

The CEO's Guide to Generative AI

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

Second edition



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. 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%).3

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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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



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 2020.

February 2024.

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

1. Hyperpersonalization

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

2. Ideation

What to know

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

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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.

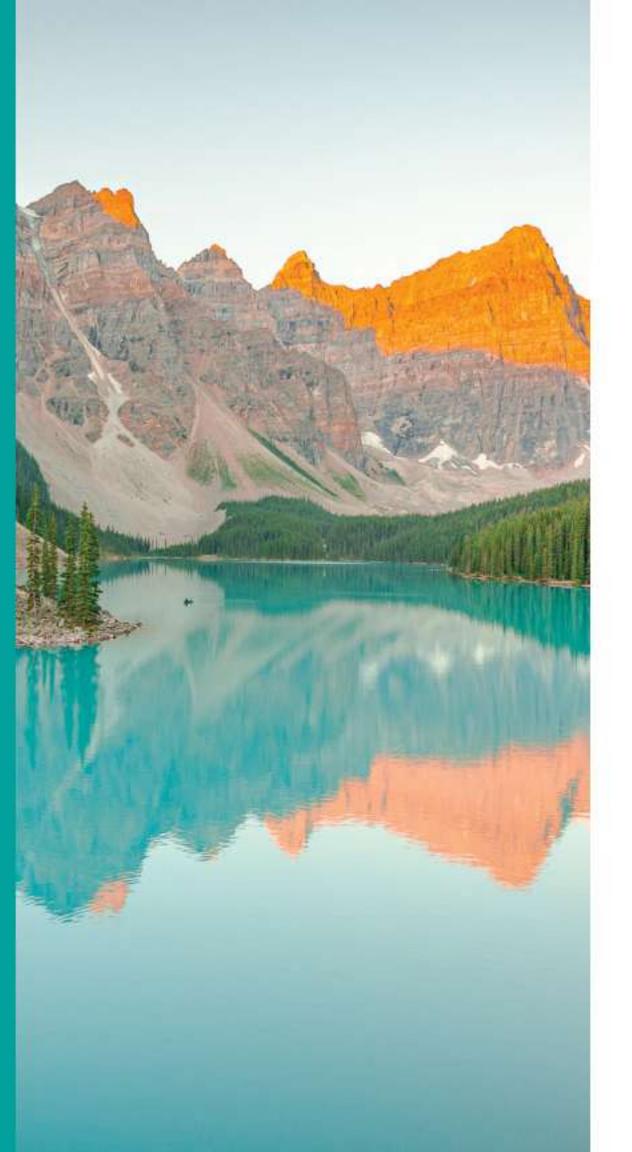
What to do

Upskill product feams 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



Chapter 1: Digital product engineering

- 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.



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

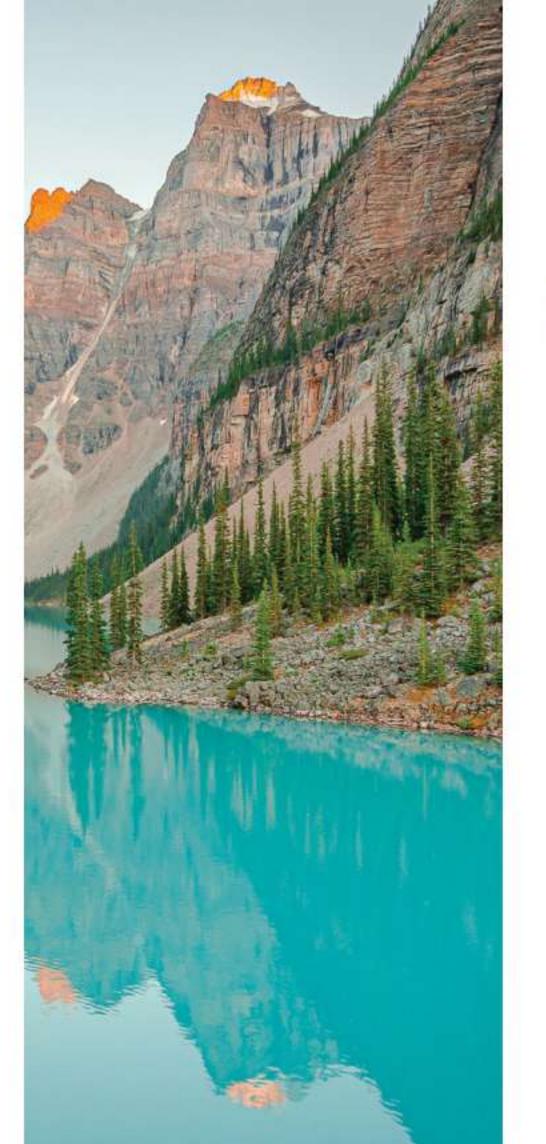
Build augmented teams to prepare for an influx of generative AI-infused workflows.

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

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.



Chapter 1: Digital product engineering

- 1. Hyper-personalization
- 2. Ideation
- 3. Design

What you need to know

Rapid code generation frees teams to double down on design.

Consumer expectations are evolving at breakneck speedsand 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

Expand the role of testers into user research.

of failure.

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 Chapter 2

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.³

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. 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.⁵

Research methodology

The statistics informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBN Institute for Business Value in collaboration with Oxford Economics. The first surveyed 207 US-based executives in 25 industries about generative A1 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 (secutives) 17 in fusiting altered generative AI and application modernization in July 2023.

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 geniu

What to do

Make tech less techy. 3. Prediction

What to know

Generative Al automation makes IT clairvoyant.

1

What to do

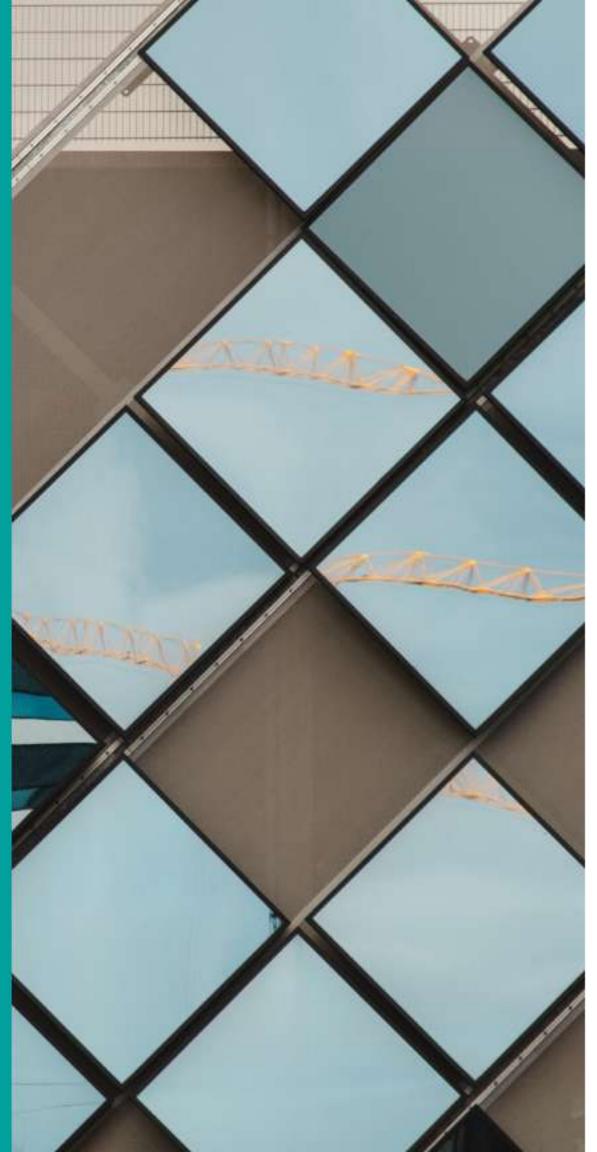
Conquer complexity with intelligent visibility

"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
- 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 2021.4

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

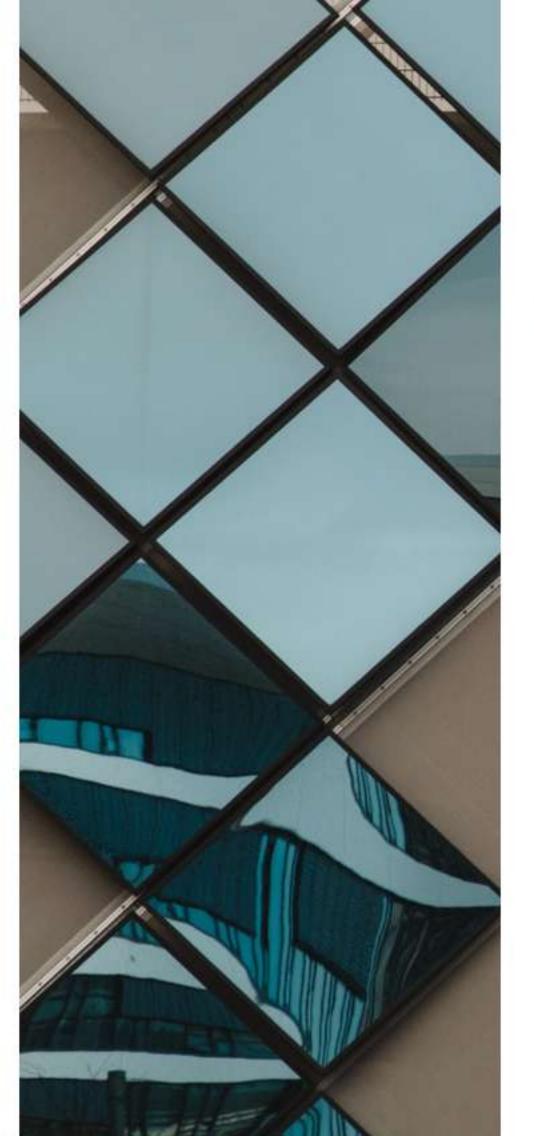
Make tech less techy.

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 Al projects. Organize workshops, hackathons, and other competitions that spurinnovative 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.

3. Prediction

1. Innovation

2 Transformation

Chapter 2: IT Automation

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.





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 12 in Survey on their perspectives regarding AT model optimization in June 2024

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 AT advantage is fleeting.

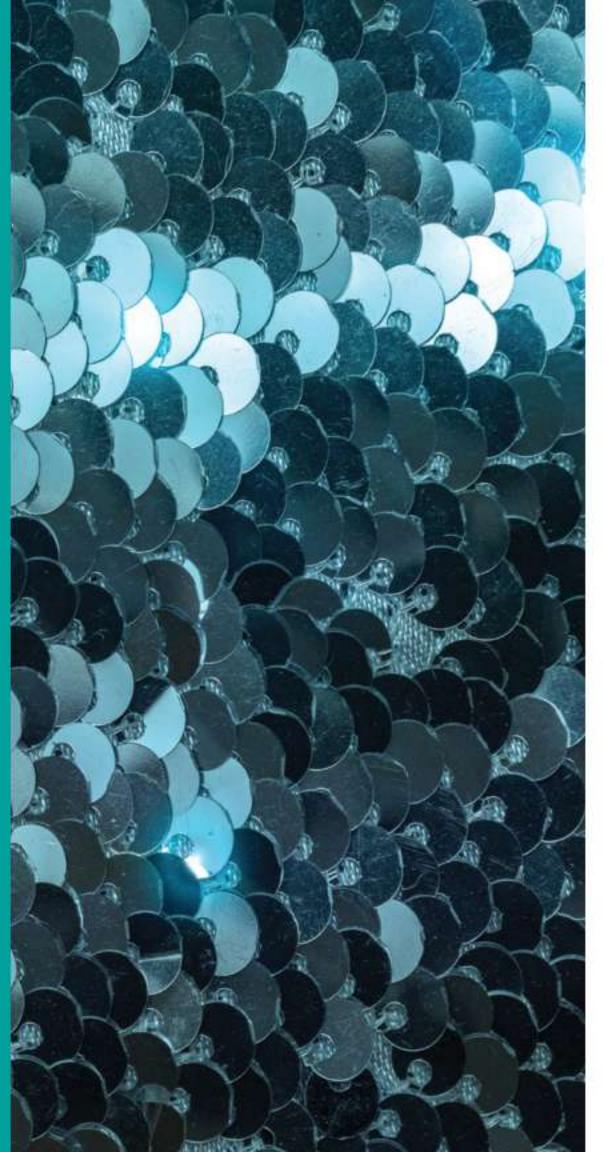
What to do

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 All Officer, Darktrace



Chapter 3: AI model optimization

- Agility
- 2. Cost
- 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. 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.



Cost

Competitiveness

What you need to know

Generative AI costs are completely in your control.

CEDs 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 guardraits-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.



Chapter 3: AI model optimization

Agility

2. Cost

Competitiveness

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

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 Jurie and July 2024. The accomd sor veyed 2, 240 global executives in 19 industries regarding sustainable IT practices from December 2023 through as 2014.

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

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.

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What to do

Forge a united front with generative AI and hybrid cloud.

3. Optimization

What to know

Generative AI stretches your computing budget.

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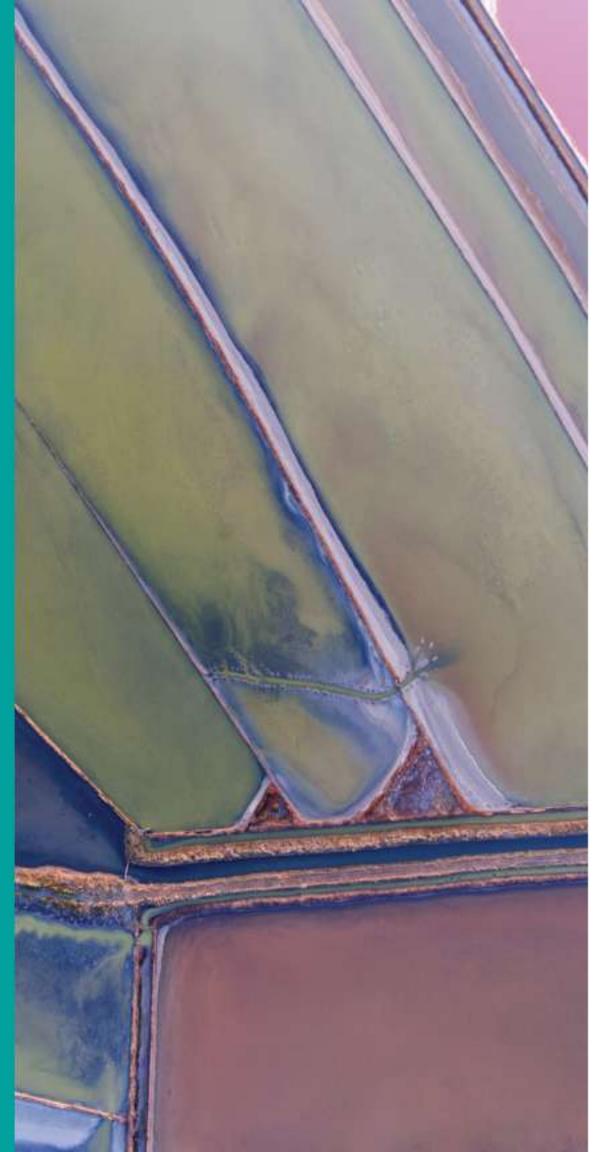
What to do:

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



Chapter 4: Cost of compute

- 1. Scaling
- 2. Hybrid cloud
- 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.



Chapter 4: Cost of compute

- Scaling
- 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.

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.



Chapter 4: Cost of compute

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

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."

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.* In fact, a quick search of share prices shows the gap between platform-natives and traditional businesses is only growing.**

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 2024.³¹

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 tipre, 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 the perceptions of generative A1 in April and May 2021. The second surveyed 5,000 global executives in 25 industries about their views on generative A1 from January to March 2024. The third surveyed 315 global executives in 22 industries regarding the application of generative A1 for open innovation in May and June 2023. The fourth surveyed 2,835 global executives in 10.00 global executives

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.

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What to do

Outfit a generative AI data expedition.

3. Governance

What to know

All and data governance are board-level concerns.

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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



Chapter 5: Platforms, data, and governance

1. Platforms

- 2. Data
- 3. Governance

What you need to know

past 20 years.13

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. 12

Successful platforms unite the right data, model architectures, governance, and computing infrastructure to enable reliable value creation across the ecosystem, with "anyone, anywhere." However,

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. ¹⁴

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.



Chapter 5: Platforms, data, and governance

- Platforms
- 2. Data
- Governance

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 2023.15

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 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%).10

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.



Chapter 5: Platforms, data, and governance

- 1. Platforms
- 2. Data
- 3. Governance

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. 17 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%.

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.

esearch methodology

The statistics Informing the insights in this chapter are sourced from three proprietary surveys conducted by the IBP. Institute for Business Value in collaboration with Oxford Economics. The first surveyed 315 global executives across 22 industries buring May and June 2023 regarding generative A1 for open innovation. The second surveyed 300 US-based executives across 22 industries in May 2023 regarding generative A1 and the workforce. The third surveyed 5,000 US-based executives in 28 industries in 28 industries in 28 industries in 28 industries.

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.

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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."

Kazuhiro 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. ¹⁷ 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

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.



Chapter 6: Open innovation and ecosystems

- Innovation
- 2. Data and skills
- 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.



Chapter 6: Open innovation and ecosystems

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

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.²⁰

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.

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 guardraits 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 source 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 U3-based executives in 17 industries about generative AI and application modernization in July 2023. The second surveyed 2,000 global executives executives in 12 industries about application modernization in August 2022. The third surveyed 3,000 global executives in 10 industries about AI and automation from April to July 2023. The forth surveyed 3,000 global CEOs in 24 industries about Distinct From January to April 2023. The fifth surveyed 530 global executives about TI architecture in May and June 2024.

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.

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What to do

Grab low-hanging fruit by applying generative AT to alread modernized apps.

2. Strategy

What to know

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

1

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



Chapter 7: Application modernization

- 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.³¹

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.²²

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.



Chapter 7: Application modernization

- Operations
- 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.23 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.24 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.



Chapter 7: Application modernization

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

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

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

modernization initiatives.

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

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.



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

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 a do, CEOs must lead the conversation about what it is 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 Distribute for Business Value surveys conducted in collaboration with Oxford Economics and MomentiveAI/SurveyMonkey. The 1st August 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 fault issurveyed 414 49 shots a consumer's regarding perspectives on social responsibility and sustainability in 2022.

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

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 A1 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 Sowmyanarayan

CEO, Verizon Consumer Grou



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-terms 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.²⁵

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.²⁶

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 innevation ecosystem by identifying and engaging key Al-locused 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.



- 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.²⁷ Consumers rank companies in many traditional industries, including retail, insurance, and utilities, lowest in responsible use of technology.28

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.29

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.30

Taken together, these perspectives showcase why companies with stronger data practices create more value, Our 2 bund that roughly eight out of 10 CDOs from these companies say their organization outperforms in data

ethics, organizational transparency and accountability,

What you need to do

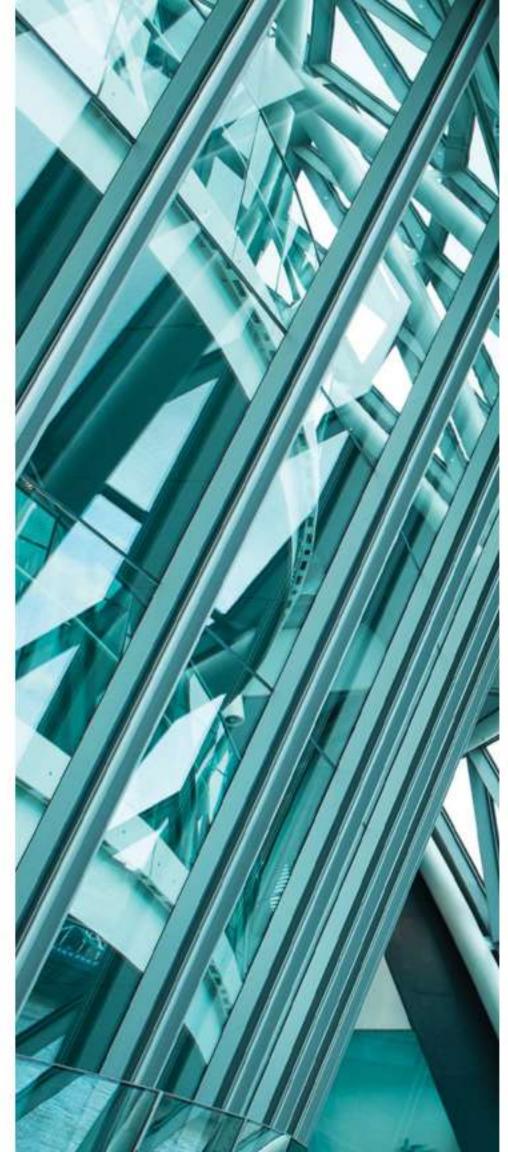
Earn trust by aligning with customer expectations.

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 AL 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.



Chapter 8: Responsible AI and ethics

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

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.32 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.33

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.34 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.



or cybersecurity.31

"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

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 in 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 130 US-based (Second Second Second

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 sideliner 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.

1

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 Sowmyanarayan

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.



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.

reports that senior AI engineers are fetching up to \$900,000 salary offers, with entry-level prompt engineers starting at \$130,000.35 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.³⁶

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.



- Spending
- 2. People
- 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.³⁷

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.

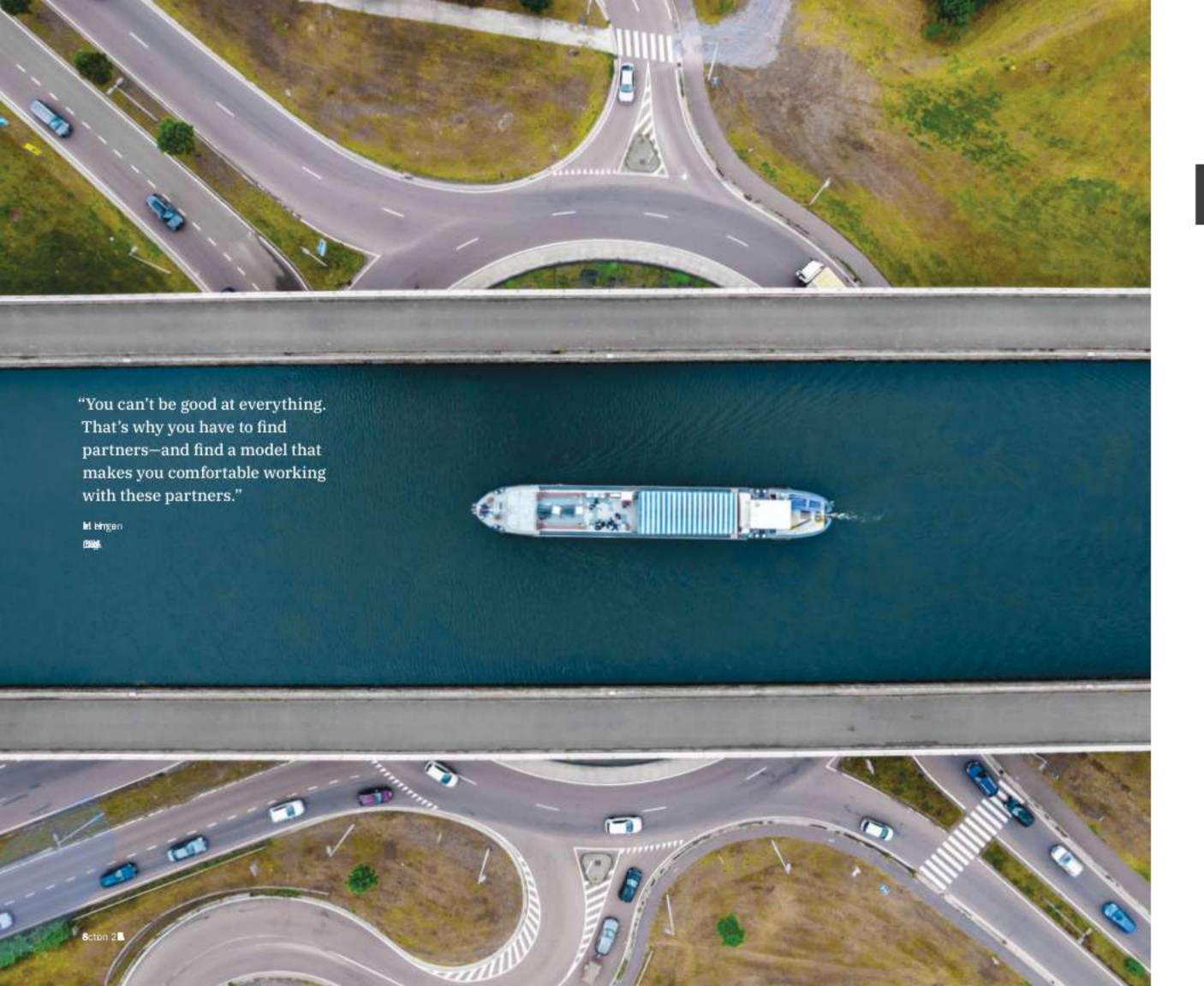
Appropriate the private equity playbook. Apply lessons from the way private equity firms invest in IT. Ruthlessly eliminate initiatives that won't improve the value of the enterprise within three years—and funnel those funds to programs that will.

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.







Enterprise operating model +





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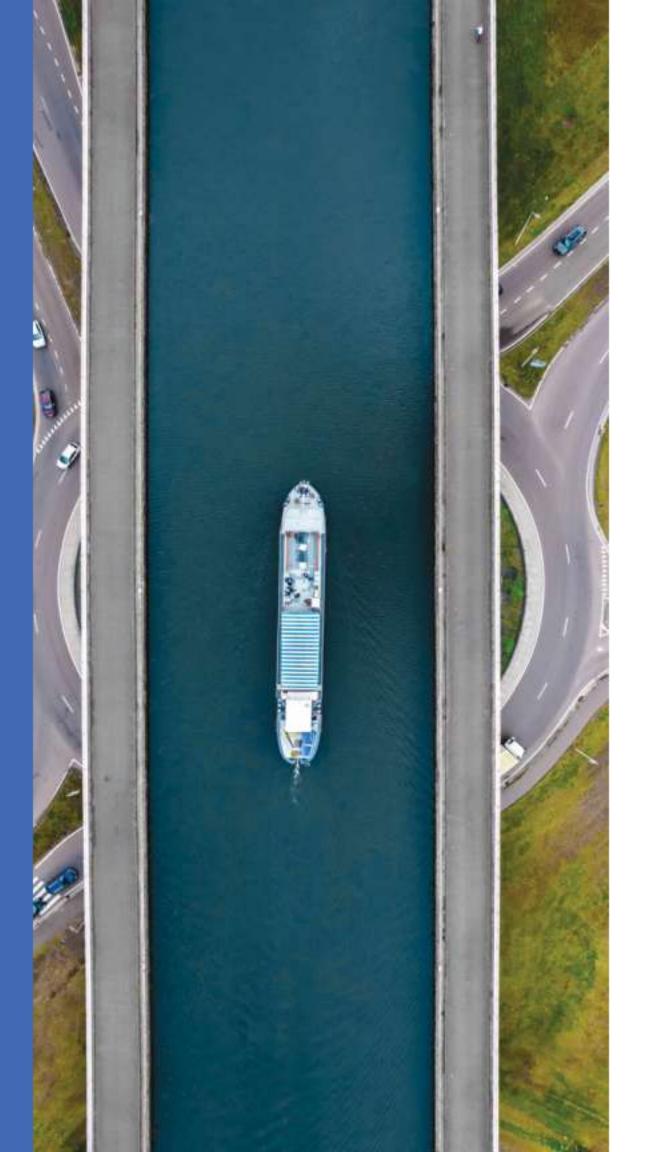




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"We see ourselves as a more horizontal organization. That's important because the tools in the digital toolbox change so fast. If people feel like they have to go through a traditional hierarchy to get buy-in, we could miss the boat. Instead, we take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

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"Process automation is not about replacing an individual. It's about enhancing the value of individualsmaking human work more human."

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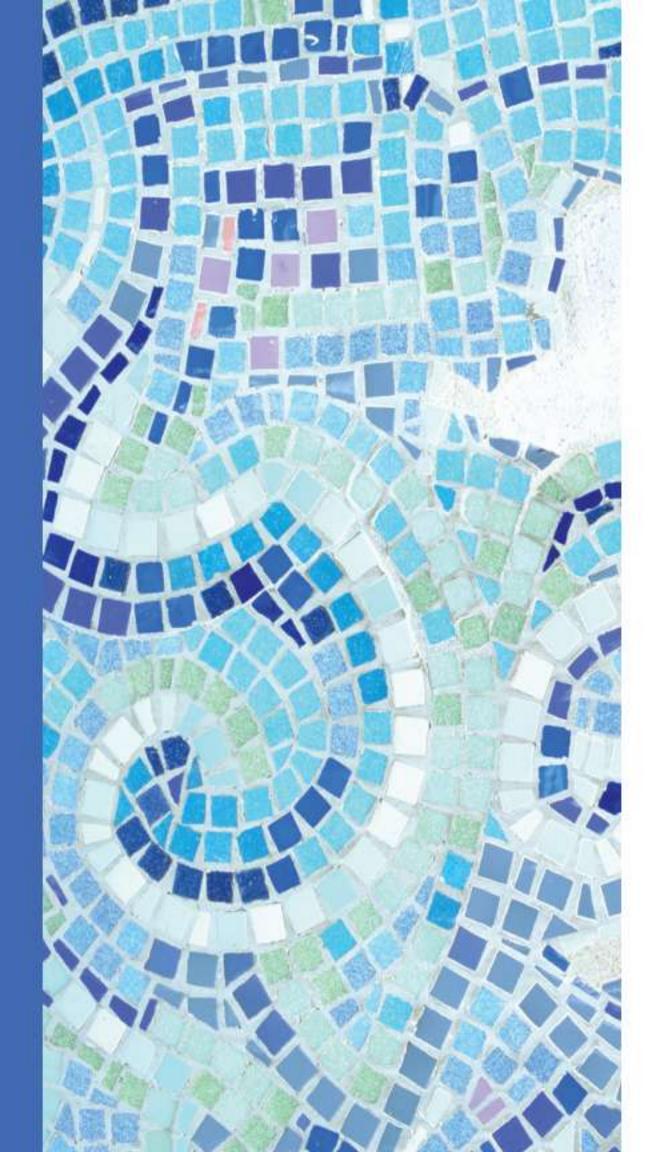


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"The more you specialize and divide a process into parts, the more you have to create some kind of dependency between the parts."

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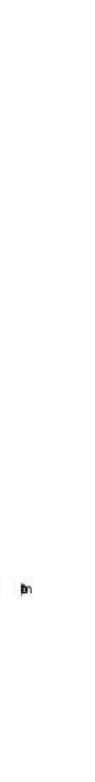
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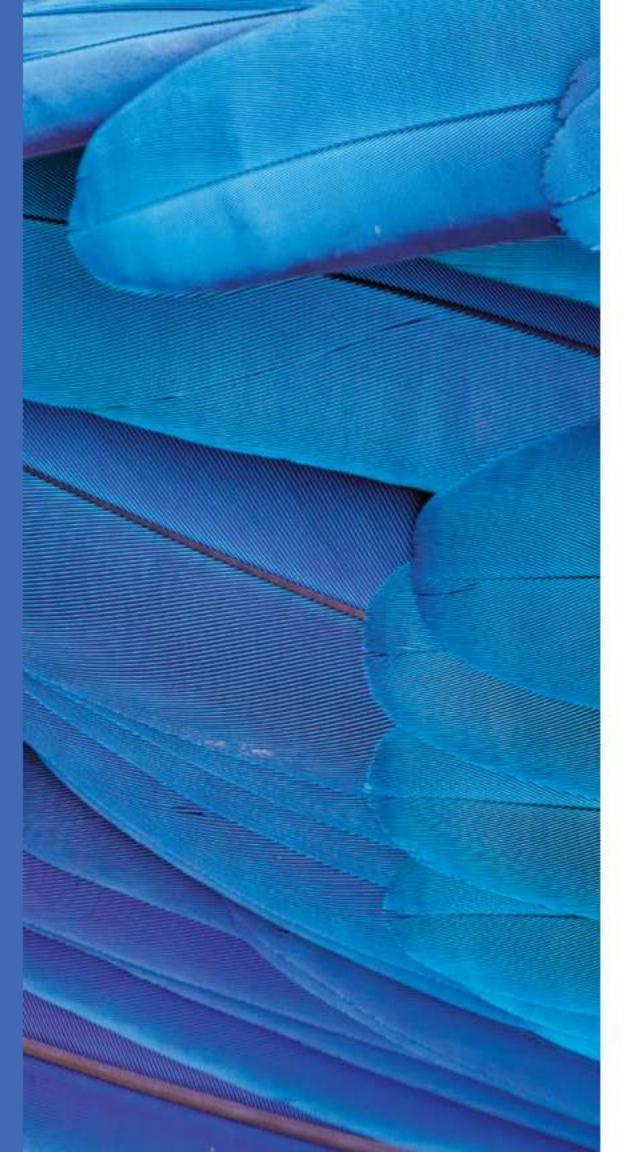
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"It's important to forecast and create a roadmap—but it's even more important to be agile. So, we've decided to focus on being more responsive to trends and to move from a plan-centered to an execution-centered approach."

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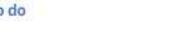
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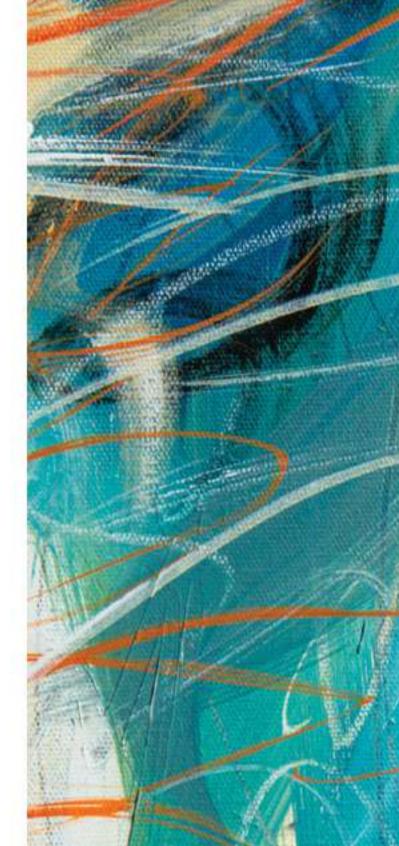
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"We want to shift time from entering the numbers in the right box to looking at the numbers and saying, 'Why is this happening? What is this telling me? Why are we spending so much here?""

Gofey ang

Procurement +





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

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"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 Cabo œ.



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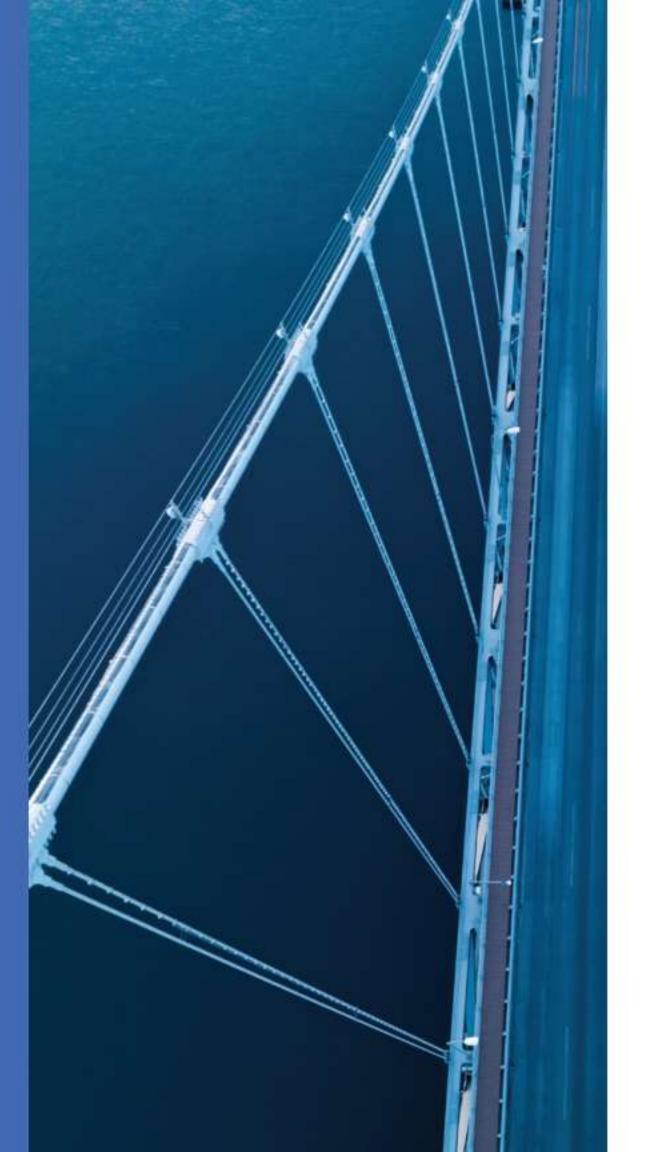


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"The goal is to get AI to do the things people don't want to do and give humans the space to do the things they want to do-to increase speed and efficiency and create extra capacity."

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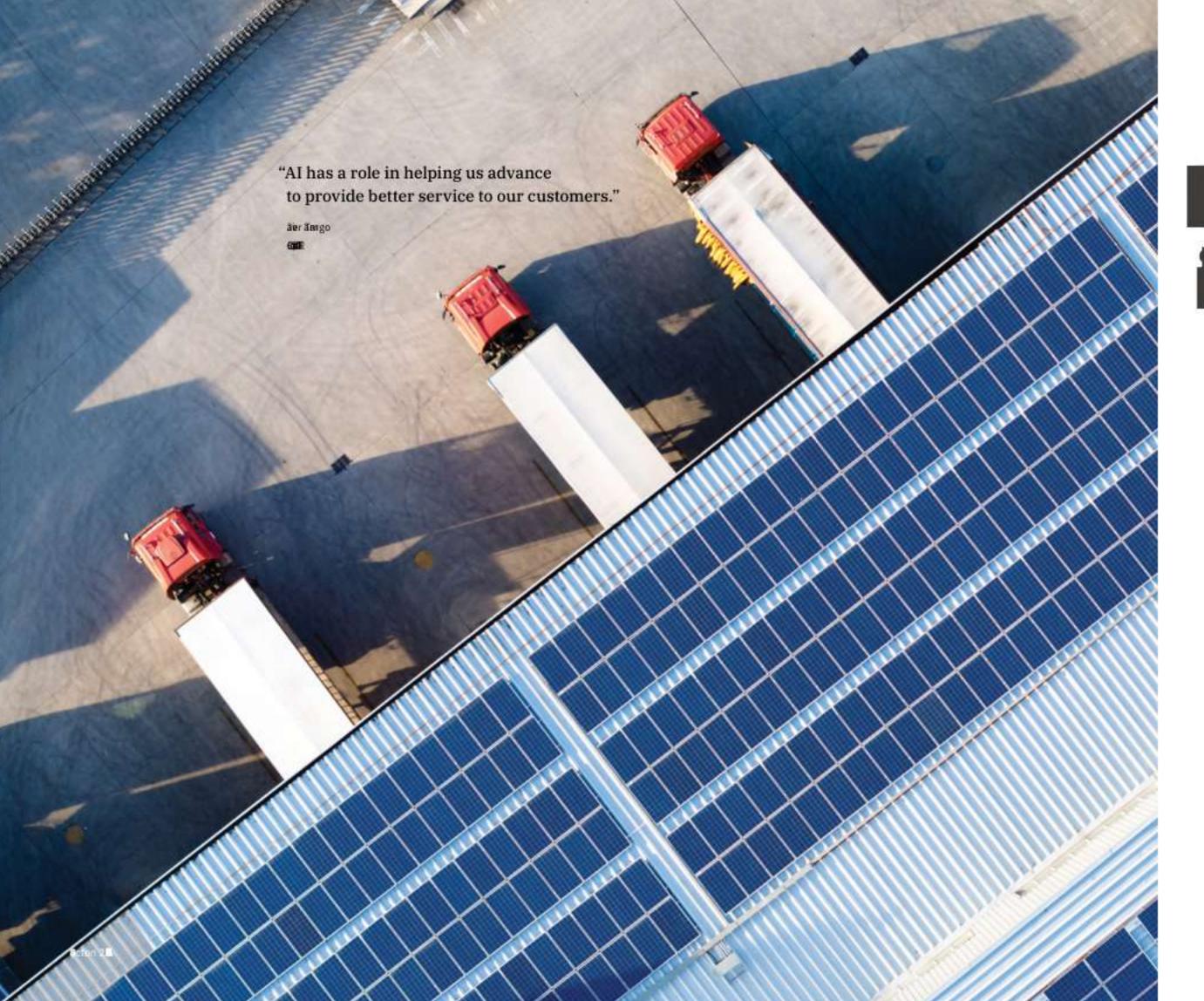
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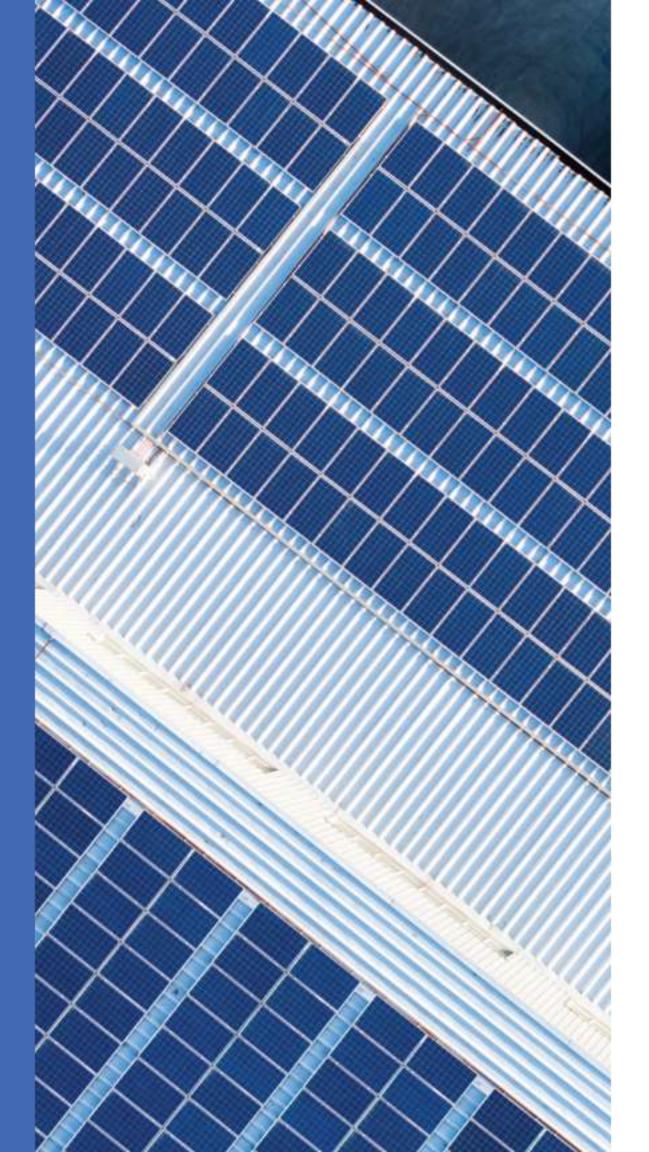
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"If we can reduce our inventory by 10% by optimization through digital twins and AI, for example, we can easily generate several hundreds of millions of dollars more in cash flow."

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"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."

Spath oweanarayan

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Marketing +





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"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."

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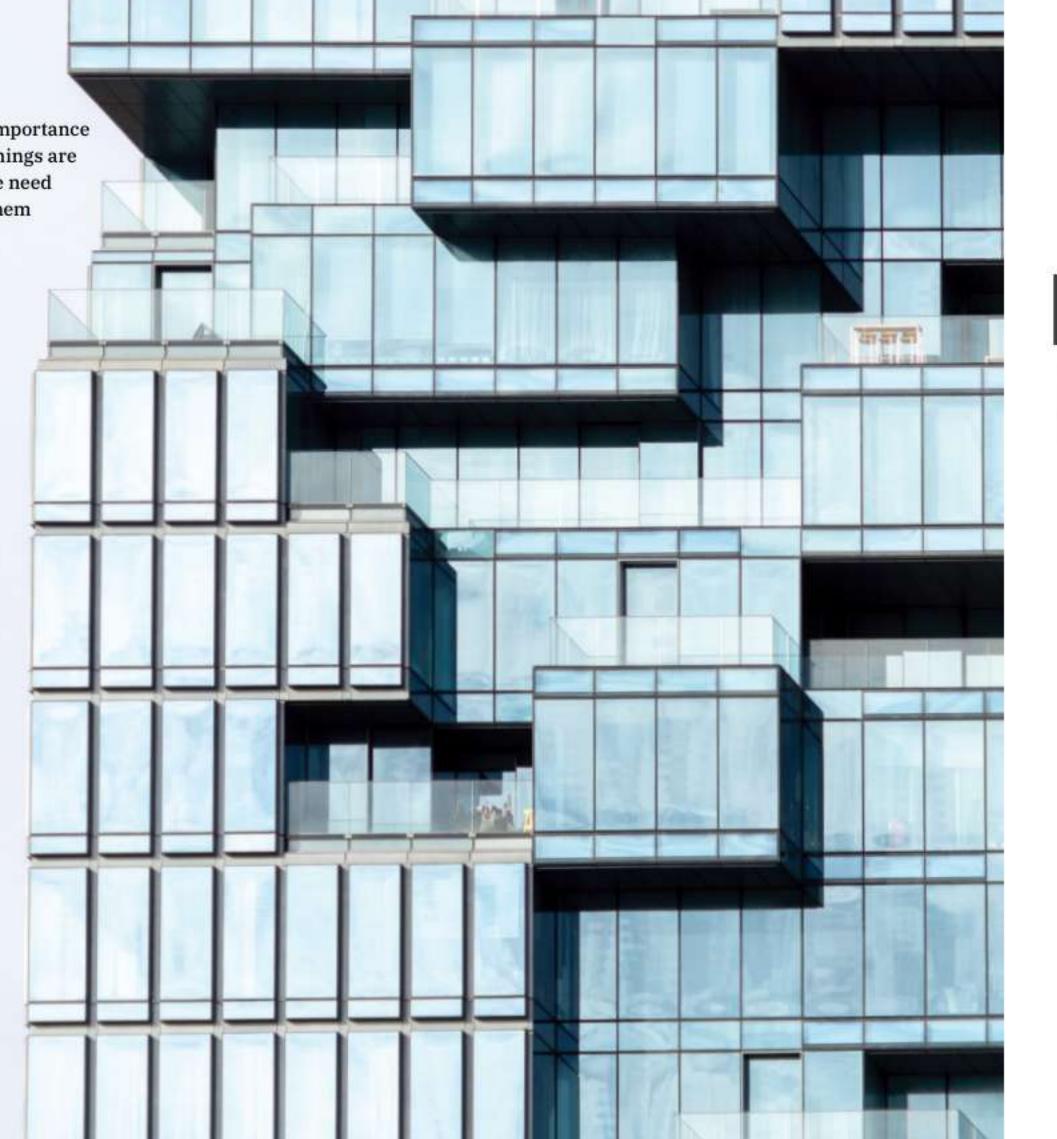
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"I'm seeing the increasing importance of security because many things are starting to connect. ... So we need a strategy to protect all of them with the same philosophy and same AI technology."

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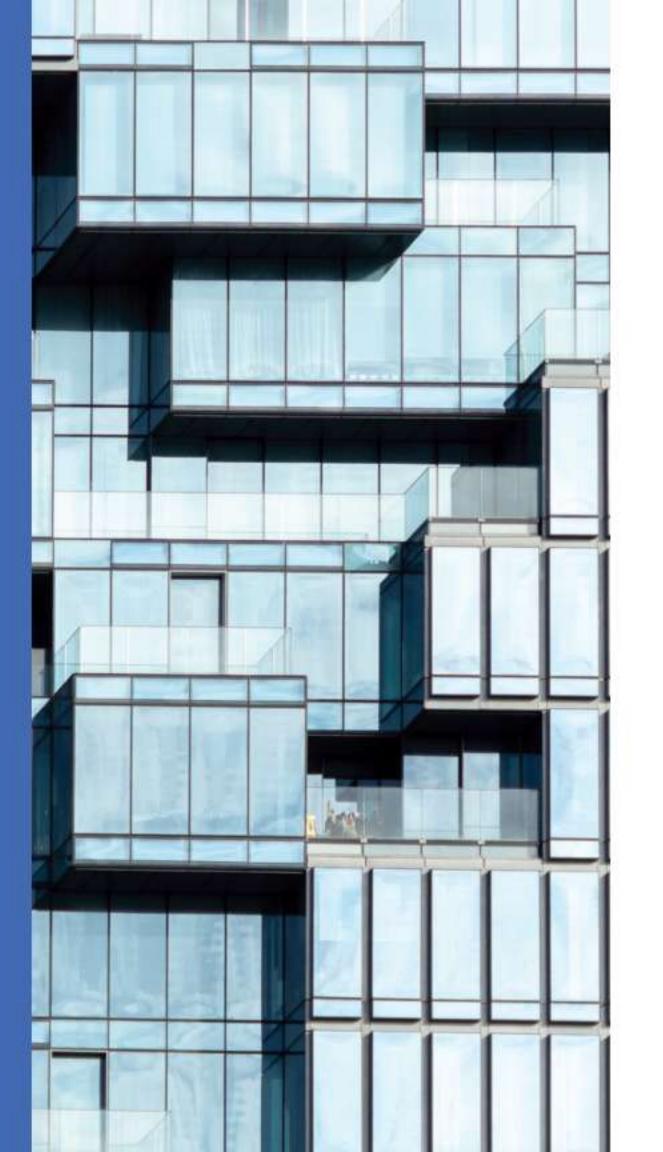
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職o kow

"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."

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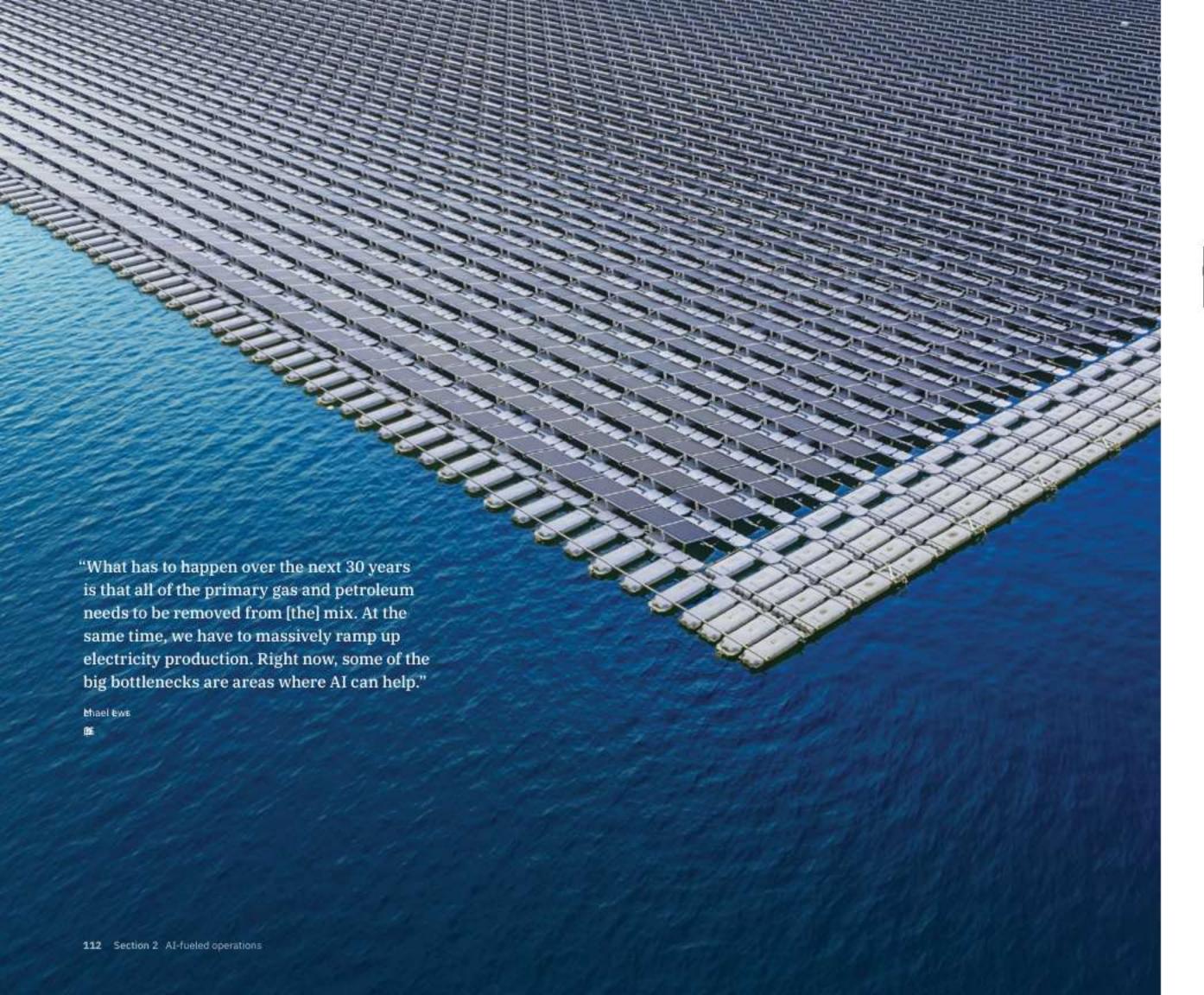
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"I equate an efficient use of resources to being better for the environment and also better for customer service."

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"Talent is key to resilience. If I don't have talent that can anticipate and adapt, absolutely nothing is going to happen."

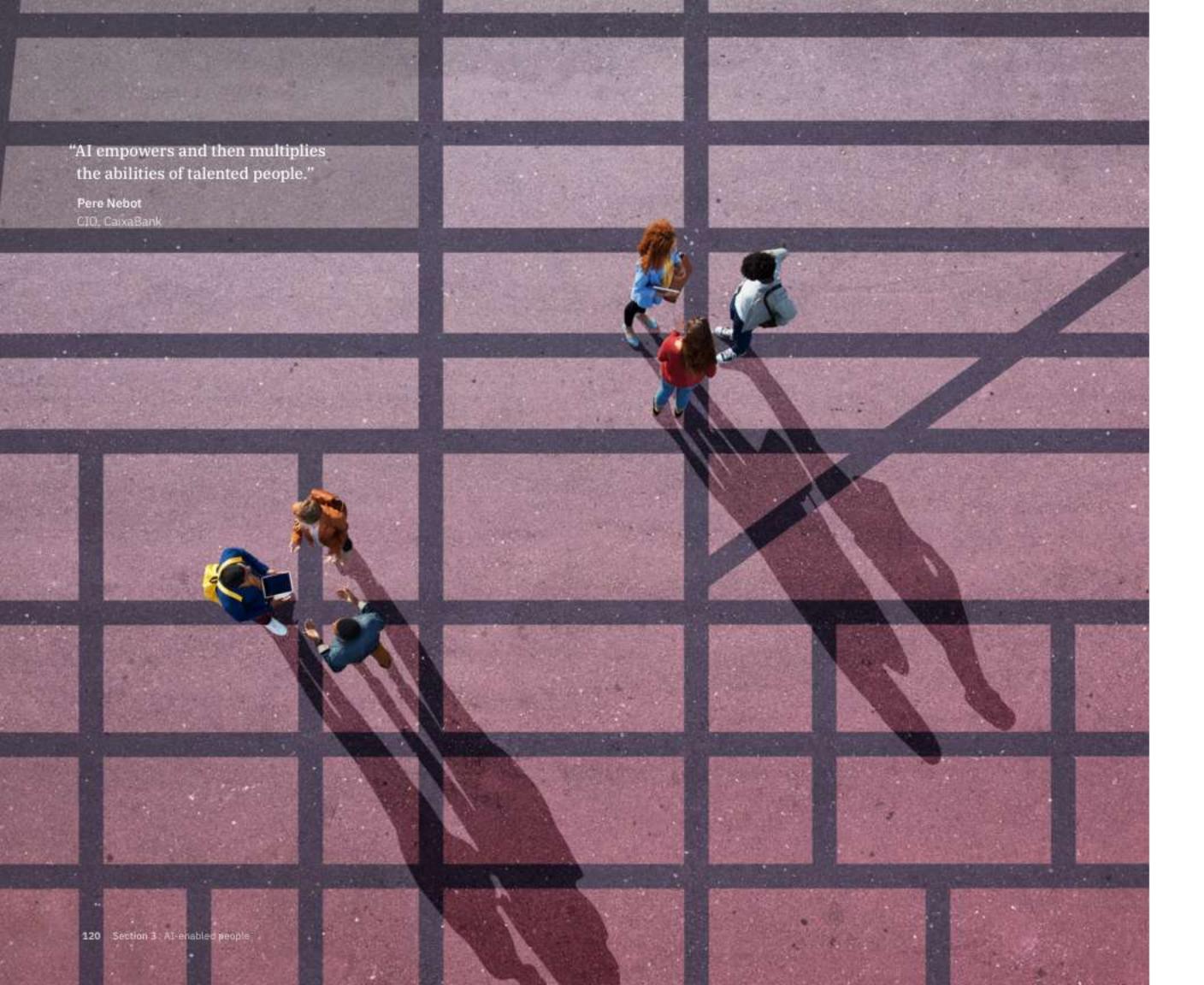
Fablen Hernandez
President and CEO, Movistar Colombia

Section three

More than two years attent programs AI burst onto the country of as much about people as technology. In fact, 64% of CEOs say succeeding with AI will depend into each people's adoption than the reconology itself. And some leaders fear they're pushing their organization to change that its than people can adopt

of they ARE educting. Gen AI is becoming a new tech co-worker that helps people you har the reductively belong teading or current capabilities. At the same time, they re-upskilling to the real part team of AI experts.

Customer service continues to be a primary use case for gen A1—human agents plus AI equals a winning combination that say the enterprise differentiation. As more and more products and services become distributions, value explores when gen AI meets experience. When combined with the data the language of the language o



Chapter 20

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generative AI







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.

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.

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 Nest surveyed 2,500 global CEDs 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 A1.

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.

Generative AI is all about people—how work gets done.

•

Make people, not technology, central to your generative AT strates

Most execs remain wary about their organization's generative AI readiness.

H

Pivot to evaluating potential rather than focusing solely on skills. B

Creativity is a "must-have" gen AI skill, with AI literacy and cybersecurity close behind.

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.



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2. Readiness

3. Skills

What you need to kow

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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. 62 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

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.



88

1. People

3. Skills

What you need to how

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. 62 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

B

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 performanceand 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.



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.⁶⁴

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.⁶⁵ What you need to do



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.

1. People

2. Readiness

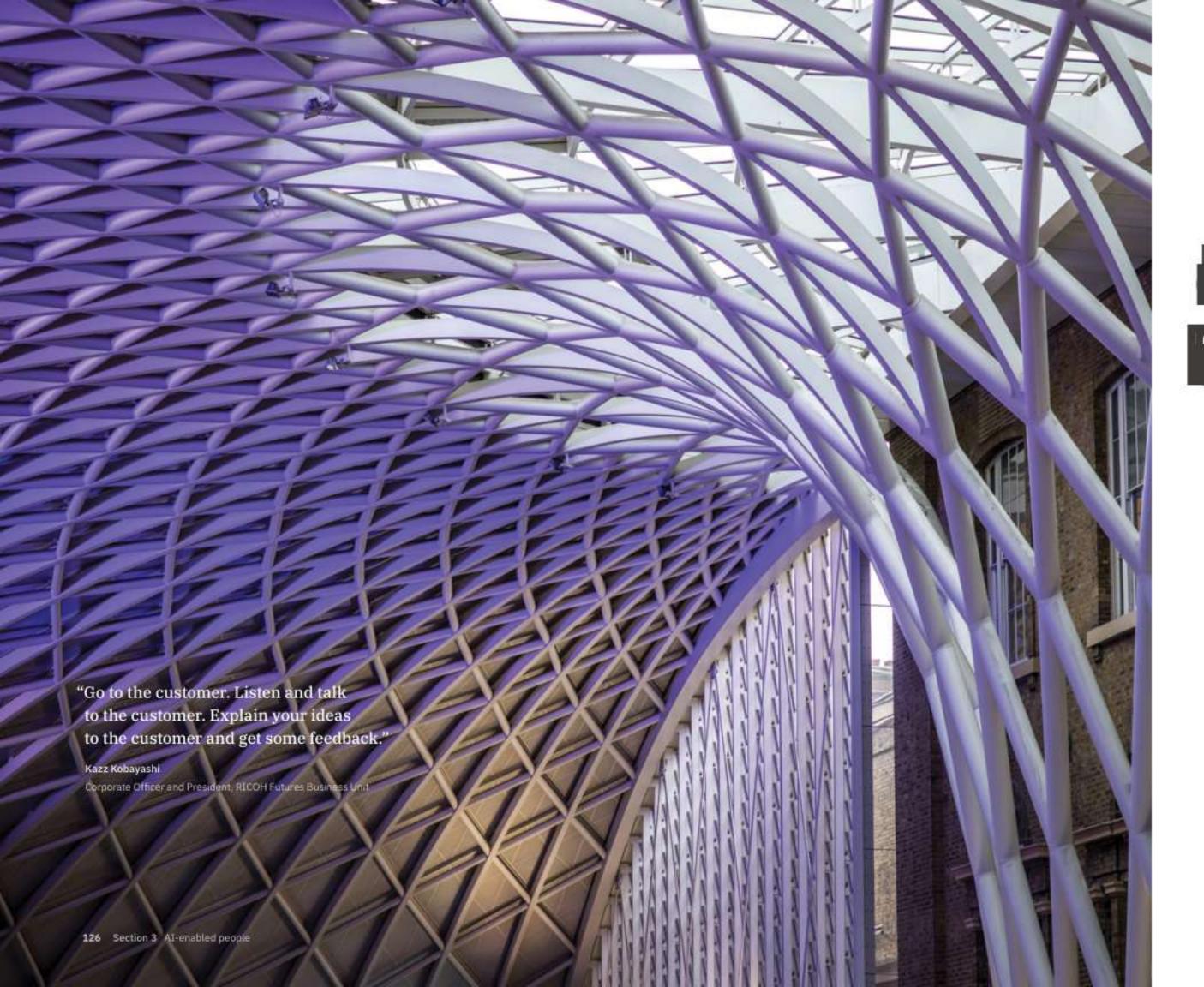
Make gen AI upskilling an advancement opportunity.

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.





Chapter 21

Dererize +

generative AI







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. 66

The statistics informing the insights in this chapter are sourced from two proprietary surveys conducted so 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 served surveyed 369 global executives across 20 industries in April and May 2023 regarding generative in 1270 FB.

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

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

Customer service has leapfrogged other functions to become CEOs' number one generative AI priority.

Turn human agents into heroes by giving them generative AI tools.

Customer-facing generative AI is changing the game.

Use generative AI to learn more about you customers than you ew thought possible.

Piloting generative A1 in customer service can speed a successful enterprise-wide rollout.

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





- 2. People
- Experimentation

What you need to how



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. 67

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%).**

What you need to do



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

Let gen AI manage standard customer interactions.

and summaries. Use gen AI for instant translations.

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.



- Strategy
- Experimentation

What you need to kow

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.

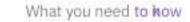
At least in its early learning phase, unsupervised gen AI has the potential to create less-than-ideal outcomes. People-and for customer service, that means agents-can provide the guardrails. Agents enhance what AI brings while acting as a backstop for AI-generated misinformation. And as the technology 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

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.



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.

What you need to do

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.

 Strategy 2. People

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

for and ephoyee exerence +

generative AI





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.

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 plobal 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 Atland the work face.

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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.

and obliterate it.

Customer trust Create ethical

Generative All opens

the door to reinventing

employee experience.

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



- 2. Customers
- Employees

What you need to how



You can't please all of the people all of the time. Or at least you couldn't before gen AL

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. 69 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.70

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





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.



- 鷝
- Strategy
- Employees

What you need to how

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 2025.71

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

customer feedback.

Lead with empathy to build trust while you speed toward innovative new experiences. Prioritize ethics and invite

customer feedback to engage customers, identify pain

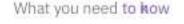
points, and pivot as their demands evolve.

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



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

Strategy

2. Customers



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—

Activate the ultimate change management tool.

and keep employee engagement top of mind.

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.



IBM Institute for Business Value

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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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