The background of the image consists of numerous parallel, slightly curved lines of various colors, including shades of blue, purple, grey, and teal, creating a sense of depth and texture.

IBM Institute for  
Business Value

# The CEO's **Guide to Generative AI**

What you need to know and do to win  
with transformative technology

Second edition

**IBM**

The CEO's  
**Guide to  
Generative AI**

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with transformative technology

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## Foreword

# On the edge of reinvention

**Just how fast can an organization evolve?** Generative AI is pushing CEOs to find out.

When the pace of change accelerates to breakneck speeds, businesses begin to strain under the pressure. Bottlenecks cause back-ups. Organizational structures buckle. Growth engines stall.

In this environment, CEOs say business model innovation is the top challenge they must overcome.<sup>1</sup> For many, reinvention is the only option. To ensure their organizations will achieve operational excellence no matter how hard the winds of change blow, CEOs must be ready to rip faulty support structures down to the foundation and rebuild.

Gen AI can power this revolution. Over the next three years, executives say traditional and gen AI will support business and operating model innovation by providing access to additional data (88%), generating new insights from existing data (86%), expanding access to new markets (85%), and accelerating product and services development (84%).<sup>2</sup>

It will supercharge people and skyrocket productivity, shifting business from a labor-based model to one that is asset-enabled. It will also open up new markets by enabling workers to create high-value solutions that previously weren't feasible or affordable.

The key is selecting use cases that drive value—and not spreading the organization too thin. Rather than looking broadly at applications and opportunities, CEOs should ask how gen AI can help solve the company's biggest problems. The leaders that win the day will be the ones who stay aligned to their strategic plans and execute the fastest.

To see how executives are making the most of this rapidly evolving technology, the IBM Institute for Business Value (IBM IBV) interviewed more than 10,000 CEOs and other members of the C-suite globally in 2023 and 2024. We asked them where they expect gen AI to make the biggest impact, how they plan to invest, and what obstacles they will need to overcome along the way.

Our findings paint the future in an auspicious light. These insights highlight a multitude of new challenges, but also showcase strategies that can help CEOs capitalize on the gen AI moment.

This book combines IBM's decades of experience working with clients to apply AI and other technologies in meaningful ways with the results of our ongoing rapid-response research. IBM's long history of using technology to make the world work better puts us in a unique position to help executives make gen AI work FOR them, rather than becoming something that happens TO them.

Explore the following 22 chapters, packed full of potential applications and action items, to learn how gen AI can redefine your customer and employee engagement strategies, accelerate enterprise transformation with data-driven tech, and build resilient operations for a future defined by disruption and change.



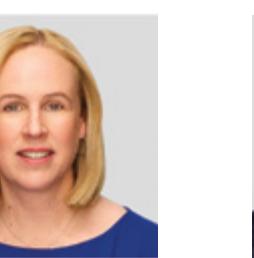
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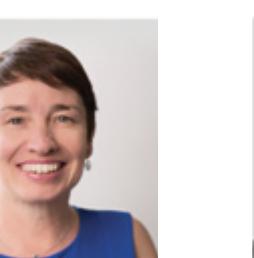
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## Section one

# AI-powered data and technology

Gone are the days when conversations about data and technology were relegated to the realm of IT. As generative AI makes it possible for companies to deliver the integrated experiences and hyper-personalized products and services customers demand, CEOs must understand how their technology is holding them back—and where their data could offer a competitive edge.

As companies rush to gain a gen AI advantage, CEOs must demystify data and technology to make the most of their finite tech spend. With the right intel, they can flow funds to the platforms, tools, and applications that offer the greatest growth potential and retire those delivering diminished returns.

CEOs who have a good understanding of what makes gen AI tick will be best positioned to answer tough questions from customers, regulators, and skeptics as the landscape evolves. If they can explain what data was used to train their gen AI models, how those outputs are used, and who is responsible for managing ethical issues, CEOs will be prepared to address the challenges that are sure to come. Find out how CEOs can develop the gen AI expertise they need in the following chapters.

**“How can we use generative AI?” is not the right question. It’s, ‘What use cases have we got that we need the most help with and what role could different areas of technology and data analytics play?”**

Bernie Hickman  
CEO, Legal & General Retail



“For me, it is all about the flow of data. People want information. How do we deliver that information to those customers in a way that’s meaningful for that individual?”

Paul Graham  
CEO and Managing Director, Australia Post

## Chapter 1

### Digital product engineering + generative AI

# Eliminate the guesswork in product development

**What do customers really want?** To crack that ever-changing cipher, digital product teams must sift through mountains of data, from market research and user surveys to device metrics, all while navigating complex code bases and enterprise architectures. It's a perpetual, painstaking process, and there's no guarantee they'll get it right. Even when market signals and metrics seem to point to a sure-fire win, products can inexplicably flop. Or a release flying under the radar can lead to an unexpected spike in adoption.

Generative AI helps businesses optimize the product development process—from streamlining ideation to rapidly testing and validating features—saving money and accelerating speed-to-market. At the same time, it frees humans to focus on solving complex engineering challenges and differentiating products through design, UX, and UI—the creative tasks that have the biggest impact on customer loyalty and satisfaction.

Gen AI can help digital product teams hit the mark more consistently by analyzing vast stores of data faster and more effectively than human teams ever could. Using machine learning algorithms to identify patterns and trends in customer behavior, gen AI can quickly uncover unmet needs, suggest dozens of features or new products that could fill a gap—and even validate these options against specific business criteria.

It also makes it possible to develop dynamic products and hyper-personalized experiences that can quickly adapt to shifting customer demands and rapidly validate changes with customers. Given these game-changing capabilities, it's not surprising that 86% of executives say gen AI is now a critical part of digital product design and development.

#### Research methodology

The statistics informing the insights in this chapter are sourced from a proprietary survey conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The survey queried 450 global digital product leaders in 15 industries on their AI adoption for digital products and its impact on metrics. It was conducted from December 2023 to February 2024.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Hyper-personalization

What to know

Generative AI helps products hit the high bar of hyper-personalization at scale.



What to do

Redesign product development to derive high-value product insights from every customer interaction.

## 2. Ideation

What to know

Teams using generative AI can conceptualize and evaluate new products in minutes—not days.



What to do

Build augmented teams to prepare for an influx of generative AI-infused workflows.

## 3. Design

What to know

Rapid code generation frees teams to double down on design.



What to do

Upskill product teams on experience and innovation.



**“The speed of innovation these days is mind-boggling. There almost isn’t a week when there aren’t two or three new developments in the enterprise.”**

Amit Bendov  
CEO and Co-founder, Gong

1. Hyper-personalization
2. Ideation
3. Design

What you need **to know**

## Generative AI helps products hit the high bar of hyper-personalization at scale.

Imagine a world where every product is tailored to a specific customer—where mobile devices, subscription services, and the Internet of Things work together to curate experiences for an audience of one. This is the world of hyper-personalization, and it’s no longer a distant dream.

As generative AI comes of age, executives expect it to pave the way for personalized experiences at a scale we’ve never seen. By analyzing every click, swipe, and interaction, gen AI can stitch together bespoke product experiences for every customer. But only 30% of organizations have been able to harness this power, tapping gen AI to quickly analyze and summarize customer feedback. Those leading the way have an early edge: They’re 86% more likely to be creating hyper-personalized experiences than their counterparts.

While only a quarter of organizations are using gen AI to create hyper-personalized digital product experiences today, that figure is expected to more than double to 64% by the end of 2024. Using gen AI in tandem with IoT could be a powerful way for companies to deliver true hyper-personalization at scale. IoT devices can feed torrents of data into AI models, which may be why executives say IoT will be a top digital product disruptor, after traditional and gen AI, over the next five years.

Looking ahead, 70% of executives expect gen AI to improve the personalization of their digital product portfolio. How far they go—and how fast they get there—will likely decide who gains a competitive edge. In the generative AI future, products will need to be functional and personal, adapting to meet every customer’s unique preferences, needs, and expectations, no matter how rapidly they change.

What you need **to do**

## Redesign product development to derive high-value product insights from every customer interaction.

Stop letting market trends catch you by surprise. Bypass the competition by cultivating proprietary data inputs and differentiating how you use generative AI. Continuously learn and generate the experiences, products, and content customers want—at exactly the right time.

**Think beyond cross-sell and upsell.** Capitalize on the UX/UI potential of hyper-personalization by using gen AI to create dynamic interfaces that adapt based on user behavior, preferences, and context. Customize everything—search results, product designs, and even pricing—to increase customer engagement and drive revenue.

**Invite customers to incorporate their data into product experiences on their own terms.** Let customers opt in to sharing their data and clearly communicate how it will be used and protected. Use gen AI to uncover hidden customer preferences and use predictive analytics to forecast what customers will want in the future.

**Tap into customer data to create hyper-personalized experiences.** Orchestrate disparate data, including from IoT devices, to enrich the user experience. Use gen AI to map your product priorities to data-driven customer pain points. Keep your product roadmap relevant and targeted by using gen AI to continually refine a backlog that will deliver the most business value.

1. Hyper-personalization

**2. Ideation**

3. Design

What you need **to know**

## Teams using generative AI can conceptualize and evaluate new products in minutes—not days.

Generative AI has turned the traditional product design process on its head. Gone are the days of endless brainstorming and exhausting pitch sessions. Today, gen AI can use large data sets to incubate ideas that have high market potential in seconds—freeing teams to validate with customers and focus on the best opportunities.

As this technology matures, two-thirds of executives anticipate that gen AI will inform—or even create—their product roadmap by 2026. Already, nearly one-third of organizations are using gen AI for digital product idea generation. Companies that have embraced this early use case delivered a 17% revenue premium for new products and 5% greater revenue from existing product enhancements in 2023.

But the revenue boost is just the beginning. Nine in 10 executives already using gen AI for product idea generation say it differentiates their company by helping it respond to market shifts faster. Going forward, they also believe gen AI will positively impact product differentiation (88%), product trust (83%), and product quality (80%).

Organizations already using gen AI for product idea generation are building the foundation needed to augment human work: 29% more are focused on building interdisciplinary teams and 39% more are focused on governance. But executives say the skills shortage is the top constraint that could hold digital product initiatives back.

While gen AI can create product ideas at lightning speed, it is humans who must review, validate, refine, and perfect them. This means people will be more important than ever as human-machine partnerships evolve.

What you need **to do**

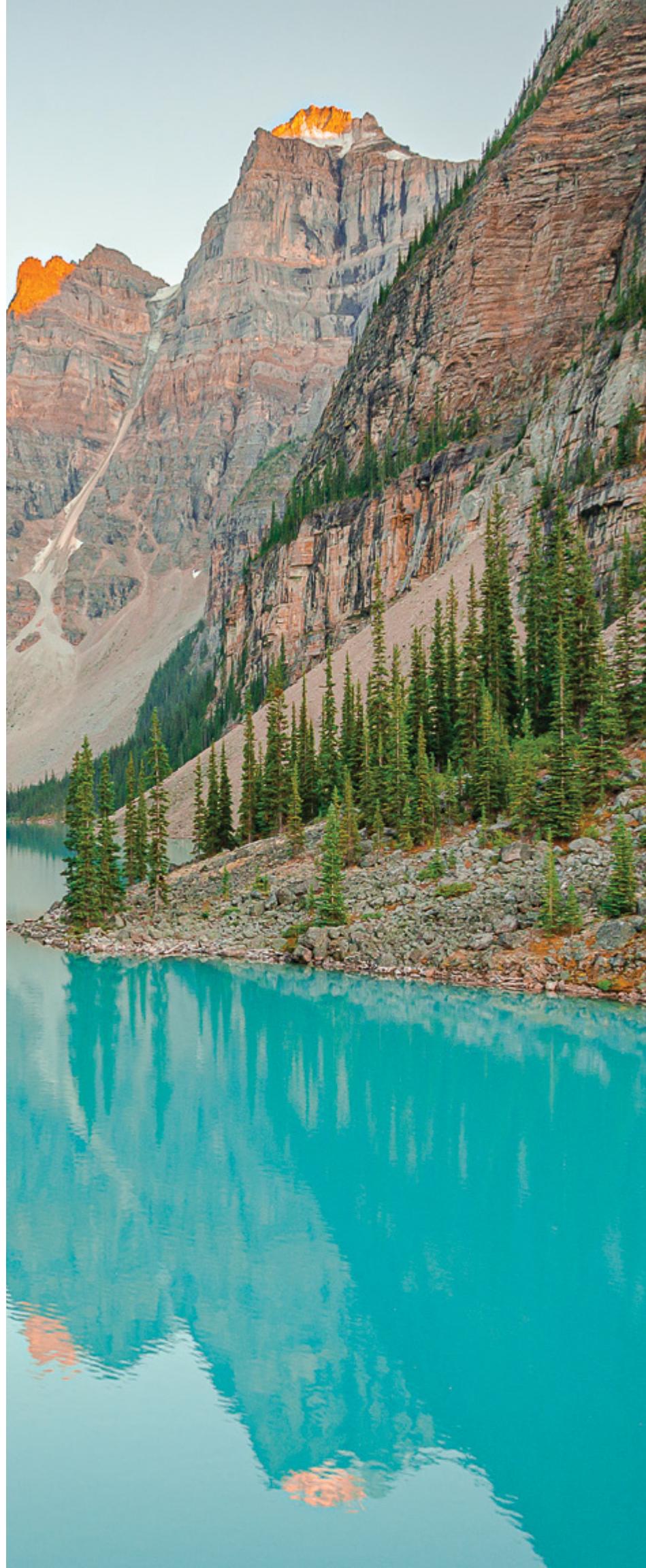
## Build augmented teams to prepare for an influx of generative AI-infused workflows.

Leverage gen AI to both ideate and rapidly validate a high volume of ideas with customers. Focus the product team's talent on reviewing, enhancing, and building out the ideas that seem most likely to succeed in the market.

**Treat generative AI as a team member.** Embed gen AI to create team workflows that are truly augmented. Define which inputs and outputs team members and gen AI assistants are responsible for, respectively. Ask gen AI to carry out discrete activities. Use it to analyze feedback, generate design options, cut development time, or reduce wasted effort.

**Reinvent the review process to lower costs and improve efficiency.** Implement an idea management system to track a high volume of AI-generated ideas, patterns, and trends, including KPIs that help predict success. Streamline the process of generation, evaluation, and implementation of ideas.

**Augment repetitive tasks to drive down testing costs as the pace of innovation increases.** Generate and execute test cases based on code and product requirements to reduce the likelihood of bugs and defects in rapidly evolving digital products.

What you need **to know**

## Rapid code generation frees teams to double down on design.

Consumer expectations are evolving at breakneck speeds—and product teams are racing to keep up. Tapping gen AI for rapid code generation can help them roll out prototypes faster without sacrificing the quality and design that customers demand.

How does it work? Gen AI speeds up the coding process, letting teams test and iterate faster to increase their speed-to-market—if development teams know how to use it responsibly. With the right training, governance, and adoption incentives, gen AI can help teams move faster while managing risk, freeing up resources to focus on the creative aspects of UX and UI design.

Today, 87% of executives say their organizations sink at least a fair amount of effort into testing code, while 83% say the same for developing new features quickly in short release cycles. And they're eager to relieve themselves of this burden.

More than six in 10 leaders plan to use gen AI for code generation in their digital products by 2025, rising to more than nine in 10 by 2026. But there's a real benefit in starting early. Only a quarter of organizations have implemented gen AI for digital product code generation so far, but these pioneers are already seeing real results.

They're 35% more likely to outperform their peers in revenue growth and 48% more likely to say their teams dedicate significant effort to UX and UI design—focus areas that do more to differentiate them from the competition. What's more, only 30% of executives at organizations already using gen AI for code generation say UX and UI design is a challenge, compared to 45% of those that plan to do so by 2026.

What you need **to do**

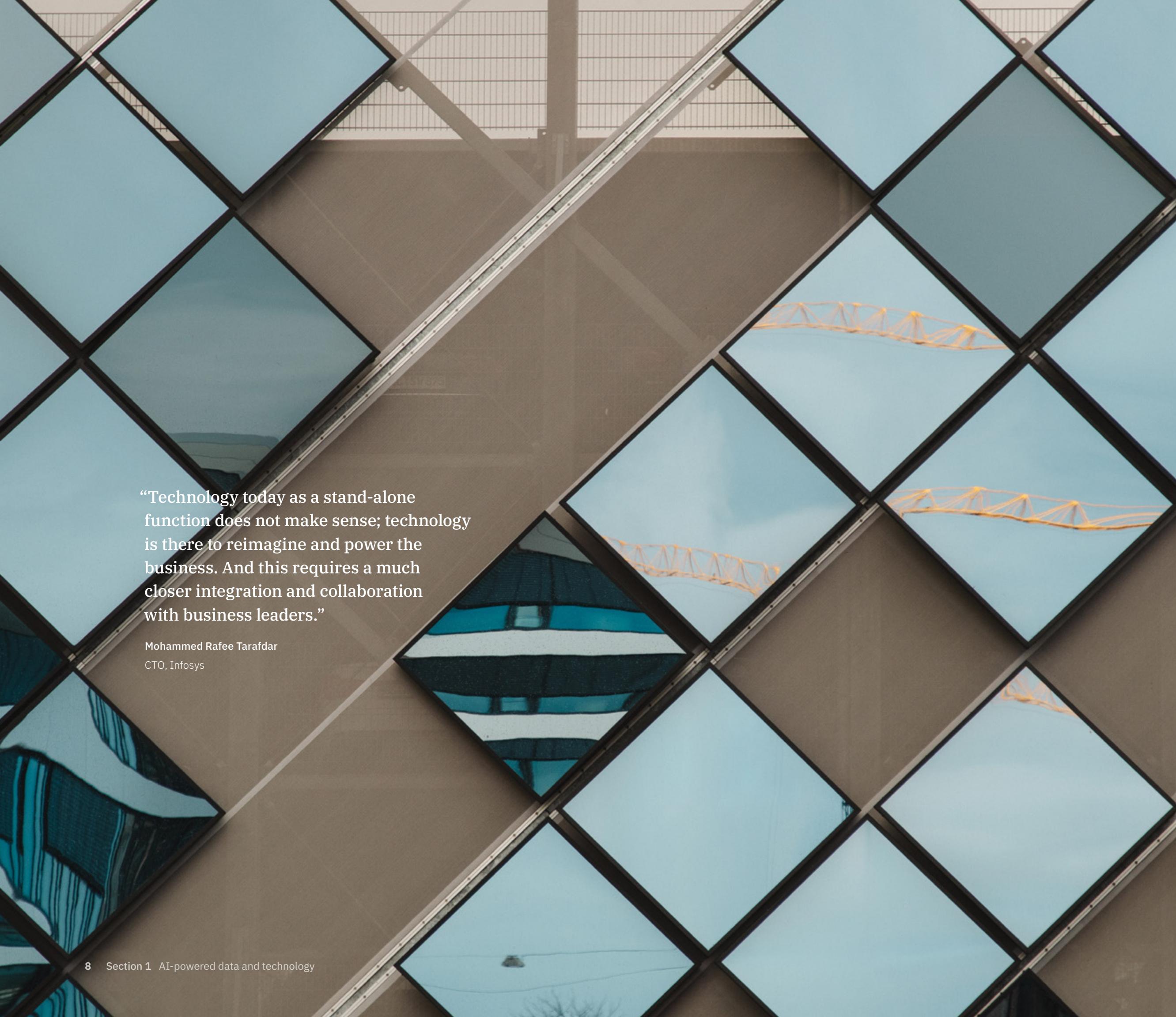
## Upskill product teams on experience and innovation.

Identify obvious time and money drains in the build and test cycle that can be powered by generative AI. Redistribute these resources in a way that supports the development of better UX/UI and more innovative products.

**Liberate developers and designers from traditional skill limitations.** Encourage teams to experiment with new training models that will boost their gen AI acumen so they can use it creatively. Allocate dedicated research and development days and sponsor hackathons to give teams opportunities to enhance their skills.

**Offer more training on creativity and customer context.** Advocate for all team members to gain domain expertise in experience design. Encourage collaboration within cross-functional teams to enable strategic innovation. Provide opportunities for experimentation without fear of failure.

**Expand the role of testers into user research.** Reskill quality assurance testers to support higher-value activities, such as concept validation and usability testing with customers.



**“Technology today as a stand-alone function does not make sense; technology is there to reimagine and power the business. And this requires a much closer integration and collaboration with business leaders.”**

Mohammed Rafee Tarafdar  
CTO, Infosys

## IT automation + generative AI

# Outdated technology is dragging you down

**Technical debt is back in the spotlight.** It erodes profitability, drains resources, inhibits growth, and stifles creativity. It's an albatross CEOs carry, impeding their push to accelerate transformation with generative AI.

As a result, many CEOs find themselves mortgaging the future to survive in the present. In fact, the 2024 IBM IBV CEO study found that two-thirds of CEOs say they're meeting short-term targets by reallocating resources from longer-term initiatives.<sup>3</sup>

There is a better way. CEOs can have their cake and eat it too. But how?

It starts by changing how we think about IT spending. Rather than viewing IT as a cost center—an expense businesses must eat to keep the lights on—we need to rethink how technology can better boost ROI. That means automating more than simple tasks that offer quick productivity boosts. Instead, leaders must assess entire IT workflows, looking for ways to improve processes with a combination of automation and augmentation.

It's a big mindset shift. Today, a typical organization spends just 23% of its tech budget to drive revenue, according to recent IBM IBV research.<sup>4</sup> But generative AI changes the equation. Three-fourths of IT executives say the value created from gen AI will be reallocated to new investments that drive business innovation and growth.

This is why CEOs shouldn't view tech upgrades as a series of isolated IT costs. They need to connect IT automation to business strategies that will drive improved performance. And then invest accordingly. By deliberately upgrading their IT estate with business priorities in mind—applying what we call hybrid-by-design principles to IT programs—IBM analysis suggests that organizations can increase ROI three-fold over five years.<sup>5</sup>

Research methodology  
The statistics informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 207 US-based executives in 25 industries about generative AI and IT automation in May and June 2024. The second surveyed 2,000 global executives in 10 industries about AI and automation more broadly from April to July 2023. The third surveyed 216 US-based executives in 17 industries about generative AI and application modernization in July 2023.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Innovation

What to know  
IT automation is the launchpad for business innovation.



What to do  
Break away from the “break-fix” model.

## 2. Transformation

What to know  
Anyone can become a generative AI genius.



What to do  
Make tech less techy.

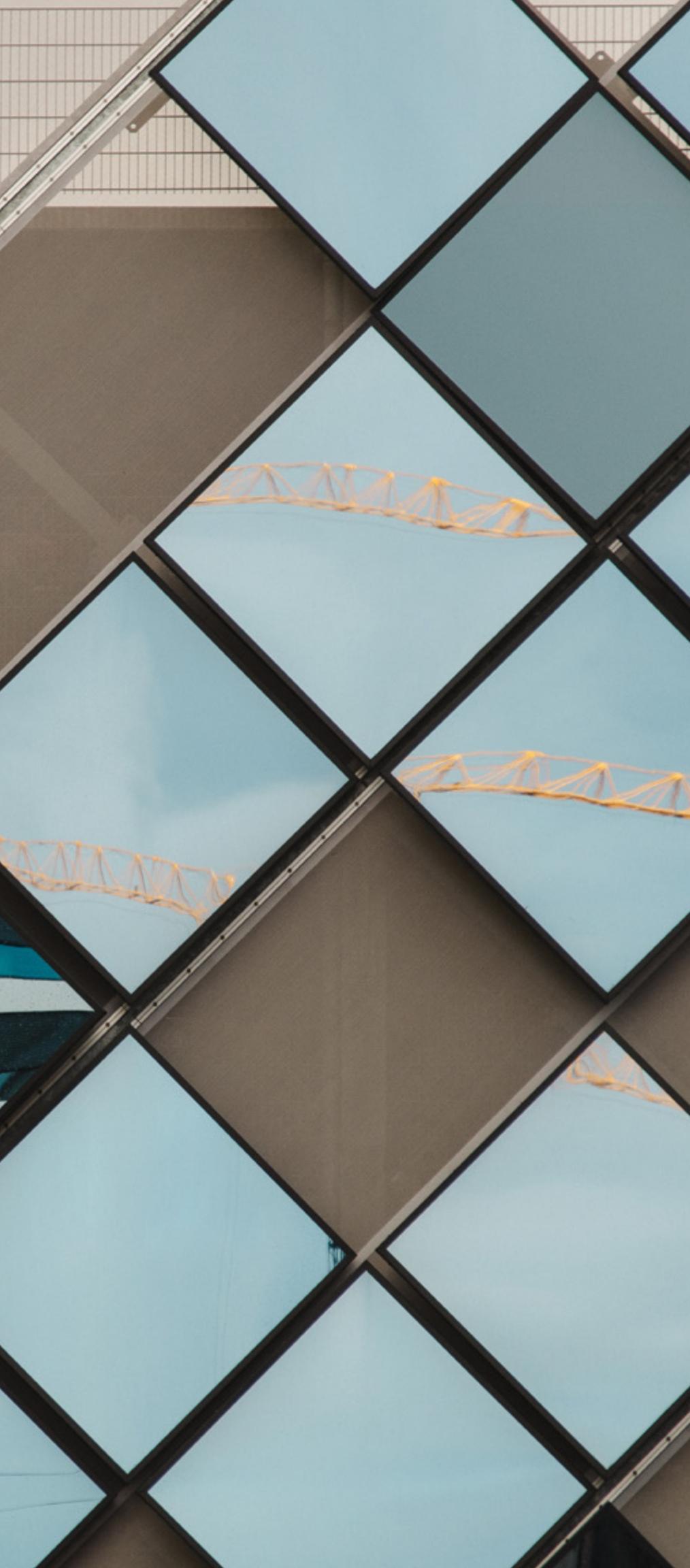
## 3. Prediction

What to know  
Generative AI automation makes IT clairvoyant.  
  
What to do  
Conquer complexity with intelligent visibility.

**“Our objective is not to reduce workforce. We just want to let people spend their time more productively and more creatively, so that they can also be happier.”**

Hiroshi Okuyama

Director and Member of the Board, Chief Digital Officer, Yanmar Holdings Co., Ltd.



## Chapter 2: IT Automation

1. Innovation
2. Transformation
3. Prediction

What you need **to know**

### IT automation is the launchpad for business innovation.

Generative AI streamlines the work IT does every day, from software deployment to network configuration to capacity management. These tasks are essential to keep operations running smoothly—but they rarely boost the bottom line.

When IT automation liberates teams from the day-to-day drudgery of maintenance and support, they’re freed to envision a future built on new transformative technologies—including, of course, generative AI. Gen AI also fuels their creative fire, sparking ideas for new digital products and revenue streams. And most companies have hit the ground running.

Today, 62% of IT executives say their organizations are using gen AI for code generation—and that figure will jump to 87% by 2026. 65% of tech leaders expect gen AI solutions to automatically resolve IT issues with little to no human intervention. And 82% of IT executives expect generative AI to improve DevSecOps, the automated workflows that incorporate security practices throughout the development lifecycle, over the next two years.

Organizations that see automation as essential to fast-track gen AI capabilities are already gaining an edge. They outperform in workforce agility, profitability and efficiency, innovation, and revenue growth—demonstrating how AI-powered automation can transform IT into a business incubator and foster an entrepreneurial culture.

By giving everyone access to generative AI tools and expertise, IT democratizes innovation, empowering employees to develop their own ideas to unlock business value—and predict which are most likely to succeed.

Gen AI not only drives growth but also attracts and retains top talent, who are drawn to organizations that prioritize creativity and autonomy. And if IT leaders funnel this curiosity into a shared, collaborative platform, they can feed a vibrant innovation pipeline that can help the organization meet ambitious growth targets quarter after quarter.

What you need **to do**

### Break away from the “break-fix” model.

CEOs need to focus on modernizing all aspects of the IT estate to enable greater automation. Empower teams to move beyond fixing what’s broken to focus on more strategic work. Ensure that IT systems are aligned with strategic business goals and specific operational and financial metrics.

**Automate to make hard work easier.** Identify the systems, applications, and data flows that must be integrated to streamline and automate work. Give IT teams access to a generative AI platform and tools they can use to quickly create the code and APIs needed to connect disparate systems. Encourage teams to identify new ways to automate and augment routine tasks.

**Get more out of every IT automation dollar.** Align tech spend with business objectives—and fast track initiatives that accelerate performance improvement. Go beyond finding efficiencies to invest in tech that will create new revenue streams and promote rapid growth.

**Measure what matters.** Establish a feedback loop to continually monitor and improve gen AI model performance. Look past traditional IT metrics, such as uptime and downtime, to gauge success. Instead, tie automation efforts to business-centric metrics, such as user satisfaction, revenue growth, and speed-to-market.

What you need **to know**

## Anyone can become a generative AI genius.

Employees don't need to be IT experts to transform business with technology. But they do need IT experts to provide the tools and platforms that put the power of gen AI automation at their fingertips.

If IT provides the right low-code and no-code platforms, anyone can create or modernize web and mobile apps—a process that, until recently, required a team of developers. At the same time, gen AI code assistants let developers quickly translate code from one language to another, reducing the need for some hard-to-find technical skills.

While IT must be the catalyst of this transformation, the benefits will extend across the business: 81% of executives say gen AI will fundamentally change how people do their jobs. And IT executives are up for the challenge, with 70% saying their organizations will design AI systems to seamlessly collaborate with humans by 2026.

To produce the best results, they'll need to bring employees along for the ride. Technology can be intimidating for non-technical teams, but training and reskilling can demystify gen AI and encourage people to try something new. And providing this support is more important than ever. In 2024, global CEOs said 35% of their workforce would require retraining and reskilling over the next three years—up from just 6% in 2021.<sup>6</sup>

For years we've been saying that IT needs to work more closely with the business—and the business needs to work more closely with IT. Gen AI could finally make this a reality: 68% of executives say it will bridge the gap between IT and the business. By providing a shared canvas for collaboration, gen AI helps IT develop a deeper understanding of business problems and business teams harness the full power of technical solutions.

What you need **to do**

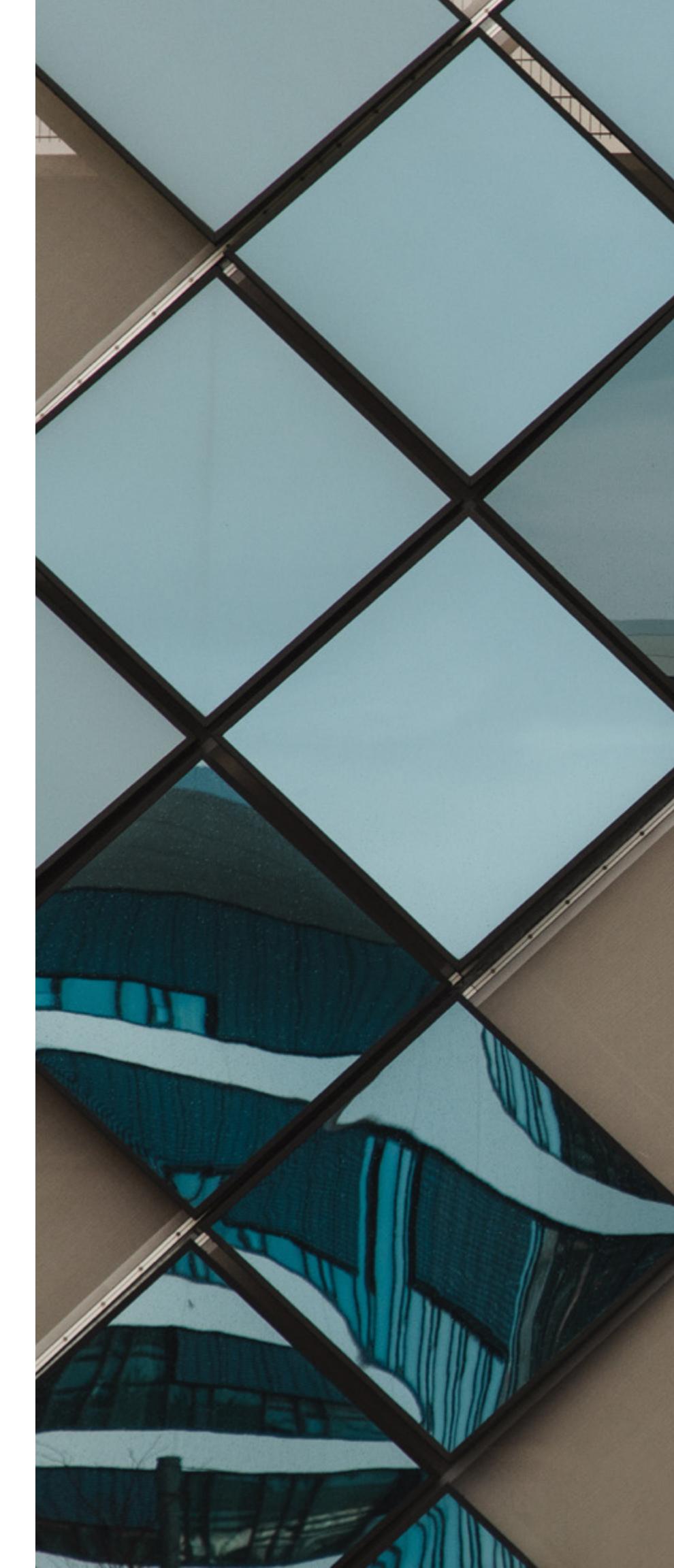
## Make tech less techy.

Embed IT in the boardroom. Make technology and automation central to every business strategy—and challenge leaders to connect performance metrics to the systems, platforms, and tools that enable their success.

**Assemble multi-disciplinary dream teams.** Build squads of people with diverse skills and backgrounds, including data scientists, engineers, domain experts, and business stakeholders, to collaborate on gen AI projects. Organize workshops, hackathons, and other competitions that spur innovative thinking and knowledge sharing.

**Empower DIY developers to get creative with automation.** Evaluate and select a low-code or no-code platform that aligns with the enterprise's technology stack and gen AI platform. Establish guidelines for data management, security, and compliance—then push people to explore what they're capable of.

**Challenge cultural norms and let digital natives drive change.** Flatten hierarchical decision-making to give younger team members a stronger voice. Launch reverse mentorship programs that pair people just entering the workforce with senior leaders. Give them space to ask why. And why not.



What you need **to know**

## Generative AI automation makes IT clairvoyant.

AI systems already help IT teams accurately predict and prevent system failures and bottlenecks. But with gen AI, businesses see even farther into the future.

By deploying gen AI and AIOps in tandem, teams gain intelligence that lets them anticipate and prepare for scenarios that might otherwise catch them by surprise. For instance, by automatically identifying and mapping relationships across the IT estate—a process known as topology discovery—teams can quickly spot dependencies between different systems and components.

This process reveals how problems in one area can cascade across the business—and lets IT limit the domino effect. It also makes it easier to optimize network performance, strengthen security, and keep teams across the organization in lockstep.

IT leaders can also use gen AI to supercharge simulations. Gen AI-enabled digital twins can model multiple dimensions simultaneously, letting teams test response strategies more effectively. Rather than wondering how well their plans will work, they can see them in action.

Gen AI also helps IT more confidently estimate the business value of different IT automation investments. Today, 57% of IT executives are already using generative AI to predict outcomes, efficiency gains, and ROI in IT and network automation initiatives—and this figure will grow to 75% by 2026. This level of visibility can help manage the cost side of the equation, as well: 76% of IT executives say they will use gen AI to enhance FinOps practices for more precise control of cloud costs.

What you need **to do**

## Conquer complexity with intelligent visibility.

Use gen AI-enabled digital twins to model the effects of specific disruptions across the enterprise and the ecosystem. Improve ROI with more accurate estimates of how much investments in technology and automation will cost—and how much value they will deliver.

**Hunt for treasure across your IT estate.** Provide operations visibility into applications and infrastructure by using gen AI to uncover the relationships that are key to building resilience and driving growth. Discover hidden riches by modeling different improvements—and investing in the IT automation solutions that promise the best returns.

**Head off hazards at the pass.** Get out in front of risks by automating the process of predicting how different scenarios could influence complex systems. Use gen AI to simulate potential outcomes and validate crisis response plans, then forge confidently into unexplored frontiers.

**Right-size technology spend with IT automation—then right-size your team.** Broaden FinOps capabilities to provide visibility into costs and spending across all AI, hybrid cloud, and application modernization investments. Optimize, automate, and augment IT operations to avoid the financial and environmental costs of overprovisioning. Realign your tech team to shed expensive talent that you no longer need.



“We have more than 40 proprietary AI models that we train and fine-tune for revenue teams with our customer interaction data. The results are more accurate and meaningful.”

Amit Bendov  
CEO and Co-founder, Gong

## Chapter 3

### AI model optimization + generative AI

# There's a gen AI model for that

**ChatGPT made everyone feel like an AI expert.** But its simplicity is deceptive. It masks the complexity of the generative AI landscape that CEOs must consider when building their AI model portfolio.

Gen AI models come in many flavors. What they can do, how well they work—and how much they cost—varies widely. Who owns the model, how it was developed, and the size of its training dataset are just a few of the variables that influence when and how different models should be used.

With the massive amount of data and resources it takes to train a single large language model (LLM), the question of size is monopolizing many conversations about gen AI. As a result, many CEOs wonder whether they should scale large gen AI models for their business. Or if they should develop smaller, niche models for specific purposes.

The answer is, they need to do both. And many already are. A typical organization uses 11 gen AI models today—and expects to grow its model portfolio by ~50% within three years.

Why so many? Because every use case comes with its own requirements and constraints. And different business problems demand different types of models.

For example, tasks that are highly specialized, such as image editing or data analysis, need gen AI models that are trained on smaller, niche datasets. Work that is sensitive or proprietary requires gen AI models that can be kept confidential—and close to the vest. More general tasks, such as text generation, may call for gen AI models trained on the largest datasets possible.

While CEOs should have teams that understand all the details about what sets different models apart, you do need to know that picking the right model for each task—each application of generative AI—matters. Knowing what drives cost, environmental impact, and business value will help you optimize the performance of your AI portfolio—and give your teams the tools they need to beat the competition.

#### Research methodology

The statistics informing the insights in this chapter are sourced from a proprietary survey conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The survey queried 200 US-based executives across 15 industries on their perspectives regarding AI model optimization in June 2024.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Agility

What to know

There's no such thing as an all-purpose generative AI model.



What to do

Give some teams the sledgehammer—and others the scalpel.

## 2. Cost

What to know

Generative AI costs are completely in your control.



What to do

Find your own generative AI sweet spot.

## 3. Competitiveness

What to know

Generative AI advantage is fleeting.



What to do

Make your models work harder.

**"It used to be that people didn't ask a lot about what models were you using, what types of AI techniques, what is your data source. Now executives are asking these questions, as they should, because these do impact their business."**

Nicole Eagan

Chief Strategy and AI Officer, Darktrace



Chapter 3: AI model optimization

### 1. Agility

2. Cost

3. Competitiveness

What you need **to know**

### There's no such thing as an all-purpose generative AI model.

Generative AI helps organizations move faster with precision and agility—if they use the right model, running in the right environment, for the right purpose.

Size is one of the first factors leaders consider when deciding which gen AI model to use for which workflow.<sup>7</sup> Large models offer greater breadth and depth of expertise and can handle more complex tasks—but they come with a higher price tag and larger carbon footprint. Smaller niche models can perform more precisely, quickly, and efficiently when trained to do specialized work, such as translating code or content into a specific language.

Model ownership is another crucial consideration. While public, commercial gen AI models are popular—making up about half of the average organization's AI portfolio—they have their limitations. Because they're available for any organization to purchase or license, they can't do much to drive competitive differentiation. Public models can help teams work faster and more efficiently but they don't offer the privacy or control businesses need to tackle mission-critical tasks.

This is where companies' proprietary gen AI models come in. Because they're developed, owned, and controlled by the organizations that use them, leaders can dictate what data will inform their outputs. This reduces the chance work products will be polluted by bad intel. They also give tech leaders more control over where and how data is stored and used. This is a crucial capability, as misuse, privacy, and accuracy are executives' top concerns when selecting a gen AI model.

Open gen AI models, which are built transparently with the help of open-source developer communities and can be large or small, also address these concerns. Gen AI model adoption is set to surge over the next three years, with open models leading the way. On average, executives expect their AI model portfolios to include 63% more open models than they use today, with the need for flexibility, transparency, and customization driving this growth.

What you need **to do**

### Give some teams the sledgehammer—and others the scalpel.

Assess your portfolio of foundation models and determine how they align with strategic workflows. Invest in large gen AI models to boost productivity and tap niche models for more targeted tasks.

**See the full gen AI spectrum.** Understand what distinguishes different types of generative AI models, including LLMs, a company's custom-developed proprietary models, open models, and more. Be prepared to invest in different models for different purposes.

**Map the AI terrain.** Ask your AI leaders to create a comprehensive catalog of all gen AI models used across the organization, including their purpose, functionality, and performance metrics. Ensure the inventory is regularly updated to reflect changes in the AI landscape.

**Find perfect pairings.** Be sure your teams are appropriately matching gen AI models with the right workflows based on their strengths, weaknesses, and quirks. Identify where gaps exist—but don't use a set of encyclopedias when one dictionary will do.

1. Agility
- 2. Cost**
3. Competitiveness

What you need **to know**

## Generative AI costs are completely in your control.

CEOs know they need gen AI—but at what cost? When executives consider barriers to adoption, 63% cite model cost and 58% cite model complexity as their top concerns.

Why is cost such an important consideration? Because it can vary widely depending on the model being used. For example, larger models come with more data storage and compute costs—which can result in higher cloud-related bills. Large models also require more frequent updates, fine-tuning, and maintenance, which come with talent costs.

On the other hand, niche models have lower compute, data storage, and energy costs—and reduce the environmental impact of an organization's AI portfolio. They can also be deployed faster and require less upkeep, which keeps people costs low.

As technology matures, niche models will become more proficient at handling a broader set of tasks, giving organizations a chance to get granular with cost management. By using models that are “fit-for-purpose,” meaning they’ve been designed, trained, and validated to meet specific requirements and objectives, teams can use only the resources they need for each task. And if companies use large models to train more focused niche models, they can make model development more cost-efficient.

In the near future, leaders may be able to improve cost management by using an enterprise gen AI control center to streamline decisions about which model should be used for which task. Adding a user-friendly experience layer that connects models, assistants, and prompts across the portfolio could let leaders bake in cost controls—as well as security, privacy, and compliance guardrails—to help ensure models are being used appropriately and efficiently by every employee, every time.



What you need **to do**

## Find your own generative AI sweet spot.

Discover the value of versatility. Right-size the gen AI models you use for each task to control costs and boost overall AI ROI.

**Cultivate a model-agnostic mindset.** Remain agile to adopt the models that have been optimized for price and performance, striking the right balance between accuracy, resource usage, and speed.

**Engineer for efficiency.** Tailor model scope to the deployment environment, favoring faster niche models for mobile and real-time applications and larger models for high-accuracy, complex tasks.

**Cut the fat.** Establish clear performance metrics and benchmarks for each gen AI deployment. Use data-driven insights to see where gen AI is delivering the intended value—and where costs need to be reined in.

What you need **to know**

## Generative AI advantage is fleeting.

The competitive edge that generative AI delivers today will be table stakes tomorrow. As teams gain more gen AI experience—and the models themselves get smarter—CEOs must prioritize continuous improvement.

Organizations that commit to ongoing optimization can expect a notable performance boost. According to our research, organizations that use either fine-tuning or prompt engineering techniques report model outputs that are roughly 25% more accurate than others. Greater accuracy drives better forecasting, resource allocation, and personalization—all of which can boost the bottom line.

And yet, only 42% of executives say they always use prompt engineering, the process of designing inputs that will deliver the desired outputs, to enhance model accuracy.

Organizations also need clear processes for tracking model performance metrics, dealing with drift—where the accuracy of a model degrades over time—and correcting for bias in model outputs. This is all on top of the work teams must do to stay in line with rapidly changing regulations.

Organizations must also continually improve their AI infrastructure—their hybrid cloud strategies—to adopt more powerful AI models. As both data volumes and model complexity increase, tech infrastructure must be able to handle the heavier load—and as more teams use gen AI, organizations need to evolve their infrastructure or cloud environment to meet increased demand.

What does this look like? Today, at least half of organizations are focused on optimizing network infrastructure, accelerating data processing, or distributed computing. Overall, 63% of executives say their organizations are using at least one infrastructure optimization technique.

What you need **to do**

## Make your models work harder.

Don’t be satisfied with early successes. Continually push teams to aggressively improve model performance and outpace the competition by using the latest AI techniques and infrastructure.

**Raise the gen AI bar.** Add enterprise data into pre-existing gen AI models—in a private cloud or on-prem environment—to create value that is unique to your organization. Use fine-tuning, prompt engineering, and other optimization techniques to stay three steps ahead of the competition.

**Future-proof your AI infrastructure.** Invest in cloud-based services or specialized hardware, as well as open frameworks, so you can capitalize on continual AI-driven disruption.

**Don’t get sidelined.** Advance gen AI faster than your peers by establishing a clear governance framework. Question assumptions about your regulatory preparedness and become your own toughest critic.



“As AI develops, there will be three types of people: those who create AI, those who use AI, and those who are used by AI.”

Kazuhiro Nishiyama

President, Kansai Mirai Bank, Limited

## Chapter 4

### Cost of compute + generative AI

# Catalyze cost of compute

Cost of compute may seem like an IT concern—and as recently as 24 months ago it would have been. But generative AI is elevating it to the C-suite. That's because, left unchecked, the massive computing resources required to power gen AI can quickly lead to a corresponding surge in unexpected costs that, in turn, might jeopardize innovation and business transformation.

By understanding what drives the computing costs of gen AI, CEOs can make more informed investment decisions, setting strategic priorities that make innovation and transformation more cost-efficient.

For instance, enterprises must make significant capital expenditures or operational investments to ensure they have the dedicated cloud capacity gen AI demands. But compute capabilities and servers are only part of the equation. There's also storage, data centers, and networking equipment and services to consider—as well as all the energy it takes to power gen AI systems.

When added together, these unexpected costs can send budgets skyrocketing. The CEOs that best manage these costs will be able to run their business like a high-performance machine—reducing drag while using the latest technology to outpace the competition. In this way, cost of compute can offer a competitive advantage. While other organizations struggle to fit gen AI into their budget, those that wrangle costs effectively can overcome financial obstacles and leapfrog into the future.

#### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value and Oxford Economics. The first surveyed 207 US-based executives across 16 industries regarding their perspectives on cost of compute and generative AI in June and July 2024. The second surveyed 1,110 global executives in 19 industries regarding sustainable IT practices from December 2023 through April 2024.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Scaling

What to know

Costs can derail your best-laid generative AI plans.



What to do

Get a grip on your cost of compute.

## 2. Hybrid cloud

What to know

Hybrid by design makes scaling generative AI affordable.



What to do

Forge a united front with generative AI and hybrid cloud.

## 3. Optimization

What to know

Generative AI stretches your computing budget.



What to do

Move lightning-fast at a lower cost.



**“There’s no safe space in the corporate world where you can just hang out and enjoy your winnings from the past. You’ve got to always be driving forward to the next horizon.”**

Bill Anderson  
CEO, Bayer AG

### 1. Scaling

2. Hybrid cloud
3. Optimization

What you need **to know**

### Costs can derail your best-laid generative AI plans.

Generative AI is shifting computing costs into high gear. Overall, the average cost of compute is expected to climb 89% between 2023 and 2025—and 70% of executives say generative AI is playing a key part in driving this increase.

As a result, many organizations are pulling back on the throttle. Every single executive we surveyed said their organization has cancelled or postponed at least one gen AI initiative due to cost of compute concerns. On average, 15% of projects have been put on hold and 21% of gen AI initiatives have failed to scale for this reason.

While many gen AI activities contribute to cost of compute—from training and fine-tuning models to storing data and powering processing—most of these will be channeled through cloud computing. Cloud costs associated with deploying gen AI are now twice as high as the cost of the models themselves—and this gap is widening as clouds become the engine rooms where gen AI is built and run. It’s a catch 22: without the proper oversight, the cloud services required to scale generative AI can become the top cost barrier to scalability.

To break out of this paradox, CEOs must set clear cost objectives for gen AI programs, establish a cost governance framework, find ways to collaborate with partners to reduce costs, and invest in more efficient architectures that can help optimize costs.

Using a hybrid cloud platform that includes a common control plane and FinOps capabilities gives leaders the visibility they need to run data, workloads, and applications in the lowest-cost environments. However, despite this potential, only 26% of organizations are currently leveraging cloud platforms and container orchestration technologies to a great extent to reduce their cost of compute.

What you need **to do**

### Get a grip on your cost of compute.

Pinpoint the factors driving up generative AI expenses—and stay ahead of the curve as your projects scale. Set clear cost guardrails and assess compute needs as early as possible in project planning to avoid expensive surprises down the line.

**Identify cost catalysts.** Understand how different elements influence gen AI costs—including hardware, cloud services, model selection and training, data collection and cleaning, integration, and maintenance—and how these drivers can change as you move from pilots to projects at scale. Set clear cost control parameters to guide every gen AI decision and give your teams the tools they need to assess, monitor, and manage the cost of compute implications of gen AI at every stage.

**Recalibrate your computing resources.** Conduct a full lifecycle cost assessment to preempt and anticipate compute needs. Invest in more cost-efficient infrastructure, fit-for-purpose models, and workload optimization tools to keep costs manageable as you scale. Collaborate with partners to reduce training, fine-tuning, and development costs.

**Use FinOps and cloud optimization to cut gen AI costs.** Use a hybrid cloud platform as your cost of compute control tower. Deploy Kubernetes to manage workloads and services in containers to roll out gen AI applications in the most consistent and efficient manner. Monitor the evolving costs that come with gen AI, from data storage to model retraining and fine-tuning to security and compliance, to avoid taking an unexpected hit to the balance sheet.

1. Scaling
- 2. Hybrid cloud**
3. Optimization

#### What you need **to know**

### Hybrid by design makes scaling generative AI affordable.

Not every application of gen AI is created equal. Each use case has its own compute, data, and privacy requirements. That's why hybrid cloud, which lets organizations use the most cost-effective infrastructure for every workload, is quickly becoming the go-to architecture for helping organizations achieve their gen AI goals at scale—without breaking the bank.

Overall, 72% of executives agree that hybrid cloud will be essential for scaling gen AI and managing the cost of compute. This figure rises to 85% for organizations that have moved beyond pilots and into full-fledged gen AI projects. But to tap the full potential of hybrid cloud for gen AI, you need to extend its principles across your platforms, security, AI, cloud, and data efforts.

This type of hybrid-by-design architecture delivers both a powerful engine for raw processing power, such as on-prem processing capability, and the agility of cloud for rapid scaling and data access. It aligns disparate technologies toward clearly defined business outcomes through wise design and intentional integration.

That's why organizations looking to scale their gen AI initiatives can benefit from a consistent hybrid-by-design approach. Today, 53% of organizations are managing their cost of compute governance centrally, with 73% expected to do so by 2026. Hybrid by design is poised to play a critical role in this shift by providing a unified view of the compute resources leaders need to monitor, optimize, and control costs.



1. Scaling
2. Hybrid cloud
- 3. Optimization**

#### What you need **to do**

### Forge a unified front with generative AI and hybrid cloud.

Channel the combined power of gen AI and hybrid cloud to deliver on concrete business goals. Optimize and orchestrate with hybrid by design and containerized workloads to corral compute costs and streamline operations.

**Establish your nerve center.** Gain visibility into where and how the demand for compute resources increases as you scale generative AI. Find opportunities to orchestrate these resources more cost-effectively, deploying only the precise amount of compute power needed for each task. Extend hybrid cloud architectural principles across your technology estate.

**Contain cost creep.** Design for modularity and flexibility. Follow architectural principles that let your organization choose the best and most cost-effective environment for each AI use case and initiative.

**Measure success with clarity.** Centralize your cost of compute management and create enterprise-wide guidelines, driven by clearly defined business objectives. Create a governance structure with a defined responsibility assignment matrix and performance metrics.

#### What you need **to know**

### Generative AI stretches your computing budget.

Gen AI may be the cause of the cost of compute crunch—but it can also be the solution. In fact, 73% of executives agree that gen AI can make their use of computing resources more efficient—and they're already putting this theory into practice.

For example, 67% of organizations are using gen AI to accelerate the development of new and more efficient models, algorithms, and applications. This not only reduces the time and effort required to develop these resources but also helps organizations create more cost-efficient solutions.

In addition, 65% of organizations are using gen AI to reduce required compute resources by automating tasks. How is this different from traditional automation? One unique aspect is that gen AI models can be designed to process data in parallel, taking advantage of multiple processing units and reducing the overall processing time and compute resources required to complete an automated task.

Another promising application of gen AI lies in making the mainframe more cost-efficient. While the mainframe has developed a reputation for being costly to manage and difficult to use, its ability to shift workloads when systems are compromised—and process transactions at unmatched speeds—has given the mainframe real staying power.<sup>8</sup>

And gen AI can take that speed and resilience to the next level through AI-powered automation, predictive analytics, and self-tuning capabilities. Plus, by using gen AI to optimize data center layouts, organizations can reduce energy consumption, lower costs, and improve overall efficiency. In 2023, 25% of organizations were applying gen AI for this purpose, and this figure is expected to rise to 70% by the end of 2024.

#### What you need **to do**

### Move lightning-fast at a lower cost.

Arm managers with intelligent decision support tools that slash compute costs and fuel real-time adaptability. Automate workflows and prune models to unlock a new era of efficiency, reduce costs, and unleash innovation.

**Inject generative AI into the heart of IT operations.** Give IT managers gen AI tools that help them create automation scripts, document operations, and spend less time on compliance. Revolutionize mainframe management with automated problem detection and resolution, predictive capacity management, and real-time performance monitoring.

**Optimize and automate your way to efficiency.** Tap gen AI for synthetic data generation, automated code generation and optimization, and dynamic resource allocation to reduce cost of compute.

**Adapt to changing market conditions in real time.** Use gen AI to analyze real-time demand, market trends, and competitor pricing to optimize pricing strategies, maximize revenue, and reduce price-related losses. Assess historical spending patterns to predict budget requirements, optimize budget allocation, and reduce waste.



“[We’ve got robots doing] millions of experiments a week. So, we’re training machine learning models, foundation models, to make sense of those data to find connections that no human ever could.”

Chris Gibson  
CEO, Recursion

## Chapter 5

### Platforms, data, and governance + generative AI

# Be a creator, not a consumer

**Generative AI is disrupting the disruptors—and platform-based businesses have the edge.** From Netflix to Nvidia, today’s top performing companies are built on digital platforms that connect people and players to deliver greater value. Rather than simply selling products, they serve as conduits for the market itself.

The first wave of platform-based businesses took over entire sectors by serving customers faster and more effectively than ever before. And many incumbents have yet to catch up.<sup>9</sup> In fact, a quick search of share prices shows the gap between platform-natives and traditional businesses is only growing.<sup>10</sup>

Generative AI levels the playing field, letting businesses do more with less on every front. But productivity gains are just the beginning. The true reward will come from business model innovation—which is the number-one challenge facing CEOs in 2024.<sup>11</sup>

To win in the new market landscape, companies must become creators—not just consumers—of business and technology platforms.

Business platforms facilitate interactions across an ecosystem. Technology platforms let employees develop and manage business applications. And, in the business models of the future, these platforms are inextricably linked. A generative AI platform, for instance, provides the technical support needed to operate a platform-based business.

But business model innovation is dependent on a modern IT architecture—and the principles of trustworthy AI. Both generative AI and business platforms demand access to vast stores of data that stretch beyond traditional borders. In the platform economy, open ecosystems are no longer optional.

This gives AI and data governance—traditionally an IT concern—firm footing in C-suite conversations. To gain a competitive edge, companies will need to cut through the red tape. At the same time, they must take a strategic approach to AI ethics, ensuring that platforms are transparent, trusted, and fair.

#### Research methodology

The statistics informing the insights in this chapter are sourced from several proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 200 US-based CEOs in 20 industries about their perceptions of generative AI in April and May 2023. The second surveyed 5,000 global executives in 25 industries about their views on generative AI from January to March 2024. The third surveyed 315 global executives in 22 industries regarding the application of generative AI for open innovation in May and June 2023. The fourth surveyed 2,895 global executives in 30 industries regarding business transformation in 2021.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Platforms

### What to know

Generative AI offers a second bite at the platform business model apple.



### What to do

Jump at the opportunity for a second chance.

## 2. Data

### What to know

Data dependency is both a challenge and an advantage.



### What to do

Outfit a generative AI data expedition.

## 3. Governance

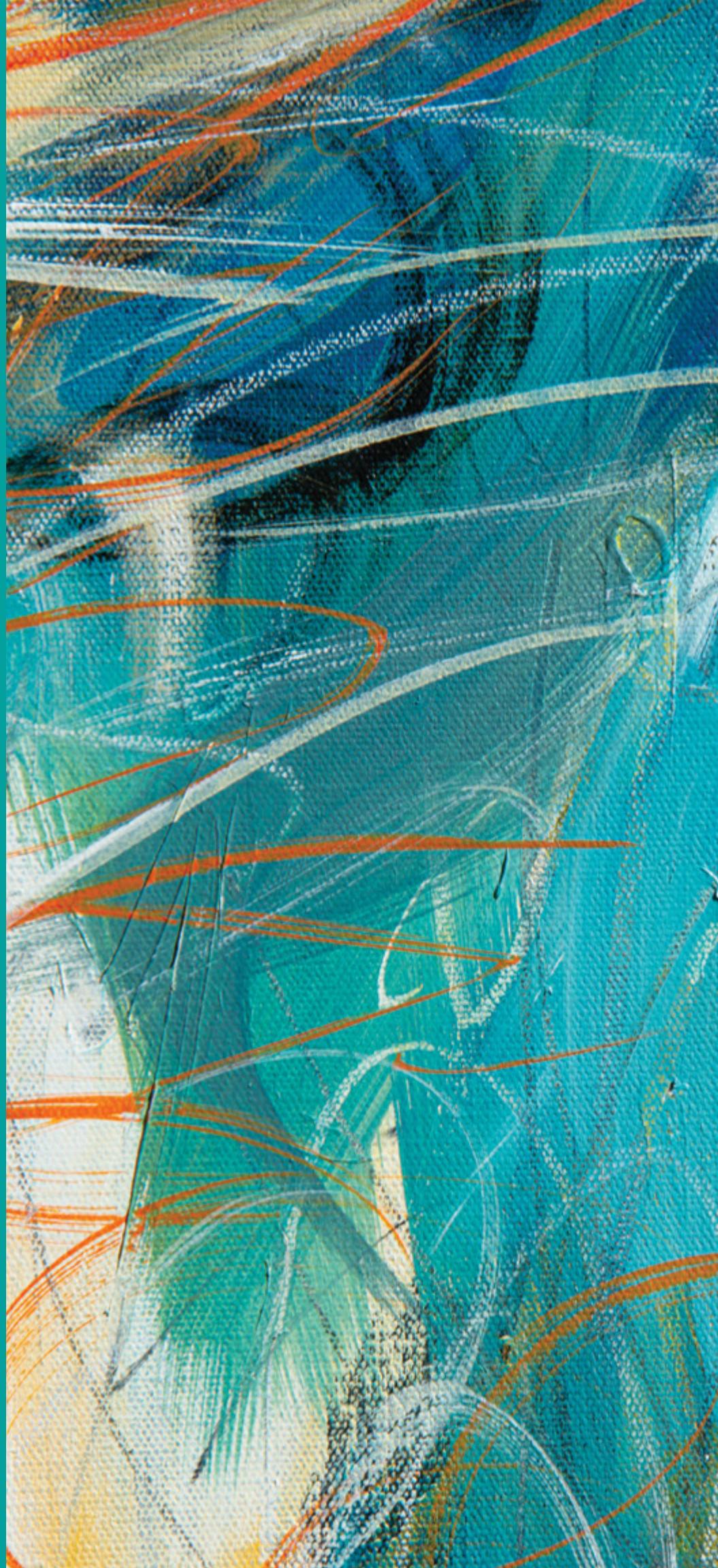
### What to know

AI and data governance are board-level concerns.



### What to do

Put governance at the heart of the generative AI lifecycle.



**"We have to understand the use of the data—and not see generative AI as a black box."**

Stefano Tomasini

General Consultant of the State General Accountant,  
Italian Ministry of Economy and Finance

## 1. Platforms

### 2. Data

### 3. Governance

## What you need **to know**

### Generative AI offers a second bite at the platform business model apple.

Platforms are at the core of the world's most valuable companies. Their success has been hard to replicate, but generative AI makes a new wave of business model innovation possible. In fact, 50% of executives say their organizations will be operating AI solution platforms at enterprise scale in two years, up from just 13% today.<sup>12</sup>

Successful platforms unite the right data, model architectures, governance, and computing infrastructure to enable reliable value creation across the ecosystem, with "anyone, anywhere." However, *Harvard Business Review* found that only 17% of platforms have succeeded in the past 20 years.<sup>13</sup>

Generative AI could be the missing ingredient. It instills platform superpowers by transforming business functions—but gen AI adoption isn't spread evenly across the enterprise.

Many organizations are prioritizing gen AI adoption in low-risk areas where traditional AI is already delivering clear business value. Roughly two-thirds of executives say their organizations are adopting gen AI in customer service (70%), IT (65%), and product development (65%) functions. But fewer are adopting gen AI in areas closer to the core of the business, such as information security (60%); sales (56%); and supply chain, logistics, and fulfillment (46%). However, those willing to focus on these previously underexplored areas of are seeing higher ROI.<sup>14</sup>

## What you need **to do**

### Jump at the opportunity for a second chance.

Collect all the platform puzzle pieces you couldn't gather the last time you thought about becoming a platform business.

**Act like a startup.** Avoid incrementalism. Design a gen AI platform business that could be your biggest, highest-growth, most profitable business unit within three years.

**Design for outcomes, adapt to surprises.** Structure the platform to deliver real value-adds to participants at every touchpoint. Establish a mechanism to continually assess and iterate the model based on increasing data volumes.

**Test before you invest.** Test the new gen AI capabilities your platform depends on before pulling the trigger on major investments. Learn lessons from how your customer-facing AI initiatives are faring.

What you need **to know**

## Data dependency is both a challenge and an advantage.

Data is the new oil—expansive, expensive, and difficult to extract. If it's dirty, it can pollute an entire ecosystem. But when tapped responsibly, it could be a gold mine.

Generative AI has made data even more valuable, as companies race to tap its potential faster than the competition. And those that get ahead have a lot to gain. Average AI ROI hit 13% in 2022—and early gen AI wins (led by successful pilots) boosted it to 31% in 2023.<sup>15</sup>

But this type of success is often out of reach for companies that try to go it alone. In fact, 42% of CEOs say that a lack of proprietary data will be a barrier to successful generative AI initiatives. Platform business models can help companies overcome this hurdle by sourcing proprietary data from all ecosystem participants, as well as customers.

A generative AI platform can, in turn, fuel business model innovation by integrating cycles of data preparation, model training and tuning, and application development and deployment. This approach delivers flywheel effects: The more data on the platform, the more value to customers; the more customers, the more data, and the better the gen AI model can be trained. In fact, 83% of executives say access to additional data is actively supporting business model innovation.

Integrating data stores, digital products, and automated workflows will be essential, as innovation demands interoperability. The IBM IBV 2023 *Chief Data Officer Study* found that the highest-performing data operations employ silo-busting practices and technologies, such as hybrid cloud (78%), process and task mining (70%), and data fabric architecture (68%).<sup>16</sup>

What you need **to do**

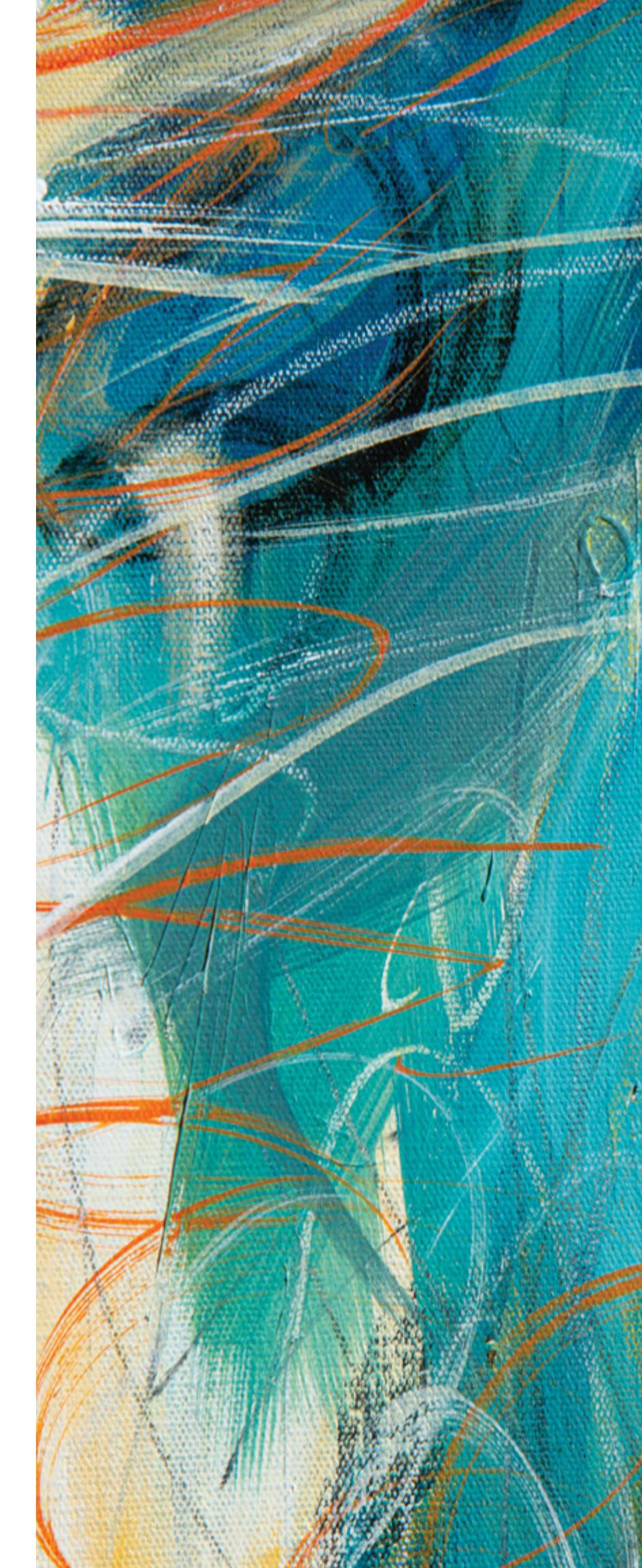
## Outfit a generative AI data expedition.

Find the data your platform needs in data lakes, data mines, data warehouses, content management systems—even laptop hard drives.

**Define requisite data sets.** Work backward from the customer experience: what will a gen AI platform need to offer to attract customers and ecosystem participants? What data will those gen AI value propositions depend on?

**Explore all data sources.** Ruthlessly mine the unstructured data that you need. Develop this data mining capability as a lever of competitive advantage that can differentiate your platform value proposition from the competition.

**Ask the ecosystem for help.** Expand your data expedition to include your customers, potential ecosystem participants, and their customers. Amplify the platform's network effects by tapping into their data streams.

What you need **to know**

## AI and data governance are board-level concerns.

Can generative AI be trusted? This question is at the core of the debate around how and where companies should tap this powerful innovation. In today's world, with massive amounts of data from multiple sources being used to train gen AI models, understanding data and its governance is more important than ever.

CEOs get that. They say concern about data accuracy and bias is the top barrier to adopting gen AI in their organizations.

In this environment, AI and data governance aren't just IT issues—they're strategies for value creation. What a company can do with AI is defined, in large part, by how it selects, governs, analyzes, and applies data across the enterprise. And trust is built by communicating that process transparently.

Best-in-class companies, with AI ROI that is more than 1.5 times higher than other companies, succeed by assessing infrastructure and processes to balance AI experimentation with industrial-strength scaling.<sup>17</sup> Data teams review governance, management, ethics, literacy, and other frameworks needed for people to access, understand, and have faith in enterprise and ecosystem data.

Companies that elevate the AI and data governance conversation to the C-suite have the potential to overcome the obstacles hindering their platform ambitions—and earn the trust of employees, ecosystem partners, and customers.

What you need **to do**

## Put governance at the heart of the generative AI lifecycle.

Make governance a fixture on the executive leadership team's agenda. Balance the power of gen AI with the guardrails required for trustworthy execution.

**Build a governance-savvy executive team.** Educate your team and the board of directors. Then make AI and data governance a recurring agenda item at board meetings, ensuring they get the attention they warrant. Don't just delegate and forget; active leadership is essential.

**Govern the whole system, not bits and pieces.** Build governance into each stage of the AI lifecycle. Break the design and execution of AI and data governance out of organizational silos to create an end-to-end system.

**Put someone in charge.** Appoint and empower a senior executive to lead AI and data governance across the enterprise. Actively mitigate the risk of failure due to fragmented ownership and accountability.



“You have to take the entire organization with you on the journey. Enable teams through new tech solutions. Give them the resources to run a pilot and see the advantages it can deliver. Then they’ll fight for it.”

Dirk Adelmann  
CEO, smart Europe GmbH

## Chapter 6

### Open innovation and ecosystems + generative AI

# Harness the power of ecosystem innovation

**Innovation doesn’t happen in a vacuum.** It’s a team sport—and no organization can change the game on its own. Ecosystem partnerships, where solution and service providers combine their skills and capabilities to deliver strategic outcomes, are essential to create innovations that are truly transformative. Past IBM IBV research found that organizations investing in ecosystems gain a revenue growth premium of 40%.<sup>18</sup> And these investments could become even more lucrative in the age of generative AI.

Gen AI can ignite ecosystem innovation by tapping into the collective brainpower of many organizations quickly and easily. By synthesizing their shared expertise, it can brainstorm potential solutions to big problems, predict which products will be most successful, and optimize project plans to deliver desired outcomes. But this synthesis demands deep stores of data, massive computing power, and sought-after skills.

That’s why gaining a competitive edge with gen AI will require sharing the load with ecosystem partners—and breaking down internal and external barriers. Openness is central to this process, as the data gen AI requires sits in multiple organizations, applications, silos, clouds, and lakes.

Of course, openness must always be accompanied by good governance. To keep innovations both ethical and secure, CEOs should engage ecosystem partners that bring the right talent, technology, and customer relationships to the table—and gauge whether partners share their principles and values. As the next generation of gen AI models quickly comes of age, ecosystem-fueled innovation must be built on a rock-solid foundation of transparency and trust.

#### Research methodology

The statistics informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 315 global executives across 22 industries during May and June 2023 regarding generative AI for open innovation. The second surveyed 300 US-based executives across 22 industries in May 2023 regarding generative AI and the workforce. The third surveyed 5,000 global executives in 25 industries about their views on generative AI from January to March 2024.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Innovation

### What to know

Generative AI reinvents innovation—and the value of ecosystem contributions.



### What to do

Innovate the way you innovate.

## 2. Data and skills

### What to know

Innovation will become the new ordinary.



### What to do

Prepare your organization to do higher value work with cross-ecosystem skills.

## 3. Ecosystem

### What to know

Partnerships that worked in the past might not be right for the future.



### What to do

Reevaluate your relationship status.

**“It’s dangerous if we can’t have heart-to-heart discussions with our partners about how we’re positioned to navigate change—and what will happen if things are left as they are.”**

Kazuhiko Nishiyama

President, Kansai Mirai Bank, Limited



Chapter 6: Open innovation and ecosystems

1. Innovation
2. Data and skills
3. Ecosystem

What you need **to know**

## Generative AI reinvents innovation—and the value of ecosystem contributions.

Gen AI isn't just another tool in the innovation toolbox. It's the entire workshop.

Every day, people are discovering new ways to use gen AI to automate tasks, make business decisions, and plan for future disruption. And no leader wants to be left behind.

Two-thirds of executives say their organization needs to quickly adopt gen AI for innovation.<sup>19</sup> However, only 45% of organizations are currently using gen AI for innovation and research.

For companies pushing forward, gen AI promises to upgrade ecosystem innovation by transforming the entire workflow. A large majority of executives say gen AI will greatly improve ideation (72%), discovery (72%), collaboration with partners for innovation (77%), and innovation execution (78%).

The organizations blazing the trail could see big dividends. Innovation outperformers see annual revenue growth that is 74% higher than their peers. And executives see increasing innovation ROI as the most important benefit that comes from using gen AI for innovation. By taking a high-level view of strategy—and being willing to go back to the drawing board—leaders can find new ways to deliver and capture value with innovation.

What you need **to do**

## Innovate the way you innovate.

Use generative AI to spark creativity and enhance collaboration throughout the innovation cycle. Synthesize expertise across the ecosystem to solve complex problems, develop competitive products, and disrupt traditional business models.

### Turn gen AI into an innovation game-changer.

Unlock the value of gen AI for innovation by rethinking the innovation operating model. Pursue it as a transformative opportunity for greater innovation efficiency and effectiveness.

**Augment and automate for more innovation.** Adopt gen AI across the innovation workflow for greater speed, scale, and impact. Use automation to free up talent to take greater ownership of innovation workflows across the enterprise.

**Introduce experimentation at scale.** Hypothesize, trial, and adjust how gen AI is applied to innovation in a controlled manner. Measure gen AI innovation outcomes against “manual” outcomes to prove value.

1. Innovation
- 2. Data and skills**
3. Ecosystem

#### What you need **to know**

### Innovation will become the new ordinary.

Generative AI frees employees from the mundane and helps them realize their untapped potential. However, capability constraints often block AI-powered innovation, both within the organization and across the ecosystem.

More than two-thirds (69%) of organizations expect to use gen AI for open innovation by 2025—up from 29% in 2022. But fewer than half of executives say their organization has identified specific innovation use cases for gen AI (45%) and is ready to adopt gen AI for innovation responsibly (48%).

To work more effectively with external partners, CEOs must first remove roadblocks. While adopting gen AI for open innovation requires access to cutting-edge tools, executives say their top barriers relate to data and people, not technology. Concerns about data privacy, confidentiality, and security top the list, followed by inadequate gen AI skills and expertise.

Yet, executives are hopeful that gen AI will help strengthen their teams' innovation chops. A full 92% of executives looking to apply gen AI to innovation say they plan to augment employees with gen AI rather than replace them.

#### What you need **to do**

### Prepare your organization to do higher value work with cross-ecosystem skills.

Unleash the potential of generative AI-powered ecosystem innovation by addressing internal barriers. Build and develop data, skills, and culture as critical ingredients to drive long-term ecosystem success.

**Fuel innovation with premium data from inside and outside the enterprise.** Develop clear data governance mechanisms, including data-sharing agreements and protocols, with partners to ensure transparency, trust, and security. Create an enterprise data fabric that makes data available where it's needed across the enterprise. Break down data silos to make it easier to share and integrate data with partners, allowing your teams to focus on innovation—not data wrangling.

**Tap into employees' inner innovators and extend capabilities outward.** Define, build, and manage organizational capabilities and skills for innovation and gen AI. Make change management an integral part of your innovation and gen AI journey. Work with ecosystem partners to enhance capabilities.

**Let culture eat tech for breakfast.** Adapt incentive mechanisms and KPIs to encourage collaboration and innovation with gen AI and allocate decision rights to drive innovation across the enterprise. Change your way of working with partners and augment service level agreements with shared objectives and key results. This will foster a culture of shared goals, increased accountability, and improved overall performance.



#### What you need **to know**

### Partnerships that worked in the past might not be right for the future.

Generative AI has put everything on the negotiating table—and opened the door to unprecedented business propositions.

But as CEOs apply generative AI to ecosystem innovation, they need to be selective about who they bring to the table. Successful partnerships are about quality—not just quantity. By first assessing their own strengths—and identifying critical gaps—leaders can determine where the organization needs the most support, whether that translates to complementary expertise, specialized data capabilities, or better market access.

Leaders should use the generative AI moment as an opportunity to reassess their existing partnerships and align their ecosystem around common standards and shared values. Nearly two-thirds of CEOs say their organization's strategy is to concentrate on fewer high-quality partners. This is perhaps to keep key vendors close at hand, as 60% expect critical expertise and capabilities to be increasingly concentrated in a small cluster of organizations.<sup>20</sup>

Understanding the strategic value of the organization's proprietary data, as well as where it resides—in which applications, with known ownership—should be part of this process. Defining the competitive advantage it can deliver—and how it will capture value from the partnership in question—will help leaders decide when and where to share intel with ecosystem partners to fuel innovation.

1. Innovation
2. Data and skills
- 3. Ecosystem**

#### What you need **to do**

### Reevaluate your relationship status.

Tap your ecosystem's collective intelligence. Assess whether you have the right partners to spur your innovation forward—and be prepared to swipe left.

**Refresh innovation strategy through new ecosystem partnerships.** Engage partners for more data, more insights, more discoveries, and better outcomes. Focus on partnerships that provide more pathways for rapid adaptation and access to in-demand capabilities and technologies. Be clear about what is unique to your organization, what needs to be proprietary, and how your partners will complement what you already have. Regularly review and refine your partner engagement strategy to ensure it remains effective and efficient.

**Build a new relationship checklist.** Assess partners for a common understanding of necessary AI guardrails and principles. Establish clear governance and standards to foster trusted and secure collaboration and innovation. Be clear on deal-breakers.

**Expand your ecosystem EQ.** Don't treat your ecosystem partners like afterthoughts. Integrate them into the gen AI journey from the very beginning. This creates a shared understanding of objectives, the architecture needed to achieve them, and the operating model for ongoing success. You can then collaborate and co-create using hybrid cloud and open AI platforms for shared data. Embrace open standards and ensure complementarity and compatibility.



“It’s crucial to prioritize the acceleration of data capture and the establishment of data accessibility. Embrace the necessary updates and adaptations required to thrive in this new era.”

Fernando González  
CEO, Cemex

## Chapter 7

### Application modernization + generative AI

# A new way to run the business

**Generative AI makes high-value modernization feasible in areas that were previously off limits.** From finance to procurement to risk management, even the most risk-averse functions are beginning to see business benefits from transforming their core operations to take advantage of gen AI's game-changing capabilities.

Some apps might still be in the “don’t fix what’s working” category—but for how long and at what cost? Rapidly evolving gen AI use cases demand a level of speed, flexibility, and connectedness that traditional IT platforms just can’t handle. While staying the course may seem safer in the short term, it will soon be a liability that leaves organizations lagging.

Plus, most leaders want to capitalize on the promise that gen AI can make modernization faster, easier, and more affordable. And roughly seven in 10 executives say they need to modernize apps to use gen AI. At the same time, gen AI has the power to transform app modernization—two sides of the same coin.

#### Research methodology

The statistics informing the insights in this chapter are sourced from five proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 216 US-based executives in 17 industries about generative AI and application modernization in July 2023. The second surveyed 416 US-based executives in 12 industries about application modernization in August 2022. The third surveyed 2,000 global executives in 10 industries about AI and automation from April to July 2023. The fourth surveyed 3,000 global CEOs in 24 industries about business transformation from January to April 2023. The fifth surveyed 530 global executives in 24 industries about IT architecture in May and June 2024.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Operations

### What to know

Combined, generative AI and app modernization fuel a virtuous cycle of increased agility and revenue growth.



### What to do

Grab low-hanging fruit by applying generative AI to already modernized apps.

## 2. Strategy

### What to know

With generative AI, businesses can retire their technical debt once and for all.



### What to do

Go after opportunities that were previously “off limits”—such as applications and processes in core systems.

## 3. Transformation

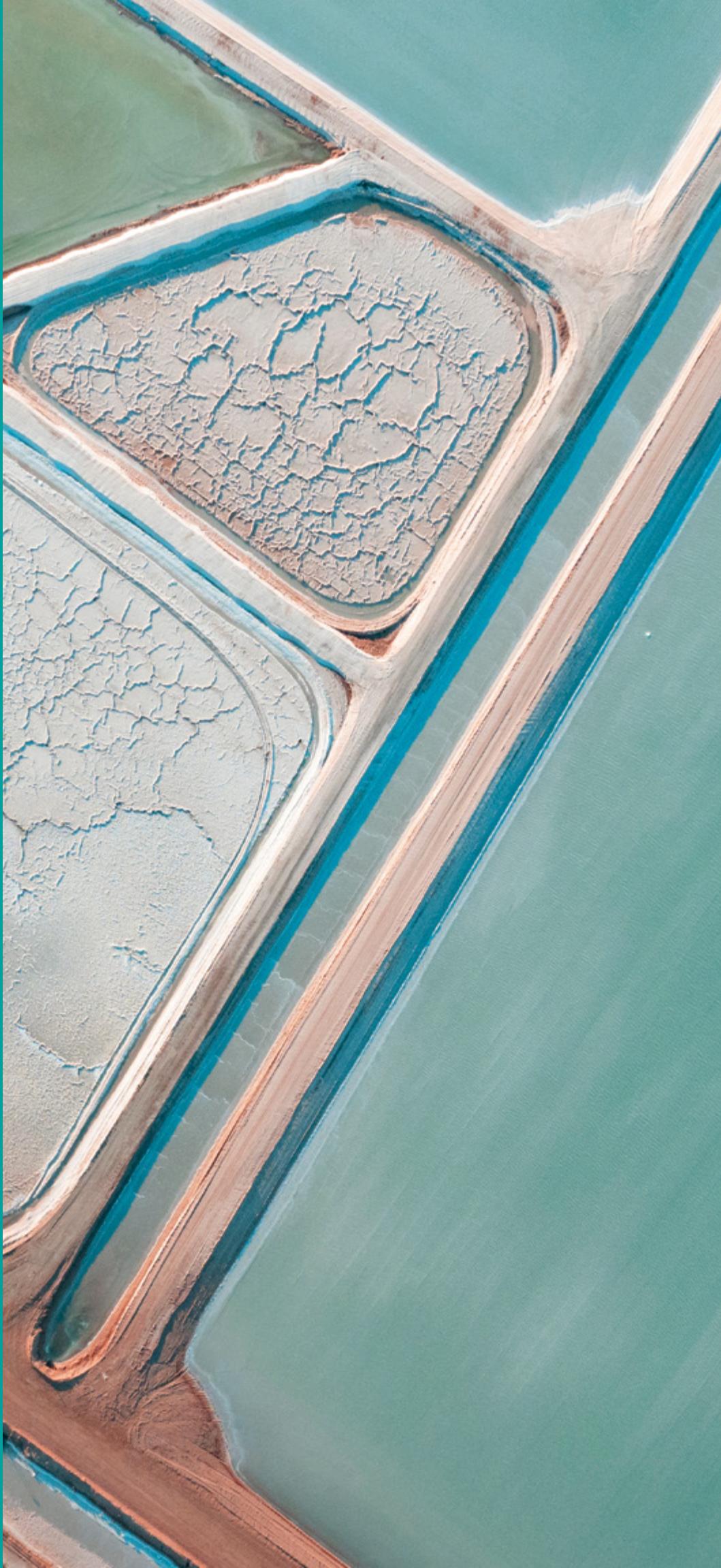
### What to know

Generative AI is closing the gap between IT and the business—finally.



### What to do

Stop measuring business and IT goals separately—explicitly prioritize IT projects with the strongest links to business value.



**“There is a real cultural and training journey to get people to understand that the balance of really good data and experience gives us a much better outcome. You can’t have one without the other.”**

Paul Graham

CEO and Managing Director, Australia Post

1. Operations
2. Strategy
3. Transformation

What you need **to know**

**Combined, generative AI and app modernization fuel a virtuous cycle of increased agility and revenue growth.**

Application modernization—the process of updating traditional systems and apps to incorporate modern technologies and architectures—is a precondition for business agility. Rather than bolting modern apps onto legacy systems, making the technical environment ever more complex, businesses can use gen AI to speed app modernization for digital transformation organization wide.

With gen AI, businesses can advance transformation initiatives that just weren’t feasible before. In fact, 98% of executives believe gen AI will turn deferred application modernization projects into approved and launched projects.

This is due, in part, to gen AI’s ability to automate and streamline parts of the application modernization process. For instance, when a typical organization modernizes legacy applications, 31% of the costs are due to code translation and development. But gen AI can now generate code snippets and application components, helping organizations reduce those costs.

77% of executives also say using gen AI in app modernization projects will increase business agility—and CEOs who embrace agile practices are 49% more likely to outperform their peers on revenue growth.<sup>21</sup>

Although gen AI is key to all this progress, only 27% of executives say their organization has modernized major workflows. 87% say their organization knows which application modernization projects would deliver the most business value—but three in four say their organizations remain unmodernized, with disparate systems using fragmented technologies and tools.<sup>22</sup>

What you need **to do**

**Grab low-hanging fruit by applying generative AI to already modernized apps.**

Apply gen AI to modern applications to showcase its potential. Demonstrate its ability to deliver specific business outcomes to overcome the inertia that plagues some modernization initiatives.

**Emphasize low-risk, high-visibility opportunities.** Use gen AI to modernize specific business systems and applications, such as apps within an already-modernized production manufacturing system or service delivery operation.

**Track and measure the business benefits of gen AI.** Quantify productivity gains to measure the cost savings that come with modernization. Use this data to demonstrate the value proposition to other business unit leaders and build buy-in.

**Build expertise from within.** Seed evolving teams with experienced talent to serve as cross-functional guides and advocates. Extend gen AI modernization to opportunities across the enterprise to broadly expand value.

1. Operations
- 2. Strategy**
3. Transformation

#### What you need **to know**

### With generative AI, businesses can retire their technical debt once and for all.

Application modernization is a big phrase for a complex process—one that few executives are excited to sponsor. But top business leaders agree it's time to stop passing the buck. 83% of C-suite executives say modernizing apps and data is central to their organization's business strategy.<sup>23</sup> And 90% say using gen AI in app modernization projects will drive growth by improving existing products and services and building new capabilities.

When advanced in tandem, app modernization and gen AI place opportunities that once seemed overly ambitious within reach. How? Some organizations are using gen AI to build or refactor applications, create workflows for migrating legacy ERP systems to SaaS versions, or develop functional requirements for new digital products built to run in the cloud.

Plus, by integrating gen AI-driven insights into every stage of the application lifecycle, from design to deployment, companies can future-proof their applications. Building apps that thrive in the cloud—and are optimized for continuous innovation—not only accelerates time-to-market but also reduces the associated technical debt.

Yet more than half of executives cite financial or technical challenges as hurdles to delivering strategic outcomes with modernization projects.<sup>24</sup> The tide may be turning—as many executives now say gen AI offers opportunities to break down those technical (90%) and financial (69%) barriers.

Where to begin? Executives expect gen AI to have the biggest impact on app modernization projects in marketing, customer service, and information security.



#### What you need **to do**

### Go after opportunities that were previously “off limits”—such as applications and processes in core systems.

Reach beyond low-hanging fruit to high-value opportunities that were either too difficult or too scary to attempt modernizing before. Urgently advance modernization efforts in core business systems—such as product lifecycle management systems in manufacturing or flight scheduling systems in airlines—where gen AI is expected to deliver the biggest, most strategic results.

**Find missed opportunities.** Get a list from your CIO/CTO of modernization initiatives that promised the most business value but were abandoned due to the estimated cost or level of difficulty. Tackle those priorities and build a running list of new modernization targets.

**Update the operating model to align with new gen AI capabilities.** Reimagine workflows and decision-making processes to make the most of the gen AI opportunity. Adopt modern architectural practices, such as composability, to enable scalability.

**Engage your ecosystem.** Encourage tech service partners to become full participants in strategic gen AI adoption. Open communication channels with customers and potential partners. Avoid unwelcome surprises by ramping up marketplace intelligence and honestly assessing the competition in the gen AI arena.

#### What you need **to know**

### Generative AI is closing the gap between IT and the business—finally.

It's no longer IT or the business—IT is the business. With gen AI, technology drives innovation and the business propels the technology. That means, to get the most value from gen AI, CEOs must break down traditional divisions and integrate functions more holistically.

68% of executives believe that gen AI will bridge the gap between IT and business roles. But what will that look like? It starts with a shared understanding of business goals and enhanced collaboration. This makes it easier for teams to identify opportunities for innovation and improvement and work more effectively toward common objectives.

Tight-knit integration with IT helps leaders ensure that the apps providing the most business value are getting the most support—and that low-performing apps aren't monopolizing IT resources. Gen AI can correlate KPIs to the app performance and support requirements, which helps CEOs make faster, smarter decisions about IT spend.

And better decisions lead to greater strategic alignment. Part of it is attitudinal. 60% of leaders who believe their gen AI investments are critical have already made significant progress in aligning their enterprise IT architecture with business activities and processes. That's 40% higher than their peers.

Although organizations are split on which roles IT and the business should play in app modernization—half say leadership should be with IT, while the other half say it should be with the business—gen AI can bring them together.

#### What you need **to do**

### Stop measuring business and IT goals separately—explicitly prioritize IT projects with the strongest links to business value.

Rather than crafting alliances of convenience, form firm and unyielding partnerships between IT and the business. Go beyond establishing innovation squads for generative AI by holding all leaders accountable for both technology modernization and business performance, irrespective of their roles.

**Make a statement with your leadership appointments.** Ask individuals who are plausibly two promotions away from a C-suite position to lead your gen AI application modernization initiatives.

**Make urgency and speed-to-value your mantra.** Require, reward, and celebrate fast cycles of modernization, where each iteration pushes toward better business outcomes.

**Shut down any conflicting, competing, or siloed incentives.** Steer recognition and rewards into one consistent program that encompasses all business objectives and applies to every team member.

1. Operations
2. Strategy
- 3. Transformation**



**"Before implementing a comprehensive AI strategy, it is crucial to consider the governance issues surrounding it, as well as the applicability of legislation to your specific environment."**

Nthabiseng Mosupye  
Chief Technology Information Officer, Rand Water

## Chapter 8

### Responsible AI and ethics + generative AI

# Ethics can't be delegated

**Human values are at the heart of responsible AI.** As companies race to discover all the incredible new things generative AI can do, CEOs must lead the conversation about what it *should* do.

Each use case comes with its own ethical dilemmas and compliance concerns. How can companies protect sensitive data? How can they choose the right data sets to train AI models? How can they use AI in a manner that respects copyrights? Are AI outputs biased, discriminatory—or just plain wrong?

While answering these questions takes the entire team, CEOs must set the organization's moral compass. The course they chart will define how the business will balance cutting-edge innovation with the age-old principles of integrity and trust.

CEOs must implement policies and processes that provide transparency and accountability across the board, offering clarity on how and where AI should be used. This work will be ongoing, as the organization will need to continuously monitor and evaluate their AI portfolios to ensure they remain in line as rules evolve.

Leaders must also foster a culture focused on AI ethics, which aims to optimize AI's beneficial impact while reducing risks and adverse outcomes for all stakeholders. Teams should prioritize human agency and well-being, as well as environmental sustainability. This will be a socio-technical challenge that can't be solved with technology alone. Ongoing investments in organizational culture, talent and skills, workflows, and frameworks are necessary to be successful at scale.

The court of public opinion will judge whether companies are behaving ethically—and in line with consumer values. In this way, fairness and appropriateness will be gauged subjectively. But compliance will not.

#### Research methodology

The statistics informing the insights in this chapter are sourced from several proprietary IBM Institute for Business Value surveys conducted in collaboration with Oxford Economics and MomentiveAI/SurveyMonkey. The first surveyed 200 US-based executives across 17 industries regarding generative AI and AI ethics in August and September 2023. The second surveyed 5,000 global executives in 25 industries regarding generative AI from January to March 2024. The third surveyed 414 US-based executives in 22 industries in May and June 2023 about generative AI and hybrid cloud. The fourth surveyed 16,349 global consumers regarding perspectives on social responsibility and sustainability in 2022.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Strategy

What to know

CEOs can't pass the buck on AI ethics.



What to do

Give ethics teams a seat at the table—not an unfunded mandate.

## 2. Trust

What to know

Customers are judging every decision you make. Don't jeopardize their trust.



What to do

Earn trust by aligning with customer expectations.

## 3. Compliance

What to know

Some companies freeze in the headlights of regulatory ambiguity.



What to do

Bake in regulatory preparedness and ethics for all AI and data investments.

**"We're focused on making sure AI is not creepy and is always helping people. If it's making their lives easy, I think people adopt it quickly. We just have to explain to them how it works."**

**Sampath Sowmyanarayanan**

CEO, Verizon Consumer Group



Chapter 8: Responsible AI and ethics

### 1. Strategy

2. Trust

3. Compliance

What you need **to know**

### CEOs can't pass the buck on AI ethics.

Generative AI is like the wild west. The rush to riches has outpaced rules and regulations—and early prospectors have the chance to strike it rich.

But at what cost? Organizations that push forward without considering the intricacies of AI ethics and data integrity risk damaging their reputations for short-term gains.

Executives understand what's at stake: 58% believe major ethical risks abound with the adoption of gen AI that would be very difficult to manage without new, or at least more mature, governance structures. Yet many are struggling to turn principles into practice. While 79% of executives say AI ethics is important to their enterprise-wide AI approach, less than 25% have operationalized common principles of AI ethics.<sup>25</sup>

That's why CEOs must take the reins and blaze a trail for others to follow. Roughly three times more executives look directly to CEOs for guidance on AI ethics than the board of directors, general counsel, privacy officers, or risk and compliance officers. And 80% of executives say business leaders—not technology leaders—should be primarily accountable for AI ethics.<sup>26</sup>

That accountability extends beyond decision-making. CEOs must also hold themselves responsible for educating other leaders on emerging ethics issues. By elevating conversations about trustworthy AI to the rest of the C-suite and the board of directors, CEOs can keep key stakeholders from being sidelined. Taking a proactive, inclusive approach helps ensure everyone understands the risks—and the clear action plan for managing them. This lets the organization move faster while keeping leaders in lockstep.

What you need **to do**

### Give ethics teams a seat at the table—not an unfunded mandate.

Roll up your sleeves to close the gap between intentions and actions. Champion ethics teams, policies, and monitoring. Report progress to the board of directors and externally, as appropriate.

#### Take charge, even if it's outside your comfort zone.

Consider appointing a chief AI ethics officer, a chief risk and compliance officer, or another leader that is not responsible for leading AI development to run point on enterprise-wide efforts. Make accountability clear among current executive roles. Align executives to common AI ethics goals and values across business units and functions. Make sure the right people come to the table—including your risk, information security, HR, legal, and other key execs.

#### Create effective human + technology collaborations.

Set the tone and strike the right balance between automation and augmentation—offering psychological safety for challenging conversations within diverse and inclusive communities. Recommend that a design guide for AI is created and adopted and that a specific section on algorithmic accountability is incorporated into the company's code of business ethics. Promote the AI and data literacy and change management agenda with applied training that gives people across disciplines hands-on experience navigating ethical issues. Treat impacted employees with dignity and respect.

**Establish "ethical interoperability."** Augment your innovation ecosystem by identifying and engaging key AI-focused technology partners, academics, start-ups, and other business partners. Affirm values as part of your corporate identity and culture—and make sure the values of all your partners are aligned. Ensure a multi-disciplinary approach, incorporating psychology, anthropology, sociology, design, law, and other specialties as appropriate.

1. Strategy
- 2. Trust**
3. Compliance

#### What you need **to know**

### Customers are judging every decision you make. Don't jeopardize their trust.

It takes decades to build a blue-chip brand—and only days to destroy it. In an era of data breaches and distrust, consumers, employees, and partners are unforgiving of companies that act without integrity.

Nearly nine in 10 consumers say they care about data privacy and want more control over their data, and 81% of these individuals say they're willing to take action to protect their data. Of this group, 46% say they've already switched brands due to their data policies or data sharing practices.<sup>27</sup> Consumers rank companies in many traditional industries, including retail, insurance, and utilities, lowest in responsible use of technology.<sup>28</sup>

Partners, investors, and boards of directors are also watching companies closely. They appear inclined to support responsible AI advancement, though they're becoming more cautious as generative AI matures. CEOs still say they feel nearly four times more pressure from their investors to accelerate gen AI adoption rather than slow it down—but this gap is smaller than it was last year.<sup>29</sup>

For their part, employees are eager to work for companies that share their values. 69% of workers say they would be more willing to accept a job offer from an organization they consider to be socially responsible—and 45% say they would be more willing to accept a lower salary to work at such an organization.<sup>30</sup>

Taken together, these perspectives showcase why companies with stronger data practices create more value. Our 2023 *CDO Study* found that roughly eight out of 10 CDOs from these companies say their organization outperforms in data ethics, organizational transparency and accountability, or cybersecurity.<sup>31</sup>

#### What you need **to do**

### Earn trust by aligning with customer expectations.

Build a collaborative culture of trust from the bottom up. Make ethics everyone's responsibility—and governance a collective noun.

**Stay ahead of customers' ethical expectations.** Recognize that your customers experience ethical failures in every part of their lives every day. Build trust by defining your ethical values clearly. Communicate them widely and transparently. Then communicate them again. And again.

**Put people first.** Re-skill your employee base to understand AI holistically and the proper and improper use of it. Build AI ethics, unwanted bias identification, and other training programs for employees and partners to reinforce the importance of trustworthy AI. Clarify when to get help from domain experts. Empower your teams to be stewards of ethics across and beyond your organization to cultivate customer trust.

**Hold everyone accountable.** Take personal responsibility, with an expectation that executives and other employees will follow suit. Ask business and AI leaders to sign their names and put their individual reputations on the line—starting with yourself—and make sure accountability crosses silos. Prioritize technology ethics as a key part of procurement's ethical sourcing criteria. Make these promises public.



#### What you need **to know**

### Some companies freeze in the headlights of regulatory ambiguity.

The EU's AI Act is on the books. China is moving ahead with robust regulations and guidelines. Federal agencies and other organizations are already carrying out the US Executive Order, along with other state and municipal statutes.

But, globally, fewer than 60% of executives think their organizations are prepared for AI regulation—and 69% still expect a regulatory fine due to generative AI adoption. In the face of this uncertainty and risk, some CEOs are pumping the brakes. Overall, 67% of organizations will forgo gen AI benefits due to ethical concerns.

As regulations come into clearer focus, CEOs will be able to move forward more confidently. In fact, 57% of CEOs say the guidelines provided by the EU AI Act increase their willingness to invest in generative AI. 35% say that, given the requirements in the EU AI Act, they will accelerate their organization's adoption of generative AI, with only 17% saying their pace of adoption will slow down.<sup>32</sup> Cultivating AI ethics skills in every area of the business will be essential for organizations to pick up the pace while navigating complex regulatory change.

Good data and AI governance will also be necessary no matter how regulations evolve—since AI can be “awful but lawful.” And those with strong ethics and governance capabilities have a chance to stand out from the crowd, with three in four executives citing ethics as a source of competitive differentiation.<sup>33</sup>

Prioritizing ethics can help CEOs act decisively and embrace the early benefits of generative AI without compromising values. This may be why executives expect investments in AI ethics to double between 2022 and 2025.

#### What you need **to do**

### Bake in regulatory preparedness and ethics for all AI and data investments.

Craft your strategy based on the broad strokes of emerging regulations. Course-correct when essential details are finalized, align with internal policies and procedures—and keep recalibrating as rules evolve. Stay focused on trustworthy AI and good governance every step of the way.

**Communicate, communicate, communicate.** Advocate for regulation that makes sense. Make sure use cases are easily explainable, that AI-generated artifacts are clearly identified, and that AI training is transparent and open to continual critique.

**Document everything—and then some.** To help manage foundation model and other AI risks, create a culture of documentation of AI use in the organization as well as the current governance around it.<sup>34</sup> Ensure AI-generated assets can be traced back to the associated foundation model, dataset, prompt, or other inputs by asking teams to maintain an inventory of every instance where AI is being used. Seed this source information in digital asset management and other systems.

**Be prepared to pivot on a dime.** Stay informed, conduct regular risk assessments, and develop a culture of agility. Make adjustments as the regulatory winds shift—or new ones blow. Equip every team with AI ethics skills to help the organization adapt quickly and responsibly.

1. Strategy
2. Trust
- 3. Compliance**



“If you have a lot of data, you have an opportunity—if you have the right computational infrastructure—to build foundational models that will give you such a network effect advantage that it’s almost silly for anyone to try and come compete with you in the future.”

Chris Gibson  
CEO, Recursion

## Chapter 9

### Tech spend + generative AI

# How will you pay for it?

**There's no “one-and-done” generative AI investment.** This revolutionary technology promises to impact every business function—and the entire IT estate. That means executives must open the aperture to see the full picture of IT spend.

As CEOs rethink business models, job roles, and workflows to capitalize on the full potential of gen AI, they must also carefully consider the broader IT cost implications. And not all of them are obvious.

Leaders need greater visibility into IT spend to better understand and orchestrate the flow of funds across the enterprise. Taking a wide-angle view of data can help them reevaluate workflows, processes, protocols—and potentially the system architecture itself.

This may reveal the need for big changes, but will businesses have the IT budget to react? Only if they prioritize projects that will deliver a competitive edge, rather than spreading gen AI spend like peanut butter across the IT portfolio.

#### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 100 US-based executives in 17 industries in July and August 2024 about generative AI and tech spend. The second surveyed 136 US-based executives in 17 industries in August and September 2023 regarding the same topic.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Spending

### What to know

The rush to generative AI is driving unexpected spending.



### What to do

Don't get sidelined by a ballooning IT budget.

## 2. People

### What to know

People costs could torpedo your AI strategy.



### What to do

Unclog the people cost bottleneck.

## 3. Strategy

### What to know

You can't cut your way to growth.



### What to do

Be intentional and stack your investments.

**"If you're a large company, the risk of underinvestment is worse than the risk of overinvestment right now. If you're underinvested, you could get left behind. If you're overinvested, you might lose a little money, but you're in the game and you live to fight another day."**

Sampath Sowmyanarayanan  
CEO, Verizon Consumer Group



Chapter 9: Tech spend

## 1. Spending

2. People
3. Strategy

What you need **to know**

### The rush to generative AI is driving unexpected spending.

Gen AI is exposing cracks in old-fashioned funding practices. Like any nascent technology, it's dynamic by nature. What it needs—and how it can deliver value—is changing by the day. And that throws a wrench into the traditional budgeting process.

If leaders can't be sure which gen AI projects will be most important in the next quarter, let alone the next fiscal year, they won't be able to allocate funds efficiently. This innovation is already disrupting IT budgets—but organizations are only preparing for incremental change.

While gen AI spend has increased exponentially in the past few years, the average gen AI budget was only \$7 million in 2023. And while IT and AI budgets will continue to grow, IT executives only expect gen AI budgets to climb 22% as a portion of AI spend between 2024 and 2026. For a \$20 billion organization, that translates to a roughly \$7 million increase. That is double what we saw in 2023—but only 18% of tech execs expect to fund this uptick with net-new spend.

Instead, many plan to plunder other parts of the IT portfolio, with 30% saying the money will come at the expense of non-AI IT spend. Most (52%) expect to pull gen AI spending from the broader AI investment portfolio, which could reflect expected synergies across traditional and gen AI projects, some culling of the AI project portfolio, or both.

This approach to reallocation is reasonable, but is it realistic? As gen AI is rolled out across the business, it will have cost implications across the board. Labor and cloud spending, in particular, will grow in lockstep with the increasing demand for gen AI solutions. Overall, the impact is likely to be far-reaching—and a \$7 million budget increase won't get a leading enterprise very far.

What you need **to do**

### Don't get sidelined by a ballooning IT budget.

Make sure you have a clear understanding of how high-impact projects will tap resources—both human and technical—to accurately budget for associated costs.

**View spending with a wide-angle lens.** Assess the entire web of IT costs required to deliver the impact you expect from gen AI. Analyze spend holistically—across IT, cloud, and people—to deliver enhanced business value across all investments.

**Extend FinOps capabilities across the enterprise.** Gain visibility into costs and spending across all AI, hybrid cloud, and application modernization investments. Understand what your people are working on and how much they cost, and map that back to specific projects, applications, and initiatives to optimize spend.

**Keep GPUs on your radar.** Gen AI requires the extreme processing power of graphic processing unit (GPU) chips, which are in very short supply. The market price for GPUs will drive the cost of building and delivering gen AI services in general and is likely to show up in your enterprise cloud costs.

1. Spending
- 2. People**
3. Strategy

What you need **to know**

## People costs could torpedo your AI strategy.

While generative AI is already more intuitive than many hype-cycle innovations, companies need internal expertise to gain a competitive advantage. But deep gen AI experience is scarce, which makes talent expensive.

*The Wall Street Journal* reports that senior AI engineers are fetching up to \$900,000 salary offers, with entry-level prompt engineers starting at \$130,000.<sup>35</sup> And they're looking for work that will elevate their résumé—not pull them into the weeds.

If companies want to bulk up their bench, they'll have to be willing to pay—and create positions that offer employees the purpose, autonomy, and opportunities for mastery that they seek. Yet, IT executives are still budgeting for the status quo.

While new staffing hit 18% of gen AI spending in 2023, it's only expected to rise to 20% in 2025. This may be wishful thinking, as 56% of CEOs have yet to assess the impact of gen AI on the workforce.<sup>36</sup>

As CEOs prioritize specific use cases, the related labor-spend calculus is prone to shift. Each gen AI model comes with its own set of labor costs, which means net-new costs will vary for each implementation. This puts leaders in a tough position, forcing them to estimate the financial impact of job roles that don't yet exist.

What you need **to do**

## Unclog the people cost bottleneck.

Bolder, high-ROI initiatives can attract top talent and help absorb spiking AI talent costs—if your organization can stomach the higher price tag.

### Get an unvarnished view of the current market for talent.

Be honest about the types of talent your organization can compete for successfully. Inner-source to secure skills and flexibility by building a marketplace where those with the right skills (or the interest in learning them) can be matched with opportunities.

**Build market-based people costs explicitly into all gen AI business cases.** Model the feasibility of business cases based on the attractiveness of the work, not just on the expected talent costs.

**Engage with strategic partners,** especially technology providers and global systems integrators, to determine which parties can contribute the specific people required to design and execute your gen AI strategy.

What you need **to know**

## You can't cut your way to growth.

Running a tight ship can cut millions of dollars from a bloated IT budget. But streamlining spend can only take a business so far.

To deliver the exponential returns CEOs dream of, leaders must identify where tech spend will drive the most transformative growth. However, the average organization spends just 23% of its tech budget on efforts that actually produce business income, while 47% is dedicated to keeping the lights on.<sup>37</sup>

The same holds true for gen AI spend. Rather than focusing on income-generating areas of the business, organizations are spreading gen AI funding equally across several cost centers. Almost three-quarters (71%) of gen AI spending will go to HR, finance, customer service, sales and marketing, and IT, where investments are expected to cut costs. Only 29% will go to product-related business functions, where growth-driving innovations incubate.

This makes it difficult to define business cases that break the mold. CEOs need to make data-driven decisions about which gen AI plays do the most to advance strategic objectives—and fund them accordingly. At the same time, don't let the perfect get in the way of the good. Proving one or two quick wins can help build the business case for more grandiose visions.

What you need **to do**

## Be intentional and stack your investments.

Dive into the data to decide where your generative AI program can provide the most bang for your buck. Worry less about financial precision until you've designed initiatives worth doing.

**Appropriate the private equity playbook.** Apply lessons from the way private equity firms invest in IT. Ruthlessly eliminate initiatives that won't improve the value of the enterprise within three years—and funnel those funds to programs that will.

**Radically modernize how you design strategic IT investments.** Allocate spend based on overall growth potential, not just short-term savings. Stop spreading gen AI funding equally across organizational silos.

**Think ecosystem always.** Engage your strategic IT service providers and your most valuable customers in discussions about how to maximize the value of gen AI. Make business model innovation a group project.

1. Spending
2. People
- 3. Strategy**



## Section two

# AI-fueled operations

**“Technology has changed us.  
It has changed the way  
we do things.”**

Gonzalo Gortázar, CEO, CaixaBank

Doing things the same way they've always been done is a recipe for disaster. In the age of generative AI, supercharging operations isn't just a good idea. It's the only way to remain relevant.

And that applies to every area of the organization. Supply chain teams need to see farther into the future. Marketing teams must master hyper-personalization. Procurement teams have to strike better deals. Each function has its own role to play.

That's why CEOs are pushing operations teams to question old assumptions and envision new ways of working. But not everyone is fully change-ready. From finance to risk management to cybersecurity, many teams wonder when it's best to follow yesterday's rules—and when they have liberty to rewrite them.

To reinvent their operations for the gen AI era, CEOs must provide the vision for responsible revolution. They must define the organization's risk appetite and reward those who are willing to innovate. By finding the people in each division doing tomorrow's jobs today—then giving them a platform to get others on board—CEOs can cultivate enterprise transformation from the ground up. Find out how in the following chapters.



**“You can’t be good at everything. That’s why you have to find partners—and find a model that makes you comfortable working with these partners.”**

Mikkel Hemmingsen  
CEO, Sund & Bælt Holding A/S

## Chapter 10

### Enterprise operating model + generative AI

# Change the rules of the game

**Old paradigms have become exactly that. Old.** As generative AI invites people to integrate technology into everything they do, siloed, top-down decision-making has become a barrier to innovation. Hierarchical structures and linear processes that once drove success are now a recipe for sluggishness. And failure.

But CEOs can’t just let go of the reins. Instead, they must reimagine workflows and decision-making processes to make the most of gen AI without throwing their organization into disarray.

This will require rethinking the operating model—and giving people the power to drive grassroots transformation. Rather than using gen AI to make the same old processes faster, people need to define how gen AI will reconstruct their job roles and the workflows they’re part of. To spur this culture shift, CEOs must envision an open operating model that facilitates seamless data exchange, collaboration, and co-creation across the organization and the ecosystem. They also must empower people with the tools and training they need to succeed—and ensure leaders have the expertise to guide them through the transition.

Good governance is central to this process. If employees are going to drive digital transformation, the operating model must incorporate guardrails that keep the organization safe from human error and bias. This includes robust governance frameworks, auditing mechanisms, and feedback loops that detect and correct issues before they create unintended consequences.

It’s time for CEOs to flip the old hierarchy on its head. They must give teams the freedom they need to innovate without allowing daily work to devolve into a free-for-all. By thoughtfully breaking down functional silos and democratizing decision-making, CEOs can create the agile, adaptive, and interconnected op models that are essential to embrace gen AI with speed and scalability. All while keeping chaos in check.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Agility

### What to know

Generative AI is disrupting your operating model.

### What to do

Reboot how your organization operates.

## 2. Collaboration

### What to know

Scaling generative AI is everyone's job.

### What to do

Empower people to drive transformation.

## 3. Innovation

### What to know

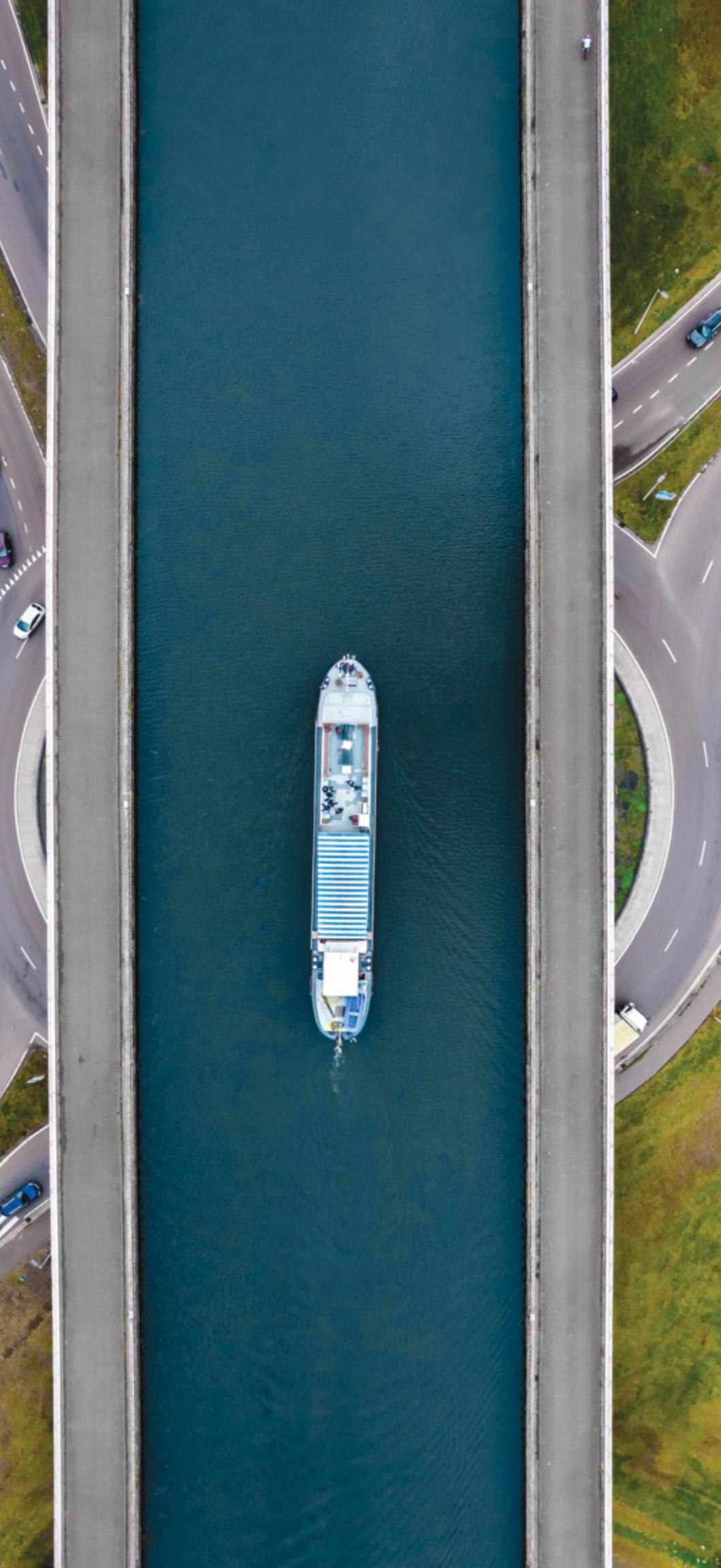
Don't expect to build a new op model perfectly on the first try.

### What to do

Make innovation at scale your North Star for op model transformation.

**"We see ourselves as a more horizontal organization. That's important because the tools in the digital toolbox change so fast. If people feel like they have to go through a traditional hierarchy to get buy-in, we could miss the boat. Instead, we take a proactive approach and encourage experimentation and exploration in real-time with our clients."**

Jordan Goldstein  
Co-CEO, Gensler



### 1. Agility

1. Collaboration
2. Innovation

### What you need **to know**

## Generative AI is disrupting your operating model.

You can't run tomorrow's business with yesterday's operating model. And business leaders know it. Over the next three years, 79% of executives expect gen AI to have a major impact on core elements of their enterprise op model.

When staying the course is no longer an option, what's a CEO to do? It starts with rethinking your approach.

Initially, leaders leaned toward harnessing the power of gen AI through centralized structures and deployment processes that align with the centralized decision-making processes already in place. But centralized control is rarely consistent with open innovation—which is essential to transform workflows with gen AI.

That's why centralization is giving way to hybrid approaches to deploying gen AI, including the "hub and spoke" model that is common in mature IT organizations. In this approach, a central hub team is responsible for developing, training, and maintaining gen AI models, while decentralized, cross-functional spoke teams focus on deploying, integrating, and customizing the models to meet specific business needs—such as developing new product features and functionality or increasing employee productivity.

Today, 63% of executives say they're deploying gen AI using a hub-and-spoke model or another type of hybrid approach for their early use cases—with 12% saying their gen AI operating model is fully decentralized. Now they need their enterprise operating models to reflect this shift.

By balancing standardization and control with the need for flexibility and adaptability in different business contexts, CEOs can accelerate progress. Rather than trying to shoehorn new ways of working into an outdated organizational structure, they must encourage the evolution of roles, workflows, and decision-making rights to drive the adoption of gen AI—and fuel future revenue growth.

### What you need **to do**

## Reboot how your organization operates.

Explore hybrid generative AI deployment models, such as the "hub and spoke" approach, and update your operating model to enable a hybrid approach to decision-making. Provide gen AI-powered tools, along with governance frameworks and guardrails that give people the freedom to rethink their roles safely.

**Rip up the playbook.** Start the conversation by defining what you want to achieve, then explore how gen AI can get you there. Push teams to redesign operations and workflows to take advantage of the new opportunities gen AI creates.

**Put customers first—no exceptions.** Adopt an operating model oriented toward services, products, and platforms. Track performance gains and assign operational value to gen AI-enabled workflows. Establish a governance model that creates transparency around how gen AI is used in service provisioning, product development, and across the platform and ecosystem.

**Accelerate decision-making.** Build on the bedrock of existing AI capabilities and governance structures to help teams pivot quickly and build momentum as new opportunities arise. Support and encourage exploration with incentives, contests, and employee performance goals.

1. Agility
- 2. Collaboration**
3. Innovation

What you need **to know****Scaling generative AI is everyone's job.**

As gen AI frees people to focus on higher-value tasks, roles are evolving faster than executives can update the org chart. The automation of routine tasks is putting greater emphasis on skills like creativity, empathy, and critical thinking—and bringing a broader set of leaders into the gen AI conversation.

While 46% of executives still say IT oversees gen AI investment decisions, most organizations have delegated these decisions elsewhere. AI and analytics functions, CEOs, and business functions are the most common primary decision-makers after IT. In this vein, 65% of executives say collaboration between finance and technology functions is now critical to their organization's success.<sup>38</sup>

Executives also say lack of collaboration is a significant barrier, with 40% of C-suite leaders citing it as the biggest obstacle to driving innovation within their organizations. To overcome this challenge, organizations must evolve their operating models to enable a cross-enterprise approach to gen AI adoption.

And culture change must be a central part of this process. While 64% of CEOs say succeeding with AI will depend more on people's adoption than the technology itself, 61% also say they're pushing their organization to adopt gen AI faster than some people are comfortable with.<sup>39</sup>

To quell concerns, leaders will need to be the first to elevate their expertise. Once they have a clear vision for how gen AI will transform the organization, they must paint a picture of what the future will hold and how they expect employee roles to evolve. They should also outline what skills people will need to be successful in this new landscape—and provide a clear path for developing them.

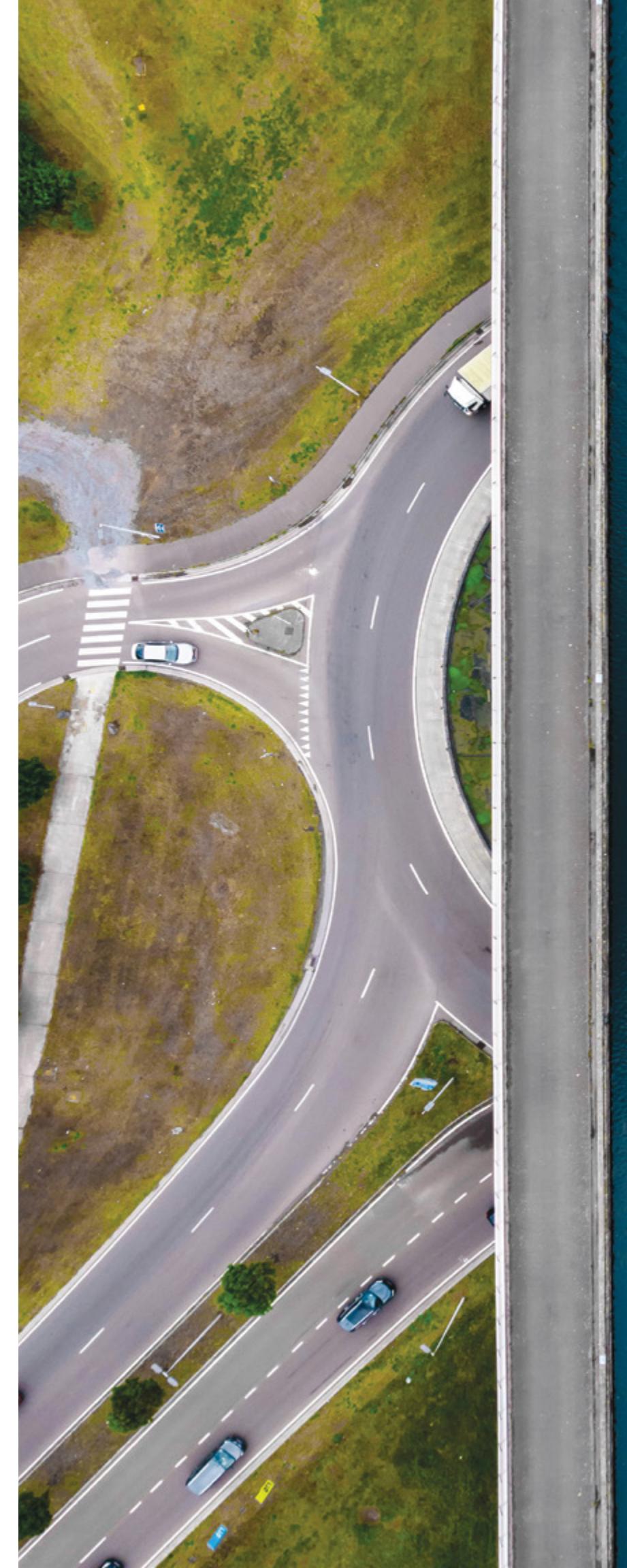
What you need **to do****Empower people to drive transformation.**

Foster a collaborative culture of shared responsibility, inclusivity, and proactive engagement. Evolve the operating model to facilitate the creation of interdisciplinary teams better equipped to ideate innovative products and solutions and overcome the obstacles to scaling generative AI.

**Don't let leaders pass the buck.** Encourage collective ownership of generative AI initiatives. Give executives and managers the education they need to become internal gen AI experts. Create a participatory culture that encourages tackling the challenges of gen AI head-on, rather than avoiding them out of fear of failure.

**Demolish siloed thinking.** Establish cross-functional roles, from AI ethicist to data curator to content orchestrator. Encourage knowledge-sharing by building teams that bring together product, engineering, and AI expertise to develop and deliver gen AI-enabled products and platforms.

**Spur culture change with a clear vision and shared imperatives.** Outline enterprise-wide milestones, timelines, and resources required for successful gen AI implementation. Set measurable goals and objectives, such as productivity gains or cost savings, and hold all teams accountable for meeting them.

What you need **to know****Don't expect to build a new op model perfectly on the first try.**

There's no single way to win with generative AI. How CEOs transform their organization's operating model will depend on its existing business architecture, talent pool, and ways of working.

That's why finding the best way forward will require broad and ongoing experimentation. Leaders must redesign the op model—which is much more than just an org structure—for both innovation and scalability from the outset. This will involve testing new approaches, processes, and technologies to see which work best.

Flexible and adaptable AI systems are critical to this process, as they allow organizations to test and refine their approaches in a rapid and iterative manner. This, in turn, enables organizations to identify and address any potential obstacles or challenges early on, reducing the risk of costly and time-consuming problems that can hamstring deployment. And these issues are widespread. In 2023, 54% of executives said their organizations halted gen AI projects after the pilot phase.

By recognizing that innovation and scalability are intertwined, leaders can design an op model that fosters collaboration, experimentation, and continuous learning as AI systems evolve.

While the path to successfully scaling gen AI will be marked by uncertainty and iteration, adopting an op model that enables experimentation within guardrails accelerates progress responsibly.

What you need **to do****Make innovation at scale your North Star for op model transformation.**

Design an operating model that fosters innovation across your ecosystem by building bridges and enabling rapid adaptation in lockstep with partner organizations.

Integrate governance as a core component, emphasizing collaborative innovation as a shared responsibility across teams. Create clear accountability from inception to implementation.

**Unite teams to ignite growth.** Emphasize that innovation through collaboration is a shared responsibility. Encourage and empower all team members to actively contribute to and take ownership of innovation efforts—down to the tiniest details of day-to-day workflows.

**Forge an unbreakable chain of accountability.** Initiate AI governance from the conceptual stage and sustain it throughout the AI solution's lifecycle. Set clear funding requirements, appoint accountable leaders, and create AI centers of excellence to ensure continuous alignment and drive enterprise success.

**Weave data and AI into an innovation tapestry.** Develop a flexible IT architecture that disaggregates models, tools, infrastructure, and applications to ensure seamless integration and cost efficiency. Use a composable data and generative AI platform to power your innovation engine.



**“Process automation is not about replacing an individual. It’s about enhancing the value of individuals—making human work more human.”**

Javier Tamargo  
CEO and President, 407 ETR

# Inspire a new generation of workflow gurus

**Everyone is hungry for the productivity gains promised by generative AI.** But innovation takes a human touch. To achieve the exponential growth that technology could unlock, operations leaders must become workflow gurus—and use gen AI to reimagine how jobs are done.

These visionaries must transform back office operations into an epicenter of strategic planning. Instead of focusing on transactional tasks, they must take charge of end-to-end processes, finding creative ways to accelerate speed to value. It’s not about automating the tasks that already exist—it’s about weeding out bad processes and introducing workflows that are entirely new.

By enhancing human ingenuity with gen AI, leaders can free people to focus on the high-value tasks that require empathy and creativity, not just time and energy. But first people have to see the value it brings. Because “productivity gains” sound a lot like “job cuts” to skeptical employees, CEOs need to share a clear vision for what gen AI adoption will look like—and how it can support operations teams.

As the line between automation and augmentation blurs, employees need to see how they can elevate their roles. They need to understand how AI assistants can help them orchestrate a symphony of processes that are more responsive to changing business needs. As gen AI continues to rapidly evolve, operations teams can become a growth engine for the business—if people are inspired to play their crucial role.

## Research methodology

The statistics informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 400 US-based executives across 22 industries in October 2023 regarding the impact of artificial intelligence on various business processes. The second surveyed 300 US-based executives across 22 industries in May 2023 regarding generative AI and the workforce. The third surveyed 2,000 global executives across 10 industries from April to July 2023 regarding AI and automation.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Experimentation

### What to know

The back office will soon be a generative AI hub.



### What to do

Give operations teams runway to experiment—but ask for proof points when they land.

## 2. Augmented work

### What to know

Generative AI converts technology into teammates.



### What to do

Treat AI assistants like racecars and employees like professional drivers.

## 3. Skills and capabilities

### What to know

Upskill and outsource to move forward faster.



### What to do

Trade control for capability.

**“The more you specialize and divide a process into parts, the more you have to create some kind of dependency between the parts.”**

Mikkel Hemmingsen

CEO, Sund & Bælt Holding A/S



1. Experimentation
2. Augmented work
3. Skills and capabilities

What you need **to know**

## The back office will soon be a generative AI hub.

Unprecedented complexity—from real-time reporting to fragile global supply chains to fintech disruption—is poised to change operations forever. At first glance, gen AI may seem to amplify this complexity. But, once teams accept it, this technology can help them cut through the noise.

Executives are optimistic about what gen AI can do—and they expect to apply it broadly across operations. By 2025, they plan to augment business processes 61% more than they do today, with growth distributed almost equally across HR and the finance processes of source to pay, lead to cash, and record to analyze. As a result of gen AI, they expect to see a whopping 41% increase in productivity—a jump that should have a profound impact on the bottom line.

But CEOs should expect progress, not perfection. Getting the most value from gen AI will require experimentation with clear guardrails, a high tolerance for failure, and a willingness to overcome challenges as they arise. For instance, roughly four in 10 executives say data privacy concerns and employee resistance to adoption are significant hurdles their teams must face.

To evolve back office operations into the gen AI hub it could be, CEOs will need to foster a culture of innovation, governance, and continuous learning. They'll also need to provide radical reskilling options to deter employees from digging in their heels. As they do, they'll uncover new opportunities to respond strategically to disruption—no matter how chaotic the future might be.

What you need **to do**

## Give operations teams runway to experiment—but ask for proof points when they land.

Reward teams for getting creative with process automation in operations, as long as they provide clear documentation about what worked. Ask them to highlight where they delivered measurable business value and where efforts fell short.

### Share learnings in real time to accelerate

**speed-to-value.** Ask employees to relay their experiences in collaborative communication channels and documentation portals.

### Reward your team’s innovative spirit—not just big wins—to discover new ways to boost ROI.

Incentivize big-picture process innovation, small-scale efficiency gains, and fast failure that leads to valuable lessons learned.

### Increase productivity through predictive analytics.

Use generative AI to detect patterns and trends that highlight opportunities to streamline workflows. Adopt flexible operating models to respond quickly to the insights it uncovers.

1. Experimentation
- 2. Augmented work**
3. Skills and capabilities

#### What you need **to know**

### Generative AI converts technology into teammates.

Can a tool become a trusted teammate? Most executives say yes—even if their employees are still unsure.

87% of executives expect gen AI-powered assistants will soon be able to query, validate, and aggregate information reliably for employees, giving them more time to focus on strategic work. And they expect employees to welcome their new co-workers with open arms. Nearly two-thirds (64%) say their people will need to work in tandem with digital teammates to deliver seamless processes by 2025.

But our *2024 CEO Study* revealed that top leaders are concerned about the human element. In fact, 64% say succeeding with AI will depend more on people's adoption than the technology itself. And 61% say they're pushing their organization to adopt generative AI faster than some people are comfortable with.<sup>40</sup>

While the scale of change on the horizon is intimidating, the potential upside for employees that embrace gen AI is substantial. For instance, 60% of executives say AI assistants will execute most traditional processes by 2025. This evolution could liberate people from mundane tasks and give them the time they need to do more valuable—and more enjoyable—creative work.

As digital teammates join the workforce *en masse*, operations leaders will need to help people see how they can use gen AI to their advantage. Employees who step up to the challenge could open new avenues for business growth—and entirely new career paths they can explore.

#### What you need **to do**

### Treat AI assistants like racecars and employees like professional drivers.

Provide a roadmap that shows employees where and when they should automate or augment processes with AI assistants. Give them an owner's manual that explains how to use these powerful machines effectively and responsibly.

**Reduce drag with streamlined design.** Identify the processes that create the greatest frustration for operations teams and find ways to automate them.

**Reinforce guardrails.** Train people to use generative AI responsibly so they aren't afraid to push the pedal to the metal.

**Teach gen AI to take the wheel when needed.** Implement a self-learning training program for gen AI to improve its performance and accuracy in tasks such as compliance risk assessment, fraud detection, and profitability analysis.



#### What you need **to know**

### Upskill and outsource to move forward faster.

Business leaders know that, when it comes to adopting generative AI, their talent is lacking. While they could fill gaps with training and hiring, that process takes years—and they don't have that much time.

As the race to gen AI pushes organizations to deliver ROI in months—or maybe weeks—executives are looking to turbocharge their efforts with external expertise. Across nearly every process in HR, as well as source to pay, lead to cash, and record to analyze in finance, most executives plan to work with business process outsourcing (BPO) providers to accelerate their digital transformation with AI. The most likely processes to be outsourced include training in HR, sourcing in source to pay, sales support services in order to cash, and general accounting transactions and processing in record to analyze.

However, outsourcing will only get an organization so far. To succeed in the long run, companies must also upskill their in-house talent. As a result, 84% of executives say they're very likely to invest in new skills and roles for gen AI in HR by 2025, with at least 70% saying the same for record to analyze (76%), lead to cash (73%), and source to pay (71%). This investment will be significant, with executives expecting to allocate 18% more of their skill budgets to gen AI-specific skills in 2025 than they did in 2023.

CEOs will need to strike the right balance between building internal capabilities that strengthen their competitive advantage and partnering to gain the skills and expertise that will support their growth. The future will belong to organizations that develop gen AI expertise as well as the ecosystem partnerships that power transformation.

1. Experimentation
- 2. Augmented work**
3. Skills and capabilities

#### What you need **to do**

### Trade control for capability.

Tap partners with generative AI expertise to automate processes that aren't core to your competitive advantage. Develop new internal roles, such as process orchestrators, digital librarians, and experience designers, to improve processes that must be managed in-house.

**Outsource to scale expertise.** Partner with BPO providers to augment internal capabilities, expand possibilities for automation and workflow optimization, and quickly deploy the most advanced AI and automation technologies at pace.

**Create career paths that don't exist today.** Explore what new roles your organization should add. Employ process orchestrators to manage AI assistants across end-to-end processes. Tap digital librarians to manage prompt libraries, generative AI models, and governance and ethical guidelines.

**Optimize processes with experience designers.** Define a compelling value proposition for process automation in operations and design experiences that deliver the intended benefits and exceed user expectations.



**"I don't think we are at a point where AI spits out something and we can trust it blindly."**

**Yoshito Murakami**  
CFO, Power, GE Vernova

## Chapter 12

### Finance + generative AI

# Unlock your finance team's analytical prowess

In today's dynamic business environment, your organization faces a perfect storm: inflation, geopolitical uncertainty, rapidly changing regulations, shifting reporting standards, tariff and trading uncertainty, and volatile cost of capital. And yet, despite these economic headwinds, growth and profit expansion have never been more essential.

To address these challenges, CFOs—and the finance functions they lead—must adopt a new approach to financial management that leverages the power of generative AI. This advanced technology can help CFOs and their teams understand which bets let the organization move faster—and deliver the right insights at the right time.

As technology reshapes the business landscape, CEOs need finance leaders to advise where finite budgets should be spent. CFOs play a crucial role in this moment. They must know how tech investments are performing and where the enterprise is getting the biggest bang for its buck. By connecting the dots between tech spend and business value, finance can provide insights CEOs need to dramatically accelerate transformation and growth.

Success depends on how quickly finance can turn data into actionable insights. And this is where gen AI delivers the most value. It unlocks a previously untapped world of unstructured data to help finance create better, more strategic narratives.

While traditional AI can only recognize patterns in financial data, gen AI can identify key themes and trends, highlight an organization's strengths and weaknesses, and uncover hidden market opportunities. It can help CFOs navigate a complex risk landscape, make investment decisions more confidently, improve productivity, drive cost take-out, increase forecasting accuracy, and create new business value. But, at least for now, AI adoption in finance remains low. A recent IBM IBV survey of CFOs found that just one in 10 finance organizations have optimized traditional AI technologies. And only 2% are optimizing gen AI. If CFOs are to be the strategic transformation partners CEOs require, this needs to change fast.

#### Research methodology

The statistics informing the insights in this chapter are sourced from several proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics and APQC. The first surveyed 5,000 global executives in 25 industries regarding generative AI from January to March 2024. The second surveyed 601 global finance leaders across 16 industries in the second half of 2023 regarding AI adoption in finance. The third surveyed 2,000 CFOs across 28 industries from November 2023 to February 2024 regarding finance and business transformation.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. FinOps

### What to know

You need generative AI for FinOps—and FinOps for generative AI.



### What to do

Fine-tune FinOps with generative AI—and apply FinOps across the enterprise—to make technology even more valuable.

## 2. Transformation

### What to know

Generative AI gives your finance team superpowers.



### What to do

Attack labor-intensive tasks that are ripe for generative AI automation.

## 3. Decision-making

### What to know

Generative AI doesn't just cut costs—it creates new business value.



### What to do

Employ generative AI assistants to execute strategies more effectively.

**“It’s important to forecast and create a roadmap—but it’s even more important to be agile. So, we’ve decided to focus on being more responsive to trends and to move from a plan-centered to an execution-centered approach.”**

Taro Fujie

President and CEO, Ajinomoto Co., Inc.



Chapter 12: Finance

### 1. FinOps

- Transformation
- Decision-making

### What you need **to know**

## You need generative AI for FinOps—and FinOps for generative AI.

Executives across industries agree that gen AI can give companies a competitive edge. For their part, CFOs tell us embedding gen AI throughout the enterprise will be a top enabler of competitive advantage over the next three years.

But not every use case is created equal. While experimentation is essential to identify where gen AI delivers the most value, the finance function can help CEOs and other leaders assess where gen AI shows the greatest potential and manage the new revenue streams created.

FinOps, or financial management for cloud-based investments, should play a big part in gen AI investment decisions. It increases visibility into cloud-related financial data, finding operational efficiencies and measuring returns. It formalizes and structures what might otherwise be a largely random process—and reduces the potential for unexplained cloud expenses.

As most organizations shift to hybrid cloud environments, cloud infrastructure costs could explode—and enterprise-scale gen AI could compound these costs exponentially. That’s why integrating FinOps early is essential: it models future scenarios to help you see where spend will be needed—and where it can be avoided.

And it’s not just FinOps increasing the value of gen AI adoption. Gen AI can also make FinOps more valuable by quickly analyzing and summarizing information from multiple sources, such as vendor bills and IT architectural guidelines, and identifying areas for improvement. Most organizations that have activated a FinOps model using AI-powered software report cost savings greater than 20%. Peers not using AI save less than 10%.<sup>41</sup>

Yet, despite clear potential benefits, only 31% of organizations currently have FinOps capabilities in place. And only 26% of CFOs are collaborating with technology leaders to scale gen AI across the enterprise.

### What you need **to do**

## Fine-tune FinOps with generative AI—and apply FinOps across the enterprise—to make technology even more valuable.

Using gen AI to improve FinOps can make it more accurate and efficient. Applying FinOps to gen AI improves cost-benefit analyses and helps teams prioritize use cases.

**If your organization doesn’t have FinOps capabilities,** take this opportunity to set up an organizational home for gen AI FinOps. Establish governance through a responsibility assignment matrix with resources from finance, IT, and the business.

**If your organization is already embracing FinOps,** immediately apply FinOps practices to your gen AI investments. Implement a cost estimation and tracking framework that can help your team understand the costs associated with gen AI projects.

**Use gen AI to enhance FinOps capabilities.** Simulate financial data and scenarios that can help increase the accuracy of financial models, improve risk management, and support strategic decision-making.

**What you need **to know******Generative AI gives your finance team superpowers.**

Gen AI frees finance teams from tedious tasks, unleashing a torrent of productivity. On average, AI adopters attribute 40% of finance function FTE redeployment to AI, which lets teams focus on higher-value, more strategic activities, such as readjusting planning decisions quickly in real time.<sup>42</sup>

What might these automatable tasks be? From accounting and forecasting to contract and compliance management, potential use cases abound. Our research shows that the finance areas poised to realize the greatest value from gen AI include predicting anomalies (47%), explaining variances (41%), and generating scenarios (40%).

Gen AI can also streamline compliance audits by analyzing financial data to identify discrepancies and anomalies, reducing the amount of time human employees must spend on monitoring and manual testing. It can make the process of reviewing contracts and negotiating terms more efficient, as well. It can analyze legal language to identify potential issues, risky clauses, or opportunities for improvement, informing more strategic negotiations—and giving teams more time to focus on relationship management.

While use cases differ, one common theme remains the same. With the right governance in place, human employees have more capacity to embrace real innovation, improve financial performance, and drive growth.

**What you need **to do******Attack labor-intensive tasks that are ripe for generative AI automation.**

Incent your CFO to introduce gen AI tools that automate manual and mundane tasks. Focus on use cases that identify and mitigate risks before making investments that might impact core finance functions—but scale quickly once you have a strong technical foundation in place.

**Acknowledge gen AI's short-term limitations while planning to capitalize on its full potential.** While gen AI isn't proficient at numeric analysis yet, it will be soon. Develop value-adding use cases now to prepare for this future gen AI capability.

**Build governance structures across the finance organization to steer gen AI use cases.** Bridge governance gaps and develop ethical guidelines that will support the ethical adoption of gen AI. Extend a culture of personal responsibility and accountability into the technology.

**Ask your CFO to drive targeted gen AI adoption in day-to-day activities.** Get individuals to use gen AI in specific daily tasks. Align gen AI adoption to real-world responsibilities to help overcome employee resistance and prove the value of this transformative technology.

**What you need **to know******Generative AI doesn't just cut costs—it creates new business value.**

Adopting gen AI in finance is about more than controlling costs and increasing efficiency. It's a capability CFOs can tap to enhance decision-making and execute strategy.

By creating commentary for financial dashboards, analyst communications, and sales analysis, it can increase finance staff time focused on decision support by 90%. Gen AI can also cut revenue loss by 60% to 70% by automating the validation of customer claims and deductions to reduce unnecessary payouts.<sup>43</sup> These performance improvements can provide a major lift to a company's bottom line. But gen AI can only be as effective as the people using it. This means businesses must train their finance teams to tap this technology responsibly in their daily work.

Many leaders understand this need. Nearly two-thirds of organizations have already invested in the machine learning and algorithmic skills needed to train cognitive systems for finance. And at least half have invested in data science and modeling and simulation skills for finance teams. However, fewer than 40% of finance organizations have implemented a center of excellence for AI—and only 18% have trained staff on gen AI.

Enterprise data is another piece of the puzzle. Uniform data, as well as an integrated data architecture, is necessary for gen AI to inform strategic decision-making at the CEO-level. We know that 71% of the very top finance organizations have implemented a standardized data architecture, compared to just 39% of their peers.<sup>44</sup> And with this data foundation in place, CFOs can do more than deliver financial data—they can define the underlying business KPIs that drive financial performance.

**What you need **to do******Employ generative AI assistants to execute strategies more effectively.**

Use AI assistants to identify trends and provide insights that inform strategic decision-making. Employ processes that help your organization respond to changing market conditions faster and stay ahead of the competition.

**Train gen AI models to accurately explain forecast and budget variances to support business decisions.** Expand scenario planning and use of gen AI-enabled predictive models that incorporate historical data and external information to accelerate innovation.

**Introduce digital assistants to increase financial accuracy, scalability, and speed.** Automate manual processes to reduce the likelihood of human error and streamline the financial analysis that informs business decision-making. For example, in financial planning and analysis, create a gen AI assistant for questions and answers on profit and loss. In procure to pay, use gen AI assistants to reduce vendor inquiries on accounts payables or reduce employee inquiries on travel and expenses.

**Embrace at least one finance-specific end-to-end use case.** For example, in record to report, use gen AI to craft and narrate impactful internal management and operational performance reports. In order to cash, use gen AI to recover cash by validating customer claims and deductions.

**Procurement + generative AI**

# Procurement is a pressure cooker

**“We want to shift time from entering the numbers in the right box to looking at the numbers and saying, ‘Why is this happening? What is this telling me? Why are we spending so much here?’”**

Geoffrey Liang  
CFO, 407 ETR

**Procurement leaders feed an insatiable appetite.** From product components to transportation services to commercial property, they manage the deals that make the business world go round. But no matter how much they buy, their work is never done. The business *always wants more*.

And the demands are getting more intense. As expectations rise, budgets shrink, and complexity grows, procurement teams are feeling the pressure. But generative AI can offer some much-needed release.

For instance, gen AI can support strategic sourcing and negotiating by identifying patterns in market data then quickly uncovering opportunities to aggregate purchases or dramatically cut costs that employees might miss in the rush to meet daily deadlines. And by automating transactional tasks, such as payment processing and requisition management, gen AI frees up procurement teams to focus on more strategic work that boosts the bottom line.

Gen AI-powered tools also help procurement teams prepare for a future characterized by uncertainty. It can simulate different scenarios, predict outcomes, and suggest ways to optimize procurement strategies—giving teams the confidence they need to innovate through volatility, form strategic partnerships, and inform new product development based on real-world intel.

With the right data foundation, gen AI opens new avenues for CEOs to improve profit margin and cash flow—and strengthen alliances to help their organizations navigate disruption whenever and wherever it appears. But only if procurement teams lean into innovation using gen AI.

**Research methodology**

The statistics informing the insights in this chapter are sourced from several proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 200 US-based executives across 15 industries in September 2023 regarding generative AI and supply chain operations. The second surveyed 400 US-based executives across 22 industries in October 2023 regarding the impact of generative AI on various business processes. The third surveyed 5,000 global executives in 25 industries regarding generative AI from January to March 2024. The fourth surveyed 5,000 global executives from August to November 2023 regarding how their organizations are operationalizing sustainability.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Leadership

### What to know

Your Chief Procurement Officer (CPO) may need convincing.



### What to do

Get your CPO to build the business case they believe in.

## 2. Transformation

### What to know

Procurement can be the pioneer in your supply chain transformation.



### What to do

Take the first-mover advantage by optimizing generative AI for procurement.

## 3. Disruption

### What to know

Generative AI is like a procurement insurance policy.



### What to do

Anticipate. Adapt. Accelerate.

**“Generative AI has allowed us to lower barriers between business units by sharing business unit-owned data.”**

Kazushi Kuse

Executive Vice President, Asahi Kasei Corporation



Chapter 13: Procurement

1. Leadership
2. Transformation
3. Disruption

What you need **to know**

## Your Chief Procurement Officer (CPO) may need convincing.

CPOs are a skeptical bunch. Because they hold the purse strings, someone is always trying to sell them something. Or trying to get them to buy something they don't want.

That means they must be diligent. To manage costs while also enabling top-line growth, they need to be critical about every investment the business makes. And they're not fully convinced that generative AI is advanced enough to drive meaningful ROI—at least not yet. Compared to other C-suite leaders, they're 60% more likely to believe gen AI isn't important to their organization.

They're not easily swayed by the promise of new technology. Unless they see real ROI. But it's a catch-22. CPOs won't get ROI from gen AI in procurement unless they start using it—and only 13% have reached advanced levels. While 41% have begun piloting or implementing gen AI, progress in procurement remains in its early stages.

By underestimating the potential of gen AI, CPOs are missing out on opportunities to steer their teams toward higher-value activities. Perhaps they're too busy doing the work to see how gen AI can do things better, faster, and cheaper. CEOs should encourage them to take advantage of both opportunities on the near-term horizon—and those they can introduce today. Because the competition will be.

CEOs can direct CPOs to start in the areas of greatest potential. For example, 59% of operations leaders believe it's very important to apply gen AI to predictive spend and sourcing analytics. If your CPO is among them, start with that. And once initial investments begin to pay off, CPOs themselves can deliver proof points needed to win over other skeptics, becoming champions for gen AI across the enterprise. Plus, they'll be more likely to expand the organization's progress and catalyze change across the supply chain ecosystem.

What you need **to do**

## Get your CPO to build the business case they believe in.

Address reservations hindering generative AI outcomes. Elevate the role of procurement from the transactional to the strategic.

**Flip the script.** Show your CPO the opportunities behind the obstacles and inspire them to do the hard work of driving change. Encourage them to become strategic business advisors and ecosystem orchestrators—not just do-ers and administrators. And make progress non-negotiable.

**Push sourcing beyond price.** Build the data foundation that will empower procurement teams to deliver enterprise value with suppliers. Centralize, clean, and enrich data from internal and external sources, including ERP systems and supplier databases, into a single platform. Employ predictive modeling to manage supplier networks and co-create strategic value across the ecosystem.

**Equip your CPO to improve cash flow.** Provide gen AI tools that can analyze data to predict future cash flow requirements and identify opportunities to release trapped cash in the supply chain. This includes optimizing payment terms, inventory levels, and other working capital components.

What you need **to know**

## Procurement can be the pioneer in your supply chain transformation.

Supply chains are complex. And procurement is at the hub. It touches every contract, every purchase order, and every request for proposal. The flow of information never ebbs and tracking it all can feel like drinking from a firehose; often more painful than productive.

But there is relief on the horizon. Generative AI helps manage the flow, diverting essential data, in the right form, to the right person in real time. For example, using gen AI in source to pay can increase visibility into non-delivery and overdue commitments so that teams can respond. By analyzing relevant supplier performance data, 80% of Chief Supply Chain Officers (CSCOs) and Chief Operating Officers (COOs) say gen AI can improve supplier management.

Measuring cost and performance more quickly and accurately helps teams improve upstream procurement and make the organization more competitive. In fact, the potential is so great that CSCOs and COOs expect procurement to be the top supply chain and operational workflow affected by gen AI in both 2024 and 2025.

But transformation will only happen as quickly as people adapt. Leaders must train teams to make the most of gen AI to truly move the needle.

Offering self-service gen AI assistants can empower teams to transform workflows through orchestration. With a quick query, teams can access insights and recommendations to gain cost efficiencies, steer supplier and category management strategies, and inspire product innovation, while reducing the burden of compliance reporting.

What you need **to do**

## Take the first-mover advantage by optimizing generative AI for procurement.

Commit brainpower—and bandwidth—to push gen AI projects past pilot phase to unlock your supply chain's full potential.

**Map the blind spots in your supply chain.** Make a mission of identifying data sources and gaps limiting the ability of your gen AI-infused operating models to gain efficiencies and contain costs. Venture into quantum computing to supercharge your simulation and visualization models and find new opportunities for supply chain optimization.

**Free up working capital.** Optimize end-to-end supply chain processes focused on inventory, such as forecasting demand, identifying logistical bottlenecks, and leveling inventory in real time. Unlock trapped capital by reducing the need for inventory buffers—then use that cash to drive growth and innovation.

**Celebrate supply chain innovators.** Find the AI champions doing tomorrow's jobs today and give them a platform to share their successes. Incentivize innovation by rewarding people who are already rethinking supply chain workflows with AI assistants. And publicly applaud when changes begin to move the needle on KPIs.



What you need **to know**

## Generative AI is like a procurement insurance policy.

In the world of procurement, risk of disruption lurks around every corner. Sustainability issues, in particular, loom large. Teams must be prepared to pivot at any moment to manage risks before they materialize, from extreme weather events to resource scarcity to rapidly changing compliance mandates.

Gen AI can help keep procurement teams from getting blindsided. Across the board, executives rank risk management and resilience as the top sustainability use case for gen AI—and 64% say gen AI will be important for their sustainability agenda overall.

But better defense is only half of the opportunity. Gen AI also helps businesses go on the offensive to advance integrated sustainability programs that often struggled in the past. If gen AI makes tracking and reporting on these initiatives easier and more cost-effective, organizations may feel more empowered to lean into sustainability strategically. And there's a lot of room for progress. Only 22% of organizations have fully integrated sustainability into the procurement function.

CSCOs and COOs see the opportunity on the table. 77% say gen AI can identify potential geopolitical and climate risks and recommend proactive risk mitigation. Three in four also say that gen AI enables better visibility, insights, and decision-making across ecosystems—which are so important to sustainability and compliance. And for their part, CPOs say supplier performance monitoring and compliance reporting is the most valuable—and most feasible—gen AI use case for procurement teams.

What you need **to do**

## Anticipate. Adapt. Accelerate.

Report on a broader set of key supplier sustainability metrics more frequently—and set a higher bar. Put partners on alert and hold them accountable.

**Scale procurement insights with ecosystem partners for sustainable innovation.** Pool resources, expertise, and models with ecosystem partners to create shared solutions that can be used across multiple organizations to drive sustainability outcomes.

**Incorporate sustainability data, KPIs, and insights into every procurement decision.** Make sustainability KPIs a central part of how vendors are evaluated and selected. Use generative AI to monitor vendor sustainability performance against your sustainability standards and objectives.

**Detect and manage reputational, compliance, and regulatory risk with gen AI.** Evaluate supplier compliance with regulatory requirements, industry standards, and ethical practices. Reevaluate your vendor relationships to align with your sustainability objectives and reduce risk.



“A question can be asked and a response can come back that is just inaccurate. If the person who is receiving it doesn’t really know that it’s made up, inaccurate, or just a weird combination of things, then they might use that information. So, I think we’re just beginning to understand that challenge or that risk.”

Judy McReynolds  
Chairman and CEO, ArcBest

## Chapter 14

### Risk management + generative AI

# Treacherous terrain is around every bend

When it comes to risk, generative AI is like a master cartographer, mapping the landscape as rapidly as disruption reshapes it. This makes it possible to see new risks clearly as they emerge—from climate catastrophes to AI-driven ethical dilemmas—all while keeping traditional risks in clear focus.

Gen AI helps identify patterns that could be symptoms of larger problems under the surface. It can simulate “what-if” scenarios that help teams prepare for the unknown and generate recommendations on what to do next. Given these capabilities, 55% of CEOs see gen AI as more of an opportunity than a risk.

But 45% say the risk is greater than the opportunity. While gen AI can be a powerful tool to expand risk management capabilities, it also expands the breadth and depth of risks that have to be managed. Gen AI is a disrupter in its own right, creating new fault lines and vulnerabilities, such as complex scams.

The sheer scale and speed of gen AI-driven data analysis often creates blind spots, obscuring critical risks from view while creating new risks, including deepfakes of images, documents, and voices. Relying too heavily on gen AI outputs can create a false sense of security at a time when teams need increasing vigilance. Inaccurate assessments, the cost of computing resources, expanded security vulnerabilities, and improper use of data are just a few of the additional risks that could push an organization off track and out of compliance.

CEOs must learn to navigate both sides of gen AI risk and chart a deliberate course forward that integrates AI-driven risk management with human judgment, oversight, and regulatory compliance. Organizations that strike the right balance will be able to efficiently respond to rapidly evolving threats with greater speed and better response, forging a more resilient future. Those that are too aggressive with their gen AI adoption—or too risk-averse—may face unforeseen consequences and competitive displacement.

Research methodology  
The statistics informing the insights in this section are sourced from three proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 210 US-based executives in May and June 2024 regarding risk and generative AI. The second surveyed 5,000 global executives in 25 industries regarding generative AI from January to March 2024. The third surveyed 2,500 global CEOs across 26 industries from December 2023 to February 2024 regarding enterprise transformation.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Innovation

### What to know

Generative AI is unleashing a maelstrom of risks.

### What to do

Set a risk threshold that fuels innovation—not chaos.

## 2. Brand

### What to know

Your reputation is on the line.

### What to do

Cool simmering reputational risks before they boil over.

## 3. Disruption

### What to know

The future is a threat multiplier.

### What to do

Prepare for 100-year risks every week.



**“My goal is to make sure that my customers can sleep soundly at night knowing that they’re protected and that they can continue to trust me as an institution.”**

Ian Cramb  
COO, UBP

1. Innovation
2. Brand
3. Disruption

What you need **to know**

## Generative AI is unleashing a maelstrom of risks.

Risk is the currency of innovation—but uncontrolled risks pose an existential threat to the enterprise. To cash in on the promise of gen AI-powered transformation, CEOs must ensure added risks don’t overshadow potential rewards.

Gen AI continues to bring new threats to the fore, with 44% of CEOs saying it creates significant risks for society. And 57% of chief risk officers (CROs) and chief financial officers (CFOs) say their organization’s use of gen AI will increase overall risk exposure. Top risks they consider when making gen AI investments include compliance and regulatory risk (63%), customer and employee privacy (58%), and bias and misinformation in decision-making (56%). More than half of executives are concerned about the cost of computing resources and new cybersecurity threats.

60% of CEOs say they’re looking into mandating additional gen AI guardrails to mitigate risk. But many are still being pushed to the sidelines. Consider regulatory and compliance risk. Even though 63% of CROs and CFOs say they’re focused on these risks, only 29% say they’ve been sufficiently addressed. And 68% of CROs and CFOs say they’re insufficiently prepared to tackle gen AI-related risks overall.

The situation is further complicated by a lack of skills. 70% of CROs and CFOs say keeping up with the speed of gen AI development and continuously addressing new risks requires expertise they currently lack. And 60% of CROs and CFOs say their current approach to managing gen AI risks is ad-hoc, only for select processes—or simply non-existent.

What you need **to do**

## Set a risk threshold that fuels innovation—not chaos.

Understand the full spectrum of risks generative AI introduces and their impact on your existing risk profile, then explicitly define how much risk you’re willing to accept to move the needle. Ask your CRO to keep you in the Goldilocks zone—not too aggressive, not too risk-averse—and give your teams the “just right” gen AI tools they need to outmaneuver even the most unpredictable threats.

### Define risk appetite for the full scope of gen AI risks.

Work with your CRO to evaluate how successful the organization has been with managing risk in the past, its financial capacity to withstand losses, and the potential impact of risk on operations. Outline the acceptable, quantifiable level of risk for each category. Establish risk limits.

### Take a formal approach to managing gen AI risks.

Set up structured risk assessments for gen AI initiatives. Work with your CRO to establish AI governance with clear accountability that is appropriate within your organization structure. Provide guidance on mitigation strategies to address identified risks and vulnerabilities.

**Establish mechanisms for ongoing monitoring and oversight of gen AI risks.** Look to AI leaders to monitor gen AI deployments, conduct risk assessments, and report to executive leadership. Use AI assistants to curate risk data for review by AI leaders. Foster open communication and collaboration with stakeholders.

1. Innovation
- 2. Brand**
3. Disruption

#### What you need **to know**

### Your reputation is on the line.

One misstep can undo years of successful brand building, causing irreparable damage to an organization's reputation—and its bottom line.

But many leaders continue to roll the dice. 84% of CROs and CFOs say reputational risk needs greater visibility at the board level. And fewer than half say their organizations have developed mitigation strategies for sources of reputational risk, including environmental and social responsibility, unsafe work environments, and security failures.

When left unchecked, reputational risks of any type can lead to financial disaster. For instance, 39 banks lost more than \$130 billion in shareholder value due to reputational risk in 2023.<sup>45</sup> Safety incidents, service meltdowns, and cyber outages in the travel industry have led to lost sales and market capitalization in the last year, as well.<sup>46</sup>

Reputational risks also present opportunities, as managing them effectively can yield substantial returns. Organizations with reputational risk protection strategies have seen their stock prices rise 5% above the market within two weeks of a reputational challenge. And those that communicate their strategy effectively see this premium rise to 9%.<sup>47</sup>

Gen AI could either multiply or mitigate reputational risks, depending on how it's managed. If gen AI deployment isn't carefully governed, concerns about ethics and bias could pose a risk to a company's reputation. However, when adopted properly, gen AI can help CEOs manage the reputational risks that threaten the organization's long-term viability. While only 16% of organizations use gen AI to address reputational risks today, 64% plan to capitalize on these capabilities by 2027 to predict, monitor, and mitigate potential issues that could affect their reputations.

#### What you need **to do**

### Cool simmering reputational risks before they boil over.

Maintain credibility with stakeholders by monitoring and responding to reputational risks as they emerge with gen AI. Predict which risks are most likely to escalate and suggest proactive mitigation strategies to keep the lid on heated situations.

**Gain insights into public perception and unseen risks.** Use generative AI to analyze social media, news articles, and customer reviews to identify emerging trends and conversations related to the organization. See what's behind negative sentiment and have your CMO and legal team develop a reputational risk mitigation strategy. Be responsive to maintain a positive brand image and reputation.

**Address environmental and social responsibility issues before they create a crisis.** Tap gen AI to assess datasets related to supply chain operations and environmental factors, including supplier performance data, transportation logs, weather patterns, and environmental and labor regulations.

**Show your true colors.** Build personas and use AI assistants to create and curate content that showcases your position on various issues. Pre-emptively test how different responses will resonate with each stakeholder group. Maintain consistent messaging and tone for social media, marketing materials, press releases, crisis communications, and customer interactions.



#### What you need **to know**

### The future is a threat multiplier.

From geopolitical disruption to data privacy compliance to generative AI-fueled cyberattacks, organizations face myriad risks that could become firestorms in a flash. That's why leaders need to be proactive, deflecting threats before they're in striking range.

In fact, 80% of CROs and CFOs say their organizations need to move from defensive risk management to a forward-looking risk stance. And many already believe that gen AI's predictive capabilities can help them play better offense. Nearly half of CROs and CFOs say forward-looking risk management will be the primary objective of their gen AI investments in risk management by 2027.

When used proactively and predictively, gen AI can unlock a treasure trove of benefits. CROs and CFOs say improving risk prioritization (76%) and improving tracking of potential risks (74%) are the most important benefits that come from adopting gen AI for risk management. These executives also expect gen AI to reduce the time it takes to assess regulatory changes (73%), shorten the time it takes the organization to respond to emerging risks (70%), and increase accuracy in risk forecasting (69%).

Gen AI can also improve an organization's market position, with 67% of CROs and CFOs saying they need to quickly adopt it for risk management to keep up with competitors. Yet, the risk function has been one of the slowest to adopt gen AI, ranking 12th out of 13 functions. The clock is ticking—and organizations that don't pick up the pace may soon find themselves under siege.

#### What you need **to do**

### Prepare for 100-year risks every week.

Use generative AI to stress-test your strategy and build resilience into your operations. Give risk managers the operational visibility they need to protect value and transform potential threats into opportunities.

**Dial in your risk radar.** Use gen AI to decode ambiguous data, interact with complex network graphs, and call attention to noteworthy anomalies. Illuminate risks that may be hidden due to complex interdependencies, emerging threats, and subtle pattern shifts.

**Preempt devastation.** Introduce predictive analytics AI assistants to identify unlikely but severe risks, helping risk managers quickly and efficiently take proactive measures to respond to a wider variety of threats.

**Continuously re-calibrate.** Encourage the risk function to monitor data streams and adjust risk forecasts in real time. Generate synthetic data to simulate potential risk scenarios. Accelerate the cycle of risk identification and assessment with gen AI suggesting new mitigation strategies as the threat landscape evolves.



“What are the things that humans could never do? We’re not actually automating the toil that was there before. You can now create capabilities and value that were never possible.”

Ed McLaughlin  
President and CTO, Mastercard

## Physical asset management + generative AI

# Say goodbye to downtime

**Production lines. Power lines. Pipelines.** With generative AI, CEOs have the chance to put equipment failures and unplanned outages in the past.

Its self-learning, self-monitoring, and self-maintaining capabilities are transforming physical asset management. For CEOs, that’s changing the business equation, as downtime that undermines productivity, revenue growth, and brand reputation dissolves.

By analyzing vast amounts of sensor data, maintenance records, and environmental metrics, gen AI can improve asset performance better than any human possibly could. And it’s better than old-style analytics. Its predictive prowess helps teams avoid costly surprises that cripple operations.

Not only can gen AI be good for an organization’s bottom line, it can also be good for the planet. Gen AI-powered assets can autonomously adjust operating parameters and plan work in ways that reduce energy consumption, shrinking an organization’s environmental footprint and limiting equipment wear-and-tear. This helps CEOs unlock new levels of efficiency, reliability, and environmental responsibility—and positions them for sustained success in increasingly contested markets.

### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics and APQC. The first surveyed 100 US-based executives across 21 industries in July and August 2024 regarding generative AI and physical asset management. The second surveyed 105 global electric power utilities executives about their organization’s maturity with respect to clean electrification in 2023.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Visibility

### What to know

Generative AI makes assets more valuable.



### What to do

Lengthen the lifespan of your physical assets.

## 2. Automation

### What to know

Connected assets take care of themselves.



### What to do

Make your machines self-aware.

## 3. Sustainability

### What to know

Generative AI makes sustainability sustainable.



### What to do

Major on eco-friendly innovation in asset design.



**“The goal is to get AI to do the things people don’t want to do and give humans the space to do the things they want to do—to increase speed and efficiency and create extra capacity.”**

Taro Fujie

President and CEO, Ajinomoto Co., Inc.

1. Visibility
2. Automation
3. Sustainability

### What you need **to know**

## Generative AI makes assets more valuable.

You can't expect your business to run smoothly every day. Or can you? By harnessing the power of gen AI, CEOs gain unparalleled visibility into physical asset performance—giving them the power to predict potential failures before they disrupt operations.

The impact will be nothing short of transformative. 71% of executives say gen AI fundamentally changes how they will manage assets—and 72% say it increases the strategic value of physical asset management to their enterprise.

A chunk of that value will come from unlocking new levels of efficiency, productivity, and profitability through proactive maintenance, because the more reliably your equipment operates, the more value it can create for your business. And understanding the true value of physical assets can lead to more profitable business strategies. Most executives see gen AI playing a larger role in this type of decision-making, with 72% of executives saying gen AI will have a major impact on their asset investment strategy.

For example, gen AI can help leaders determine when it makes sense to invest in repairing equipment they already have—or if it's time to buy something new. In the next two years, 68% of executives plan to use gen AI to assess the depreciation of individual assets and 77% expect to use it to assess entire asset classes. This level of granularity will give leaders the data they need to make more informed business decisions and derive more value from their physical assets over time.

### What you need **to do**

## Lengthen the lifespan of your physical assets.

Get ahead of routine maintenance, fine-tune processes, and drive unprecedented reliability and profitability by embedding generative AI into physical assets. Insert AI assistants directly into sensors, robotics, and machines to find efficiencies and increase the longevity of your asset investments.

**Train gen AI assistants to be the organization’s antennae.** Create gen AI-powered self-service assistants that can interact with assets, sensors, and devices to respond to vibrations before they lead to disruption.

**Increase predictive precision.** Use gen AI to analyze historical data and find the root cause of past failures. Then ask it to assess current assets and schedule preventative care based on current condition rather than arbitrary milestones.

**Discover hidden treasure.** Generate synthetic data where needed to better train gen AI models to spot opportunities to improve asset performance, increase asset availability, and decrease wear-and-tear.

1. Visibility
- 2. Automation**
3. Sustainability

What you need **to know****Connected assets take care of themselves.**

Machines depend on people for many things—but managing the minutiae of maintenance is no longer one of them. Generative AI empowers connected assets to handle scheduled maintenance and spot potential issues all on their own, unlocking the latent potential of connectivity across the enterprise and ecosystem.

When complex asset ecosystems work in harmony, they can help businesses achieve results that weren't previously possible. And by 2026, 76% of executives expect to use gen AI to derive differentiated outcomes from connected assets.

Potential applications seem almost limitless—and executives expect them to quickly become commonplace. By 2026, 77% of executives believe gen AI will enable connected assets to make autonomous decisions. Roughly three in four also expect to use gen AI to detect and diagnose asset anomalies, proactively schedule maintenance, and inspect assets across the portfolio.

By reviewing historical data, gen AI can analyze past failures and their effects, providing a treasure trove of insights to inform asset management decisions—and 71% of executives plan to use gen AI for this purpose in the next two years.

In the same timeframe, 69% of executives say gen AI will generate work instructions for field services technicians, streamlining maintenance processes and improving efficiency, and 76% say it will play a critical role in making maintenance recommendations, planning work orders, and authorizing service requests.

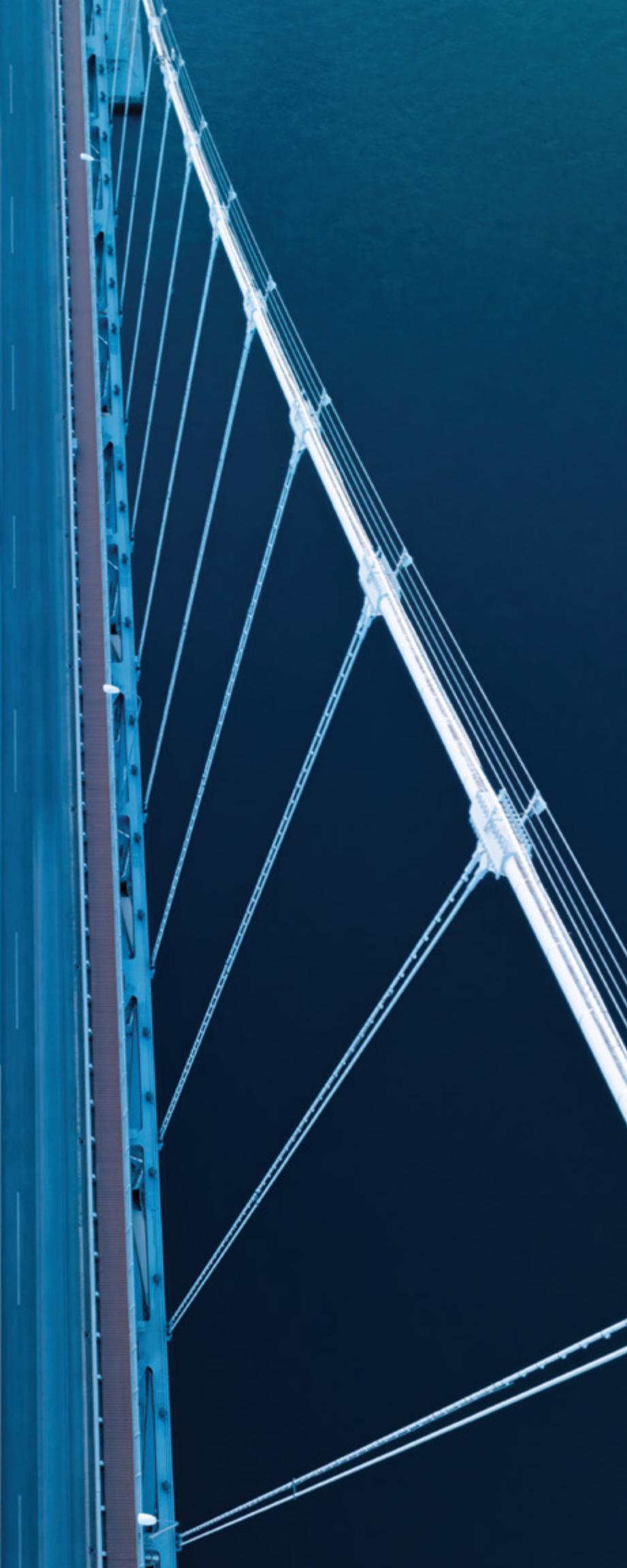
What you need **to do****Make your machines self-aware.**

Overcome predictive maintenance barriers by giving your assets the power to self-monitor, self-maintain, and communicate their status across the network and partner ecosystem. Connect robotics, sensors, drones, and IoT devices to self-service assistants so they can collaborate with one another to optimize their performance. Enable ecosystem visibility by connecting AI assistants across the supply chain.

**Solve problems before they appear.** Empower machines to communicate when trouble is brewing. Free service personnel from one-off service calls by using generative AI to troubleshoot and address basic problems.

**Tap into the hive mind.** Design gen AI systems that enable collaboration among connected assets. Use edge computing to gather real-time monitoring data sent to hybrid cloud platforms to enable interconnected intelligence and modernize predictive maintenance programs enterprise-wide.

**Merge human experience and computational power.** Streamline your employees' to-do lists by using gen AI to prioritize and schedule maintenance tasks. Ask gen AI assistants to provide all the information technicians need to fix problems quickly—without the frustration of random troubleshooting.

What you need **to know****Generative AI makes sustainability sustainable.**

As the world grapples with the challenges of climate change, CEOs are under pressure to reduce their environmental footprint, optimize resource usage, and promote sustainable practices throughout their operations. Gen AI is emerging as a powerful tool to help achieve these goals, powering a virtuous asset lifecycle.

And that process starts with ideation, with 76% of executives expecting to use gen AI to design more sustainable assets by 2026. Roughly four in five plan to tap it to monitor (79%) and optimize (78%) asset sustainability performance. For example, they expect gen AI to suggest ways to reduce CO<sub>2</sub> emissions, water and energy consumption, and waste. It can also make it easier for employees to look for opportunities for improvement, with 74% of execs saying gen AI will enable self-service sustainability reporting for employees in the same timeframe.

As CEOs set ambitious, yet attainable sustainability goals for the future, gen AI can be an invaluable tool. 72% of executives say they will use gen AI to set sustainability targets based on real-world data in the next two years. By simulating complex systems, predicting potential environmental impacts, and spotting opportunities to optimize resource usage in real time, gen AI-fueled digital twins can help companies make clear and consistent progress—and bring true sustainability within striking distance.

What you need **to do****Major on eco-friendly innovation in asset design.**

Merge disparate data streams to uncover actionable insights that drive asset performance optimization and sustainability outcomes. Visualize the intricate web of asset relationships and simulate scenarios to future-proof sustainability strategies and reduce environmental impact.

**Revolutionize sustainable design.** Weave environmental responsibility into the very fabric of asset design to forge new paths to achieve sustainability targets. Use data to simulate and predict the environmental performance of different design options and discover new, more sustainable materials with the right properties. Recognize and reward the designers and engineers who make the biggest difference.

**Divine truth from chaos.** Use generative AI to analyze data from various sources, including sensors, drones, and IoT devices, to gain insights and optimize asset performance, including energy and water consumption, waste, and carbon emission reduction.

**Set the form for a sustainable future.** Create a continuous feedback loop, delivering data from assets directly to the people responsible for meeting sustainability goals. Empower these teams with gen AI assistants that can help them identify adjustments that will keep the organization on the right trajectory.

1. Visibility
2. Automation
- 3. Sustainability**



**"AI has a role in helping us advance to provide better service to our customers."**

Javier Tamargo  
CEO and President, 407 ETR

## Supply chain + generative AI

# Instant insights fuel faster supply chain innovation

If you could see the future, would you run your business differently? This is the question CEOs face in the era of generative AI—and supply chain automation has taken it out of the abstract. As real-time data fuels faster simulation and more accurate predictive analysis, it's become easier for businesses to plan for tomorrow.

And in an increasingly fragmented global landscape, companies need these capabilities to stay competitive. To manage the risks that come along with geopolitical and economic conflict—and take advantage of opportunities that emerge from disruption—CEOs need their supply chains to be resilient and dynamic.

That's why strategic supply chain management has earned a prominent place on the CEO and board-level agenda. In this environment, CEOs are rapidly investing in solutions to automate and streamline their supply chains, with gen AI playing a major role. In fact, 89% of executives report that key investments in automation will include gen AI capabilities—and 19% say gen AI will be critically important to their supply chain automation futures.

For six out of 10 executives, the business case for investing in automation centers on boosting workforce productivity and agility—and gen AI amplifies these effects for both human employees and AI assistants. Clean and trusted data will be central to getting the intended value from these investments.

Organizations are seizing the gen AI moment to capture opportunities to increase responsiveness, build deeper human-tech partnerships, and innovate at clock speed. Those that don't will be stuck in the control tower wondering why they've fallen behind.

### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 200 US-based executives in September 2023 regarding generative AI and supply chain operations. The second surveyed 2,000 global executives across 10 industries about AI and automation from April to July 2023.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Data

What to know

Real-time data is finally for real.



What to do

Stop fighting fires and start rethinking your supply chain.

## 2. Productivity

What to know

Seamless collaboration sparks productivity gains.



What to do

Feed generative AI data that supports supply chain productivity.

## 3. Prediction

What to know

Generative AI is a mirror that lets you see around corners.



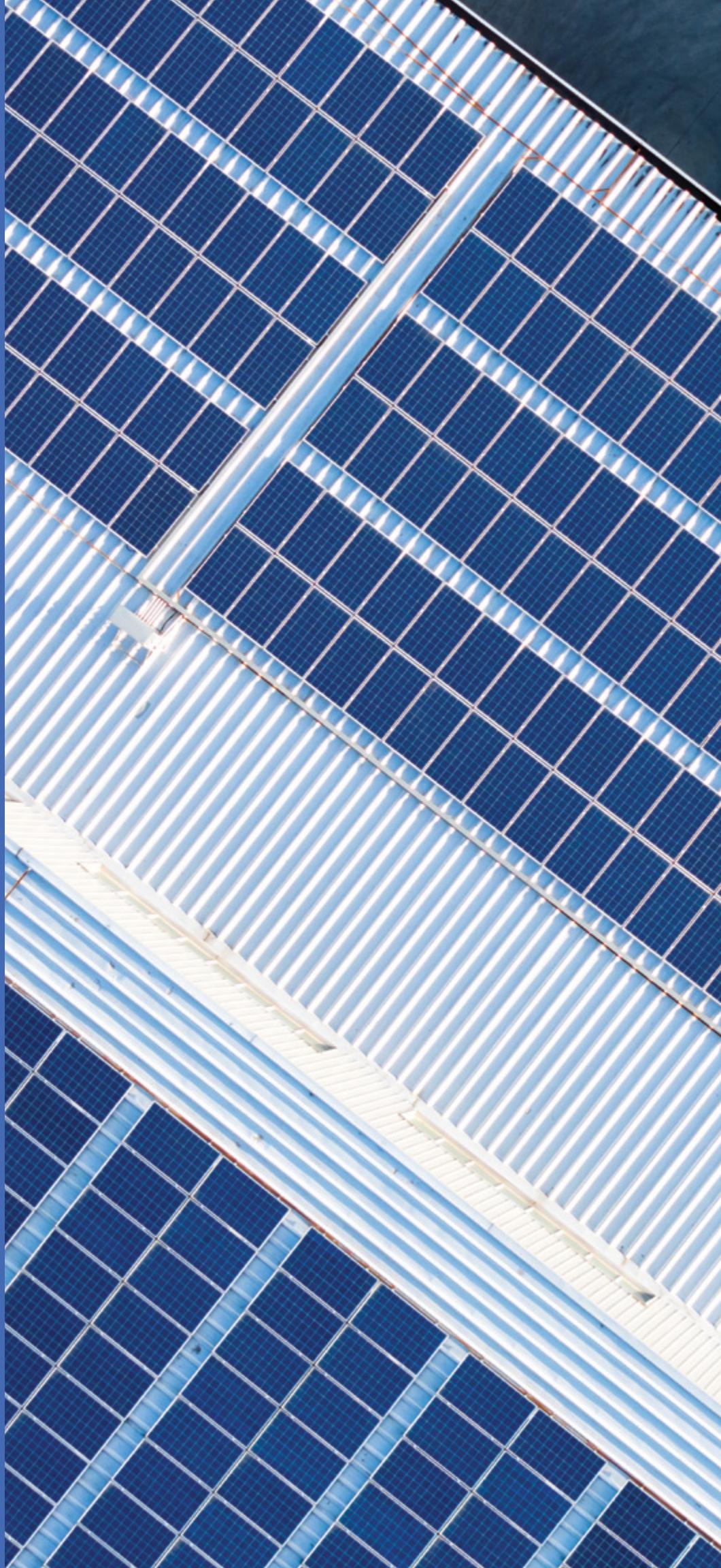
What to do

Supercharge supply chain operating models with generative AI platforms.

**"If we can reduce our inventory by 10% by optimization through digital twins and AI, for example, we can easily generate several hundreds of millions of dollars more in cash flow."**

**Hiroshi Okuyama**

Director and Member of the Board, Chief Digital Officer, Yanmar Holdings Co., Ltd.



Chapter 16: Supply chain

### 1. Data

2. Productivity
3. Prediction

What you need **to know**

#### Real-time data is finally for real.

As disruption continues to rock the global supply chain, executives are hungry for a single source of truth. In fact, being able to respond to real-time demand volatility is a top operational priority (51%) over the next two years.

With generative AI, they'll finally be able to feast. It can help leaders collect data from across the supply chain in real time and avoid the confusion that comes from competing views. Rather than debating whose numbers are right, teams can look through the same pane of glass to make faster decisions—and elevate their ability to innovate.

Nearly two-thirds (62%) of executives expect gen AI to accelerate the pace of discovery, leading to new sources of product and service innovation. And companies that get it right can gain a crucial advantage: gen AI leaders outperform in innovation 53% more frequently than their peers.

Of course, real-time data won't just appear on the dashboard overnight. To tap into this invaluable asset, CEOs need to address a host of practical and pragmatic data issues, from segmenting and cleaning data to determining how structured and unstructured data should be used across the organization.

What you need **to do**

#### Stop fighting fires and start rethinking your supply chain.

Enable innovation with real-time, data-driven insights. Pair these findings with business know-how to deliver differentiated outcomes. Determine which data should be centralized and what should be left at the edge or with third parties to add the most value.

**Modernize your supply chain with advanced modeling.** Take advantage of generative AI's uniqueness to modernize your supply chain applications and architecture. Engage with quantum computing tools and methods to capitalize on expanded modeling and optimization capabilities.

**Identify hidden pain points that are candidates for targeted innovation.** Encourage end-to-end experimentation related to demand volatility, sourcing, production, and distribution. Sponsor the integration of supply chain communities that rely on predictive and prospective analysis fueled by gen AI and huge amounts of data.

**Deploy your AI assistants into your supply chain ecosystem.** Achieve a new level of synergy and efficiency by sharing gen AI capabilities with your ecosystem partners. Get quicker access to data that complies with your standards and accelerators.

What you need **to know**

## Seamless collaboration sparks productivity gains.

Identifying issues that foreshadow future disruption is essential to keep supply chains up and running. But that's only the first step. Acting on that information fast enough to fill the gaps takes coordinated effort on a global scale.

That's where generative AI comes in. It enables faster, more effective collaboration between people, AI assistants, and partners that can proactively identify supply chain anomalies and correct them in real time.

Executives report that gen AI will increase the volume of decision-making by digital assistants by 21% by 2025. While this does introduce new opportunities for error, 82% of executives agree that the benefits they expect from gen AI are worth the potential risks.

Nine in 10 executives now say their organization's workflows will be digitized with intelligent automation and AI assistants by 2026. This expansive digitization promises to deliver benefits across the supply chain, with 80% of executives expecting gen AI to enable better management by analyzing all relevant supplier performance metrics.

Increased visibility and transparency help leaders respond to risks immediately, rather than waiting for partners to report problems at their own pace. Integrating clean and trusted data from across the supply chain also makes it possible to power a large language model (LLM) that people across the industry can tap for accurate, real-time information.

What you need **to do**

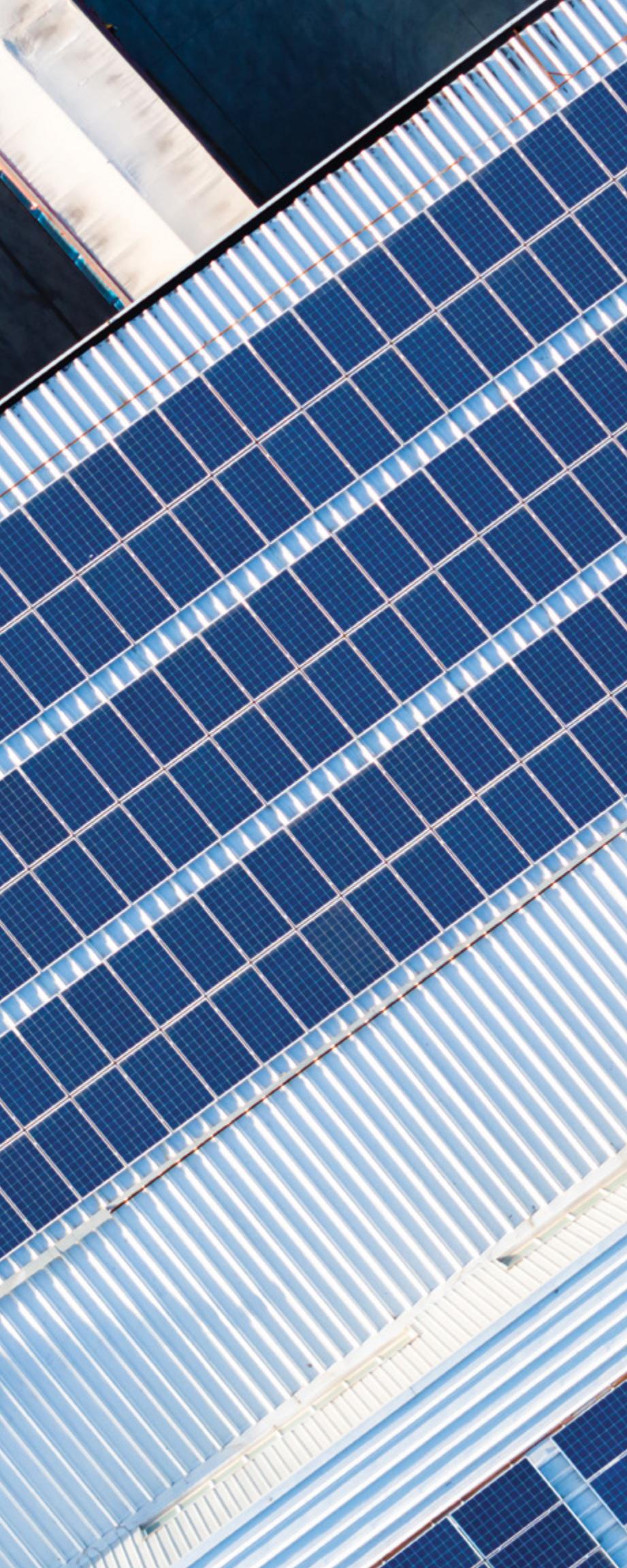
## Feed generative AI data that supports supply chain productivity.

Map the full range of preemptive data initiatives needed to connect people and technology across the supply chain ecosystem. Upskill employees and train tools to speed decisions and actions. Progress an LLM specific to supply chain for your industry.

**Cultivate human-tech chemistry to uncover real-time insights.** Make this chemistry a commodity that touches every point of the supply chain: planning, sourcing, manufacturing, and distribution and transportation.

**Crank up the dial on process improvement.** Look for leaders in each key supply chain function to suggest and execute supply chain process improvements. Augment technology with people and people with technology to deliver superior process outcomes and transform the employee experience. Find ways to free supply chain professionals from transactional work so they can focus on solving real business problems.

**Replace traditional dashboards with real-time supply chain LLM queries.** Feed comprehensive supply chain metrics and transactional data into generative AI models. Take the latency out of decision-making with LLMs that enable immediate insights. Conceptualize new practices based on gap analysis and points of interrelation. Use the recommendations for predictive and preemptive decisions and actions.

What you need **to know**

## Generative AI is a mirror that lets you see around corners.

Predicting the future isn't just for fortune tellers. Gen AI serves as a counterweight to global complexity, letting leaders detect approaching threats and suggest evasive maneuvers based on more than premonition.

More than four in five (81%) executives agree predictive capabilities with gen AI detect problems earlier, and 77% say gen AI models successfully identify geopolitical and climate risks, enabling proactive mitigation. More tactically, 79% of executives say gen AI will optimize inventory management by predicting future demand patterns.

In response, 80% of executives say gen AI models with visualization and simulation, such as digital twins, will uncover supply chain bottlenecks in real time. But applications will be limited. By 2025, they say only 19% of supply chain use cases will incorporate gen AI, including simulation and modeling of complex systems, transportation optimization, product lifecycle management, and customer service and real-time response.

What you need **to do**

## Supercharge supply chain operating models with generative AI platforms.

Create self-learning simulations that let you identify, visualize, and proactively correct critical operating exceptions. Hyper-automate transactional work to create next-level operational efficiencies.

**Preempt the next shock.** Predict and embrace disruptions. Deploy analytics, data visualization, and simulation models, along with gen AI capabilities for pattern recognition. Act calmly and resolutely to keep your supply chain afloat while the competition takes on water.

**Put mission-critical touchpoints front and center.** Align the most crucial and differentiating supply chain workflows with your early predictive gen AI use cases. Involve key partners for improved collaborative foresight. Ensure gen AI-driven artifacts are clearly identifiable and auditable.

**Measure the positive impact of premodeling.** Regularly assess the performance and ROI of gen AI-driven predictive analysis. Set clear goals to ensure these efforts are delivering the desired results and adjust as needed for continuous improvement.



"We introduced personalization quite quickly in our business, whether it's in shopping, customer care, or communications. The next step is, how do you make the personal even more personal? From the tone of communication to the images, everything is different."

Sampath Sowmyanarayanan  
CEO, Verizon Consumer Group

## Chapter 17

### Marketing + generative AI

# This is marketing's sink-or-swim moment

**Companies have long had the data they need to create hyper-personalized experiences.** But it's been housed in disparate datasets across multiple departments, and marketing didn't have the power to harness it—until now.

Generative AI fuels both high-octane content creation and real-time data analysis, giving marketing teams the nitro boost needed to deliver bespoke customer communications. This can both elevate the organization's brand and introduce new risks. In this environment, 81% of CMOs say generative AI will change the way marketing operates—and 53% say the failure to quickly adopt generative AI will significantly hurt their ability to stay competitive.

While many marketing organizations are already using public large language models (LLMs) for content creation, few have tapped this game-changing capability for extreme customization by feeding the models their own data. But that will soon change, as 72% of content executives and professionals say their organization plans to use models trained on proprietary data—the intellectual capital about their customers that sits in marketing—before the end of 2024.<sup>48</sup>

Generative AI offers a way to create content faster with more personalized messages, and it gives marketing executives more control over analytics, making it far easier to distill insights from customer data with speed and specificity at scale. It highlights patterns that tease out the details of customer preference, letting marketers finally go beyond targeted segmentation to serve up truly individualized offers and interactions.

The real-time insights it enables can also help marketers gauge whether personalized products, services, and experiences are hitting the mark—and shift gears quickly when the answer is no.

#### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 100 US-based Chief Marketing Officers across 18 industries in August and September 2024 regarding generative AI and marketing. The second surveyed 300 US-based executives in May 2023 across 22 industries regarding generative AI and the workforce.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Transformation

### What to know

Marketing is the pacesetter for enterprise-wide generative AI.



### What to do

Position marketing as the model for generative AI-driven workforce transformation.

## 2. Content

### What to know

Content creators are freed from feeding the beast.



### What to do

Prioritize creative ideation and high production value in marketing content.

## 3. Hyper-personalization

### What to know

With generative AI, hyper-personalization is no longer a pipedream.



### What to do

Build 360-degree customer profiles using integrated data.

**“Utilizing gen AI can lead to job creation, freeing up time spent on mundane tasks that machines can do in a repeatable fashion and unlocking time for more strategic, impactful work.”**

Simon Khalaf  
CEO, Marqeta



1. Transformation
2. Content
3. Hyper-personalization

### What you need **to know**

## Marketing is the pacesetter for enterprise-wide generative AI.

CMOs are all in on the gen AI revolution. Nearly all (94%) believe it will free up marketing teams from mundane tasks so they can focus on more important, creative activities.<sup>49</sup>

At the same time, more than one in four (27%) executives expect marketing roles to be automated due to gen AI. While this may sound dire for marketing professionals, there is a huge opportunity yet to be uncovered, according to Mark Read, CEO of WPP, the world's largest advertising organization.

“We know what jobs [gen AI] will disrupt, but we don't know what jobs AI will create. And I'm sure it'll create many, many jobs. If I look at WPP, probably half the jobs inside the company didn't exist 20 years ago. We didn't have social media managers; we didn't have programmatic media managers. We didn't have search engine optimizers. I could go on.”<sup>50</sup>

To realize their full value, gen AI models will need to access customer data across the full chain of engagement—from marketing to sales to service. That means marketing teams have an amazing opportunity for growth, but they also need to broaden their view of data privacy and governance to manage brand risks and safeguard customer trust. However, only 23% of CMOs say their marketing function is implementing gen AI in collaboration with both sales and customer service.

Rethinking the marketing operating model to enable more effective human-technology partnerships frees up humans to do higher-value work. Bolstering creativity and innovation, strategic thinking and decision-making, and product positioning and merchandising can help marketing teams upskill and accelerate through the learning curve. And once these teams hit their stride, CEOs can distill learnings into a road map that will help other functions integrate this technology more effectively across the enterprise.

### What you need **to do**

## Position marketing as the model for generative AI-driven workforce transformation.

Challenge your CMO to redefine what marketers do. And what they don't. Build lessons learned into transformation of other functions across the enterprise.

**Make the CMO the champion of the customer.** Position marketing as the owner of the brand's customer experience and lifecycle. Give it the responsibility and authority to influence the customer value chain across the enterprise. Recognize and address brand risks while leveraging new engagement opportunities offered by gen AI.

**Emphasize higher-value role creation.** Work with your CMO to build marketing teams rooted in the skills needed for the gen AI era. Measure where gen AI delivers the most value by tracking KPIs, such as content creation and campaign cycle time, conversion rates, and customer satisfaction. As in customer service, apply lessons learned from marketing's reinvention to other functions.

**Turn apprehension into excitement.** Encourage your CMO to execute a purpose-driven, targeted, formal change management approach to help marketers understand and lean into new value propositions for their roles. Find people doing tomorrow's jobs today and ask them to share insights, leading practices, and lessons learned that will help define the MarOps model of the future.

What you need **to know**

## Content creators are freed from feeding the beast.

Content production can be oppressive—and the pressure is increasing by the day. In a recent Adobe survey, 88% of customer experience and marketing professionals said content demands at least doubled over the last two years—and about two-thirds expect demands to increase between five times and 20 times over the next two years.<sup>51</sup> As teams rush to meet never-ending deadlines, high-value, strategic work is often lost in the shuffle.

Generative AI is changing all that. It can take on the lion's share of content creation work, helping teams summarize messaging, brainstorm catchy tag lines, and optimize assets for different audiences. And 63% of content executives and professionals strongly agree that gen AI will help them vastly scale the creation and delivery of personalized content.<sup>52</sup>

By the end of 2025, 69% of CMOs say their organization will use gen AI to create content for employees. However, only 53% say they'll use it to create external content. This shows that many marketing teams are first experimenting with internal communications to strengthen their gen AI chops.

As generative AI plays a larger role in content creation, teams will be able to spend more time thinking strategically about how messaging can support both business objectives and customer needs—and experimenting with innovative marketing approaches. Rather than frantically filling the publishing pipeline, they can thoughtfully consider where high-value content should be created based on data inputs and determine which delivery methods will be most effective for each customer. These directives can also fuel product and merchandising decisions across the organization.

What you need **to do**

## Prioritize creative ideation and high production value in marketing content.

Raise the bar for marketing materials by tying them to touchpoints and moments of truth along the customer journey. Boost productivity by streamlining content creation and diverting human energy toward higher-value work. Encourage teams to experiment on internal content before using generative AI to create customer-facing communications.

**Say goodbye to writer's block.** Show teams how gen AI can accelerate the content production process. Provide LLMs customized with your organization's data to help brainstorm topics, headlines, social posts, and variations on messaging that will work for different audiences. Train teams to triple check to eliminate bias in any content created by generative AI—or humans.

**Close the gap between customer needs and marketing content.** Determine where content is needed to prompt desired customer actions and outcomes and use gen AI to produce pieces that will alleviate specific pain points on the customer journey.

**Play the field before you commit.** Evaluate the capabilities of multiple tools before making any large-scale platform decisions. Test them through tournaments or working sessions where teams try out different options side-by-side.



What you need **to know**

## With generative AI, hyper-personalization is no longer a pipedream.

Every customer is unique—but on a traditional marketing dashboard, they get absorbed in a sea of aggregated data. The details needed to make personal connections are lost.

Nearly half (47%) of CMOs say scaling hyper-personalization is a marketing priority—and 43% expect to use gen AI for content personalization by the end of 2025. But organizations need a consolidated, granular view of customer behaviors and preferences to get there. This takes flawless data integration and management, which has long been marketing's Achilles heel.

That's why CMOs crave more authority over data collection and insights. When asked which aspects of marketing they want to control more, analytics topped the list.

Gen AI could synthesize the complexity of customer preferences and behaviors into actionable insights. By analyzing customer data from a variety of sources, teams can see what works best for specific people and tailor outreach efforts accordingly. From personalized content and experiences to bespoke chatbot support, gen AI can help teams cater to fluid customer needs in real time.

The list of potential applications keeps growing, and CMOs are focused on building a strong foundation of analytical capabilities that will help them keep up with the pace of change. For example, 71% of CMOs expect to use gen AI to conduct data analysis and capture insights from digital/social channels by the end of 2024—up from 34% last year. And 79% of CMOs say they plan to use gen AI to analyze customer insights by the end of 2025.

What you need **to do**

## Build 360-degree customer profiles using integrated data.

Unify data to make hyper-personalized marketing possible. Give CMOs autonomy over the marketing tech stack across all touchpoints, including sales and service.

**Build multidisciplinary marketing and IT teams.** Align CMO and CIO priorities, incentivizing partnership between the two. Stand up the infrastructure, systems, and data integration required for true one-to-one marketing with generative AI.

**Get the full picture of your customers' needs.** Break down functional silos to consolidate data from marketing, sales, and customer service to capture a complete picture of customers' individual journeys with your business.

**Upgrade open models with customer data.** Position your customer data as your best brand differentiator and defense against misinformation. At the same time, leverage the speed and scalability of open and public models to personalize experiences and offerings—while securing sensitive data each step of the way.



“I’m seeing the increasing importance of security because many things are starting to connect. ... So we need a strategy to protect all of them with the same philosophy and same AI technology.”

Hiroshi Okuyama  
Director and Member of the Board,  
Chief Digital Officer, Yanmar Holdings Co., Ltd.

## Chapter 18

### Cybersecurity + generative AI

# When it comes to cybersecurity, fight fire with fire

Generative AI has given rise to a new generation of cyberthreats. Hackers have more opportunities to attack vulnerabilities—and more ways to execute their malicious campaigns.

Fortunately, the opposite is also true: gen AI can fortify business defense. In the near term, gen AI will speed up security processes that were once a heavy lift. And by analyzing vast amounts of data and recognizing patterns—and anomalies—gen AI can spot threats as quickly as they materialize.

As bad actors add new tricks to their repertoire, cybersecurity teams will need to move fast to keep pace. In this game of cat-and-mouse, vigilance will be the key to managing vulnerabilities—and staying a step ahead.

#### Research methodology

The statistics informing the insights in this chapter are sourced from four proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 200 US-based executives across 17 industries in September and October 2023 regarding generative AI and cybersecurity. The second surveyed 414 US-based executives across 22 industries in May and June 2023 regarding generative AI and hybrid cloud. The third surveyed 200 US-based executives across 17 industries in August and September 2023 regarding generative AI and AI ethics. The fourth surveyed 300 US-based executives across 22 industries in May 2023 regarding generative AI and the workforce.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Cyber-risk

### What to know

Generative AI ushers in a world of new cyber threats.



### What to do

Treat generative AI like a burning platform and secure it now.

## 2. Data

### What to know

Trustworthy generative AI isn't possible without secure data.



### What to do

Make trusted data the backbone of your organization.

## 3. Cyber-resilience

### What to know

Using generative AI for cybersecurity is a force multiplier.



### What to do

Reorient cybersecurity investments around speed and scale.

**"How do you have generative AI and LLMs be the cause of risk, but also have AI be the thing that can keep your data safe? So, I think we might ... see more AI against AI trying to keep the ecosystem in balance."**

Nicole Eagan

Chief Strategy and AI Officer, Darktrace



Chapter 18: Cybersecurity

1. Cyber-risk
2. Data
3. Cyber-resilience

What you need **to know**

## Generative AI ushers in a world of new cyber threats.

Generative AI has given cyberattackers a whole new arsenal. Hackers are no longer just spoofing emails—today they can mimic voices, faces, and even personalities to trick victims into falling into their traps. And this is just the beginning.

As gen AI proliferates, experts expect new intrusion attacks to exploit scale, speed, sophistication, and precision, with constant new threats on the horizon. When considering both likelihood and potential impact, autonomous attacks launched in mass volume stand out to executives as the greatest risk. However, they expect hackers faking or impersonating trusted users to have the greatest impact on the business, followed closely by the creation of malicious code.

How organizations implement gen AI could introduce new vulnerabilities, as well. In fact, 47% of executives are concerned that adopting gen AI in operations will lead to new kinds of attacks targeting their own AI models, data, or services. And almost all executives (96%) say adopting gen AI makes a security breach likely in their organization by 2026.

These growing pains might be expected, but that doesn't make them any less expensive. The average cost of a data breach reached \$4.88 million globally in 2024—a 10% increase over last year and the highest total ever. The US led the world with the highest average breach cost, coming in at \$9.36 million.<sup>53</sup> In this environment, companies are investing heavily in managing new cybersecurity risks. Executives say their 2023 AI cybersecurity budgets were 51% higher than their 2021 budgets. And they expect budgets to climb an additional 43% by 2025.

What you need **to do**

## Treat generative AI like a burning platform and secure it now.

Pressure cybersecurity leaders to act with urgency, responding to gen AI's risks as immediate—not incremental.

**Understand your AI exposure.** Convene cybersecurity, technology, data, and operations leaders for a board-level discussion on evolving risks, including how gen AI can be exploited to expose sensitive data and allow unauthorized access to systems. Get everyone up to speed on emerging "adversarial" AI—nearly imperceptible changes introduced to a core dataset that cause malicious outcomes.

**Secure the entire AI pipeline.** Focus on securing and encrypting the data used to train and tune AI models. Continuously scan for vulnerabilities, malware, and corruption during model development. Monitor for AI-specific attacks, such as data poisoning and model theft, after the model has been deployed.

**Invest in new defenses specifically designed to secure AI.** Extend existing security controls and expertise to secure the infrastructure and data that support AI systems. Develop new methods to detect and stop adversarial attacks on AI models.

1. Cyber-risk

**2. Data**

3. Cyber-resilience

What you need **to know****Trustworthy generative AI isn't possible without secure data.**

Data is the lifeblood of gen AI. All models rely on data to answer queries and inform insights—which is why training data has become a target for cyberattacks.

While hackers still want to steal data to sell to the highest bidder, data infiltration offers a new path to ill-gotten gains. If they can change the data driving an organization's gen AI model, they can influence business decisions with targeted manipulation or misinformation. This evolving threat introduces a whole host of new legal, security, and privacy concerns that CEOs will need to manage enterprise wide.

Executives expect a wide variety of risks to materialize, with 84% concerned about widespread or catastrophic cybersecurity attacks that could introduce new vulnerabilities. One in three executives say these risks can't be managed without fundamentally new forms of governance, such as comprehensive regulatory frameworks and independent third-party audits.

Overall, 94% of executives say it's important to secure AI solutions before deployment. Yet, only 24% of their early gen AI projects included a cybersecurity component—and 69% say innovation takes precedence over cybersecurity for gen AI.

This shows a glaring disconnect between the understanding of gen AI cybersecurity needs and the implementation of cybersecurity measures. To prevent expensive—and unnecessary—consequences, CEOs must address issues head-on by investing in data protection measures, such as encryption and anonymization. Data tracking and provenance systems can better protect the integrity of data used in gen AI models, as well.

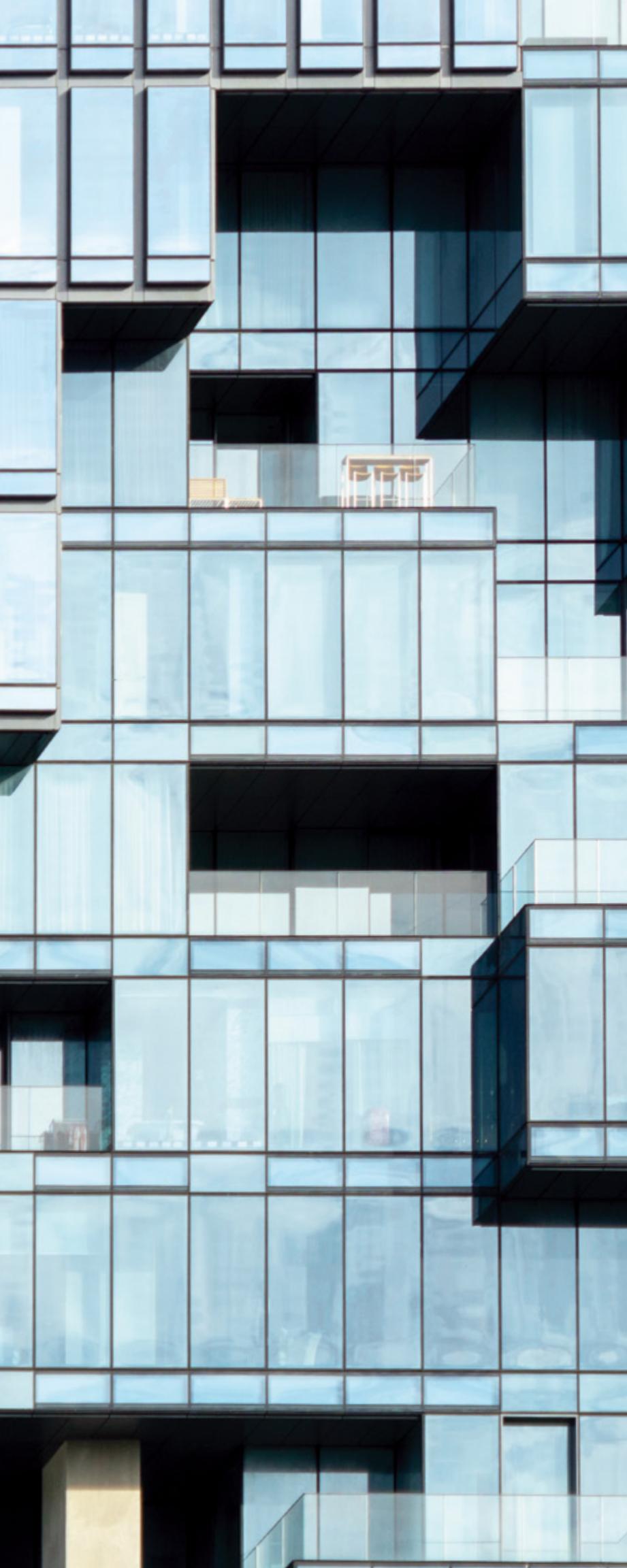
What you need **to do****Make trusted data the backbone of your organization.**

Evolve your cybersecurity practices to consider the requirements of multiple generative AI models and data services.

**Build trust and security into AI use.** Prioritize data policies and controls centered on security, privacy, governance, and compliance. Communicate how transparency and accountability are critical to prevent bias, hallucinations, and other concerns while managing risk.

**Protect the data that powers AI.** Task your CISO to discover and classify sensitive data used in training or fine-tuning. Implement data loss prevention techniques to prevent data leakage through prompts. Enforce access policies and controls around machine learning datasets. Expand threat modeling to cover gen AI-specific threats, such as data poisoning and outputs containing sensitive data or inappropriate content.

**Treat cybersecurity like a product. And stakeholders like customers.** To secure the AI that you use in products, educate your teams on the cybersecurity threats that come with gen AI. Highlight the value of changing behaviors to improve data and security hygiene. Encourage adoption by aligning cybersecurity outcomes to business outcomes.

What you need **to know****Using generative AI for cybersecurity is a force multiplier.**

When applied to cybersecurity, gen AI can be a business accelerator. It can automate repetitive and time-consuming tasks, freeing up teams to focus on the more complex and strategic aspects of security. It can also detect and investigate threats and learn from past incidents to adapt the organization's response strategies in real time.

With so much to gain, CEOs are under pressure to introduce gen AI quickly and broadly. But to avoid the collapse of a growth-fueled house of cards, it's imperative that business leaders also use the technology to build resilience. In that way, execs not only avoid the risks of gen AI—they also use it to make their organizations stronger.

More than half of executives (52%) say it will help them better allocate resources, capacity, talent, or skills, and 92% say they're more likely to augment or elevate than replace their cybersecurity workforce as they adopt gen AI.

These new tech tools can help teams reduce complexity and focus on what matters most, which may be why 84% of executives plan to prioritize gen AI cybersecurity solutions over conventional cybersecurity solutions.

Using gen AI in cybersecurity can also extend the multiplier effect across your ecosystem—and 84% of executives say open innovation and ecosystems are important for their future growth strategy.<sup>54</sup> As these leaders look to build relationships that support innovation and growth, most expect gen AI capabilities will influence their selection of ecosystem partners in cloud (59%) and across the business (62%) by the end of 2025.

1. Cyber-risk

## 2. Data

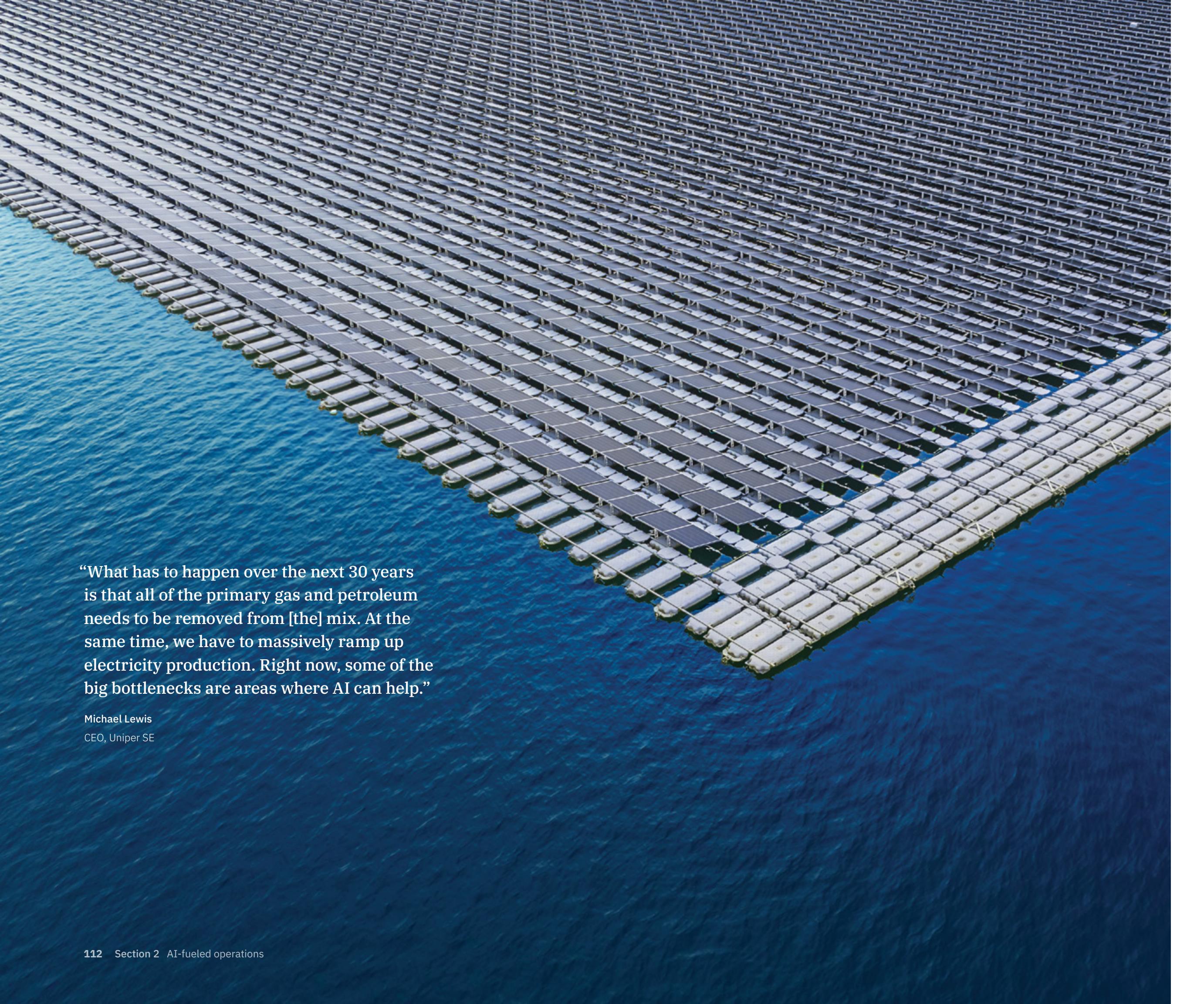
**3. Cyber-resilience**What you need **to do****Reorient cybersecurity investments around speed and scale.**

Make AI an essential tool to strengthen security defenses. Encourage cybersecurity leaders to embed generative AI and automation into their tool kits to resolve security risks and incidents at speed and at scale.

**Use AI to speed up security outcomes.** Automate routine tasks that don't require human expertise and judgment. Use gen AI to streamline tasks that rely on the collaboration between humans and technology, such as security policy generation, threat hunting, and incident response.

**Deploy AI to detect new threats.** Update tools and techniques to equip your teams with the same speed, scale, precision, and sophistication as your attackers. Use gen AI to identify patterns and anomalies faster, allowing teams to recognize new threat vectors before they disrupt the business.

**Find strength in numbers.** Work with trusted partners to help define your AI security maturity and implement a comprehensive gen AI strategy that drives value across your organization.



**“What has to happen over the next 30 years is that all of the primary gas and petroleum needs to be removed from [the] mix. At the same time, we have to massively ramp up electricity production. Right now, some of the big bottlenecks are areas where AI can help.”**

Michael Lewis  
CEO, Uniper SE

## Sustainability + generative AI

# Old school sustainability is obsolete

**At times, the climate crisis can seem insurmountable.** As emissions targets are set, then missed, then set again, some are left wondering if anything can tip the scales. Add pollution, deforestation, and species loss to the list of environmental problems, and the outlook for life on our planet becomes even more ominous.

Enter generative AI. With its whiz kid capabilities, it can analyze environmental data in an instant, uncovering patterns that lead to game-changing insights. It can offer solutions to stubborn problems across the sustainability spectrum. It's no silver bullet, but if used strategically, gen AI could help companies achieve sustainability aspirations at scale.

As AI-first solutions inspire business model innovation, CEOs have a chance to center sustainability in a way that wasn't previously possible. Gen AI can optimize operations for both sustainability and profitability, helping leaders avoid suboptimal tradeoffs. It can explore new materials, simulate new designs, and evaluate product lifecycles in a fraction of the time, eliminating the costly process of trial-and-error.

Gen AI can also help make businesses more resource-efficient, reducing costs, emissions, and waste. For example, it can use data from energy grids, weather patterns, and usage trends to predict and adjust energy distribution in real time. This helps companies limit their carbon footprint while also boosting the bottom line, strengthening the business case for sustainability across the board.

In this environment, good intentions will no longer be good enough. With gen AI on the scene, CEOs can make the enterprise sustainable by design—not as an afterthought—and translate ideals and ambitions into the actionable strategies and measurable business results that stakeholders expect.

### Research methodology

The statistics informing the insights in this chapter are sourced from a proprietary survey conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. It surveyed 5,000 global executives from August to November 2023 regarding how their organizations are operationalizing sustainability.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Strategy

### What to know

Generative AI can help make ideals real.



### What to do

Turn trade-offs into win-wins.

## 2. Ecosystem

### What to know

Sustainability is a team sport—and generative AI is a star player.



### What to do

Make 1+1=3 with ecosystem partners.

## 3. Environment

### What to know

Sustainable AI isn't a given.



### What to do

Use generative AI to make a net positive impact.

**“I equate an efficient use of resources to being better for the environment and also better for customer service.”**

Judy McReynolds

Chairman and CEO, ArcBest



Chapter 19: Sustainability

1. Strategy
2. Ecosystem
3. Environment

What you need **to know**

## Generative AI can help make ideals real.

What will it take to bridge the gap between sustainability aspirations and action? This question has plagued CEOs for decades, as financial pressures have precluded progress toward many sustainability goals. Even today, while 86% of executives say their organization has a sustainability strategy in place, only 35% have acted on it.<sup>55</sup>

Integrating the principles of sustainability into the core business has been a key challenge. Recent IBM IBV research revealed that 72% of executives approach sustainability as a revenue enabler rather than cost center.<sup>56</sup> Yet 59% think they must continue to make tradeoffs between financial performance and sustainability.

Gen AI has cast sustainability commitments in a new light. Powered by transparent data, it can help leaders turn intel into insights faster than ever, enabling businesses to hit both sustainability goals and financial targets with one strategic strike. For example, gen AI can analyze historical sales data, market trends, and other factors to predict future demand more accurately, helping companies optimize production levels, reduce overstock, and minimize waste.

Of course, gen AI can't do all of this on its own. We've identified four pillars of success: data and ecosystems, digital technology, process and business integration, and skills and decision-making. Organizations with higher maturity in these areas are 43% more likely to outperform their peers on profitability—and 52% more likely to say their sustainability efforts drive profitability. Not coincidentally, they're also 33% more likely to use AI for sustainability reporting and performance.<sup>57</sup>

This data hints at generative AI's potential. Today, 64% of executives say gen AI will be important for their sustainability agenda and 72% of organizations plan to increase their investment in gen AI for sustainability. Roughly three in four executives say manually processed data is holding back their sustainability reporting and performance efforts—and inadequate data is the top barrier to sustainability progress overall.<sup>58</sup>

What you need **to do**

## Turn trade-offs into win-wins.

Use generative AI to address key sustainability data gaps, make reporting processes more efficient, reduce risk, and comply with rapidly changing requirements. Tap data to find opportunities to automate processes, design products and services, cut energy costs, and limit resource consumption in a way that delivers positive sustainability outcomes and financial gains.

**Drive sustainable business outcomes through dramatically improved insights.** Activate sustainability data and insights for improved performance across the enterprise and ecosystems, understanding where specific gen AI use cases add value or introduce risks. Use gen AI to find patterns that inform better pricing, budgeting, and incentive mechanisms based on sustainability metrics and data.

**Embed sustainability across the enterprise.** Align sustainability, business, and AI strategies to avoid advancing gen AI in isolation. Integrate sustainability-driven gen AI initiatives into all business units and your corporate governance framework. Use gen AI to augment and enrich your sustainability data for reporting and operationalization of sustainability goals.

**Innovate, don't replicate.** Use gen AI as a source of innovation for sustainability to change how things get done. Don't just automate existing, suboptimal processes and ways of working.

1. Strategy
- 2. Ecosystem**
3. Environment

#### What you need **to know**

### Sustainability is a team sport—and generative AI is a star player.

No single organization can solve the world's sustainability problems. Natural resources are shared across borders and board rooms, and every organization plays its own role in preserving them for future generations.

Protecting the ecosystem takes an ecosystem—and every player is essential. AI experts, data scientists, environmental specialists, business strategists, and policymakers must all work in unison to develop and implement sustainability solutions.

The need for collaboration isn't new, but gen AI has changed the game. Now that it's on the roster, organizations can collaborate faster and more effectively. In fact, ecosystem collaboration is the second-most common benefit executives expect from using gen AI for sustainability. For example, gen AI can help raw materials providers, manufacturers, and consumer products companies develop more eco-friendly packaging together by using desired properties, environmental criteria, and each organization's business requirements to suggest innovative compositions and designs.

Harnessing the power of advanced algorithms enables the entire ecosystem to make more sustainable game-time decisions. Organizations are assembling a new playbook in response, with 70% co-creating gen AI capabilities for sustainability with ecosystem partners or suppliers.



#### What you need **to do**

### Make 1+1=3 with ecosystem partners.

Scale impact across the enterprise and the ecosystem to pursue sustainability and profit as complementary business goals. Co-create generative AI capabilities with partners to limit environmental impact and advance sustainability initiatives.

**Work with strategic ecosystem partners to drive greater impact.** Make partners integral to your sustainability data and gen AI efforts. Share sustainability data with partners for collaboration and co-creation.

**Democratize, don't centralize.** Give employees access to relevant sustainability data and AI capabilities. Empower them to adjust their daily tasks and decisions based on data-enabled insights. Enable the thousands—or millions—of daily actions that bring an organization's sustainability strategy to life.

**Upskill, don't stand still.** Invest in people with the right mix of sustainability and gen AI skills as part of your business strategy. Use gen AI to educate employees about sustainability concepts.

#### What you need **to know**

### Sustainable AI isn't a given.

No path forward comes without pitfalls. As organizations leverage generative AI *en masse*, new sustainability concerns are coming to the forefront.

For example, gen AI is resource hungry. Training one large language model (LLM) can consume a lot of water and emit a massive amount of CO<sub>2</sub>. Organizations can minimize impact by fine-tuning existing gen AI models rather than training new ones.

It's also important to choose the right size. Bigger isn't always better. A small model trained on high-quality data can be more energy efficient and achieve the same results—or better, depending on the task at hand.

Then there's the question of infrastructure. To reduce overall energy consumption as much as possible, companies need to co-locate data and processing. With hybrid cloud, for instance, you optimize your use of infrastructure by selecting nearby processing locations with access to renewable power. Plus, running workloads in a container platform lets you cut annual infrastructure costs by as much as 75% thanks, in part, to increased energy efficiency.<sup>59</sup>

For its part, gen AI can take these sustainability strategies to the next level. In addition to quickly translating code into more energy-efficient languages, it can develop more sustainable algorithms and software by analyzing code performance. It can also identify which workloads can be most efficiently containerized—and rethink the entire data center, designing and optimizing layouts, cooling systems, and server configurations to minimize energy consumption.

#### What you need **to do**

### Use generative AI to make a net positive impact.

Minimize the environmental impact of gen AI by building on existing foundation models rather than starting from scratch. Use gen AI to create better code with lower environmental impact and redesign data centers to consider sustainability.

**Recalibrate your approach to gen AI.** Make your gen AI capabilities more sustainable before they become more pervasive. Upgrade and fine-tune existing models as much as possible and use open-source resources to make existing AI models better instead of building new ones for every need.

**Design IT for sustainability.** Monitor energy consumption, hardware utilization, and data storage to identify opportunities to become more energy efficient. Tap gen AI and hybrid cloud to limit your IT carbon footprint.

**Don't take opportunistic shortcuts.** Put data governance in place to ensure the use of gen AI follows principles that advance sustainability and align with your organization's values.

1. Strategy
2. Ecosystem
- 3. Environment**



“Talent is key to resilience. If I don’t have talent that can anticipate and adapt, absolutely nothing is going to happen.”

Fabián Hernández  
President and CEO, Movistar Colombia

### Section three

# AI-enabled people

More than two years after generative AI burst onto the scene, it’s still as much about people as technology. In fact, 64% of CEOs say succeeding with AI will depend more on people’s adoption than the technology itself.<sup>60</sup> And some leaders fear they’re pushing their organization to change faster than people can adapt.

But they ARE adapting. Gen AI is becoming a new tech co-worker that helps people work more productively than ever before. Leading organizations are pivoting their people strategies to look at future potential, rather than just focusing on current capabilities. At the same time, they’re upskilling to enable a team of AI experts.

Customer service continues to be a primary use case for gen AI—human agents plus AI equals a winning combination that can drive enterprise differentiation. As more and more products and services become digital-first, value explodes when gen AI meets experience. When combined with the data that drives hyper-personalization, gen AI technologies can turn the people on your team into superheroes. Find out how in the following chapters.

## Talent and skills + generative AI

# A new frontier for the future of work

Generative AI is transforming how we work and what skills we need—and the pace of change is only picking up. Nearly two-thirds (64%) of CEOs say their organization must take advantage of technologies that are changing faster than employees can adapt—and 61% say they're pushing their organization to adopt gen AI faster than some people are comfortable with.<sup>61</sup>

To get people on board, leaders will need to help them see that gen AI is a tool that can work FOR them, not something that is happening TO them. With the right talent strategy, training, and support, gen AI can become a new tech co-worker that helps people work more productively than ever before.

The enterprises that succeed in this environment will be those that build a flexible, thoughtful approach that encourages creativity, experimentation, and innovation. By putting people in the driver's seat—letting them determine how gen AI should augment their work—CEOs can soothe employee anxiety and spark enthusiasm and optimism for the future.

### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 2,500 global CEOs across 26 industries from December 2023 to February 2024 regarding enterprise transformation. The second surveyed 369 global executives across 20 industries in April and May 2023 regarding generative AI.

“AI empowers and then multiplies the abilities of talented people.”

Pere Nebot  
CIO, CaixaBank



# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. People

### What to know

Generative AI is all about people—how work gets done.



### What to do

Make people, not technology, central to your generative AI strategy.

## 2. Readiness

### What to know

Most execs remain wary about their organization's generative AI readiness.



### What to do

Pivot to evaluating potential rather than focusing solely on skills.

## 3. Skills

### What to know

Creativity is a “must-have” gen AI skill, with AI literacy and cybersecurity close behind.



### What to do

Rethink your operating model to unlock generative AI skills.



“We want to digitize all the know-how of our more experienced sales and service people and try to teach it to gen AI. Then gen AI can help our less experienced sales and service people in doing a good job.”

Hiroshi Okuyama

Director and Member of the Board, Chief Digital Officer, Yanmar Holdings Co., Ltd.

1. People
2. Readiness
3. Skills

What you need **to know**

## Generative AI is all about people—how work gets done.

Unlike new technologies that are all about what machines can do, gen AI amplifies human capabilities. It allows repetitive tasks to be automated, from market research to content creation to data analysis to code development. Practical applications abound.

Customer service agents can use gen AI to offload routine questions, allowing them to spend time on sales enablement. Coders can automate mundane programming tasks and focus on improving code quality and security. HR specialists can step back from day-to-day processing to focus on what really matters—growing talent.

Feedback loops are becoming near-instantaneous, opening the door to new, better business outcomes. But gen AI’s impact doesn’t happen in an abstract digital environment. Competitive advantage comes from scaling employee expertise and expanding organizational capabilities.

In fact, 64% of CEOs say succeeding with AI will depend more on people’s adoption than the technology itself.<sup>62</sup> And 57% say culture change is more important to becoming a data-driven organization than overcoming technical challenges.

Leaders who understand how to power their people with gen AI will have a multiplier impact on their business. Half of all executives say gen AI will improve multiple aspects of their business, from decision-making to customer experience to revenue growth. But first they must address change fatigue and find ways to inspire the workforce to reimagine everything.

What you need **to do**

## Make people, not technology, central to your generative AI strategy.

Gen AI isn’t replacing people, but people who use gen AI are replacing people who don’t. Anchor on human talent and show your people how gen AI boosts their productivity—and their careers.

**Elevate HR from purely administrative.** Your HR team will have a strategic role in building the gen AI-enabled workforce of the future. Start by reskilling the HR professionals who need to lead this effort.

**Create a roadmap for change.** Develop a formal, transparent, people-focused change management initiative that provides continuous feedback across the enterprise about use cases, successes and failures, and lessons learned.

**Avoid buyer’s remorse.** Make sure you have a model for the ethical use of gen AI, with clear standards, guidelines, and expectations, and share these with your people across the enterprise.

1. People
- 2. Readiness**
3. Skills

What you need **to know**

## Most execs remain wary about their organization's generative AI readiness.

Gen AI is redefining every job and every task, from entry level to the executive suite. 77% of entry-level workers will see their jobs shift by 2025—and so will more than one in four senior executives.<sup>63</sup> Over the next few years, the use of gen AI will dominate all roles and all levels across an organization.

To succeed in a shifting landscape, CEOs must pivot to look at people's potential, rather than their current capabilities. The goal is to anticipate how a person might develop, perform, or contribute throughout their career—not just this quarter. Using data models to make informed predictions about future potential and is an emerging use case for talent-related AI.

What you need **to do**

## Pivot to evaluating potential rather than focusing solely on skills.

Don't be afraid of the seismic shifts spurred by generative AI. Demonstrate openness to change by integrating gen AI into every workflow—including your own.

**Reward future potential now.** Establish performance- and readiness-based compensation and incentives that align with business goals and gen AI adoption priorities.

**Encourage risk-taking and failing fast.** Let teams identify and test their own gen AI opportunities. To help get HR fully engaged, start with HR.

**Create mutual accountability.** Hold leaders from business, IT, and HR jointly responsible for gen AI outcomes to underscore the strategic importance of gen AI adoption across the enterprise.

What you need **to know**

## Creativity is a “must-have” gen AI skill, with AI literacy and cybersecurity close behind.

Obviously, a tech-based transformation will require new skills. In the past, about 6% of the workforce has required reskilling each year. In 2024, that soared to 35% of the workforce—or more than a billion workers globally—largely due to gen AI.<sup>64</sup>

The skill executives say will be most valuable to their organizations by 2025 is creativity. The thing about creative people? They're clever. They will find productive ways of interacting with their generative AI “assistants,” as well as novel enhancements to how they will interact with their human colleagues.

By 2026, executives expect their teams to have AI literacy skills and expertise in cybersecurity, along with heightened emotional intelligence.<sup>65</sup>

What you need **to do**

## Rethink your operating model to unlock generative AI skills.

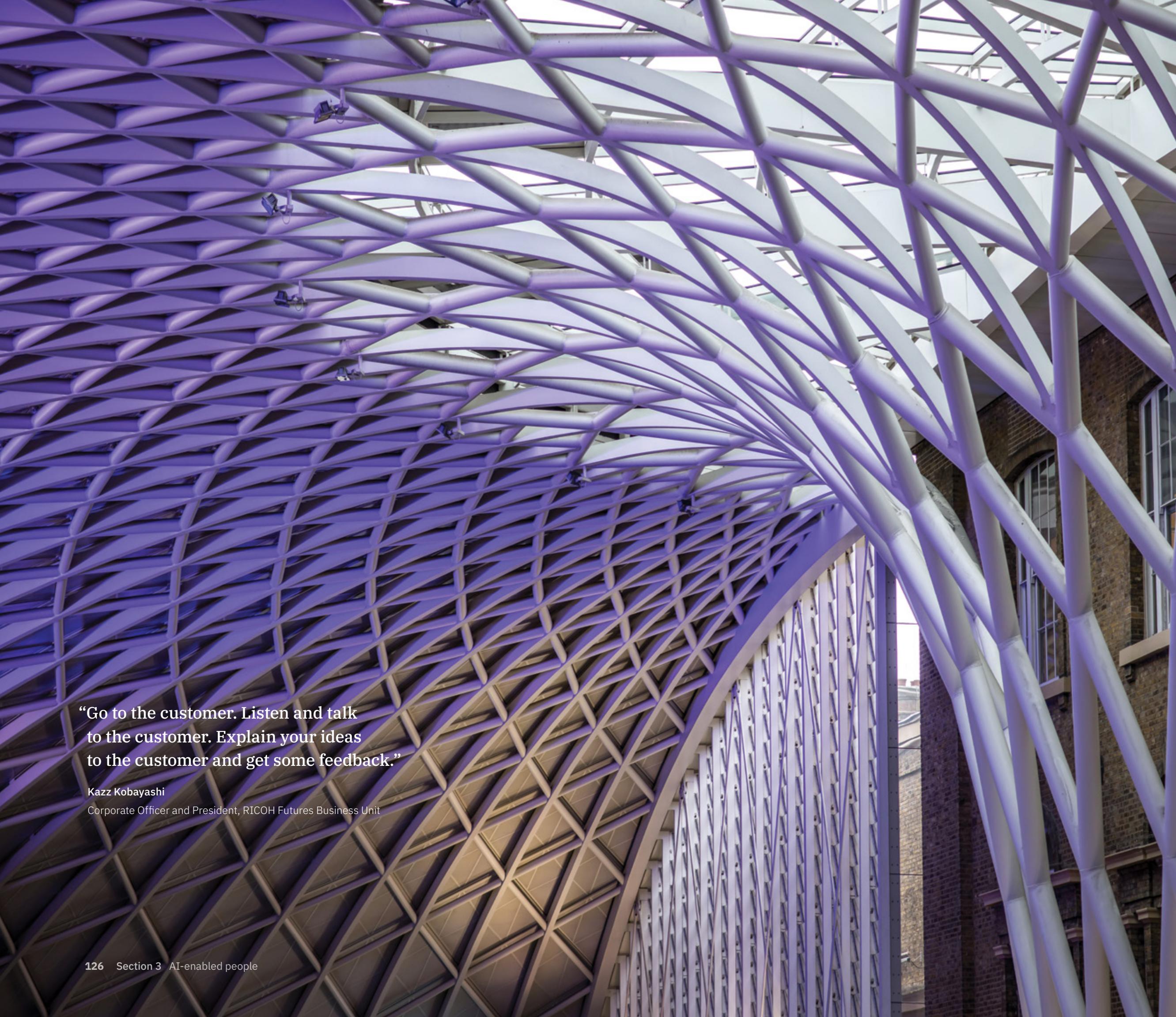
Transform your organization by encouraging your most creative people to unlock the power of gen AI. Ask others to follow their example and think outside of the box to revolutionize workflows, eliminate inefficiencies, and build the augmented teams of the future.

**Make gen AI upskilling an advancement opportunity.** Open new doors for top performers, and those with future potential, who are willing to revolutionize workflows.

**Crystallize a culture of curiosity.** Make gen AI central to team building. Use it to create clear feedback loops where they don't exist today and distribute learnings and insights that previously sat on a shelf in a binder.

**Redefine ways of working.** Use gen AI-augmented process mining to analyze how work is done, where bottlenecks and inefficiencies exist, and how to remediate them—including how decision-making can be accelerated and improved at scale.

1. People
2. Readiness
- 3. Skills**



# From problem solver to innovation hub

**Opportunity is knocking.** No single area of an organization provides a better foundation to demonstrate generative AI success than customer service.

The interplay between AI tools, human agents, and customers offers CEOs a distinctive opportunity to generate value while building operational proficiency in new ways of engaging. No matter where an organization is in its AI journey, adding gen AI can provide a much-needed performance lift.<sup>66</sup>

#### Research methodology

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 1,495 global executives and customer service leaders across 19 industries from July to November 2023. The second surveyed 369 global executives across 20 industries in April and May 2023 regarding generative AI.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Strategy

### What to know

Customer service has leapfrogged other functions to become CEOs' number one generative AI priority.



### What to do

Turn human agents into heroes by giving them generative AI tools.

## 2. People

### What to know

Customer-facing generative AI is changing the game.



### What to do

Use generative AI to learn more about your customers than you ever thought possible.

## 3. Experimentation

### What to know

Piloting generative AI in customer service can speed a successful enterprise-wide rollout.



### What to do

Exploit successes and learnings in customer service.

**“Customer sentiment and how we handle customer interactions are really, really important to us. And so, we’ve used generative AI to read the collected transcripts of those calls and help more quickly identify the problematic ones where we need a leader to come in and coach the person to a better result.”**

Judy McReynolds

Chairman and CEO, ArcBest



Chapter 21: Customer service

1. Strategy
2. People
3. Experimentation

What you need **to know**

**Customer service has leapfrogged other functions to become CEOs' number one generative AI priority.**

In early 2023, CEOs told us research, innovation, marketing, and risk compliance were the most immediate and valuable use cases for gen AI. Just months later, customer service jumped to the top of the gen AI implementation list, cited by more CEOs than any other organizational function or service.

This makes sense, as gen AI is the next logical step for companies that have already been using traditional AI in customer service for years. In fact, 67% of these organizations have already deployed gen AI in conjunction with traditional AI in customer service. By creating dynamic, personalized experiences for both customers and human agents, this approach has the potential to spur a seismic shift in productivity and effectiveness.<sup>67</sup>

Executives recognize the power of gen AI to deliver transformation in customer service. They anticipate a long list of benefits, with enhanced customer and employee experiences at the top.

Customers want personalized answers, fast and without hassle, which means AI-powered customer service assistants are not only useful; they’re essential.

But executives are particularly interested in using gen AI to assist human agents. More than two-thirds say they will have invested in gen AI use cases to serve agents directly by the end of 2024, including deploying gen AI for agent training (67%), and enabling agents to interact directly with gen AI to deliver improved instant assistance (68%).<sup>68</sup>

What you need **to do**

**Turn human agents into heroes by giving them generative AI tools.**

Free up human agents so they can pivot to more personalized customer engagement—where it matters most—to offer enhanced value to customers, differentiate your brand, and begin transforming customer service from a cost center into a revenue accelerator.

**Prioritize use cases that improve the agent experience.**  
Let agents tap gen AI to answer questions about products and services and offer personalized recommendations. Give agents quick and easy access to call transcriptions and summaries. Use gen AI for instant translations.

**Let gen AI manage standard customer interactions.**  
Relay the more complex and sensitive queries to your human agents. Along with empathy, ensure they have the business acumen to offer the top-tier service that can convert unhappy customers into brand loyalists. Give agents and team leaders access to personal analytics to enhance coaching and performance.

**Don’t play “hide-and-seek” with your customers.**  
Tell them when they’re engaging with a gen AI bot. And let them request human assistance at will, no questions asked.

1. Strategy
- 2. People**
3. Experimentation

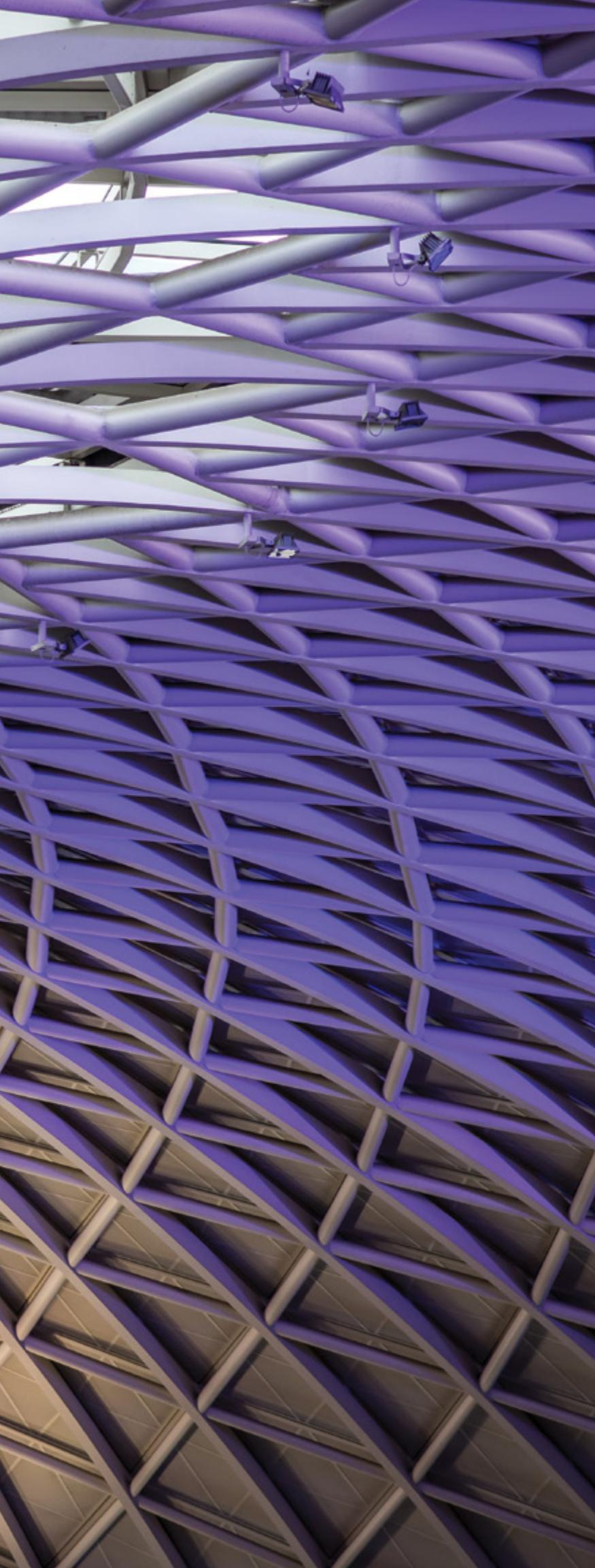
#### What you need **to know**

### Customer-facing generative AI is changing the game.

By 2027, 89% of execs say gen AI will be interacting directly with customers. It's high stakes when businesses are putting gen AI on the front line where missteps with customers could be catastrophic for the brand.

It may be tempting to deploy gen AI with customers quickly, but it's essential that leaders understand the customer pain points gen AI can resolve best and apply what they learn from agent interactions. Some concerns are already top of mind for executives, including the lack of a secure environment for organizational data, difficulty integrating with business processes, and issues with transparency or auditability.

At least in its early learning phase, unsupervised gen AI has the potential to create less-than-ideal outcomes. People—and for customer service, that means agents—can provide the guardrails. Agents enhance what AI brings while acting as a backstop for AI-generated misinformation. And as the technology becomes more sophisticated, agents can forge the emotional connections with clients that can yield new insights and opportunities. It's about agents plus AI—a winning combination that can drive added value for the enterprise.



#### What you need **to do**

### Use generative AI to learn more about your customers than you ever thought possible.

To conquer high risks and capture high rewards in customer service, gen AI deployment should be about listening, testing, and then capitalizing.

**Invest in direct engagement between customers and gen AI.** But don't do it blindly. Start by determining which challenges are most likely to pose the most risk for your organization and which gen AI use cases can be designed to mitigate those pitfalls.

**Use gen AI as a research tool.** Collect and analyze sentiment-based metrics for each customer service interaction. Start with low-risk, low-effort use cases that address key customer concerns. Stay mindful of what differentiates your brand today and how AI can enhance what makes your organization unique.

**Use gen AI for more than interactions and engagement.** Drive innovation by tapping into new opportunities with customers and track customer service success. See how automated applications influence sales and customer loyalty across the customer lifecycle. Refocus efforts around data governance.

#### What you need **to know**

### Piloting generative AI in customer service can speed a successful enterprise-wide rollout.

The call center continues to be ripe for transformation. During pandemic lockdowns, it became clear how much customer service could be automated—but we also suffered for the lack of human contact.

With generative AI, organizations get the best of both worlds. By pairing automation with humanity, customer service becomes a proof of concept, demonstrating to the rest of the enterprise how new tech tools can improve employee satisfaction, impact customer engagement, and drive returns.

Using generative AI to make automated responses better and more conversational can quickly demonstrate how AI's impact can be used to upgrade service elsewhere in the organization. And for most organizations, the opportunity is wide open. For example, most businesses say they haven't optimized their ability to review and retrain customer service bots, and only 38% are able to distinguish customers by category, such as loyalty program members or high-value customers.

1. Strategy
2. People
- 3. Experimentation**

#### What you need **to do**

### Exploit successes and learnings in customer service.

Because generative AI is as much about your people as it is about technology, the very visible realm of customer service will serve to motivate change across the enterprise.

**Re-orient customer service from problem resolver to innovation hub.** Foster outcomes-based generative AI experimentation that can be measured, optimized, and scaled. And package specific learnings that might be readily applied across other areas.

**Shout-out generative AI successes.** Share exemplary outcomes at individual and functional levels. Demonstrate to employees in other areas how they can benefit from generative AI by highlighting the ways in which gen AI capabilities improve not just customers' experiences but employees' circumstances.

**Challenge and motivate your workforce.** Push them to explore how generative AI can help in their day-to-day work—beyond the initial use cases. Create gamified opportunities for individual contributors to pitch use cases that can spark new ideas and applications.



## Chapter 22

### Customer and employee experience + generative AI

# Experience is everything

**"I want to apply AI in my core operations in this order: first to improve the employee experience, then to improve the customer experience, and then to take cost out. The biggest opportunity in front of us is to remove or reduce the cognitive workload on our frontline teams."**

**Sampath Sowmyanarayanan**  
CEO, Verizon Consumer Group

**Today, every product is a digital product—and every company is selling a digital experience.**  
Regardless of industry, all businesses are now competing with the digital experiences that have redefined consumer and employee expectations. And the competition is steep.

Hyper-personalization is now the high bar, as customers demand targeted offers, relevant recommendations, and seamless customer service. But bespoke interactions aren't enough. Experiences must also be intuitive, serving up what customers and employees want before they've even asked for it.

Gen AI promises to elevate these expectations—and give companies the tools to meet them. In fact, global executives say that gen AI is the top trend they expect to disrupt the way their organizations design experiences going forward.

For example, an online retailer can use gen AI to streamline its search function. Rather than using categories and filters, customers can ask for what they want in natural language—typed or spoken—specifying key details, such as color, size, or material. They could even include their budget and target delivery date to refine search results. In this instance, not only do customers get what they need easily, they provide valuable data the retailer can use to inform future business decisions.

In this environment, every experience should incorporate AI and every application of AI should be an experience—the two are inextricably linked.

#### Research methodology

The statistics informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBM Institute for Business Value in collaboration with Oxford Economics. The first surveyed 2,000 global executives and design leaders across 10 industries from July to September 2023 regarding next-generation experience design. The second surveyed 369 global executives across 20 industries in April and May 2023 regarding generative AI. The third surveyed 300 US-based executives across 22 industries in May 2023 regarding generative AI and the workforce.

# The three things **to know** and the three things **to do**

IBM Institute for Business Value research has identified three things CEOs need to know and do right now.

## 1. Strategy

What to know

Generative AI is a seismic shock to experience.



What to do

Find the friction and obliterate it.

## 2. Customers

What to know

Customer trust is the new currency.



What to do

Create ethical journeys that build customer confidence.

## 3. Employees

What to know

Generative AI opens the door to reinventing employee experience.



What to do

Give your workers what they want—and more.

**"We firmly believe that developing a superior customer experience is what truly sets us apart. To achieve this, we are integrating AI technologies, including generative AI, to optimize and elevate how our sales force provides information and knowledge to our customers."**

Fernando González  
CEO, Cemex



Chapter 22: Customer and employee experience

1. Strategy
2. Customers
3. Employees

What you need **to know**

### Generative AI is a seismic shock to experience.

You can't please all of the people all of the time. Or at least you couldn't before gen AI.

The hyper-personalized journeys created by gen AI promise to revolutionize how companies connect with customers and employees. For example, a financial services company can use gen AI to rapidly analyze their own customer data—as well as data from social sources and partner organizations—to determine which customers are most likely to take various actions, from opening a new checking account to investing assets to applying for a loan. Gen AI can then help bankers achieve true one-to-one marketing with a personalized strategy and automated, point-in-time customized offers, translated into the customer's preferred language.

Globally, 57% of executives, creative directors, and designers believe gen AI is the most disruptive force impacting how they will design experiences going forward. This outpaces other considerations—even those as serious as cybersecurity threats, changing regulations, and sustainability issues.<sup>69</sup> Personalization is at the core of this evolution. In fact, the combination of better content quality and personalization is the number-one benefit driving organizations to reinvent their experiences with gen AI.<sup>70</sup>

But how organizations will get there is still a bit hazy. While 78% of executives say their organization has an approach for scaling gen AI into customer and employee experiences, most are still figuring out how to ensure consistent quality. One approach is to use a proprietary gen AI model that's trained on approved materials, programmed to meet specific performance benchmarks—and accessible only to employees. These models can be integrated seamlessly into an organization's existing infrastructure, which provides a more cohesive user experience.

What you need **to do**

### Find the friction and obliterate it.

While generative AI is accessible to all, how CEOs choose to use this capability can be a differentiator. By analyzing large amounts of user data, gen AI can identify common pain points and help design experiences that are intuitive, engaging, and unique. Make this your moonshot to deliver stellar results.

#### Empower designers to become content curators.

Augment content creation with gen AI to create adaptive designs that automatically adjust based on how users access and interact with content. Apply the human touch to the details that can make all the difference.

**Prioritize everything proprietary.** Not all users interact with experiences the same way. Complement open models with deeper investments in proprietary data to help gen AI identify patterns that are unique to your customers and employees. Gen AI can also use proprietary data to personalize, refine, and improve experiences over time.

**Lead with design thinking.** Use gen AI to make the complex simple, not the other way around. Embed design into everything you do to change how things work—not just how they look.

1. Strategy
- 2. Customers**
3. Employees

#### What you need **to know**

### Customer trust is the new currency.

Generative AI can give customers what they want faster than ever before—but that convenience is only valuable when it's built on a foundation of trust.

If customers don't think the recommendations they receive are aligned with their interests or values, personalization can harm rather than help customer relationships. Striking the right balance is crucial, but CEOs also feel pressure to act fast. To keep up with the pace of change, organizations are rapidly rolling out customer-facing gen AI in several areas:

**Voice:** 25% of organizations are deploying gen AI-powered voice conversations with customers today, and 71% predict they'll be offering this by 2025.

**Chat:** 36% of organizations are using gen AI text-based chatbots with customers, with 81% expected to do so by 2025.

**Outreach:** 31% are using gen AI for customer outreach, and 78% plan to do so by 2025.<sup>71</sup>

But 80% of business leaders see explainability, ethics, bias, or trust as a major concern on the road to gen AI adoption. And half say their organization currently lacks the governance and structures needed to manage gen AI's ethical challenges.

Some organizations may cut corners to move ahead quickly, but most are committed to responsible action. In fact, 72% of executives say they'll step back from gen AI initiatives if they think the benefits could come at an ethical cost. In this case, less is more. These same organizations are 27% more likely to outperform on revenue growth than others.

#### What you need **to do**

### Create ethical journeys that build customer confidence.

Lead with empathy to build trust while you speed toward innovative new experiences. Prioritize ethics and invite customer feedback to engage customers, identify pain points, and pivot as their demands evolve.

**Empathize with customers to build trust.** Make empathy a guiding design principle for customer experience. Win customer trust by developing your generative AI ethics in accordance with their concerns. Hold ecosystem partners to the same standards.

**Turn data provenance into data wealth.** Present customers with trustworthy experiences and gain data in return. Iterate to improve and personalize products and services for growth and greater ROI.

#### Hyper-personalize marketing once and for all.

Build gen AI into customers' experience from their first brand encounter. Earn trust by powering personalized marketing campaigns, targeted advertising, and direct customer outreach with gen AI—and encourage continual customer feedback.



1. Strategy
2. Customers
- 3. Employees**

#### What you need **to know**

### Generative AI opens the door to reinventing employee experience.

Gen AI is transforming work, automating tasks that were previously too complicated for a machine to handle. But business leaders don't plan to replace human talent wholesale. On average, 87% of executives expect job roles to be augmented, rather than replaced, by gen AI.

Developing human-machine partnerships that will engage employees—not enrage them—is an organizational change challenge on steroids. And those that get it right have a lot to gain: Organizations that deliver top employee experiences outperform on revenue growth 31% more than others.

A great experience is also the ultimate change management tool, as it inspires employees to adopt new ways of working. When organizations automate tedious tasks, such as translation or device optimization, it can boost employee productivity and satisfaction by letting humans focus on higher-value work. These productivity gains are ultimately what will allow teams to deliver innovations that both differentiate the organization and make jobs more interesting.

CEOs need to rethink the operating model with an eye toward embedding gen AI in ways that will do the most to improve employees' lives. For example, organizations can use gen AI to provide a seamless conversational interface for back-office systems, rooting the employee experience in natural language.

The end goal is to give employees a one-stop-shop for managing their daily tasks. Rather than logging into separate platforms, seamless interfaces let them do more within a single tool they're already using. And as companies migrate between systems, the employee experience remains unchanged.

#### What you need **to do**

### Give your workers what they want—and more.

Use generative AI to put your employees in the operating model of tomorrow. Develop effective human-machine partnerships to create more value than either can alone—and keep employee engagement top of mind.

#### Activate the ultimate change management tool.

Make a good impression with gen AI by showing employees how it can boost their efficiency and productivity—and what that could mean for their careers. Give employees a voice to remediate negative experiences.

#### Convert talent challenges into operating model opportunities.

Integrate conversational AI, hybrid cloud platforms, intelligent workflows, and agile ways of working to empower people to perform at the top of their game.

**Expand the remit of human workers.** Lean on employees to help design human-centric experiences and determine which tasks are ripe for gen AI. Pair human workers with digital assistants. Start with HR touchpoints and build out.

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## About the CEO's Guide to Generative AI

The content in this book was informed by IBM Institute for Business Value proprietary research and expert analysis. All data comes from surveys conducted in partnership with Oxford Economics, unless otherwise noted. Generative AI was used to accelerate the writing process, helping our editorial team turn data-driven insights into compelling narratives faster than would have been possible otherwise. We used a pre-trained gen AI voice and tone assistant and a series of pre-defined prompts to cut our content creation timeline by 50% for each digital-first chapter.

## The images in this report were developed using generative AI

As part of our traditional concepting phase, IBM IBV designers arrived at the idea of using particles to communicate the relationship between data and the design of experiences. The designers used Adobe Firefly to generate images of the thread shapes, and then translated those images into 3D art. The time saved using this approach was substantial. What typically would have taken four weeks to produce was completed in just one.

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## Conclusion

# Make reinvention a reality

How can CEOs future-proof the business when they don't know what tomorrow will hold? It starts with building a flexible foundation.

Like skyscrapers constructed to withstand gale-force winds, companies must be redesigned to absorb future shocks. They need adaptable data and technology, responsive operations, and creative people who are ready to solve any problem that might arise.

As markets evolve at a feverish pace, CEOs have the power to define what comes next. But to reinvent their business and operating models, they'll need to move beyond iteration to embrace true revolution.

But no organization can do it alone. At IBM, we're tapping decades of experience in creating technologies and driving enterprise transformation to help our clients navigate the unknown.

Let's create what's next together. Future chapters are ours to write.

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