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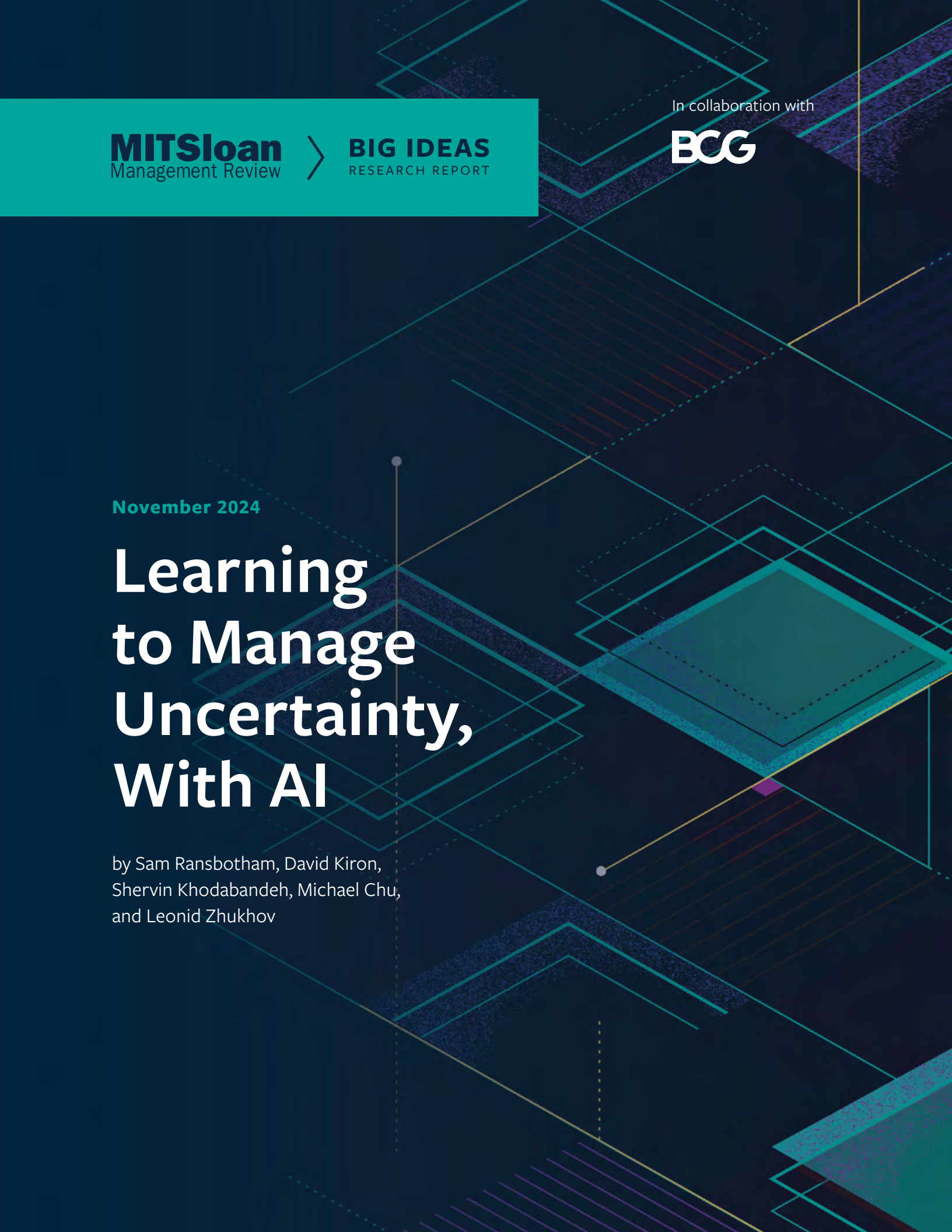

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Learning to Manage Uncertainty, With AI

by Sam Ransbotham, David Kiron, Shervin Khodabandeh, Michael Chu, and Leonid Zhukhov

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Uncertainty Abounds

Uncertainty is all about the unknown. The less an organization knows, the greater its uncertainty and the less able it is to manage resources effectively. Managing uncertainty, therefore, requires learning. Companies need to learn more, and more quickly, to manage uncertainty.

Addressing uncertainty constitutes a pressing challenge for leadership, especially today, when geopolitical tensions, fast-moving consumer preferences, talent disruptions, shifting regulations, and rapidly evolving technologies complicate the business environment. Companies need better tools and perspectives for learning to manage uncertainty arising from these and other business disruptions. Our research finds that a major source of uncertainty, artificial intelligence, is also critical to meeting this challenge. Specifically:

> *Companies that boost their learning capabilities with AI are significantly better equipped to handle uncertainty from technological, regulatory, and talent-related disruptions compared with companies that have limited learning capabilities.*

The Estée Lauder Companies (ELC) offers a case in point. The cosmetics company has a strategic need to anticipate consumer trends ahead of its competitors. In earlier times, consumer preferences might have shifted seasonally. Now, preferences are less certain; shifts happen more quickly due to social media and digital influencers. Fashion trends can change by the week. If the color peach suddenly captures the public's interest, the company needs to discern that trend as quickly as possible. It uses AI to detect and rapidly respond to consumer trends. Sowmya Gottipati, vice president of global supply chain technology at ELC, reports that the company, which carries products across more than 20 brands and "hundreds of different shades," uses fuzzy matching to figure out which products can meet the demand and delight consumers. "We are looking to AI to discover consumer trends and then match up our existing products to the trends so that we can repackage them and position them in the market for that trend," Gottipati explains. ELC uses AI to detect sudden changes and have a market response ready so it can redeploy inventory and supply chain processes to meet demand efficiently. Companies can't control the changes but can use AI to manage their responses.

ELC is not alone: The company is among the 15% of organizations that integrate AI into their learning capabilities. These organizations — what we refer to as Augmented Learners — are 1.6 times more likely than those with limited learning capabilities to manage various environmental and company-specific uncertainties, including unexpected technological, regulatory, and workforce changes. These companies are twice as likely to be prepared to manage talent-related disruptions compared with organizations that have limited learning capabilities. What's more, these organizations are 60%-80% more likely to be effective at managing uncertainties in their external environments than Limited Learners — companies with limited learning capabilities. By doing so, they reap advantages with AI well beyond direct financial benefits.

Based on a global survey of 3,467 respondents and interviews with nine executives, our research quantitatively and qualitatively establishes a relationship between organizational learning, learning with AI, and the ability to manage rapidly changing business environments. Organizational learning itself has long been associated with improved performance. Integrating AI with an organization's learning capabilities significantly improves corporate responses to uncertainties from talent mobility, new technology, and related regulations. This report defines an AI-enhanced organizational learning capability (augmented learning), explains its use in reducing the considerable uncertainty managers face today, and offers key takeaways for exploiting these new abilities.

Companies need to learn more, and more quickly, to manage uncertainty.

ABOUT THE RESEARCH

This report presents findings from the eighth annual global research study on artificial intelligence and business strategy by *MIT Sloan Management Review* and Boston Consulting Group. In spring 2024, we fielded a global survey and subsequently analyzed records from 3,467 respondents representing more than 21 industries and 136 countries. We also interviewed nine executives leading AI initiatives in a broad range of companies and industries, including financial services, technology, retail, travel and transportation, and health care.

Our research connects organizational learning, learning with AI, and the ability to manage rapidly changing environments. This report defines an AI-enhanced organizational learning capability, explains its use in reducing several types of uncertainty managers face today, and offers key leadership takeaways for exploiting these new abilities.

To assess whether organizations have "high" or "low" organizational and AI-specific learning capabilities, we analyzed survey responses to these statements using an agree-disagree Likert scale:

- My organization learns through experiments. (organizational learning)
- My organization tolerates failures in experiments. (organizational learning)
- My organization learns from postmortems on both successful and failed projects. (organizational learning)
- My organization codifies its learning from initiatives. (organizational learning)
- My organization gathers and shares information that employees learn. (organizational learning)
- My organization's use of AI leads to new learning. (AI-specific learning)
- My organization uses AI to learn from performance. (AI-specific learning)
- My organization builds AI solutions with human feedback loops. (AI-specific learning)
- Employees in my organization learn from AI solutions. (AI-specific learning)

We then grouped respondents into four categories: Limited Learners, Organizational Learners, AI-specific Learners, and Augmented Learners. (SEE FIGURE 2, PAGE 3 FOR THESE BREAKDOWNS.)

Combining Organizational Learning and AI-specific Learning Leads to Augmented Learning

Organizational learning is an organization's capability to change its knowledge through experience.[1] Organizations that learn from mistakes, tolerate failure, capture best practices, and support new ideas have an advantage over organizations that don't: They learn to get better. Those that struggle to learn will struggle to navigate increasing uncertainties. Extensive past research demonstrates the benefits of general organizational learning.

General organizational learning capabilities don't necessarily depend on AI; organizations can have strong organizational learning capabilities without using the technology. Conversely, organizations can use AI to learn even if they don't otherwise have strong organizational learning capabilities. Managers can learn from generative AI tools, use AI to deepen their understanding of performance, and iterate with AI to develop new insights and processes. These individual learning experiences create value from AI but may not constitute an organizational learning capability.

Our research finds that organizations that combine organizational learning with AI-specific learning — Augmented Learners — outperform organizations that employ either approach in isolation. As businesses adopt AI and embrace successively more powerful AI tools in various contexts, they have new opportunities to strengthen their learning capabilities — for both human workers and their machines. Our prior research, "Expanding AI's Impact With Organizational Learning," found that organizations with superior learning capabilities are more likely to obtain significant financial benefits from their AI use.[2] In our latest research, we find that the reverse is also true: Using AI can improve organizational learning capabilities, and these learning improvements are tied to not only enhanced financial results but also the ability to manage strategy-related uncertainties.

Assessing Learning Capabilities

Our survey instrument measured each enterprise's organizational learning capability using five questions. We also assessed how individuals and systems learn with AI through a different set of four questions. Together, these questions probe several aspects of organizational learning and AI-specific learning: knowledge capture, synthesis, and dissemination. (SEE FIGURE 1, PAGE 3.)

Becoming adept at these learning activities — which represent only a slice of an organization's overall learning capability — significantly improves a company's ability to manage uncertainty.

Most Companies Have Limited Learning Capabilities

Given the uncertainties facing many companies, it's striking that most organizations have limited learning capabilities; 59% of all companies represented in our sample report low levels of both organizational learning and AI-specific learning. Only 29% of respondents agree or strongly agree that their enterprise has organizational learning capabilities. While 27% of organizations report learning with AI, only 15% combine AI-specific learning with organizational learning capabilities. These Augmented Learners are the focus of this report.

Organizational learning	AI-specific learning
• Learns through experiments and tolerates failure • Supports employees presenting new ideas • Learns from postmortems on successful and failed projects • Codifies learning from initiatives • Gathers and shares information that employees learn	• Uses AI to lead to new learning • Uses AI to learn from performance • Builds AI solutions with human feedback loops • Enables employees to learn from AI solutions

FIGURE 1
Characteristics of Organizational Learning and AI-specific Learning

We outline characteristics of organizational and AI-specific learning based on nine survey questions.

ORGANIZATIONAL LEARNING
An organization's capability to change its knowledge through experience.

AI-SPECIFIC LEARNING
The measure of organizations' use of AI for learning.

AUGMENTED LEARNERS
Organizations that score high on organizational learning and AI-specific learning.

LIMITED LEARNERS
Organizations that score low on organizational learning and AI-specific learning.

In our global survey, we assessed an organization as having "high" or "low" organizational and AI learning capabilities. For more detail, see "About the Research," page 2.

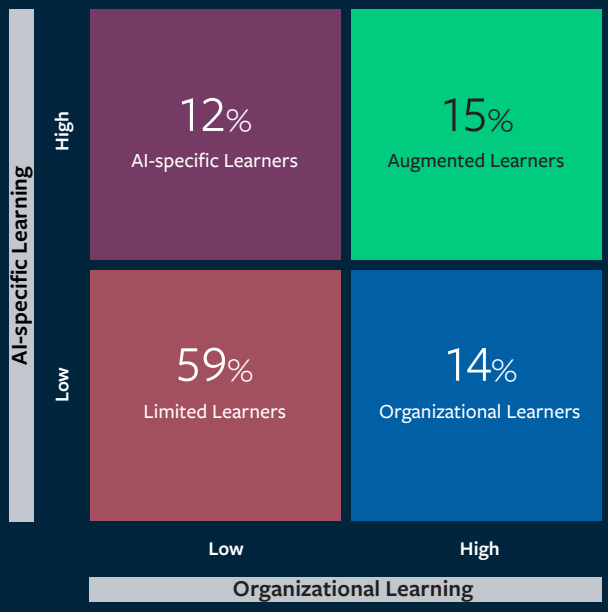


FIGURE 2
Learning Capabilities Vary

Only 15% of organizations are Augmented Learners — organizations that enhance organizational learning with AI.

Limited learning capabilities constrain opportunities and undermine organizations' ability to manage uncertainty.

Augmented Learners Are Better at Managing Uncertainty

Among our sample, 15% of organizations report high levels of both organizational learning and AI-specific learning. These Augmented Learners display abilities and advantages that lead to better outcomes than organizations with limited capabilities. They are more likely to improve financial outcomes with AI than Limited Learners: 99% of Augmented Learners report annualized revenue benefits from AI. (SEE SIDEBAR, "ENHANCING ORGANIZATIONAL LEARNING WITH AI IMPROVES FINANCIAL OUTCOMES," PAGE 5.) What's more, they are much more likely to be prepared to deal with uncertainty from talent, technology, and legal disruptions.

Figure 3 shows that organizational learning alone or AI-specific learning alone offers some benefits, but their combination represents the most powerful hedge against multiple types of uncertainty. Organizational learning with AI may well prove to be a source of resilience against other forms of disruptions or uncertainty.

Augmented Learners Are Better Prepared for Many Types of Uncertainty

Combining organizational learning and AI-specific learning capabilities helps enterprises manage uncertainty and disruptions from talent mobility, changing technology, and evolving regulatory and legal requirements. (SEE FIGURE 5, PAGE 6.)

Disruptions From Talent Mobility

Elevated rates of workers quitting, retiring, being laid off, or even ghosting employers create risks and ambiguities for organizations striving to compete. Shilpa Prasad is head of incubation, AI Ventures at LG Nova, the subsidiary of LG Electronics that works with startups to fuel innovation for the company. She observes that "60% of the workforce will likely hit the age of 65 by the year 2028 or 2030, which means that a lot of knowledge will go out from the workforce because they'll retire, not because they're going somewhere else to work." When employees leave organizations, their knowledge can leave with them unless the company has effective organizational learning capabilities.

These problems are not new for organizations. In industries like chemicals, aerospace, and oil and gas, retirement rates have been an increasing cause for alarm for years. However, companies have new resources to address these challenges. Augmented learning is a valuable resource for addressing disruptions from talent mobility. Only 39% of organizations with limited learning feel prepared to handle the disruption in knowledge from departing employees, but this readiness increases to 64% if the companies have organizational learning capabilities. Using AI can further contribute to this readiness: Eighty-three percent of Augmented Learners are prepared to deal with the uncertainty of knowledge disruption from talent mobility — twice as much as Limited Learners.

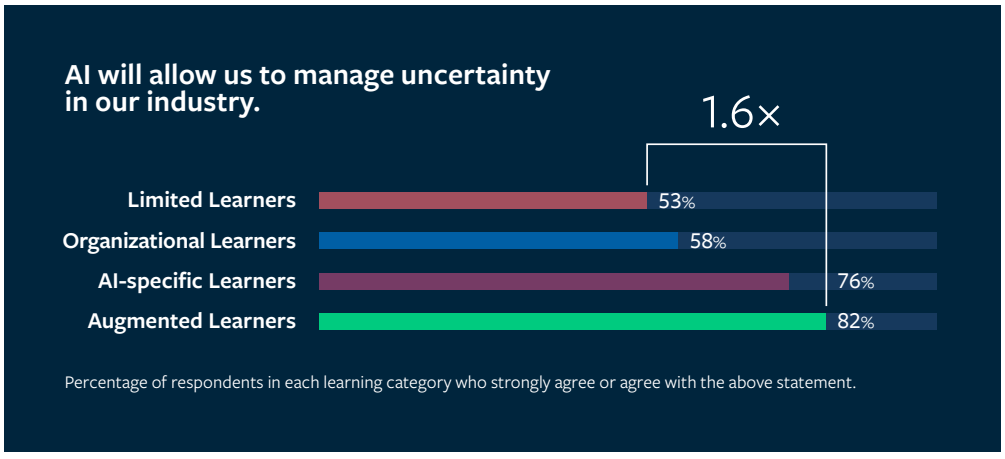


FIGURE 3
Learning With AI Helps Organizations Manage Uncertainty

Organizations that combine organizational and AI-specific learning (Augmented Learners) are 1.6 times more likely to feel prepared to manage uncertainty than organizations with limited learning capabilities.

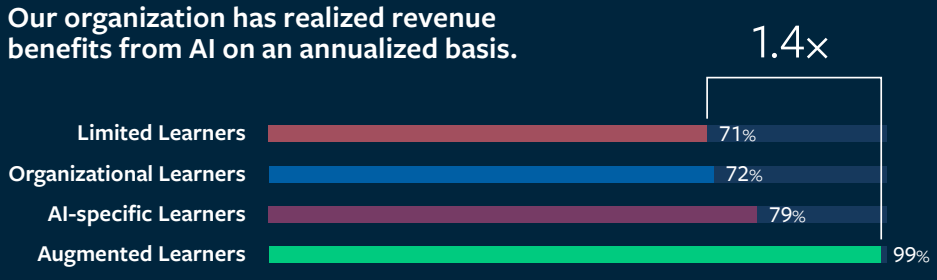
SIDEBAR

ENHANCING ORGANIZATIONAL LEARNING WITH AI IMPROVES FINANCIAL OUTCOMES

Numerous studies now show the direct financial benefits of AI adoption. Clearly, organizations are finding ways to extract financial benefits through AI, even if many such efforts fail or their costs exceed revenues. Extensive past research also surfaces the general benefits of organizational learning for companies. In prior research, we found that organizations with superior learning capabilities are more likely to obtain significant financial benefits from their AI use than organizations with lesser learning capabilities.

In this study, we find that using AI can improve organizational learning capabilities and that these learning improvements are similarly tied to improved financial results. Organizations using AI to improve organizational learning are 1.4 times more likely to recognize some revenue benefits from AI compared with organizations with limited learning capabilities. Indeed, virtually all of these organizations (99%) recognize or observe some revenue benefits from AI. What's more, organizations that combine AI and organizational learning are significantly more likely to have realized revenue benefits from AI compared with companies that excel at organizational learning but not learning with AI, and with companies that excel at AI-specific learning but not organizational learning. That is, combining organizational learning and AI-specific learning enables organizations to cross a revenue benefit threshold that neither type of learning alone can generate.

Percentage of respondents who strongly agree or agree that AI has created additional business value over the past three years.



Percentage of respondents who report revenue benefits from AI.

FIGURE 4
Enhancing Organizational Learning With AI Leads to Financial Benefits

Organizations that combine organizational learning and AI-specific learning (Augmented Learners) are 1.4 times as likely to realize additional business value and annualized revenue benefits from AI.

As more and more workplace communications occur via digital channels, emerging AI capabilities can make this raw data sensible, and tacit knowledge accessible, on demand. Jackie Rocca, former vice president of product at Slack, describes how AI can surface and distill the trove of information from past conversations in a platform like Slack when people need it. "People can get context from coworkers who left the company months or years ago and still learn from that knowledge," she points out.

Generative AI tools can help synthesize and disseminate personalized knowledge. "GenAI helps you get more value out of this knowledge so that you can find what you're looking for and be more effective in using all that data that has been available to you but hasn't been very easy for you to access and use," Rocca says. While tools like wikis make it easier for people to record knowledge, AI capabilities can bolster organizational learning about what workers know. That enables organizations to better handle knowledge

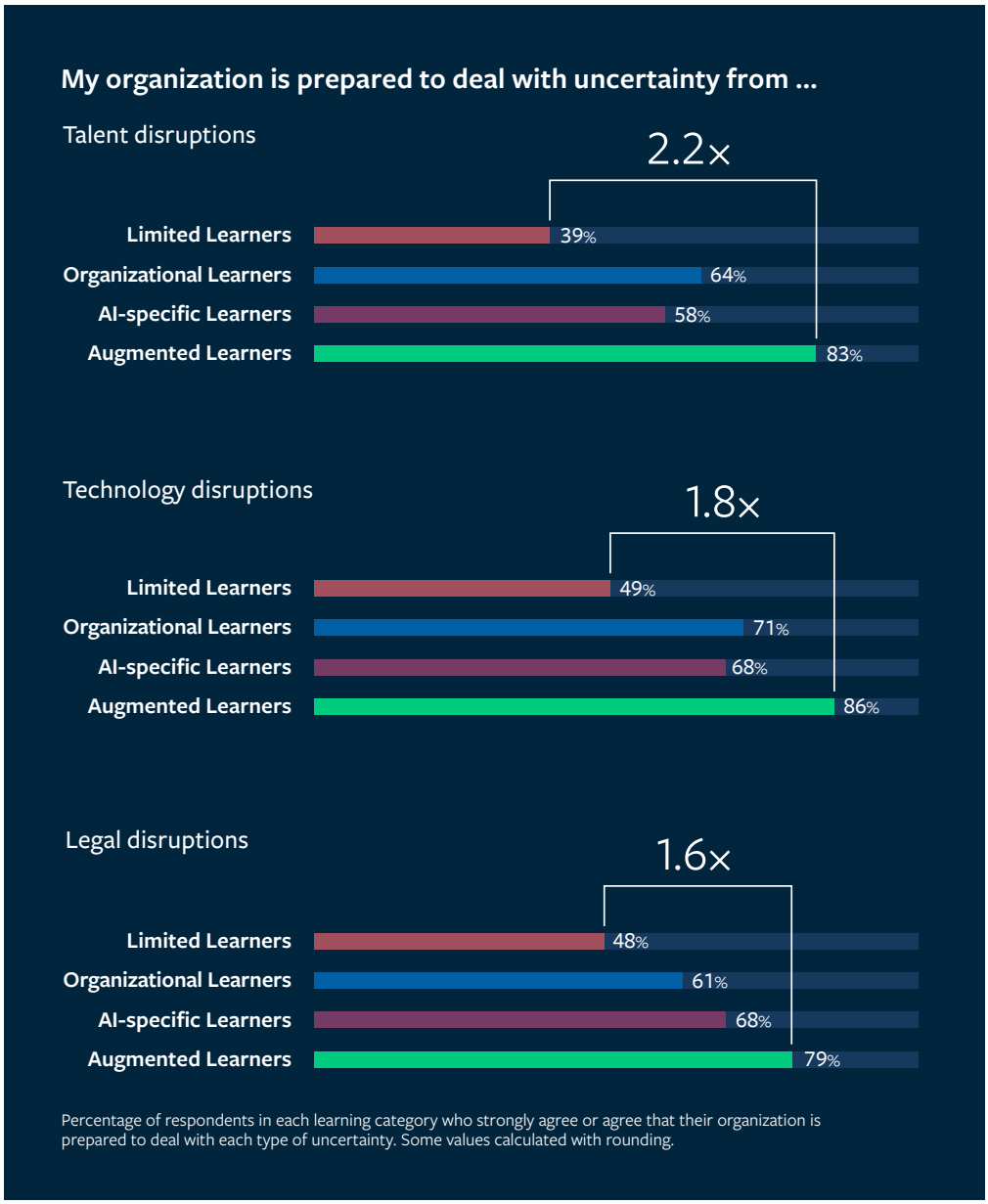


FIGURE 5

Combining Organizational Learning With AI Learning Helps With Many Types of Uncertainty

Organizations that combine organizational and AI-specific learning (Augmented Learners) are more likely to manage talent, technology, and legal disruptions.

loss from talent mobility, reducing uncertainty around how and when to capture tacit knowledge.

One cloud services provider wasn't preparing for a potential pandemic when it developed its learning tool, but when in-person meetings were no longer possible due to COVID-19, its platform and micro-learning content enabled the company to sustain and even enhance meaningful educational experiences. The company's responsible AI lead explains how an innovative learning tool turned into a powerful tool for managing uncertainties wrought by the pandemic. Before the pandemic, the company had begun shifting its learning modules to shorter, AI-supported "micro-adaptive" approaches suitable for a "TikTok world." The pandemic necessitated a remote work environment that changed what employees needed to know and, furthermore, made it more difficult for the company's educational content providers to determine what employees knew and didn't know on an ongoing basis.

The adaptive modules tailored content recommendations to each individual as the system assessed individual users' learning capabilities. "AI became a huge part of that," this executive says. "We monitored users' self-reporting and skills self-assessments in their profiles and from the learning platform." By analyzing skills and competency proficiency across systems throughout the organization, the company identified what its employees were learning and needed to learn. She adds, "The AI-enabled modules did not just enable a different delivery of content; the platform helped people better understand what they knew and how that intersected with what they needed to know." Drawing on the learning approaches and habits of many of the company's workers, the learning modules made tailored recommendations based on individual needs that reduced uncertainty about what an individual needed to learn next. Enhancing organizational learning with AI provided flexibility to manage necessary changes during an unanticipated crisis.

Technological and Regulatory Uncertainty

Increasingly frequent technology innovations lead to significant strategic and operational uncertainty. Adapting systems over and over again can be exhausting and disruptive to technologists and business users alike. Just when companies had begun to understand how to incorporate AI use into their business strategies, generative tools introduced changes that required a reassessment. (SEE "THE STATE OF AI IN BUSINESS," PAGE 14.) Tonia Sideri, director of the AI and Analytics Center of Excellence at Novo Nordisk, notes that "technology is evolving faster than organizations can address. Combining that with the hype around technology's possible effects pulls the organization to do something." Emerging technologies become "a propeller for the organization," she observes, even if it's initially unclear what the business case is or where investments should go. Reassessing technology investments can be beneficial, even if organizations don't end up adjusting their strategies but, rather, reinforce them to work within the new technological landscape.

What's more, technology adoption can lead to more, and more complex, regulatory scrutiny and compliance issues, raising difficult questions about how to navigate increasingly uncertain legal environments. Surprisingly, using AI to amplify organizational learning dramatically improves a company's ability to manage uncertainty from both technology and regulatory disruptions. Compared with organizations with limited learning capabilities, Augmented Learners are significantly more likely to be prepared to deal with uncertainty from technology disruptions (86% versus 49%) and regulatory disruptions (79% versus 48%). (SEE FIGURE 5, PAGE 6.)

Learning to manage uncertainty that comes from a dependence on older technology and from future waves of technology is a growing opportunity for Augmented Learners. Shelia Anderson, CIO of Aflac U.S., shares how the insurer uses generative AI to reverse-engineer code in certain legacy systems. This approach is projected to boost current levels of system productivity by five to 10 times by revealing hidden complexities. "We have built in approaches to learning that leverage AI and actually help to inform our organization on how AI can be used as well," Anderson says. She notes that Aflac also has a technology incubator that uses AI to evaluate new technologies and rapidly prototype leading candidates to prove out concepts for the business. If a prototype appeared to be viable for the business, Anderson says, "we would use AI to build a full business model with the return on investment or productivity savings or whatever business value metric we're looking to achieve."

On the regulatory front, large organizations with global operations can use AI to navigate complex, uncertain regulatory frameworks that vary from one country to the next. For example, ELC's Gottipati observes, "From a company point of view, you make one product and distribute it. But then, if the requirements are different for different countries, and also certain ingredients are limited in certain countries,

it becomes time intensive to keep track of all these changing regulations and at the scale at which we operate." The combinatorial explosion of products in a large number of markets is difficult to keep up with. But Gottipati sees potential in using AI to help manage the myriad combinations. "That's where I think AI can play a huge role: to identify the right combination of products before we ship anything, or sending us alerts and assisting with compliance," she notes. Using AI can offset growing legal complexity.

Technology and regulatory uncertainty are inherently intertwined. As difficult as technological disruptions can be, legal disruptions can exacerbate technological uncertainty in addition to creating uncertainty on their own. Mark Surman, president of the Mozilla Foundation, notes that the software company is still very early in the process of figuring out the legal implications of AI. He says, "The core piece is, there's just so many questions about copyright and what it means to own knowledge. Maybe the copyright law we have just needs to be interpreted for the AI era. Or maybe we need new copyright law." Within and beyond the boundaries of organizations, AI has turned the question of knowledge ownership upside down because, as Surman points out, "many of the main large language models are built on stuff that, arguably, doesn't belong to them."

Augmented Learners have an advantage here because they have abilities that those unable to learn with AI lack. For example, knowing how to build your own AI tools could hedge against uncertainty from third-party solutions subject to upcoming copyright regulation. Surman explains that this knowledge can help an organization navigate current legal uncertainties: "The one thing that is known and safe is [what's] inside the organization … to the degree that you have good practices that information is clean and belongs to you. So if you train a large language model on your company's information, it's yours."

Surman also sees open source as critical for managing that uncertainty. He expects that "open source will play a huge role in the organizational learning and corporate AI space because it lends itself to on-premises privacy, respecting customized models. It creates market demand for open-source models that you can fine-tune on your own data." However, taking full advantage of open source requires organizational learning.

Openness isn't restricted to the models themselves. For example, federated learning allows multiple organizations to train models collaboratively while keeping their data private. Surman believes that "private AI — using open-source models — becomes a hedge against regulatory uncertainty. Federated learning, in which I benefit from my data in the partnership, you benefit from your data in the partnership, and there's some area where we collectively benefit or at least we can operationalize on each other's data, is super juicy." While standards for federated learning are still being worked out, Augmented Learners are better able to manage regulatory and legal uncertainties like these.

Three Ways to Enhance Organizational Learning With AI

While it may be tempting to identify organizational learning as — or, more pointedly, reduce it to — knowledge management or learning and development, organizational learning involves far more than these important activities. It encompasses whether organizations view unsuccessful experiments as failures or as sources of learning; how organizations develop, not just manage, knowledge; and how organizations anticipate the unknown rather than merely capture what is known. It occasionally requires setting aside old ways of working to make learning new

Combining organizational learning with AI-specific learning yields more benefits than taking either approach alone.

capabilities possible.[3] What's more, organizational learning encompasses synthesizing and analyzing information to glean what is and is not working in the enterprise. It also involves optimizing metrics, not merely maximizing performance on existing metrics. Finally, organizational learning addresses the communication, dissemination, and accessibility of knowledge.

Combining organizational learning with AI-specific learning yields more benefits than taking either approach alone. AI-specific learning can significantly enhance (at least) three areas of organizational learning: knowledge capture, knowledge synthesis, and knowledge dissemination. These are not incremental additions; Augmented Learners multiply their abilities in these areas.

Knowledge Capture

Adopting generative AI and embracing developments in traditional AI can expand an organization's ability to capture knowledge. Organizations can use it to extract tacit knowledge resistant to legacy codification techniques, absorb vast quantities of external information, and even help crystallize knowledge that employees are still learning.

Using AI helps managers capture tacit knowledge, an often intractable challenge for traditional knowledge-capture techniques. Consider the example of NASA's Mars 2020 mission. NASA wants to explore as large an area of Mars as possible, which means its Perseverance rover needs to be moving as much as possible. At the same time, the agency wants the rover to stop when it finds something "interesting" — a concept that's difficult for operators to define. Plus, with 30 minutes of communication latency, human operators cannot immediately direct the rover to stop. Vandi Verma, a principal engineer at NASA's Jet Propulsion Laboratory and chief engineer of Robotic Operations for Mars 2020, explains that AI has helped solve the problem. "We have AI capabilities on the rover where it'll take a wide-angle image, look at a large swath of terrain, and then try to figure out what is the most interesting feature in there," she says. Despite the difficulty that humans have articulating what is and is not interesting, the AI learns from past data to operate semiautonomously, without anyone explicitly defining criteria for "interesting." Perseverance has had to overcome many obstacles while driving on Mars; using "interesting" as a guide for where to explore was an unexpected one. It had to re-create the tacit knowledge behind "interesting" to navigate the terrain successfully.[4]

AI technologies represent new capabilities for capturing existing tacit knowledge. In a more down-to-earth context, LG Nova's Prasad observes that AI-based augmented reality (AR) glasses have the potential to capture the tacit knowledge of factory workers on the shop floor who have mastered a certain way of working with machines. "If they're doing a technique on the shop floor that only they know, AR glasses can allow real-time content creation," she says. While AR use is not common today, Prasad states this use case has the potential to become a more significant approach to capturing tacit knowledge as the technology/hardware matures.

Using AI to distill information at scale enables the capture of salient information that would otherwise be impossible for humans to discern. Since 2021, LG Nova's mandate has been to work, develop, and collaborate with startups to build new business ventures — a typically daunting task, given the sheer number of potential targets worldwide. Prasad summarizes the question driving the subsidiary: "Can we use AI to find the right startups and create a deal flow that merits being put in front of our executive team?" The answer was decisive. AI has to work alongside humans and can narrow the search process and save executives' time. While final decisions on which startups to recommend falls squarely on LG Nova's human team, Prasad says that using AI can help generate a list of candidates for human evaluation and improves the company's situational awareness while expanding the number of investment targets for its small team.

Employees can also use AI to clarify how their knowledge would work in contexts they haven't yet experienced. Expedia Group is a case in point. The company, like any large online platform, faces constant security threats. "Travel, like most other industries, is a great target for bad actors," notes Expedia Group's chief architect, Rajesh Naidu. He says that the company is beginning to use generative AI to simulate attacks so it can prepare for them. Expedia Group learns from looking at "how an account-takeover scenario would work, or phishing, social engineering, things like that," Naidu says. With the help of AI, the organization captures the knowledge it needs to prevent fraudulent activities before they occur.

Knowledge Synthesis

Making sense of vast data sets can overwhelm legacy analytics. AI, however, can more effectively systematize an organization's data, pulling together internal and external data sets while making it all more digestible for managers, customers, and partners.

Jeff Cooper, formerly senior data science director at online personal styling service Stitch Fix, describes how effective generative AI can be in synthesizing and summarizing large volumes of content. "One of the spaces we've been working hard on and considering where it might be useful involves customers who have been with us for dozens and dozens of Fixes," he says, using the company's term for the delivery of stylist-selected clothing and accessories. "To have a stylist come in and look at all of the feedback they've given over years potentially can be really complicated. With our new generative tools, we have the possibility of creating summaries of those things and compressing some of that information a bit further. In this case, it's almost like you have a stylist working alongside a partner that can help do some of the extra work."[5] Generative tools excel at summarizing, a valuable feature in a business environment, where desirable (and expected) response times are increasingly short.

Organizations need not build their own tools to synthesize data if a significant chunk of their data is in general business products with AI components. Our 2022 annual research report found that 55% of organizations were using third-party tools with these capabilities.[6] (That number is likely higher now, with the widespread availability of tools based on large language models.)

Slack is an example of how work platforms are using AI to assist in synthesizing knowledge. More than 700 million messages are sent in Slack each day. In large organizations, especially, the volume of data produced across company channels can be challenging to keep up with.

In response, the company developed a native AI solution for its product that helps workers instantly tap into their knowledge base by answering questions, summarizing conversations, and providing daily recaps of channels. Rocca remarks on the value that a feature like this provides, saying, "We are creating GenAI solutions — a combination of generative AI and machine learning — that deliver a daily recap summarizing all the channels you want to get up to speed on without going through every single message. A sales leader I know uses recaps to stay in the loop on his top 10 accounts, and he has many more accounts than that across many more channels. He doesn't want to know all the ins and outs that the team is doing to prepare for their next meeting." The net effect is that users are able to quickly reduce ambiguity about what's happening with the accounts that matter most.

Knowledge synthesis with AI is not only about synthesizing knowledge within a company, it also facilitates knowledge transfer from one context to another. Expedia Group has been using AI to synthesize data from over 3 million properties, 500 airlines, and 100 million loyalty members in the U.S. Collectively, the company manages more than 1.26 quadrillion combinations for hotel options alone, which includes variations like location and length of stay, all the way down to beachfront vistas and free parking; and assessments of how the presentation of images impacts the end-user experience. With AI, Expedia Group can make sense of all of that information and make detailed recommendations to its partners. Naidu says, "We have enough information to provide really good recommendations to our hotel partners on image selection, image quality, and what content needs to be there to help drive a booking. We have the ability to suggest winning formulas that are based on our insights from other properties." Synthesizing knowledge, especially across organizational boundaries, can lead to value-creation opportunities with partners throughout a business ecosystem.

Knowledge Dissemination

Organizational learning depends on more than capturing and synthesizing information. A critical challenge in any learning organization is knowledge dissemination within the enterprise. Chief data officers' mandate to get the right information to the right person at the right time reflects the importance of managing the dissemination challenge. Using AI to disseminate knowledge makes the process more inclusive and personal.

One executive in the cloud services industry observes, "With generative AI, we have an opportunity to ensure that everyone is getting a learning experience that is going to meet their specific needs. That could be someone who's neurodiverse, or it could just be different learning styles or different languages. Often, we build technology and systems to meet the needs of the majority. AI can provide more rapid, lower-cost opportunities that prioritize some groups that might be underserved or whose needs may not otherwise be met. We can provide an experience more representative of your entire organization and consumer base."

The opportunities to capture, synthesize, and disseminate knowledge with AI bring a fresh perspective to a remark commonly attributed to Lew Platt, the former CEO of Hewlett-Packard: "If only HP knew what HP

knows, we would be three times more productive." As more enterprises adopt AI and participate in business ecosystems, knowing what the company knows is only part of a larger learning challenge. Organizations also need to know what others, including suppliers, partners, customers, and competitors, know. Of course, knowing every detail would be overwhelming, particularly in environments where speed matters. Furthermore, it isn't enough for the organization generally to know; individual employees need access to digestible information to make the knowledge useful.

Developing Augmented Learning Capabilities

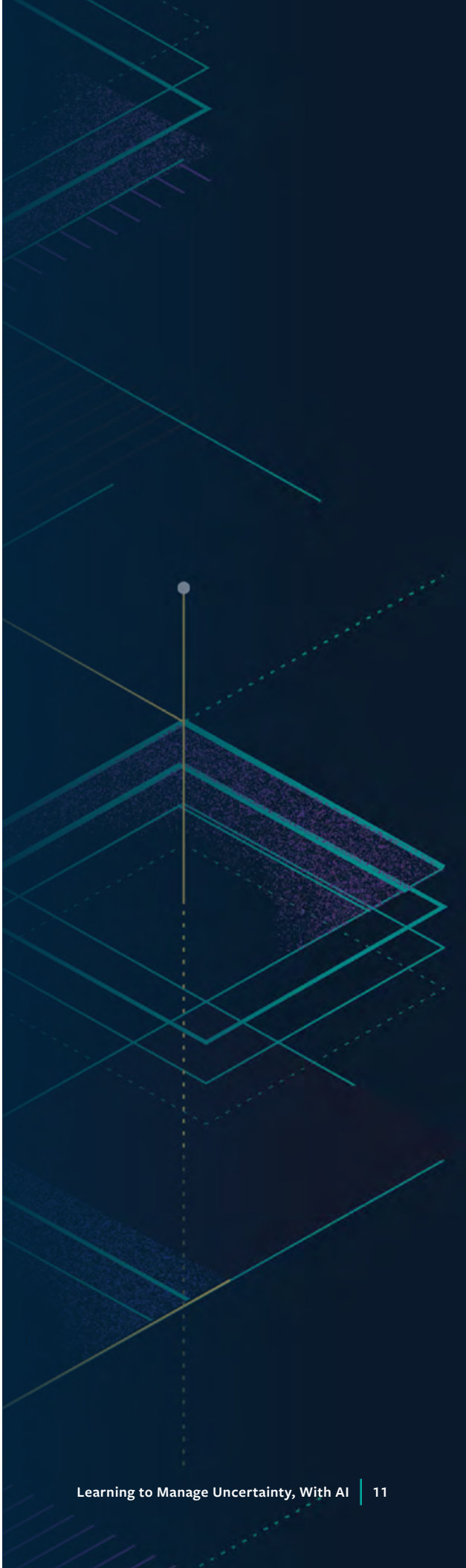
Our research identifies five practical and actionable steps to improve organizational learning with AI.

Simultaneously Improve Both Organizational Learning and AI-specific Learning

Only 29% of organizations report having organizational learning capabilities, and only 15% of those organizations use AI to boost their organizational learning. (SEE FIGURE 2, PAGE 3.) That's a clear mandate for enterprises to improve their limited learning capabilities. However, focusing on AI-specific learning at the expense of organizational learning (or vice versa) poses risks. Organizational learning that isn't ready for AI-based insights and perspectives will be less beneficial. Both types of learning need to be calibrated and worked on together. One starting place is to assess organizational and AI-specific learning in the enterprise using the questions in the "About the Research" section. This is not a knowledge management audit. Rather, it's an assessment of organizational learning that includes support for new ideas, employee perceptions of organizational learning, and the ways workers use AI to learn.

Learn to Explore With AI

It's tempting to use AI primarily to improve existing processes — say, to increase efficiency. Limited Learners are far more likely to succumb to this temptation: They are twice as likely to use traditional AI to improve existing processes than Augmented Learners. Conversely, Augmented Learners are twice as likely to use traditional AI to explore



new ways of creating value than Limited Learners (and 1.6 times as likely to use generative AI for exploration).

The tension between exploitation and exploration isn't new. It's natural to use technological progress to exploit and improve existing processes. Exploration, meanwhile, involves trying new things. It requires managers to make conscious decisions about which new areas to explore. Avoid a strategy driven by technology availability (e.g., "AI is cool; what are we doing that we could slap on a 'now improved with AI' label?") in favor of using technology to advance strategic outcomes. Our research finds that organizations become better learners through exploratory projects than through exploitative projects. An exploratory approach helps organizations manage uncertainty because the exploratory projects build depth in areas that might become strategic.

Accelerate Learning With AI

Our prior research found that organizational learning helps improve AI effectiveness.[7] Our research this year finds that the reverse can also be true: AI can help enterprises improve their organizational learning. For example, Aflac has a technology incubator that looks at emerging technologies that might be useful for the business. The

FIGURE 6
Project Selection Can Enhance Learning Capabilities

Augmented Learners are more likely to invest in long-term and high-risk projects compared to Limited Learners.

incubator team partners with business leaders and teams to rapidly prototype new technologies. AI plays a critical role in quickly building, iterating, and assessing these innovation opportunities. Would a new underwriting system that addresses 10 times the number of parameters as existing processes be appropriate for the business? Quickly learning what's possible, practical, and strategically relevant is a key source of value creation with AI. Anderson describes Aflac's incubator as "a rapid iterative approach to seeing if we can implement some of these technologies," with the goal of learning which technologies to invest in to support organizational strategy.

Every innovation opportunity cultivated with AI offers a chance to learn more about how to instantiate, operationalize, or even expand a company's strategic aspirations. Effective learning capabilities, especially for fast learning, tend to reduce the costs of technology uncertainty and encourage innovation. Strategies should incorporate a clear vision for using AI to develop an organization's learning capabilities.

Choose Projects That Promote Learning

Our survey results find that organizations become better learners from high-risk AI projects than from low-risk projects. They also become better learners from long-term AI projects than from short-term projects. Project selection matters to how organizations learn. (SEE FIGURE 6, PAGE 12.)

Viewing projects as learning opportunities increases their potential value. Prem Natarajan, Capital One's chief scientist and head of enterprise AI, says that he considers investing in thoughtful new projects as bringing potential beyond traditional financial returns. He also sees longer-term strategic potential like experimenting with use cases that "allow you to test and learn. Without adopting a test and learn approach, you cannot slope up into the other, more complex use cases in well-managed ways."

Learn Responsibly

Knowledge capture and dissemination with AI carry practical and ethical risks. Workers may perceive invasive monitoring practices as a threat to their agency and autonomy, which can reduce employee engagement. In ecosystem partnerships, knowledge dissemination carries the risk of losing control of knowledge capital. Knowledge dissemination without trust in the underlying data is a well-known hurdle to data-driven decision-making. To address these pitfalls, deliberately apply responsible AI practices to ensure that knowledge capture and dissemination represent established learning principles and values.

For example, Expedia Group uses its partner portal to push recommendations (say, for replacing dated furniture or improving dining services) to affiliates based on sentiment analysis of its vast databases. Account representatives and managers follow up periodically to remind and encourage partners to act. The company opts for a nudge approach to disseminating knowledge instead of attaching consequences or incentives that directly manipulate behaviors.

Meanwhile, at Mozilla, much of the attention regarding knowledge dissemination is focused on the difficult problems of ownership of knowledge capital and safety in the AI world. But, Surman says, "the one I think we're not working on is the question of economic security and equity. That may be the thing that upsets a big part of the apple cart." Will organizations learn so well that they become less reliant on humans for production? Will learning capabilities be equally accessible to humans with a range of learning styles and needs? Will vulnerable workers become even more economically insecure when AI eliminates the tasks they are most qualified to do? The growing use of AI in organizational learning should impel companies to ensure that they learn responsibly.

Learning With AI Is Key to Navigating Uncertainty

Considerable research over the past decade has focused on AI's impact on traditional financial outcomes, but our findings on the relationship between AI use and organizational learning could prove to be more consequential. Organizations currently face considerable uncertainty in many dimensions — technological, regulatory, political, and workforce-related, among others. Our research indicates that organizations that use AI to become better learners are 1.6 to 2.2 times more likely than those with limited learning capabilities to manage these external and internal uncertainties (SEE FIGURE 5, PAGE 6.) Given the rapid changes in modern society, the longer-term benefit of improved organizational learning may prove to be far more important than potentially ephemeral short-term financial benefits.

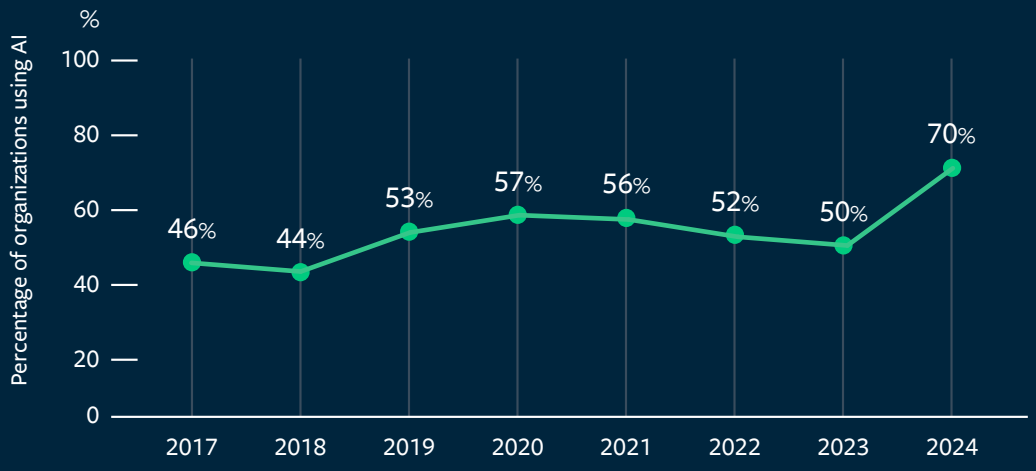
APPENDIX
The State of AI in Business

Our research finds evidence of other trends in AI use in business beyond the relationship between AI use and organizational learning.

1. Interest in AI, especially GenAI, is increasing.

Since 2017, we've tracked AI use in business as part of our ongoing research program. Each year, we ask organizations about their level of AI adoption. Historically, from 44% to 57% of organizations have reported piloting or deploying AI solutions. We've attributed this relative stability and fluctuation to the net effects of two main mechanisms. On the one hand, the use of and attention to AI seem to be increasing. On the other hand, the definition of and expectations for AI are rapidly evolving. AI applications that once seemed magical AI now feel routine. Furthermore, many people are becoming less aware of AI use as it becomes routine or embedded in other systems.[i]

However, this year, 70% of organizations report that they are now piloting or have deployed AI solutions. The progress of and attention on generative AI appear to underlie this increase. More than 54% of organizations report piloting or deploying GenAI solutions. That's a relatively high number, considering that many generative technologies were in their infancy less than two years ago. (SEE APPENDIX FIGURE 1.)

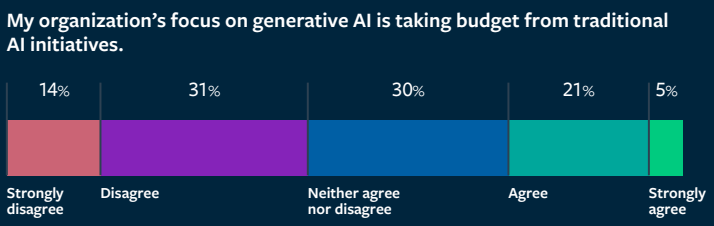


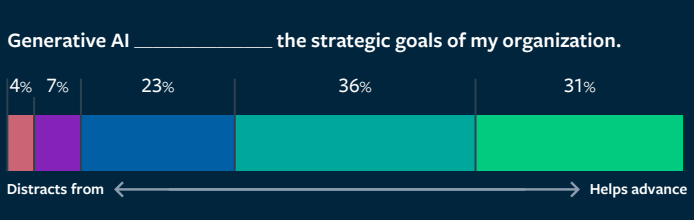
APPENDIX FIGURE 1
AI Adoption Increased Rapidly in the Past Year

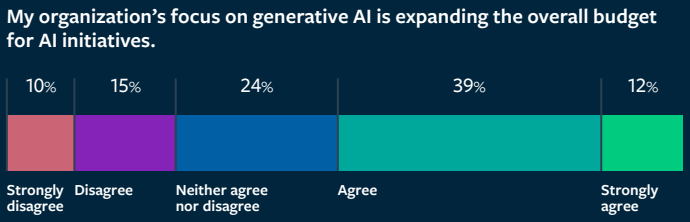
Since 2023, the percentage of organizations piloting or deploying AI solutions rose 20 percentage points.

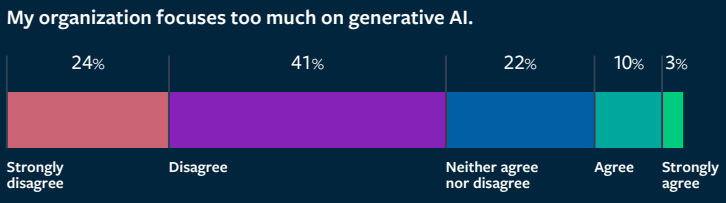
2. Generative AI is drawing attention — both good and bad.

Is GenAI a shiny new distraction or a crucial strategic imperative? Expectations for generative AI are particularly high. Ninety-one percent of organizations report that their leadership expects generative AI to be a core element of their business strategy across at least some of their business units in the next three years. Leadership attention to, or enthusiasm for, generative AI can lead to mixed results for a company's AI strategy if it distracts from more promising traditional AI-related projects. Most survey respondents do not believe generative AI is a distraction at their company. While some organizations (26%) feel that the focus on generative AI is taking budget away from traditional AI initiatives, far more (51%) feel that the attention to generative AI is expanding the overall budget for AI. Only 11% feel that generative AI is distracting, and only 13% feel that their organization focuses on it too much. (SEE APPENDIX FIGURE 2.)









APPENDIX FIGURE 2

Organizations Show More Positive Than Negative Attitudes About Generative AI

Most organizations report that generative AI efforts expand the overall budget for AI efforts and help advance their strategic goals.

Some charts do not total 100% due to rounding.

3. Hopes for AI are outpacing fears.

Our 2017 research found that far more people (70%) hoped that AI would perform some of their tasks than feared AI performing their tasks (31%). At the time, this finding countered a narrative of widespread concern about job loss. Yet, recent progress in generative models has since heightened discussions about job security among knowledge workers. Current AI models appear far more capable of replacing knowledge-intensive tasks. But instead of exacerbating concern, our research this year finds even more people (84%) hopeful that AI can assist with some of their tasks. As the performance of generative models for language and images improves, people see greater potential for the technology. This potential has not increased their trepidation; now, only 20% of respondents are fearful that AI will assume some of their tasks. Experience with generative AI may be showing people what these models can — and cannot — do well.

(SEE APPENDIX FIGURE 3.)

APPENDIX FIGURE 3

Individuals Are More Likely to Welcome Automation Than to Fear It

Despite rapid advancements in AI, the percentage of individuals who report that they fear AI will do too much of their work has declined.

Percentage of respondents who agree or strongly agree with these statements: "I hope that AI will do some of the current tasks in my job in five years," and "I fear that AI will do some of the current tasks in my job in five years."

4. Emergence of GenAI upsets strategic plans for AI use.

In 2017, we reported that 39% of organizations felt they understood the connection between AI and their strategy. By 2020, that figure had risen to 59%, as organizations attained greater understanding of and experience with AI. However, in 2024, the connection with strategy became murkier: Only 39% of organizations now report that they have a strategy for AI use, returning to the levels of 2017. Generative AI tools are in their infancy, scarcely two years into mainstream use. Technology changes, like the rising capabilities of generative tools, require executives to reassess the technology's effect on strategy. The changes might fundamentally affect a value proposition — or they might not. The proliferation and varieties of AI make it more difficult to incorporate their frequent changes into AI strategy, particularly when many come with the potential for significant vendor lock-in. The connection between AI and strategy is important; organizations that report a strategy for AI are twice as likely to generate additional business value from the technology. Perhaps the pattern of understanding strategy with AI will return to 2020 levels (or higher) as organizations gain experience with generative AI. (SEE APPENDIX FIGURE 4.)

Since 2020, we've also been asking respondents how important AI is to their business strategy. That year, 41% of respondents felt that AI was core to their organization's business strategy, while the remaining 59% felt it was more peripheral. By 2023, 61% felt that the use of AI was core. But this year, only 38% report that the use of AI is core to their business strategy. Generative AI might be an important factor in this notable shift, as executives reconsider whether or how these new tools contribute to their strategies. Our research finds positioning important, in that organizations are 2.6 times as likely to get business value from AI when it is core to their business strategy. While having AI at the core of strategy has been strongly correlated with getting business value from AI, it is not yet clear whether GenAI will strengthen, weaken, or maintain this strong connection between strategic AI and business value from AI.

APPENDIX FIGURE 4
Organizational Strategies for AI Drop Back to Pre-Generative AI Levels

Recent technological breakthroughs require organizations to reformulate their AI strategies.

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Mark Surman
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Diya Wynn
responsible AI lead, Amazon Web Services

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