptors from the disrupted

# Preface

"Generative AI: Differentiating disruptors from the disrupted" is an MIT Technology Review Insights report sponsored by Telstra International. To produce this report, MIT Technology Review Insights conducted a global poll of 300 executives. The report also draws upon eight in-depth interviews with data and AI experts, conducted in November and December 2023. Paul Kielstra was the author of the report, KweeChuan Yeo was the editor, and Nicola Crepaldi was the publisher. 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:

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**Laurence Liew**, Director of AI Innovation, AI Singapore

**Giuseppe Nuti**, Head of Machine Learning and Artificial Intelligence, UBS Global Markets

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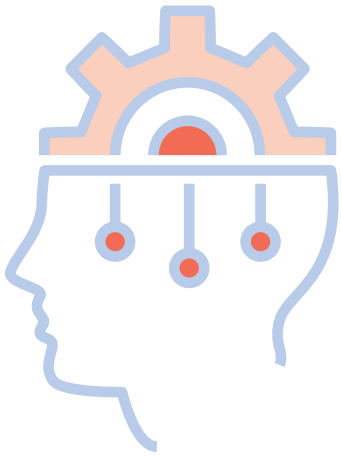


Generative AI[1], though still an emergent technology, has been in the headlines since OpenAI's ChatGPT sparked a global frenzy in 2023. The technology has rapidly advanced far beyond its early, human-like capacity to enhance chat functions. It shows extensive promise across a range of use cases, including content creation, translation, image processing, and code writing. Generative AI has the potential not only to reshape key business operations, but also to shift the competitive landscape across most industries.

The technology has already started to affect various business functions, such as product innovation, supply chain logistics, and sales and customer experience. Companies are also beginning to see positive return on investment (ROI) from deployment of generative AI-powered platforms and tools.

While any assessment of the technology's likely business impact remains more forecast than empirical, it is necessary to look beyond the inevitable hype. To examine enterprises' technological and business needs for effective implementation of generative AI, 300 senior executives across a range of regions and industries were surveyed. Respondents were asked about the extent of their corporate rollouts, implementation plans, and the barriers to deployment. Combined with insights from an expert interview panel, this global survey sheds light on how companies may or may not be ready to tackle the challenges to effective adoption of generative AI.

The overarching message from this research is that plans among corporate leaders to disrupt competition using the new technology – rather than being disrupted– – may founder on a host of challenges that many executives appear to underestimate.

**Executives expect generative AI to disrupt industries across economies.** Overall, six out of 10 respondents agree that "generative AI technology will substantially disrupt our industry over the next five years." Respondents that foresee disruption exceed those that do not across every industry. Rather than being confined to specific sectors, the technology is likely to transform specific functions across the economy, such as corporate IT and customer service.

"Generative AI technology will substantially disrupt our industry over the next five years."

62% AI

of poll respondents agree

Source: Compiled by MIT Technology Review Insights survey, 2024

## Poll methodology

In November and December 2023, MIT Technology Review Insights polled business leaders about how organizations are implementing – or planning to implement – generative AI technologies, along with the barriers to effective deployment of the technology. The 300 respondents are C-suite executives (70%) and vice presidents or directors (30%). The majority (70%) of respondents manage information technology, data, and data engineering-related functions. They are distributed among industries including financial services, banking, and insurance (17%); consumer packaged goods and retail (17%); manufacturing and automotive (17%); technology and telecom (17%); logistics (13%); energy, oil, and gas (10%); and media and communications (10%). The responses are global in scope, representing the Americas (17%), Europe (17%), and Asia-Pacific (66%).

**A majority of respondents do not envision AI disruption as a risk; instead, they hope to be disruptors.** Rather than being concerned about risk, 78% see generative AI as a competitive opportunity. Just 8% regard it as a threat. Most respondents hope to be disruptors: 65% say their businesses are "actively considering new and innovative ways to use generative AI to unlock hidden opportunities from our data."

**Despite expectations of change, few companies went beyond experimentation with, or limited adoption of, generative AI in 2023.** Although most (76%) companies surveyed had worked with generative AI in some way in 2023, few (9%) adopted the technology widely. Those that used the technology experimented with or deployed it in only one or a few limited areas. The most common use case was automating low-value tasks – a use with low-to-modest gains but minimal risks. Expert interviewees characterize generative AI deployments as tactical experimentations rather than holistic transformations.

**Companies have ambitious plans to increase adoption in 2024.** Respondents expect the number of functions where they aim to deploy generative AI to more than double in 2024. This will involve frequent application of the technology in customer experience, strategic analysis, and product innovation. Respondents plan to increase use of generative AI in fields relevant to their industries, such as coding in IT, supply change management in logistics, and compliance in financial services. Experts we interviewed say companies will search for innovative use cases that may give them unique competitive advantages, along with ongoing expansive rollout of generative AI.

**Companies need to address IT deficiencies, or risk falling short of their ambitions to deploy generative AI, leaving them open to disruption.** Fewer than 30% of respondents rank each of eight IT attributes at their companies as conducive to rapid adoption of generative AI. Moreover, these results may be overly optimistic. Those with the most experience of deploying generative AI – called early adopters in this report – have less confidence in their IT than their peers. At best, many early adopters (65%) say their hardware is modestly conducive to rapid adoption. Approximately half say the same of data volume (54%), accuracy (50%), and storage infrastructure (50%). These assets, however, are necessary to develop and run the AI from which companies

"Effectively deploying generative AI solutions is predicated upon having 100% confidence in the end-to-end operationalization of capturing, processing, contextualizing, and actioning data."

**Geraldine Kor**, Managing Director of South Asia and Head of Global Enterprise, Telstra International

seek to benefit. According to Geraldine Kor, Telstra International's managing director of south Asia and head of global enterprise, "effectively deploying generative AI solutions is predicated upon having 100% confidence in the end-to-end operationalization of capturing, processing, contextualizing, and actioning data – particularly if attempting to do so in real time or near real time." Such data, in turn, is essential for getting full value from generative AI. Many companies need to rethink their underlying IT by, at least, creating an appropriate data strategy and securing reliable access to the necessary hardware for deploying generative AI.

**Non-IT factors also undermine the successful use of generative AI.** Survey respondents also report non-IT impediments to the extensive use of generative AI.

- **Risk:** 77% of respondents cite their regulatory, compliance, and data privacy environment as a leading barrier to rapid AI adoption. Meanwhile, 54% of early adopters admit their companies' cybersecurity measures are at best modestly capable of supporting a rollout. Any strategy to use the technology needs to be rooted within holistic governance structures that address this inter-related complex of risk.

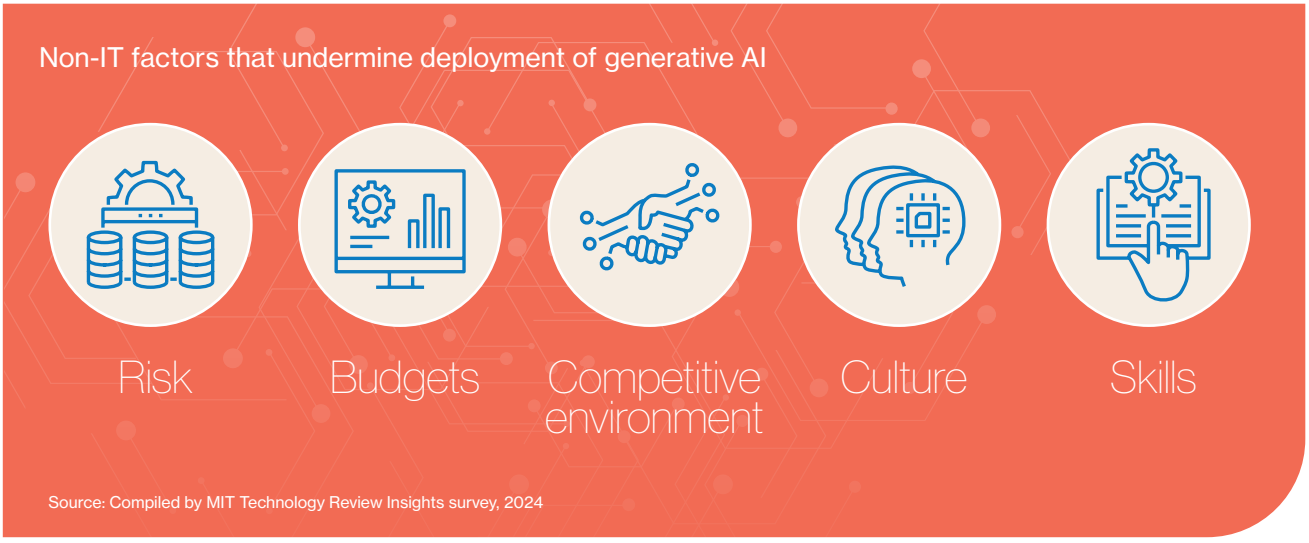
- **Budgets:** 56% list IT investment budgets as a leading barrier. One expert advises executives to examine use cases in terms of ROI, not just cost, to judge better what spending is worthwhile.

- **Competitive environment:** Early adopters are more than twice as likely to see the competitive environment as an enabler of rapid generative AI adoption than as a barrier; among other respondents, the opposite is true. Generative AI for its own sake makes limited business sense. Any adoption strategy needs to be consistent with a search for improved competitive standing.

- **Culture:** Early adopters are more likely to regard attitudes toward innovation at their companies as an enabler of rapid AI rollout; other surveyed executives are more likely to report that this aspect of culture is a barrier. As with any change management program, adoption plans need to include efforts to win over users and executives.

- **Skills:** The IT skills needed for significant AI projects are in short supply but among our respondents, early adopters are more acutely aware of the shortage of available talent. Wider business skills are also necessary for applying the technology well. Users of even basic generative AI-powered tools need to understand their risks, limitations, and potential benefits. Talent acquisitions and talent development are integral to successful adoption.

Executives expect generative AI to provoke a wave of disruption. In many cases, however, their hopes to be on the right side of this innovation are endangered by impediments that their companies do not fully appreciate.



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# Introduction: Great expectations

Generative AI dominated news headlines in 2023, fueling dramatic forecasts, such as the extent of disruption to businesses in the near term and the significant market opportunities that may soon be available. McKinsey estimated in 2023 that adoption of generative AI across industries will drive $3.5 trillion in global economic activity. That number could double if the technology is used more widely.[2] Meanwhile, Bloomberg Intelligence projected in 2023 that the worldwide market for generative AI products will grow from $67 billion in 2023 to $1.3 trillion by 2032, a compound annual growth rate of 42%.[3]

Investors and senior executives are also increasingly talking about generative AI. According to *S&P Global Market Intelligence*, for example, during earnings calls of U.S. S&P 500 companies, mentions of generative AI rose tenfold between 2022 and 2023.[4] Nearly half of S&P companies mentioned the technology on these calls between May and December 2023 – a proportion similar to those who talked about interest rates during calls, according to NBC News.[5]

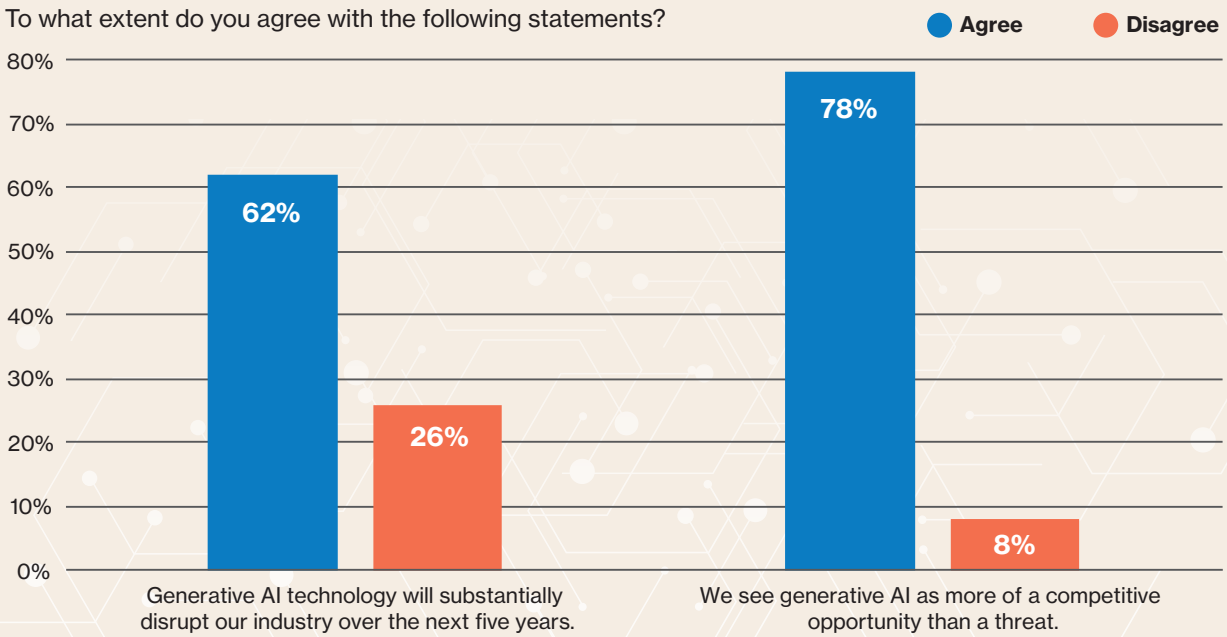
"Like cloud, mobile devices, and the original world wide web protocols, generative AI is both foundational and a force multiplier," says Michael Schrage, research fellow of MIT Sloan School's Center for Digital Business. "There's no escaping it and we're not even close to the end of its beginning." Giuseppe Nuti, head of machine learning and AI at UBS Global Markets, adds that generative AI "clearly has the potential to be highly impactful." The technology's ability to create content, address complex problems, automate, predict, and interact easily with humans are both novel and useful.

As with other nascent technologies, hype can obscure substance. Gartner puts generative AI at the top of its 2023 Hype Cycle for Emerging Technologies, which precedes "the trough of disillusionment" phase.[6] This does not mean the talk is meaningless. In 2015, for example, IoT was at the peak of Gartner's 2015 Emerging Technologies Hype Cycle,[7] and it is now commonplace in business.

It's risky to sit on the sidelines as others undertake the transition from hype to value, says an AI expert at a

No sector doubts the likely impact of generative AI: respondents from every industry agree generative AI will bring disruption.

**Figure 1: Generative AI is seen as a disruptive opportunity**




Source: MIT Technology Review Insights survey, 2024

global IT consultancy. He likens the current situation to that of a peloton, the main pack of riders in a cycling race. Most companies, he says, are currently huddled in the pack. "For innovators, their skills will get better, as their data becomes more and more available in better quality," he says. "As they are able to start identifying more and more use cases, you will start seeing leaders emerge and pull away from the pack." The risk for others is that without learning lessons by staying in the race, they will lag further behind those working with the technology.

## Unusual calm about disruption

Many executives surveyed believe generative AI will quickly and markedly shake up the business environment (see Figure 1). A majority (62%) agree that "generative AI technology will substantially disrupt our industry over the next five years." Just 26% say the opposite.

Predictably, executives from certain industries are more likely to anticipate change. For example, 87% of respondents in media and communications – heavy users of IT and producers of substantial creative content – say generative AI will bring disruption, compared with 7% who disagree. No sector doubts the likely impact of generative AI: respondents from every industry agree generative AI will bring disruption.

"Generative AI is going to increasingly gobble up any business involved in giving advice: technical, spiritual, business, and financial," says Schrage. Stela Solar, inaugural director of Australia's National Artificial Intelligence Centre, goes further. She argues that the effect is unlikely to be highly concentrated in a few industries. Instead, functions common to many – such as customer service or finance – will use the technology to generate value and enhance productivity.

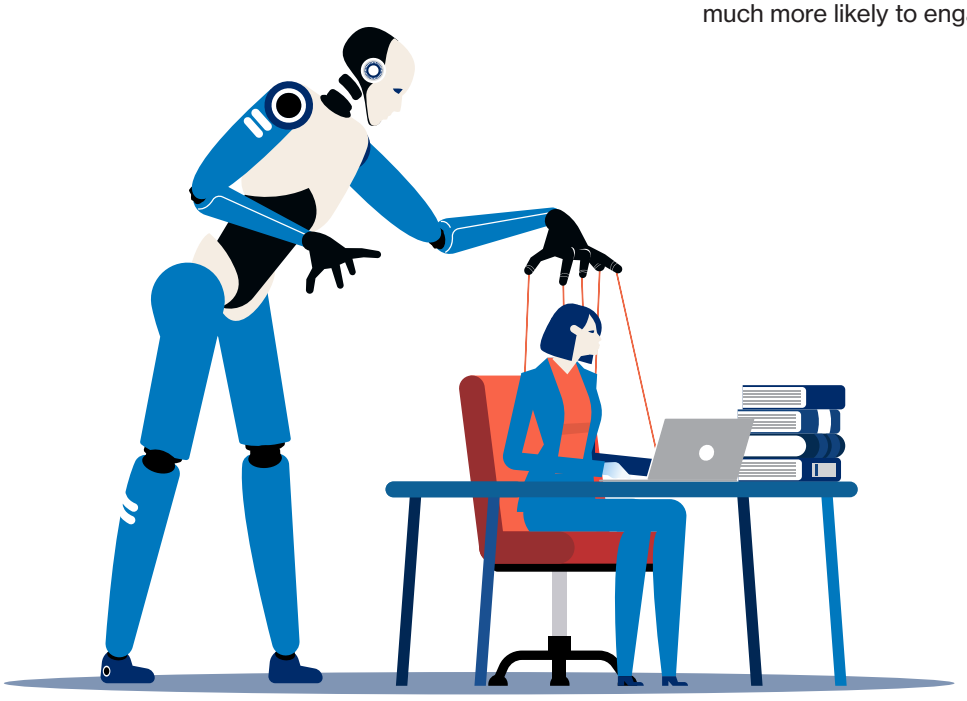
"Generative AI is going to increasingly gobble up any business involved in giving advice."

**Michael Schrage**, Fellow, Center for Digital Business, MIT Sloan School


McKinsey expects generative AI to have its biggest effect in sales, marketing, customer operations, software development (for corporate IT), software (for product innovation), and R&D. Everywhere except the public sector, 2023 McKinsey research expects generative AI to highly impact at least one – sometimes several – of these fields.[8] Meanwhile, academic research foresees the technology will impact common tasks in many sectors. A 2023 study of GitHub Copilot says generative AI-powered code development tools could increase web design speed by more than 50%.[9] A 2023 National Bureau of Economic Research working paper predicts generative AI customer service software could raise productivity by 14%.[10]

While business leaders are usually wary of disruption, respondents appear more focused on possibilities than risks. Overall, most respondents (78%) say generative AI is more of a competitive opportunity than a threat; 8% say the opposite. Other survey data suggests this response reflects respondents' hopes to be on the side of the disruptors. In particular, 65% say their business "is actively considering new and innovative ways to use generative AI to unlock hidden opportunities from our data, which would not have been possible with earlier technologies." Just 13% are not doing so.

A closer look at adoption of generative AI across surveyed companies, however, fails to reveal extensive disruptive innovation. Instead, for now, businesses are much more likely to engage in modest experimentation.



# 03 Deployment in 2023: Learning in pool's shallow end

Enterprises have a nearly universal interest in generative AI. A majority (76%) of respondents report that their companies have used the technology. Among the rest, most (18%) say they plan to do so soon. Moreover, about seven in 10 say "finding ways to derive business benefit from generative AI is the single leading priority of at least one corporate function at my company."

Too narrow a focus on specific statistics, however, obscures the broader picture. The business implications of generative AI depend on the breadth and impact of deployment. So far, businesses are largely engaged in learning and modest experimentation. Current efforts rarely seek out disruptive possibilities as much as they could at this stage. "While most businesses are exploring generative AI capabilities, it is disappointing how tactical that experimentation has been," says Schrage. "Too many experts look at generative AI as a way of automating or augmenting existing workflows and processes, rather than rethinking use case fundamentals or the desired outputs and outcomes they really want."

For example, Laurence Liew, director of AI innovation at AI Singapore, says certain tasks such as document summarization will become "part and parcel of work that people may occasionally do" because major office productivity suites now integrate generative AI-powered functions. On the other hand, although now easier, such activity is similar to past practice.

Survey data is consistent with these observations. In 2023, most businesses engaged in careful, limited use rather than wholesale transformation. One-third of respondents conducted at least one generative AI trial but did not permanently adopt any tools (see Figure 2). A slightly higher percentage (37%) deployed generative AI in specific areas but have yet to do so more generally. Only 9% of executives indicate their companies used generative AI widely. Even in sectors that rely heavily on IT, adoption has only recently started to spread. For example, just 20% of media and communications respondents and 18% of those in telecoms and technology report companywide deployment.

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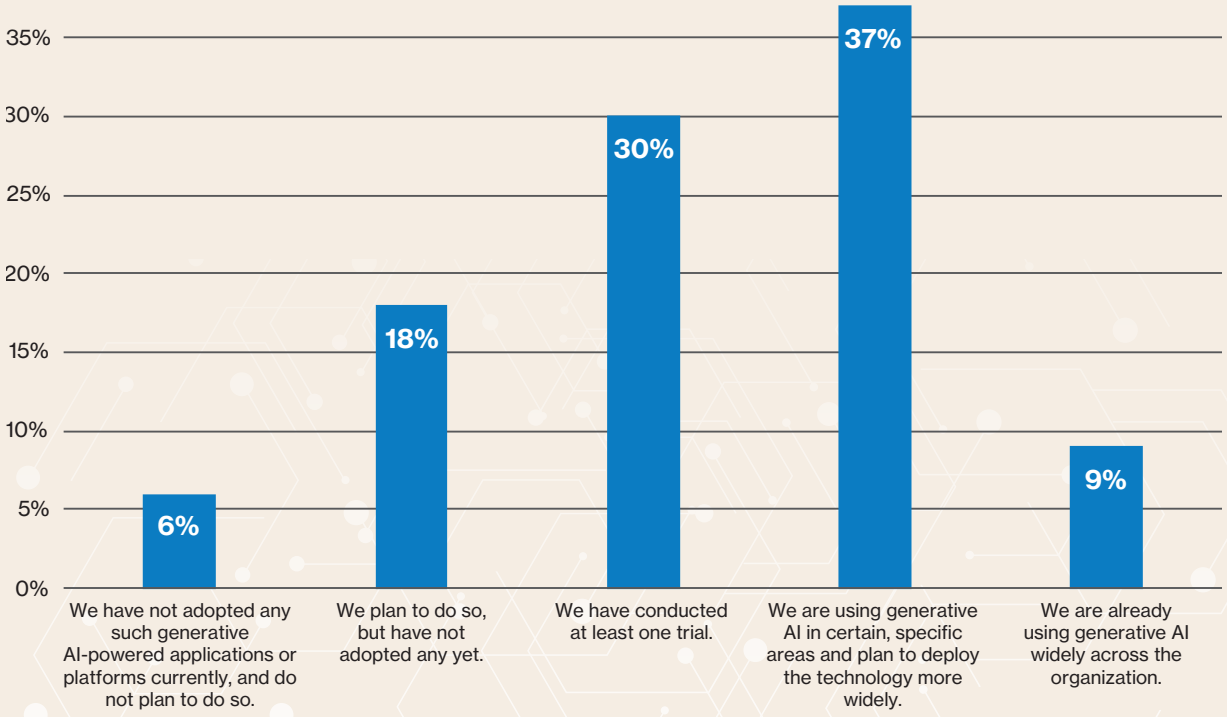
>
> **Michael Schrage**, Fellow, Center for Digital Business, MIT Sloan School

## Figure 2: The state of generative AI adoption

Which of the following best describes your company when it comes to adopting generative AI technology across the business?




Source: MIT Technology Review Insights survey, 2024

"In Singapore, we are still in the very early stages," says Liew. Even generative AI-enabled productivity suites have only recently become available. Similarly, in Australia, Solar says "no holistic transformation or approach that's mature across companies" is yet visible.

The most frequent uses of generative AI focus on areas where application is straightforward and unlikely to disrupt industries. The most common, cited by 54%, is automation of repetitive, low-level tasks. This appears to be a gateway activity. Four out of 10 companies that deployed generative AI for a single purpose in 2023 used it in this way.

The next tier of adoption consists of product innovation (33%) and customer service (29%). These frequently reflect applications that draw on immediately accessible strengths of generative AI. The sectors that most frequently use the technology for product innovation are media and communications (57%) and technology and telecom (40%). Generative AI can create text and video for media and PR. It can also produce extensive code for specific purposes, boosting product development in these IT-centric fields.

> "In Singapore, we are still in the very early stages [of using generative AI]."
>
> **Laurence Liew**, Director of AI Innovation, AI Singapore

Customer service is also looking to generative AI. "Most organizations that deal with a large volume of customers are really looking to figure out how to use large language models to both power and become platforms for next-generation chatbots," says Schrage. "Opportunities for personalization, segmentation, and upselling here can only increase."

While inconsistent with the hype surrounding the transformational potential of generative AI, these smaller efforts are important for the experience they provide. Nuti says focusing on increasing productivity and speed from available tools is a sensible "first port of call" as a company grows to understand the potential benefits and risks of going further. Moreover, there is substantial economic value in these initial efforts. Pointing to the available tools that UBS is adopting, Nuti says they "are going to make a material difference to the productivity of UBS and our employees."

The slow pace of generative AI adoption, however, creates its own risks. Many employees want to work with the same tools they have adopted personally. "Across the market, generative AI is coming into organizations in quite uncontrolled, non-centralized ways," says Solar. "Employees are using it at work, and most are not telling anyone."

A 2023 survey by *Technology Decisions* magazine in Australia and New Zealand, for example, found that 63% are using AI in the workplace, but just 11% of their organizations have a use policy.[11]

Given the risks, today's levels of bring-your-own-generative AI is dangerous. The survey, however, shows this problem may be temporary. Adoption is expected to accelerate markedly, reducing the need for employees to use their own tools.

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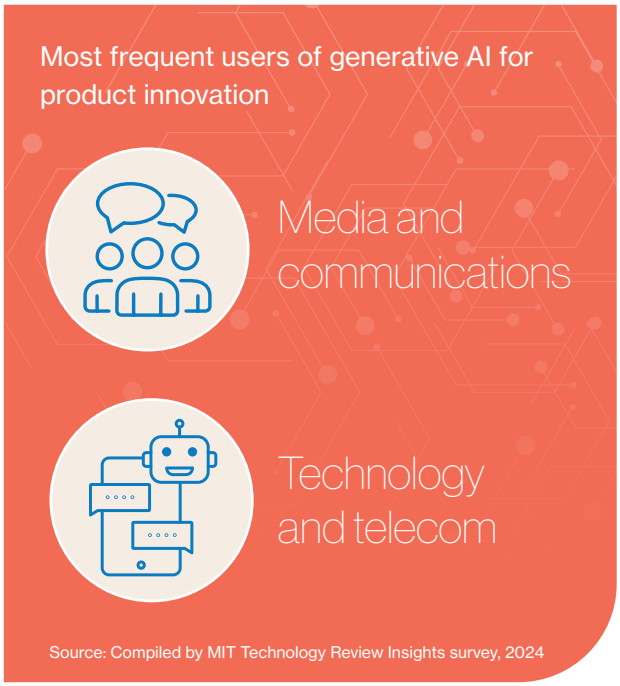
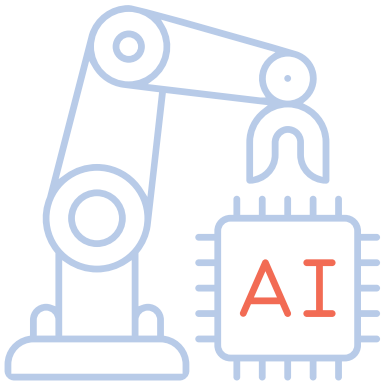
**Stela Solar**, Inaugural Director, Australia's National Artificial Intelligence Centre, Commonwealth Scientific and Industrial Research



# 04 2024: Year of grand ambition



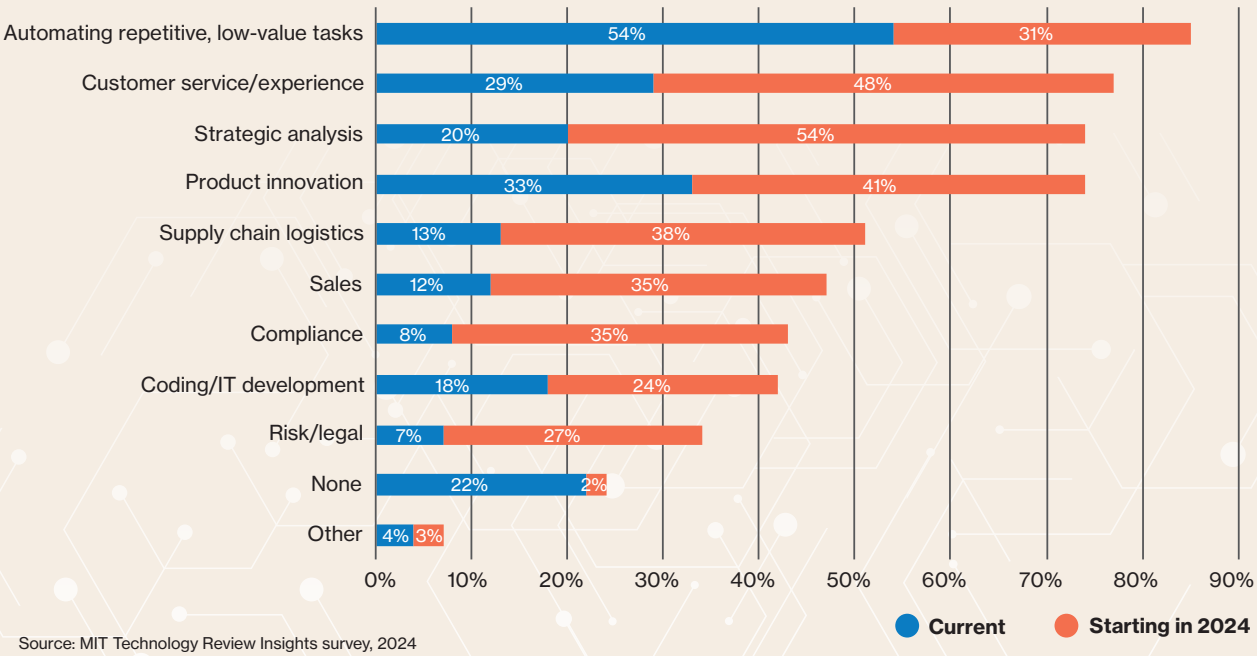

In contrast to 2023, plans for 2024 reflect intentions for a full embrace of generative AI. Schrage says he sees the first stirrings of the tech equivalent of an event known as the "Cambrian explosion," when a wide variety of animals burst into the fossil record millions of years ago.

Innovation will occur around different kinds of products and services, says Schrage. "Many of these are use case-driven," he explains, while others are driven by what generative AI now allows companies to do. The survey data indicates companies plan wide-ranging rollouts that could fuel an eruption of innovation.

By the end of 2023, respondents used generative AI for two purposes or fewer, on average. By the end of 2024, they expect that number to more than double to exceed five. Just as notable, the technology will proliferate in certain areas, particularly automation of repetitive tasks, customer service, strategic analysis, and product innovation (see Figure 3). More than 50% of respondents in each industry say their companies will deploy generative AI in these fields. Most businesses (85%) say by the end of 2024 they will use generative AI to automate repetitive, low-value tasks that previously required considerable human effort.

**Figure 3: How companies plan to use generative AI**

In which areas are you currently using generative AI technology or will you begin in 2024?




Source: MIT Technology Review Insights survey, 2024

Generative AI-powered software will also become the norm in customer service. Chatbots will become increasingly ubiquitous as tools for agents, customers, or both. Use of the technology, though, will go further. One example, says Schrage, is the development of hybrid chatbots and wikis that provide "curated guidance" for customers who want detailed answers and insights. Seller-buyer communication also looks set to deepen. Liew says a marketing company he worked with has a new generative AI tool that allows customers to describe more precisely what they want the firm to produce, shortening the creative process.

Meanwhile, only one in five companies used generative AI to support strategic analysis in 2023. But more than half (54%) plan to adopt it for this purpose in 2024, implying this area could see the largest spread of the technology. Anecdotal evidence suggests that, once properly trained and given a user-friendly interface, generative AI can provide rapid insights on specific questions. An INSEAD study combined the strategic principles of the school's marketing framework with ChatGPT's large language model (LLM) in this way. The resultant AI was directed to create a proposal for a bagel bakery in Paris. It produced one in one hour: the proposal was of similar quality to and, in some ways, more original than that made by MBA students, who took one week to complete the task.[12]

Product innovation is the last of the general areas where respondents foresee widespread use of generative AI by the end of 2024. AiDA, a generative AI fashion design tool, shows what this might look like, especially within creative industries (see sidebar).

Beyond general use cases, specific industries plan to deploy generative AI in core operational areas in 2024. The survey shows nearly half (48%) of technology and telecom firms are already using it for coding and IT development. A further 32% expect to join them in 2024.

Meanwhile, most respondents (85%) from the logistics sector intend to use generative AI in supply chain management by the end of 2024. "A lot of supply-chain leaders are looking for that great use case," says an AI expert from a global IT consultancy. "It's almost like musical chairs. Everybody's looking at what everybody else is doing." Eventually, he expects managers to have access to generative AI-enabled, complex digital twins, giving them significant insights about their supply chains, suppliers, ecosystems, and customers.

## Generating product designs

Calvin Wong, CEO, and center director of the Laboratory for Artificial Intelligence in Design (AiDLab), which created the AI-based interactive design assistant for fashion (AiDA), says the traditional process of creating a new collection for a fashion house typically involves designers creating a "mood board." This consists of diverse images including color tones, fabric print patterns, initial sketches, and possibly even the upcoming season's theme. In a time-consuming, iterative process, designers use the board to create design proposals, which are then refined and finalized.

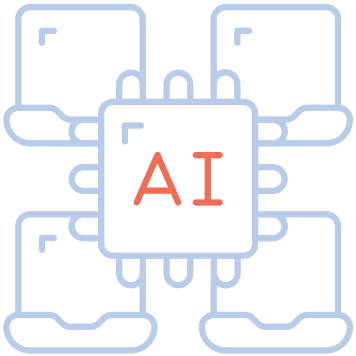
With AiDA, designers can upload their mood board to the platform. Within 10 seconds, the AI could generate thousands of suggestions. Based on their judgement, designers can modify their proposals with AiDA's suggestions, and feed ideas back into AiDA to further explore them.

AiDA assists designers, but does not replace them. Creative control remains firmly in human hands. The process, though, is dramatically faster than the traditional method. It can cut the time between initial proposal and completed collection by 70%, says Wong.

Just 8% of respondents from the highly regulated financial services sector say they used generative AI in compliance tasks in 2023. But 54% expect to begin doing so in 2024. Nuti explains that while part of this involves accelerating existing tasks, the technology promises to achieve much more. For example, current regulations require banks to review a small sample of written and telephone communication for conduct risk, which is time consuming. Generative AI-enabled tools, however, can rapidly review every interaction.

Schrage cites a financial services company that created a tool to answer compliance-related questions for developing new investment products. "The bet was that it would lead to faster development and less painful interactions with the compliance people when they went to market," he says. "The organization in question felt that they got real value for their time and effort."

# 05 Ambition and hubris signal weak readiness for rapid adoption




The majority of surveyed executives expect a rapid rollout of generative AI in 2024 to support some key corporate activities. But organizations have a substantial agenda to get through before they can fully embrace the technology. "There is a misconception about how easy it is to run mature, enterprise-ready, generative AI," says Solar. "The large language model is almost the smallest part. There are surrounding elements like the app design, connection to data and business processes, corporate policies and more that are still needed." These IT and business challenges can stand in the way. "They often find a need to improve data quality and capability, privacy measures, AI skilling, and implement organization-wide safe and responsible AI governance," she explains.

## IT resources and capabilities often fall short

"Many organizations underestimate the requirements for effective implementation of generative AI because of the ease in using AI-enabled web pages or consumer software," says Solar. However helpful for certain tasks, the impact of such tools will be limited. Creating enterprise-level generative AI capabilities for competitive advantage is another matter. "You need datasets, real datasets," says Liew. "You need the AI engineers who can actually build such applications and you need access to the computer infrastructure."

Specialized IT assets that can effectively support extensive, high-quality generative AI tools and platforms are not yet widely deployed. Few respondents, when asked to rank a range of relevant IT-related capabilities and infrastructure elements, indicate their companies' assets are highly conducive for rapid generative AI adoption (see Figure 4).

The responses of those who rank the conduciveness of their companies' IT capacities for rapid generative AI adoption as between "not at all" and "modestly" reveal weaknesses that could block a rapid and widespread rollout of generative AI (see Figure 5). More than half of surveyed executives rate their businesses poorly on hardware needed for generative AI adoption. More than half also say the volume of data available for LLMs currently falls short.

Even these numbers are likely optimistic. Among respondents, 9% say their companies have adopted generative AI widely. The responses from these early adopters indicate technological weaknesses run deeper than most executives fully realize (see Figure 6).

> "There is a misconception about how easy it is to run mature, enterprise-ready, generative AI. The large language model is almost the smallest part."
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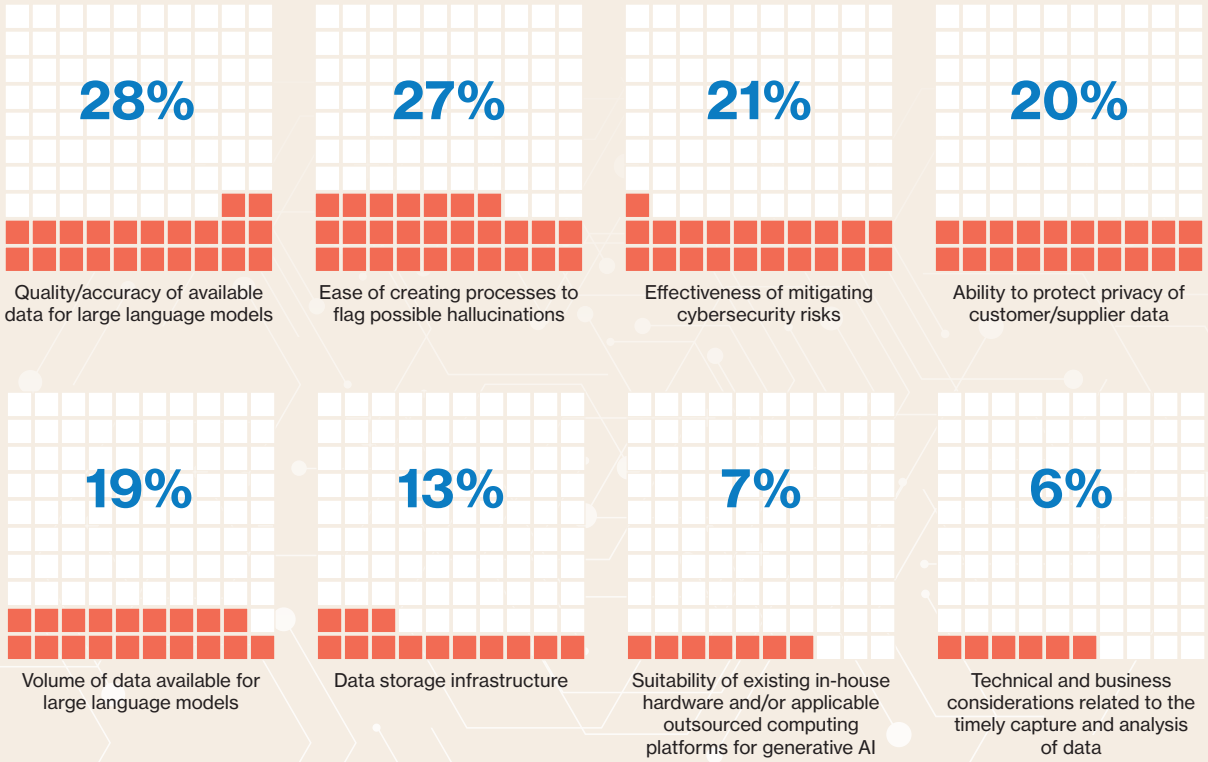
> **Stela Solar**, Inaugural Director, Australia's National Artificial Intelligence Centre, Commonwealth Scientific and Industrial Research

**Figure 4: Few perceive their IT assets for deploying generative AI as highly conducive**

Percentage who consider the following highly conducive to the rapid adoption of generative AI at their companies (on a scale of not at all conducive (1) to highly conducive (5)).




Source: MIT Technology Review Insights survey, 2024

"You need datasets, real datasets. You need the AI engineers who can actually build such applications and you need access to the computer infrastructure."

**Laurence Liew**, Director of AI Innovation, AI Singapore

**Partner perspective**

## How Telstra is transforming itself into an AI-fueled organization

As generative AI has hit a critical mass, one of the most profound technology revolutions of our time is set to transform the way we work and live. New opportunities are forged by disruption: from improving products through innovation to exponentially enhancing the customer experience, embracing AI is no longer optional.

Telstra's vision of becoming an AI-fueled organization is an ambition that doesn't happen overnight. It's a multi-year journey that has required a fundamental shift: from considering and applying AI in isolated instances or on a use case basis, to embedding AI at the heart of most decisions and processes.

Over the last few years, we have embarked on a radical simplification and modernization of our underlying technology architecture and data ecosystem. We've shifted to a 100% application programming interface (API)-first approach to product development. We're migrating workloads to the cloud and building reusable AI capabilities.

We are now using AI to improve half of our key processes, including to automatically detect and resolve fixed services faults, and to solve customer issues faster. For example, we have piloted new AI applications including Ask Telstra – an OpenAI-based solution to help our frontline teams find the information they need to serve our customers better and more quickly.

We're also investing in our people, including through our Data & AI Academy, to upskill them in AI and help them understand how they can use it in their roles.

Cybersecurity, identity, and scam protections remain extremely important to us and our customers. Through our Cleaner Pipes initiative[1], as of February 2024 we are blocking on average more than 10 million scam calls and 11 million scam SMSs, and almost 280 million incoming scam and potentially unwanted emails from reaching our customers each month.

Our work with a leading Australian bank on the Scam Indicator is another prime example of applying data and AI to detect high-risk scenarios and respond accordingly. Telstra created an API for the bank to integrate with its existing scam detection processes, offering visibility on whether a customer is on a phone call – a key indicator they may be in the process of being scammed.

The considerable benefits of AI are apparent but must be tempered with recognition of the risks. And fervor can't lead to taking shortcuts with good governance.

From the outset, the responsible and ethical development and deployment of AI has anchored our approach. It's why we've consulted and co-developed with the Australian government and tech leaders across the globe to develop strict guardrails based on human-based values. Principles such as privacy, security, contestability, and accountability are absolutely critical to leveraging AI in a responsible manner and are supported by other robust frameworks and controls.

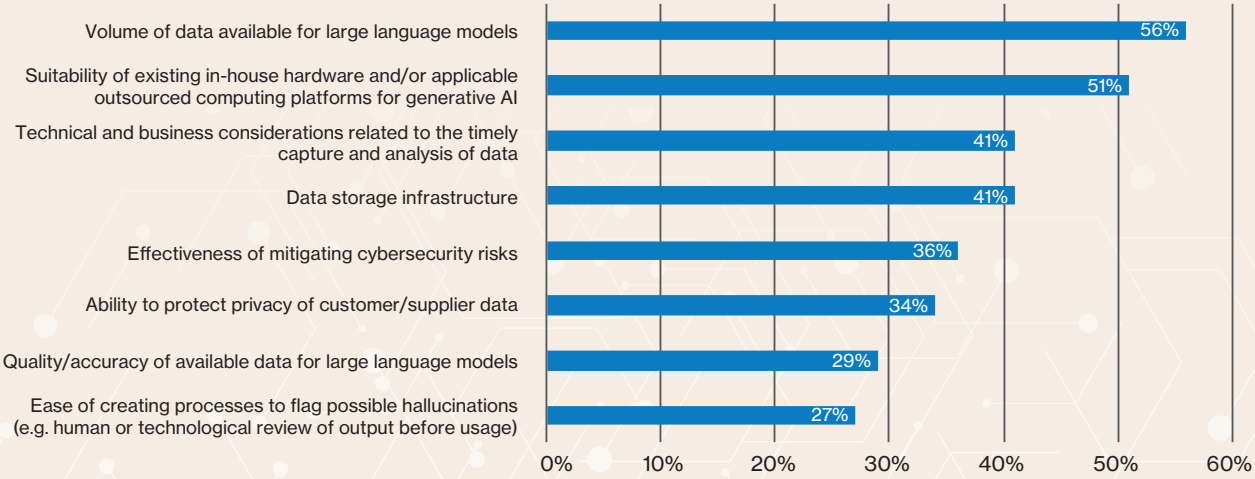
The path from early adoption to becoming truly AI-fueled will be one that requires an unwavering conviction, but an agility allowing us to flex to seize opportunities as they arise.

What lies ahead is unknown but as we accelerate our adoption of AI, what is clear is that it will require a paradigm shift and an infusion of data and AI into the very fabric of our company.

1. Source: https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-i/ceo-cfo-analyst-briefing-presentaion-and-materials.pdf

## Figure 5: Overview of IT assets that fall short for rapid generative AI adoption

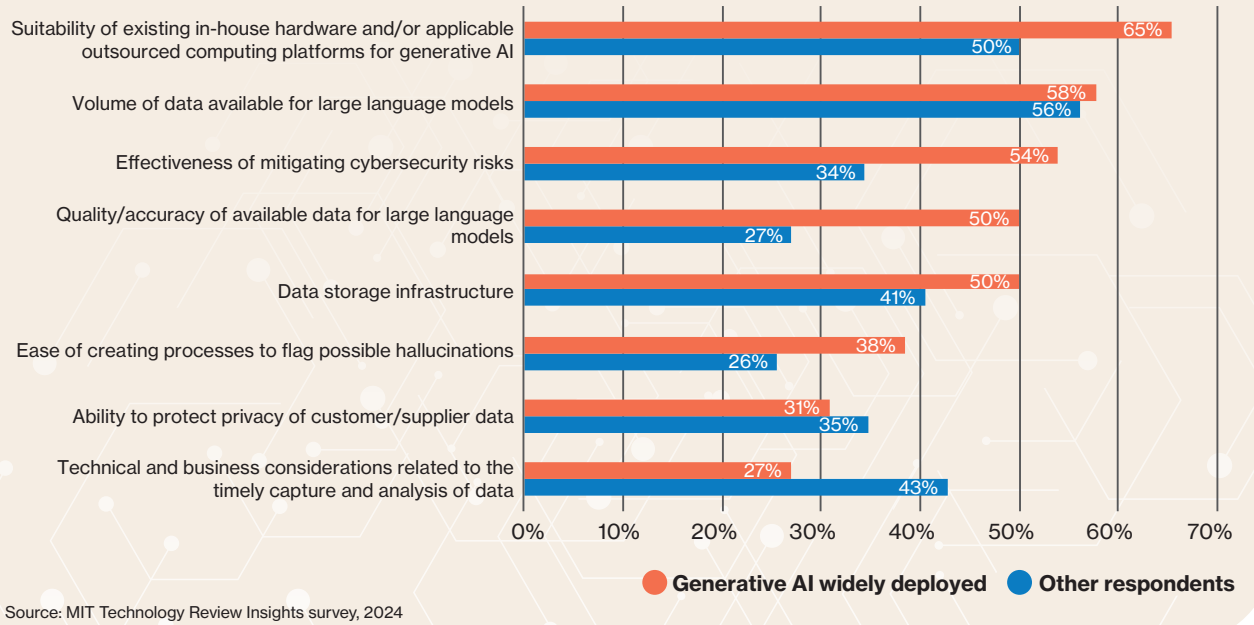
How conducive are the following to the rapid adoption of generative AI tools at your company? (Percentage answering between "not at all" and "modestly")




Source: MIT Technology Review Insights survey, 2024

## Figure 6: Early adopters rate the conduciveness of their IT assets and capabilities harshly

How conducive are the following to the rapid adoption of generative AI tools at your company? (Percentage answering between "not at all" and "modestly")




Source: MIT Technology Review Insights survey, 2024

"Building end-to-end capabilities to handle large datasets, accurately contextualize the data for business value and ensure minimal AI hallucinations is extremely challenging."

**Geraldine Kor**, Managing Director of South Asia and Head of Global Enterprise, Telstra International

Deploying generative AI across the company seems to douse tech optimism. Nearly two-thirds of early adopters acknowledge their available hardware is at best modestly conducive to rapid adoption. Half or more say the same about the volume (54%), quality (50%), and storage infrastructure of their data (50%). In almost every case, those who have implemented generative AI widely are more likely to rate their IT more harshly. Problems with hardware and data are particularly notable.

**Hardware:** Appropriate hardware, in-house or outsourced, is a prerequisite of extensive generative AI adoption, and executives often fail to grasp the degree of the requirement.

Accessing these assets poses a dilemma. Outright purchase carries risk and in a fast-moving landscape, over-committing is risky. "Rather than building a massive data center, it might be more appropriate to remain nimble, keep an eye on developments, and try to do as much pay-as-you-go as you can," says Nuti. Many large suppliers can be found for such outsourcing, adds Liew, but this solution brings its own risks. "You may not necessarily have access to this infrastructure when you want it," he says.

**Datasets and volume:** Also in short supply – and fundamental for generative AI – is enough good data. Among early adopters, 54% say available volume of data at their companies is at best modest, and half say the same of data accuracy and storage infrastructure.

Calvin Wong, CEO and center director of Hong Kong-based Laboratory for Artificial Intelligence in Design (AiDLab), says clients' inability to provide a large dataset is the biggest barrier for his organization's generative-AI fashion design tool. "Data is the key component if proposals generated by generative AI tools are to meet the actual requirements of a specific industry," he says. "The dataset is a common problem."

Perhaps, as a result, companies are beginning to rethink their approach to data. "Generative AI has turned on its head the value of data in an organization," says Solar. Nevertheless, firms need to scrutinize their data practices. "They have to consider what data they actually need to add value on top of existing foundation models," she adds. "Are they collecting the right data? Do they need to keep all of that data because data, as well as being valuable, also adds exposure to cybersecurity risks."

Geraldine Kor, managing director of south Asia and head of global enterprise at Telstra International, says "in today's hyperconnected business and AI landscape, it is essential that IT leaders embark upon a technology adoption strategy that right-fits, right-sizes and right-locates their IT investments." Determining the optimal deployment scenarios for storing, analyzing, and interconnecting large data volume sets and business logic that can meet the latency-sensitivity of modern applications can be extremely complex, she adds.

"Data is the key component if proposals generated by generative AI tools are to meet the actual requirements of a specific industry."

**Calvin Wong**, CEO and Center Director, Laboratory for Artificial Intelligence in Design

**Data quality and storage:** Even though generative AI is better at using unstructured data than other technologies, data quality and storage remain basic requirements for effective deployment. "When you are doing the fine-tuning, you actually need cleaner datasets," says Liew, referring to LLMs and training them to respond to prompts. More generally, he adds, appropriately "structured datasets still need to be curated and collected." Any deficiency in this area will slow adoption. For supply chain companies, data is the biggest barrier because so much information in the industry has traditionally lived on spreadsheets and siloed databases differentiated by application or location, says an AI expert at a global IT consultancy.

## Non-technological barriers pose daunting, long-term challenges

Looking beyond IT, respondents identified other barriers or enablers for rapid adoption of generative AI. The regulatory, compliance, and data privacy environment was the most commonly mentioned impediment (see Figure 7). More than half of early adopters say they struggle to address cybersecurity (see Figure 6).

"Legal regimes, not technological capabilities, pose the biggest threat to the development and deployment of generative AI," says Schrage. Regulators and litigators could rein in businesses that overstep existing rules with the new technology.

> "It's still unclear whom to hold accountable for what, in order to create safe and responsible AI outcomes."
>
> **Stela Solar**, Inaugural Director, Australia's National Artificial Intelligence Centre, Commonwealth Scientific and Industrial Research

## Need for a broader data strategy

Amid the specific data-related requirements made more pressing by the advent of generative AI, companies need to embed their improvements in a broader data strategy.

"As the world becomes increasing digitized and human-to-machine interactions flourish, being able to process data to drive informed real-time or near real-time business decisions is paramount", says Geraldine Kor, managing director of south Asia and head of global enterprise at Telstra International.

"When implemented successfully, this proficiency will be a game-changer for most organizations, and will distinguish leaders from followers," adds Kor. "However, building end-to-end capabilities to handle large datasets, accurately contextualize the data for business value and ensure minimal AI hallucinations is extremely challenging."

Dayle Stevens, Telstra's data and AI executive agrees. "A broad, well-thought-out data strategy is pivotal for leveraging generative AI effectively," she says. "It underpins ethical AI use, ensures regulatory compliance, and prepares the organization for future technological shifts. This, in turn, positions companies to harness AI's full potential, driving innovation and competitive advantage."

There are myriad problems for companies in staying on the right side of this issue. For example, Solar argues, the challenge that generative AI creates in differentiating truth and falsehood is already disrupting the cybersecurity threat landscape. Similarly, unsanctioned employee use of generative AI undermines essential risk assessment processes and corporate policy implementation.

Just as problematic, Solar adds, is lack of clarity on accountability. "An AI solution has many vendors, providers, services, and stakeholders that contributed

# “A broad, well-thought-out data strategy is pivotal for leveraging generative AI effectively.”

**Dayle Stevens**, Executive – Data & AI, Telstra

towards it: data that’s bought from somewhere; a cloud platform that’s purchased; machine learning toolkits; advisory that’s provided,” she says. “It’s still unclear whom to hold accountable for what, in order to create safe and responsible AI outcomes.” This is particularly worrying as, in the race to create AI technologies, some development teams at startups and even mature companies have completely bypassed internal regulatory and compliance checkpoints, she says.

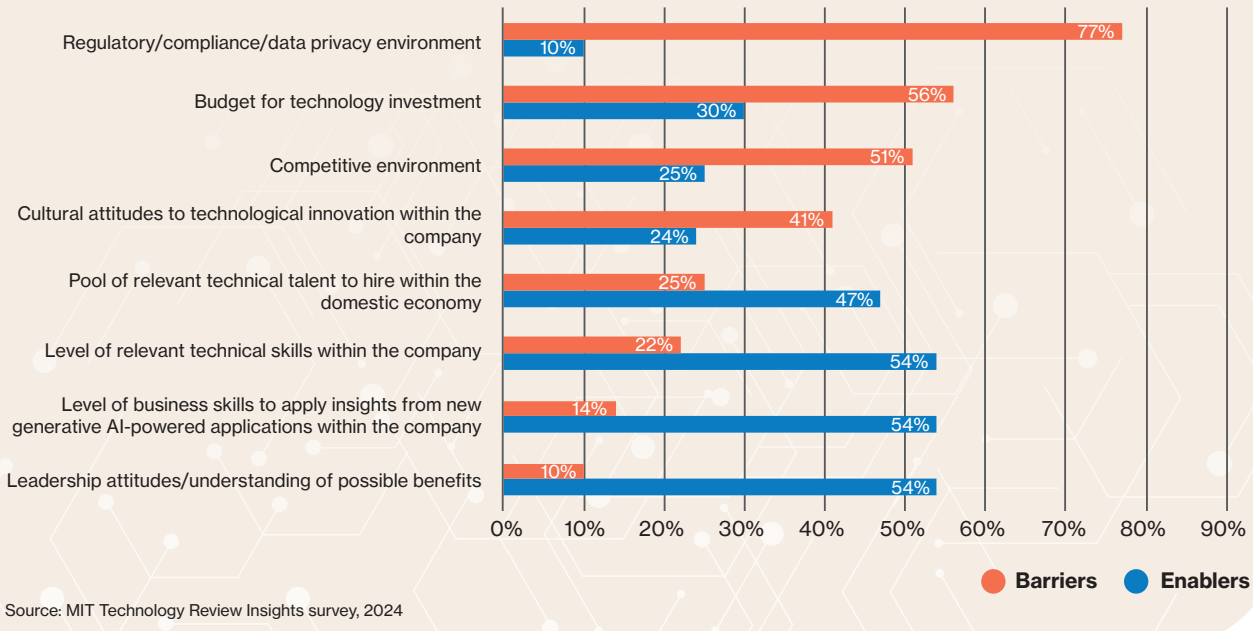
For UBS, risk and compliance are the biggest non-technological challenges for generative AI adoption. “Potentially, many risks come with this new technology that we need to ponder carefully,” says Nuti. These may be heightened versions of existing ones, such as data privacy, or entirely new dangers.

Rather than adopt and hope, companies must place risk governance at the center of the technology’s adoption, says Nuti. UBS’s generative AI governance process gives its risk department “full visibility, understanding, and the ability to control the risks of these new applications,” he adds.

Others use different but comprehensive approaches. Solar says many organizations are pursuing a cohesive combination of “implementing or endorsing a set of approved generative AI tools, establishing generative AI policies, and proactive employee upskilling.” She has also seen a new role – the “trust architect” – begin to appear. These professionals “stitch technology processes, business processes and siloed company systems together, to ensure that safe and responsible outcomes are supported throughout the system.”

## Figure 7: Non-IT barriers to rapid generative AI adoption

Which of the following are the three leading enablers/drivers of rapid adoption of generative AI at your company and which are the top three barriers?




Source: MIT Technology Review Insights survey, 2024

Dayle Stevens, data and AI executive at Telstra, argues these policies provide guardrails to develop and deploy AI responsibly and are non-negotiable. "AI possesses immense potential to deliver benefits but create a minefield of risks," says Stevens. "Robust checks and balances have to be included by design from the outset to ensure principles, based on human-centered values, are observed. As AI rapidly scales, we all must have a deep commitment to its ethical application, which should be anchored to goals such as privacy, security, contestability, transparency, and explainability."

The second most common barrier reported by respondents are budgetary constraints. The numerous technological challenges for generative AI adoption indicate that success may require substantial investment. This problem is compounded at firms that focus too much on cost when mulling spending decisions. "Look for business cases around growth, margin, cost reduction, and process efficiency, and then decide what you are prepared to spend to leverage generative AI," Schrage says. Unfortunately, he adds, this appears still to be a minority view.

## Early adopters see things differently

The third and fourth most frequently mentioned barriers to generative AI adoption (see Figure 7) are the competitive environment (cited by 51% of respondents) and cultural attitudes toward technological innovation (41%). Early adopters, however, see both factors as drivers of rapid adoption rather than impediments.

Almost half of early adopters (46%) call the competitive environment an enabler, while two in 10 call it a barrier (19%). For other respondents, the equivalent figures are 23% and 54%. Culture is another differentiator: 50% of the early adopters call culture a driver of rapid AI adoption and 31% say it is a barrier. Within the rest of the respondents, 22% say culture is a driver, and 42% call it a barrier.

Cultural reticence can undermine the benefits of generative AI adoption. Wong says some fashion designers trained in conventional design processes for years are reluctant to adopt the AiDA tool. Even though many appear excited about generative AI before it is deployed, they show concern when it becomes real, he says. They seem worried about losing their jobs.

Company culture is not immutable. Wong believes it is essential to educate users and executives in a way that "puts the focus on the interaction between human creativity and generative AI." They can then see that the technology assists rather than replaces them. Openness to building trust is also essential. "Many business leaders will start by making decisions that play safe in a window of normalcy," says an AI expert at a global IT consultancy. "When these initial pilot projects come up with good results, then trust will grow, and leaders will be more comfortable expanding their use cases."

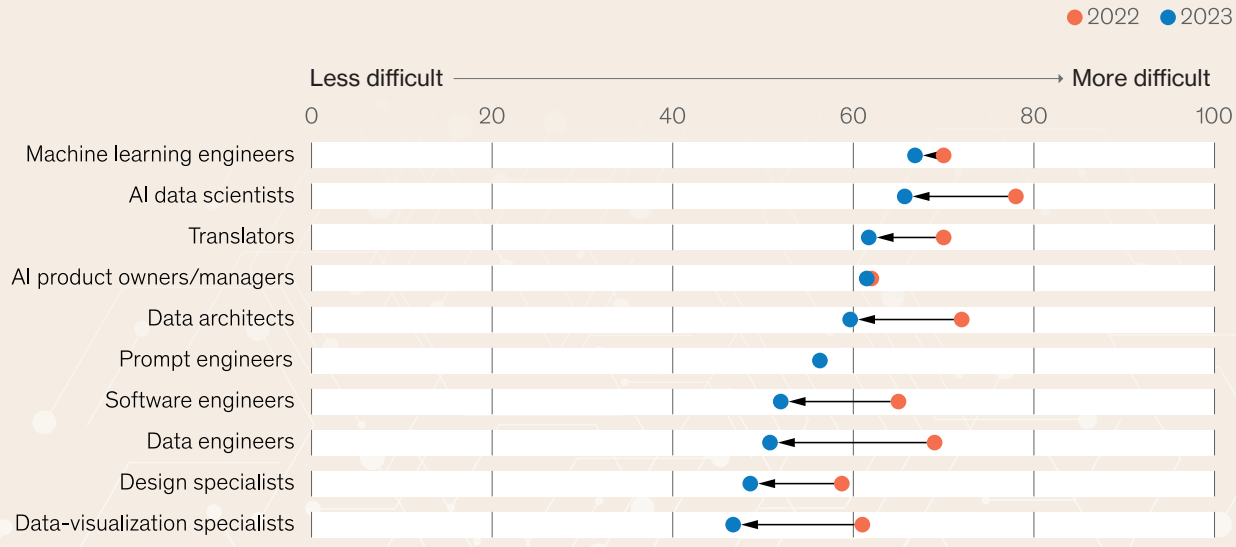
Early adopters and other surveyed executives also differ around talent. Non-early adopters are more optimistic: a minority (21%) of them say the skill levels within their workforce are a barrier to rapid adoption. A similar number (23%) say the same of skills within their domestic economies. Meanwhile, 31% of early adopters say skills within their own companies are a barrier, while 46% say the same of available external talent.

"As AI rapidly scales, we all must have a deep commitment to its ethical application, which should be anchored to goals such as privacy, security, contestability, transparency, and explainability."

**Dayle Stevens**, Executive – Data & AI, Telstra

## Figure 8: Shortage of AI talent

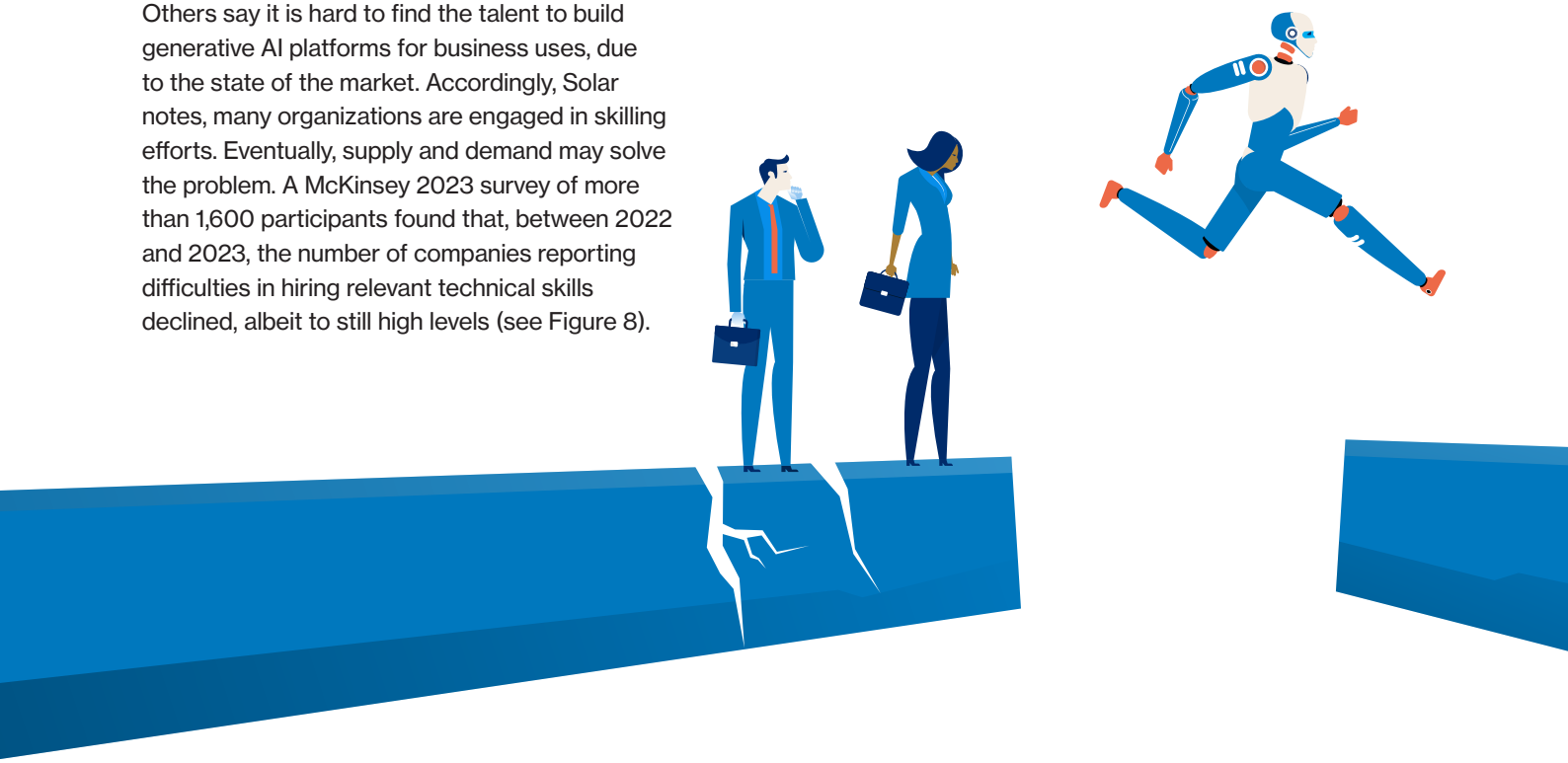
Share of respondents reporting difficulty in organizations' hiring of AI-related roles (%)



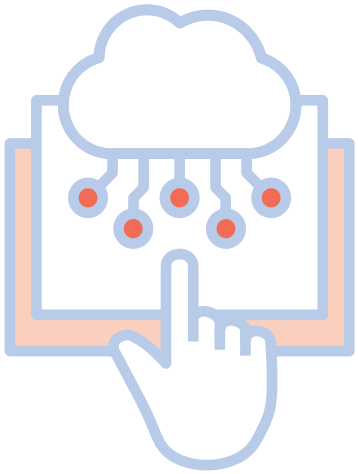

Source: Compiled by MIT Technology Review Insights from McKinsey & Company, 2024

Talent is a bottleneck for many firms wishing to build their own LLMs, says Liew. Nuti says, beyond IT skills, even those who use generative AI tools need the right knowledge and skillsets to understand its risks and potential pitfalls.

Others say it is hard to find the talent to build generative AI platforms for business uses, due to the state of the market. Accordingly, Solar notes, many organizations are engaged in skilling efforts. Eventually, supply and demand may solve the problem. A McKinsey 2023 survey of more than 1,600 participants found that, between 2022 and 2023, the number of companies reporting difficulties in hiring relevant technical skills declined, albeit to still high levels (see Figure 8).



# 06 Conclusion: Grand plans or unrealistic dreams



Generative AI is a technological advance of huge importance. It could irrevocably reshape key business operations and enable extensive innovation. Senior executives from various industries in this survey expect adoption of generative AI to cause substantial disruption. They primarily see the opportunity to secure competitive advantage as the technology becomes more pervasive and continues to mature.

Their actions, however, paint a less ambitious picture. Few companies rolled out generative AI widely in 2023. It is used most commonly for automation of low-value tasks, rather than for innovative use cases or reshaping business models. This only begins to tap its potential.

Polled executives appear to agree broadly that a wider rollout is coming. In every surveyed industry, the majority of respondents hope to explore or expand use of generative AI in customer relations, strategic analysis, and product innovation by the end of 2024. Specific sectors will likely embark upon wider adoption of generative AI in core areas, such as supply chain management for logistics and compliance at financial services firms.

Given the potential competitive value of generative AI, many companies are likely to pursue an aggressive adoption strategy. The question in 2024 is how many businesses are ready to deploy generative AI effectively. Survey responses indicate many are in danger of leaving themselves open to being disrupted rather than becoming disruptors.

# The question in 2024 is how many businesses are ready to deploy generative AI effectively. Survey responses indicate many are in danger of leaving themselves open to being disrupted rather than becoming disruptors.

The survey uncovered specific challenges companies should be mindful of as they seek the opportunities presented by generative AI.

**IT infrastructure:** Respondents, especially early adopters, have reservations about whether their companies' hardware can provide the backbone for generative AI platforms and tools. The choices are complex and require planning.

**Data:** Generative AI requires large volumes of high-quality, accessible data. A coherent strategy is essential. Firms that have not thoroughly digitalized both the front- and back-end of their businesses have another pressing reason to do so.

**Risk management:** Regulatory, compliance, data, and cybersecurity risks have multifaceted implications that create the biggest non-technological barrier to generative AI deployment. Any strategy to use the technology should be rooted in holistic risk governance structures.

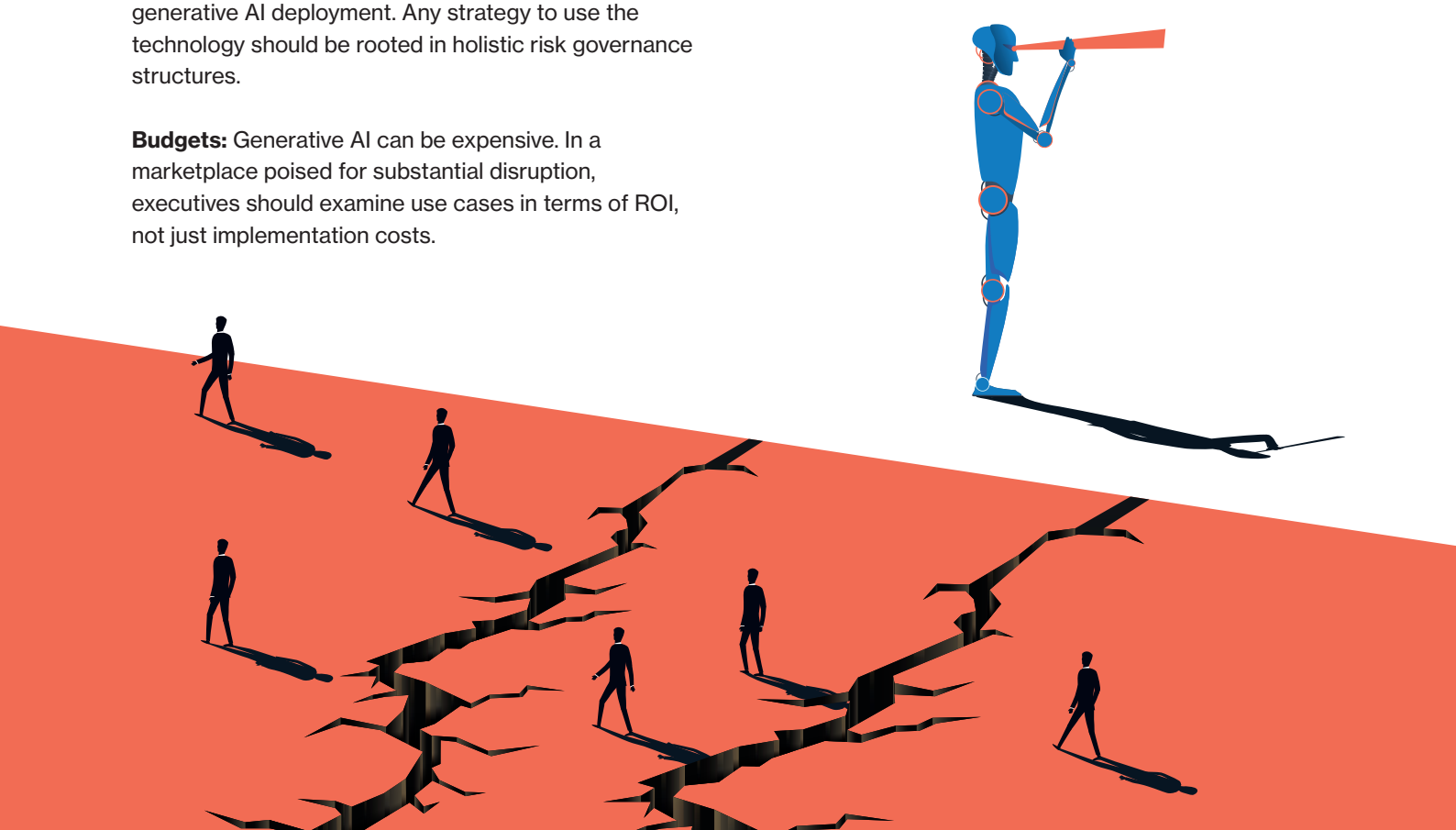
**Budgets:** Generative AI can be expensive. In a marketplace poised for substantial disruption, executives should examine use cases in terms of ROI, not just implementation costs.

**Competitive environment:** Generative AI for its own sake makes limited business sense. Early adopters have learned that companies need to deploy it specifically to improve competitive position.

**Culture:** Effective change management requires openness to innovation. Early adopters say it is also a key factor for rapid generative AI adoption.

**Skills:** The IT skills to run generative AI projects are in short supply. Those using generative AI-powered tools need to understand the risks, limitations, and potential benefits. Talent acquisitions and development will require investment.

Disruption can happen to any company. But bringing about that disruption requires the adoption of tools and attitudes in the new competitive environment that they are seeking to create.



**Endnotes**


1 This report focuses specifically on generative AI, one of the critical technologies that fall under the broader category of emergent AI. Gartner has highlighted emergent AI as one of four hype cycle themes to think about in 2023 and beyond (see "What's New in the 2023 Gartner Hype Cycle for Emerging Technologies," August 2023, https://www.gartner.com/en/articles/what-s-new-in-the-2023-gartner-hype-cycle-for-emerging-technologies).

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