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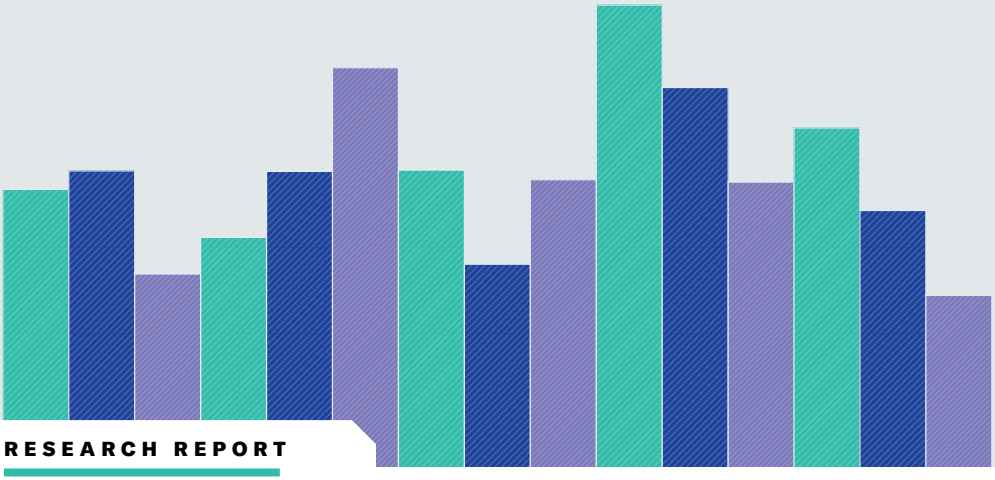
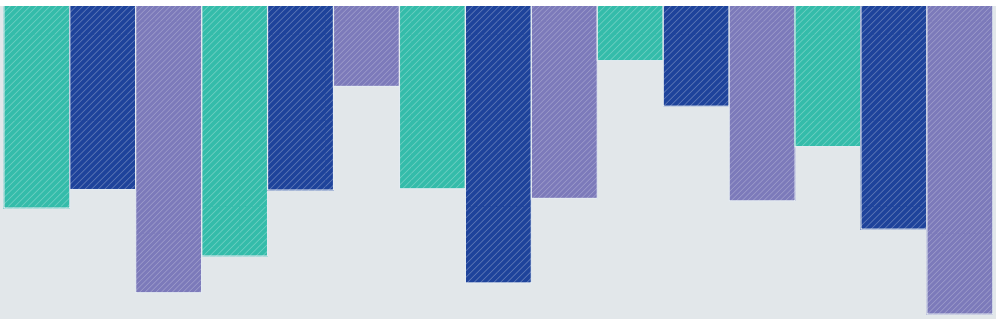


RESEARCH REPORT

Scaling Generative AI for Value:

Data Leader Agenda for 2025



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At AWS, we have long recognized the critical importance of data as the foundation for innovation in the digital age. As generative AI (gen AI) emerges as a transformative force across industries, we commissioned a comprehensive study with Harvard Business Review Analytic Services to gain insights into how organizations are leveraging their data assets to drive value from this technology.

The study's threefold motivation was to:

1. Understand the real-world challenges and opportunities organizations face in scaling gen AI initiatives
2. Explore how the role of data is evolving in the context of generative AI and its impact on business and technical decision-makers
3. Identify best practices and strategies to help organizations succeed in their gen AI journey

The findings validate our belief in the critical importance of a robust data foundation. The survey reveals that data issues are the top challenge in scaling gen AI, cited by 39% of those at organizations moving forward with generative AI. This finding aligns with what we hear from our customers—the ability to effectively manage, integrate, and leverage data is the key differentiator in successful artificial intelligence initiatives.

The report underscores the strategic importance of investing in data infrastructure and governance for business leaders. The survey results show that 83% of respondents in organizations moving forward with generative AI consider it a top, high, or moderate strategic priority. Technical decision makers will find valuable insights in the report's emphasis on data integration and talent development, with 46% of those at organizations moving forward with gen AI saying it's working on improving data integration and 42% saying it's focused on developing talent (for example, upskilling and team restructuring).

The study also sheds light on the evolving roles and responsibilities in data management as data becomes a shared responsibility across the organization. This is a topic of particular interest to us at AWS as we support our customers through their digital transformation journeys.

By sponsoring this research, we aimed to provide a comprehensive view of the state of gen AI adoption and the critical role of data in this landscape. We believe that this information is vital for organizations as they navigate the complexities of scaling gen AI and strive to turn its potential into tangible business outcomes. The insights from this study will inform our own strategies and solutions, ensuring that we continue to provide the tools, expertise, and infrastructure needed to support our customers in harnessing the power of their data for gen AI initiatives.

At AWS, we're committed to continuing this dialogue and supporting our customers as they build the data foundations necessary for success in the age of gen AI. We believe that by focusing on data as a strategic asset, organizations can unlock unprecedented opportunities for innovation, efficiency, and growth.

Scaling Generative AI for Value:
Data Leader Agenda for 2025

Generative AI (gen AI) is arguably one of the more significant technological advancements of our era and has captured the attention of individuals, businesses, and investors around the globe. While 2022 and 2023 were characterized by a flurry of excitement and experimentation, 2024 has ushered in a critical period for organizations to turn to the practicalities of implementing gen AI at scale.

Making use of an organization's own data can transform an otherwise-generic artificial intelligence (AI) experience into a personalized, customized product or service. Using an organization's own data is what drives business value from gen AI technology. However, curating, cleaning, and integrating structured and unstructured data sets that are likely held in multiple silos across an organization is no easy feat. Consequently, data readiness frequently holds organizations back from scaling their gen AI efforts.

In August 2024, Harvard Business Review Analytic Services surveyed 646 members of the *Harvard Business Review* audience involved in making their organization's data decisions, including decisions to use, or not use, gen AI. The survey finds that the most common challenge experienced in scaling up gen AI is data issues (the top-cited answer, selected by 39% of respondents in organizations moving ahead with gen AI—defined as those with active gen AI use cases or exploring/planning gen AI use). Data readiness is also a stumbling block—52% of these respondents rate their data foundation's readiness for gen AI implementation a five or lower on a zero to 10 scale (where zero is "not at all ready" and 10 is "completely ready").

"If organizations aren't getting good results with AI, and gen AI, it's because they don't understand the fundamentals," says Seth Earley, founder and

HIGHLIGHTS

89% of survey respondents in organizations moving forward with generative AI (gen AI) say **general/executive management teams are involved in making gen AI decisions** at their organization.

83% of those same respondents say **gen AI is** the top (13%), a high (37%), or a moderate (33%) **strategic priority**.

52% of the same group rate their **data foundation's readiness for gen AI implementation a five or lower** on a zero to 10 scale (where zero is "not at all ready," and 10 is "completely ready").

Due to rounding, some figures in this report may not add up to 100%.

CEO of Earley Information Science Inc., a Carlisle, Mass.-based consultancy specializing in data management. "Going from hype to value means focusing on use cases and specific outcomes and getting your data and data reference architecture right for that. And the fundamental issue to get right is data quality. Clean data is the price of admission."

Meanwhile, getting data gen AI-ready is only one part of the scaling equation. Organizations are also facing an often-daunting array of critical decisions such as selecting use cases, determining gen AI strategies and roadmaps, and setting risk guardrails in place. Many of these issues fall to the chief data officer (CDO). But as general business functions and executives become increasingly involved in gen AI decisions and projects, the notion of who is responsible for data and gen AI is evolving.

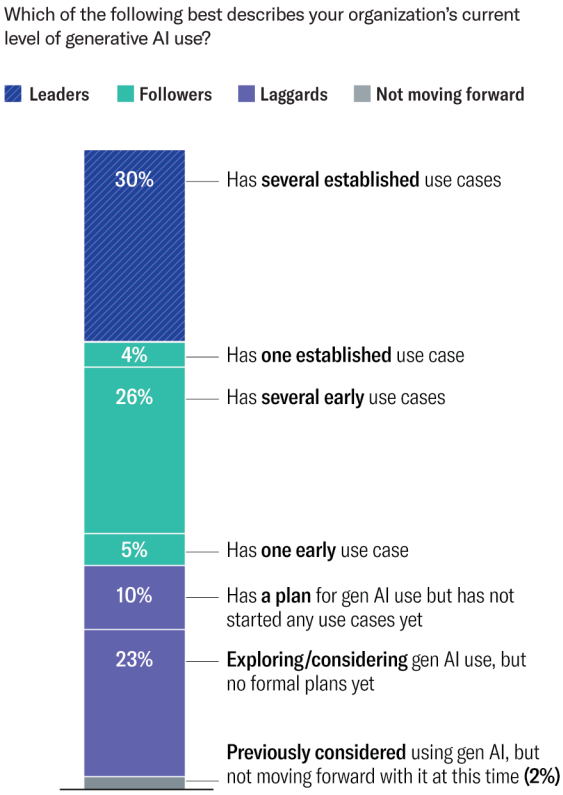
"Specific job titles are a matter of semantics; when you think about a gen AI leader, you're looking for someone who can understand the science and drive the application at scale to achieve business impact," says Paul Ballew, the chief data and analytics officer of the National Football League (NFL). "At the NFL, we treat AI as a team sport, spanning data and analytics, IT, information security, and business. It's important that we have humility and recognize that cross-functional collaboration is essential for using gen AI to make better decisions, optimize the business, and connect with our customers and better serve them."

This report examines the state of data in the era of gen AI and explores how organizations are advancing from gen AI experimentation to implementation. It considers the role of the CDO in light of gen AI's data requirements and investigates how gen AI is changing data leadership roles. It also uncovers common challenges that organizations face in making the use of gen AI a reality and the practical steps and approaches they are taking to overcome them.

FIGURE 1

A Variety of Maturity States

Use cases are divided into thirds among leaders, followers, and laggards



Base: 646 respondents; anyone who selected "Not using gen AI and has not considered it" or "Don't know" in response to this question was routed out of the survey.

Source: Harvard Business Review Analytic Services survey, August 2024

A Wide Array of Uses and Maturity

When it comes to moving up the gen AI maturity curve, Tom Davenport, distinguished professor of information technology and management at Babson College, believes in thinking big but starting small. "Organizations don't need to approach gen AI as one big transformation," he says. "The technology has broad applications, but you need to start small in terms of the particular use cases to which you're going to put it. Pick a narrow use case that will have the most value and start with that."

Organizations recognize the potential value of gen AI, but many have not yet made the leap from experimentation to maturity. The survey finds that gen AI is widely considered a strategic priority, as 83% of survey respondents in organizations moving forward with gen AI say it is the top (13%), a high (37%), or a moderate (33%) strategic priority.

Even so, when it comes to usage, maturity is varied. Among the sample, very few respondents (2%) say that their organization previously considered using gen AI but is not moving forward with it at this time. For the rest (the vast majority, whose organizations are moving forward with gen AI), maturity is a story of thirds: 33% are in the exploration/planning stage, 36% have one or more early use cases or one established use case, and 30% have several established use cases. **FIGURE 1**

It may not be surprising that the leaders of the group, with several established use cases, tend to put the highest priority on gen AI (77% say gen AI is a "top" or "high" strategic priority at their organization versus 47% of followers and 27% of laggards).

"We can now leverage gen AI, particularly large language models, in conjunction with other analytic services to transcribe voice into text and then capture, summarize, and provide insight from this vast amount of previously invisible unstructured data," says Zuwen Kuang, senior vice president, global head of data and analytics, digital technology and innovation at Fresenius Medical Care.

This mindset appears to be paying off: Leaders are also much more likely to report that their gen AI projects are going well (73% versus 50% and 22%).

The government of the United Kingdom provides an example of how an organization can take different approaches to different categories of gen AI use cases to attain scale. Craig Suckling, the British government's chief data officer, based at the Central Digital and Data Office, explains its three strategic areas for gen AI use. First, provide the ability to create productivity and efficiency gains within and across government departments to deliver accelerated and improved services to citizens and businesses. Use cases include automation and collaboration tools for research or policy writing. "These broad use cases can be piloted and scaled in a low-risk environment, as they are mostly internal-facing gen AI tools," says Suckling.

"The second tranche of use cases involves going narrower and deeper to connect public-sector data with a particular gen AI application for a specific use case. Examples include chatbots on our websites to enable citizens to better access the services they need, like tax advice," he says. "Here we take a more purposeful approach to ethics, legislation, security, and privacy, and we have to make sure that the risk of false information is mitigated absolutely."

The British government's third category of use cases is aimed at driving economic growth and innovation across the country's economy. "These use cases involve identifying key priority data sets across health, education, taxation, and other areas and allowing for that data to be made available to private-sector organizations, startups, and academia to foster innovation."

Over and above these categories, the British government uses gen AI to improve the quality of its own data. "The temptation is to focus on the front-end value, but there's a huge amount you can do in the back of house, as well specifically, looking at how gen AI can be pointed back to help create a higher level of data quality," asserts Suckling. "We're applying gen AI to detect data quality issues, and security and sensitivity issues, so we can faster unlock how data is used in the front end. We have a huge amount of unstructured data—for example, the National Archives data goes back 800 years. Gen AI allows for departments to better manage the sprawl of unstructured data that they need to archive in the right way and then create a better, more secure, plane of data that is ready for gen AI use cases."

Making Data Visible

Zuwen Kuang, senior vice president, global head of data and analytics, digital technology, and innovation at Fresenius Medical Care in Waltham, Mass., notes that, historically, unstructured data has been "dark matter"—an unseen yet crucial force that constitutes the vast majority of the data universe. Fresenius Medical Care provides products and services for individuals with renal diseases. Through its network of 3,757 dialysis clinics, it provides dialysis treatments for approximately 311,000 patients around the world and also provides dialysis machines and other dialysis-related products. "We deal with a vast amount of data, some of which can be captured in rows and columns, that can generate valuable insights with traditional business intelligence tools or classical AI techniques," she explains. "What has not been visible is the unstructured data like the information from thousands of daily phone calls with patients, clinical notes from electronic health records systems, and documentation in a variety of formats such as pictures and PDFs."

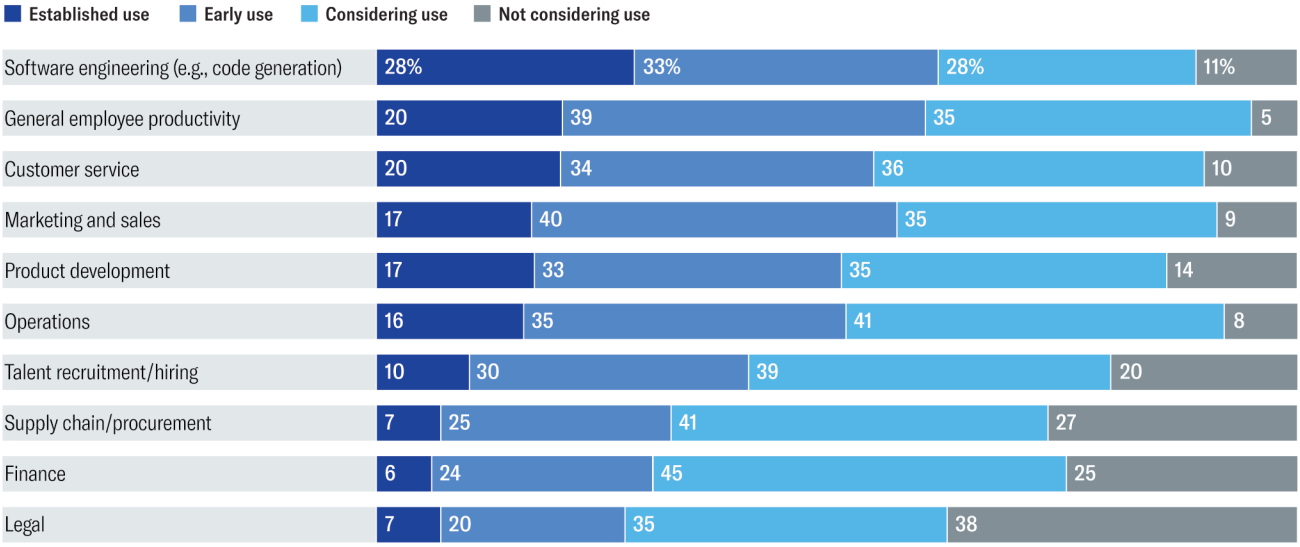
Kuang adds that gen AI has opened opportunities to gain value from what was previously invisible. "We can now leverage gen AI, particularly large language models, in conjunction with other analytic services to transcribe voice into text and then capture, summarize, and provide insight from this vast amount of previously invisible unstructured data and make this content accessible to medical teams to improve the patient experience, especially when it comes to continuity of care. Furthermore, there are opportunities to leverage gen AI to alleviate the administrative burden on health care staff, for example, by reducing time-consuming nonmedical tasks. Reorganizing these tasks can save time, minimize disruptions, and potentially enhance patient-clinician interactions."

FIGURE 2

Established Use Cases Vary Across Functions

Software engineering, employee productivity, and customer service top the list

To what extent is your organization exploring the use of gen AI in the following areas?



Base: 420 to 589 respondents; varies by row among respondents whose organizations are moving forward with gen AI and excludes "Do not have this function" and "Don't know."

Source: Harvard Business Review Analytic Services survey, August 2024

The future of gen AI, according to Kuang, will be one in which the integration of structured and unstructured data can generate more predictive insights and recommend interventions for improvements.

Organizations are deploying gen AI in diverse use cases and business areas, with employee productivity, customer service, and software engineering emerging ahead of the rest. The majority of survey respondents with early use cases have more than one, which speaks to the versatility and range of gen AI use cases. The most common current use cases (combining established use and early use) for those moving ahead with gen AI are in software engineering (61%), general employee productivity (59%), marketing and sales (57%), and customer service (54%). **FIGURE 2** Generally, it is more common to have scaled gen AI within a function (e.g., a fully deployed customer service use case) than across functions (e.g., a gen AI tool successfully deployed and used across different departments), but leaders tend to have scaled gen AI across functions more successfully than have followers or laggards.

Getting the Data Foundation Right

Whichever use cases organizations choose to pursue, they need a solid data foundation for gen AI to be of value. In fact, the survey's gen AI leaders have better-prepared data foundations than their counterparts, with 67% of leaders saying their data foundations are mostly/moderately ready for gen AI implementations (six or higher on the scale), compared to 38% of followers and 25% of laggards.

Earley Information Science's Earley stresses that the data foundation is the source of truth that allows gen AI to be effective. He says AI of any kind simply won't work without solid information architecture (IA) and clean, well-structured data, prompting him to quip, "There is no AI without IA."

"Organizations must be able to curate their knowledge and have a source of truth from which AI can retrieve and use data," Earley says. "They need to process, curate, tag, and structure their content, creating the knowledge scaffolding that allows gen AI to retrieve content correctly."

Ballew, the NFL's chief data and analytics officer, likens creating a solid data foundation to the rule of eating your vegetables before you can eat dessert. The NFL has multiple

"Organizations must be able to curate their knowledge and have a source of truth from which AI can retrieve and use data. They need to process, curate, tag, and structure their content, creating the knowledge scaffolding that allows gen AI to retrieve content correctly," says Seth Earley, founder and CEO of Earley Information Science Inc.

AI applications and use cases ranging from office productivity tools to analytics capabilities that ensure players' safety during the game to applications for creating and delivering targeted content to fans.

Much of these use cases' utility depends on the data foundation. "You have to get the data foundation right, in totality," Ballew explains. "That's not just about making data clean; it's about capturing, ingesting, curating, and transforming it so it has an appropriate standardization and structure. The foundation also includes data governance, spanning access control and audit trails, and use case understanding and approval. That sounds easy until you rub up against the reality that most companies have legacy environments where data is generated for a specific use case and now they want to use it for things that it was never intended to do. All of these factors mean that you have to get the data foundation right before it is fit for gen AI."

Vista, a Waltham, Mass.-headquartered online design and marketing provider to millions of small businesses around the world, took an incremental approach to creating its data foundation for gen AI. Sebastian Klapdor, an independent consultant and former executive vice president of technology and data at Vista, believes that organizing the data needed for one use case is enough to move ahead with gen AI and prove value, instead of pouring resources into building an enterprise-wide data foundation without a specific use case in mind.

Vista's chatbot is a case in point. "In six weeks, we developed a chatbot to [help] our customer service agents interact with customers online. When version one was able to show value, by managing 30% of the calls successfully, we could see the investment was justified," Klapdor explains. "Then we spent more time, effort, and resources on improving the data quality of our knowledge base, which then set us up to refine the application."

Another of Vista's gen AI use cases is software development. "The company employs around 800 software and data engineers globally, and gen AI-assisted solutions that help them to create code faster are a huge productivity saving," he says.

Many organizations are taking steps to ensure their data is ready for gen AI implementations. When it comes to data-focused efforts to ensure gen AI readiness among those whose organizations are moving forward with gen AI, at least 87% of respondents say they are doing something. Almost half say they're improving data quality/cleaning (49%), while more than 40% each are improving data integration (46%), enhancing data security and privacy (44%), improving data strategy (41%), or enhancing data governance policies and standards (41%). **FIGURE 3**

Complex Data Ownership and Roles

Leadership roles and data responsibilities are shifting in the age of gen AI. Given gen AI's strategic importance, and the central role that data plays in making gen AI implementations possible, it follows that the questions of who owns data, and who is responsible for it, are complicated. Babson College's Davenport notes that while CDOs have "data" in their job descriptions, they often don't feel entirely responsible for it. "Data is a broad organizational asset, and it's hard to put one person in charge of it," he says. "What's needed, and often difficult to achieve, is a common definition of key data elements around the organization and some clarity about who owns data. Further, nobody has been responsible for unstructured content, which now needs to be addressed. Consequently, many CDOs feel they need a new data strategy, but many haven't started on one.

"Another aspect of the CDO role that is often overlooked is that doing the job well takes more than just data and technology skills," Davenport continues. "Gen AI has necessitated a multifaceted culture-change initiative which likely falls to the CDO, who may not have the background or expertise to create culture and behavioral change."

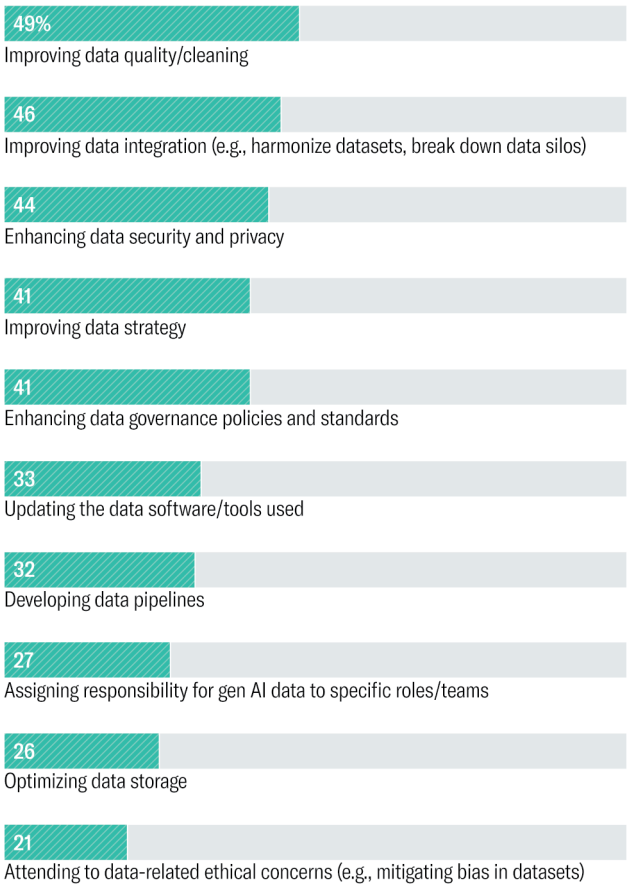
Many organizations experience ambiguity around data and gen AI. The survey finds that half (50%) of respondents in organizations moving forward with gen AI agree that there is unclear ownership over gen AI projects between teams/roles, and a similar proportion (46%) agree that it's unclear which department/role is in charge of overseeing the data

FIGURE 3

Getting Data Gen AI-Ready

Almost half are improving data quality or integration

What data-focused efforts is your organization working on (or recently completed) to ensure its data is ready for gen AI implementations, if any? *Select all that apply.*



Base: 632 respondents whose organizations are moving forward with gen AI. Not shown: 7% Don't know, 6% None, 0% Other.

Source: Harvard Business Review Analytic Services survey, August 2024

used for gen AI projects. Further, the definitions of roles are blurring: CDOs are increasingly involved in business tasks, while business roles are leading gen AI projects. A majority (89%) of respondents say general or executive management teams are involved in making gen AI decisions. Moreover, the business side isn't just involved; it's at the helm of gen AI efforts: 40% say their gen AI projects are business led, compared to 14% who say they're data led.

What the leader cohort of the survey has in common is clearer ownership of gen AI data and projects than other groups. Just 32% of leaders agree that data ownership is unclear, and 39% agree ownership over gen AI projects between teams/roles is unclear, compared to 56% and 57% of laggards, respectively. In addition, the leaders' CDOs are more likely to be more involved in business strategy as a result of gen AI (46%, versus 30% of followers and 28% of laggards).

Emily Lyons, chief enterprise data and data science officer at Boston-based Liberty Mutual Insurance Co., feels that some of the specifics of her role have changed due to gen AI, but at a high level her focus remains the same. "Liberty Mutual is no stranger to leveraging data, AI, and analytics. In the insurance industry, the cost of goods sold is not known at the time of sale, as it is in other industries. Consequently, predictive analytics are part of our lifeblood—we have to make sure we are charging a price that covers the cost of goods sold, even years after we write a contract or sell a policy," she says. "Accordingly, data is ingrained in our culture and in our set of capabilities. Everyone plays a role in data and analytics, and some kind of AI, from the CEO to senior managers to engineering and analytics teams to operational employees."

Lyons is one of those senior managers who sets the pace in the organization with data. "My role is to align business priorities across the organization, making sure we implement the data and AI investments that are most important for the company," she explains. "We don't have infinite capacity, so we need to decide on investments that will drive business strategy in an optimal way. And we need to coordinate and orchestrate business and technology goals and processes across the huge global ecosystem that is Liberty Mutual."

Lyons notes that what has changed with the advent of gen AI is the need for change management and communication, as more people are involved with the technology. "Gen AI is not the same paradigm as more traditional machine learning," she asserts. "Now, all of a sudden, we have this capability that everyone can interact with at some level, and everyone can understand and appreciate the power of it. My role has shifted in terms of the new capabilities that are available and having people knock on my door a lot more readily as they are keen to get involved and apply gen AI to their work."

According to R. "Ray" Wang, founder, chairman, and principal analyst of the Cupertino, Calif.-based research and

advisory firm Constellation Research Inc., gen AI could herald the rise of the chief AI officer. "We recently announced the 2024–2025 AI-150 list of top global policy shapers, practitioners, and pioneers in AI. And what we realized is that AI needs a dedicated role. Many companies will likely appoint a chief AI officer going forward," he says. "The important thing to know is that this role is going to draw on different kinds of people. In some companies, the chief AI officer is going to come from legal, because they have to get the ethics right or they're focused on regulatory changes in their industry. In others, the CIO or CTO will step into the role. In a very creative or product-oriented company, an operations or design person could fill the role."

Suckling, the British government's CDO, believes that AI is bigger than data, and consequently, responsibility for it is three-pronged. "In our organization, we have myself as the CDO, a CTO, and a director of people and capability. These three roles need to jointly think and collaborate around AI," he explains. "What's more, AI is such a transformational technology that it's going to touch every role. Going forward, it's likely that any director or VP of any department will need to have a level of expertise in AI and how they apply that to their contexts. Now traditional corporate roles need to have a data and an AI component, regardless of what role you're in."

Attaining Scale

Organizations are making efforts to scale gen AI use, particularly by making changes to roadmaps for the journey, data, tech, and talent. At least 88% of survey respondents at organizations moving forward with gen AI say their organization is working on (or has recently completed) at least one effort in order to scale up their use of gen AI. The most common efforts among the group include creating/improving a gen AI roadmap (47%) and making data improvements (46%), followed by making technology improvements (42%) and developing talent (42%). When looking at scaling efforts by maturity group, leaders show notably more focus on certain areas: data improvements, developing talent, and fostering a more gen AI-focused organizational culture. **FIGURE 4**

Organizations on the gen AI journey are facing an existential problem of assessing value, says Daniel Newman, CEO at The Futurum Group, an Austin, Texas-based technology research and advisory firm. "[Large language models] democratized AI and the hype took off around killer apps. But since then, several pundits, including those from global investment firms, have questioned whether there has been enough significant measurable value stemming from the hundreds of billions of dollars' worth of capex that has been invested in gen AI collectively," he says. "As a society, I think we are still trying to make sense of gen AI and to assess ROI."

"Everyone plays a role in data and analytics, and some kind of AI, from the CEO to senior managers to engineering and analytics teams to operational employees," says Emily Lyons, chief enterprise data and data science officer at Liberty Mutual Insurance Co.

To move forward, Newman suggests that organizations and their executives follow several principles. "There are several rules of being a CEO," he explains. "The first is survival. So, with every big disruptive force, you have to figure out how to create a foundation of stability that allows you to embrace the new technology and not get left behind. And, importantly, you need to use new technology to meet your customers' needs.

Talent, too, is an important element in the journey to scale. Nearly a third of survey respondents (30%) say a main challenge their organization has experienced in scaling up gen AI is a lack of talent/skills, and, accordingly, upskilling existing employees is a talent adjustment that 63% are making or have recently made (all among those at organizations moving forward with gen AI). Gen AI leaders are the most focused on upskilling or reskilling their staff on gen AI (83%, versus 65% for followers and 43% for laggards).

Constellation's Wang offers advice for organizations on their journey to scale: "If you've established proof of concept and you're ready to step up investment and production, you need to consider three points," he asserts. "I would say nothing is ready for the public until you can answer at least these three questions: One, do you have enough data to get to a level of precision that your stakeholders will trust? Two, when and where do you insert a human in the process? And three, who's responsible if something goes wrong?"

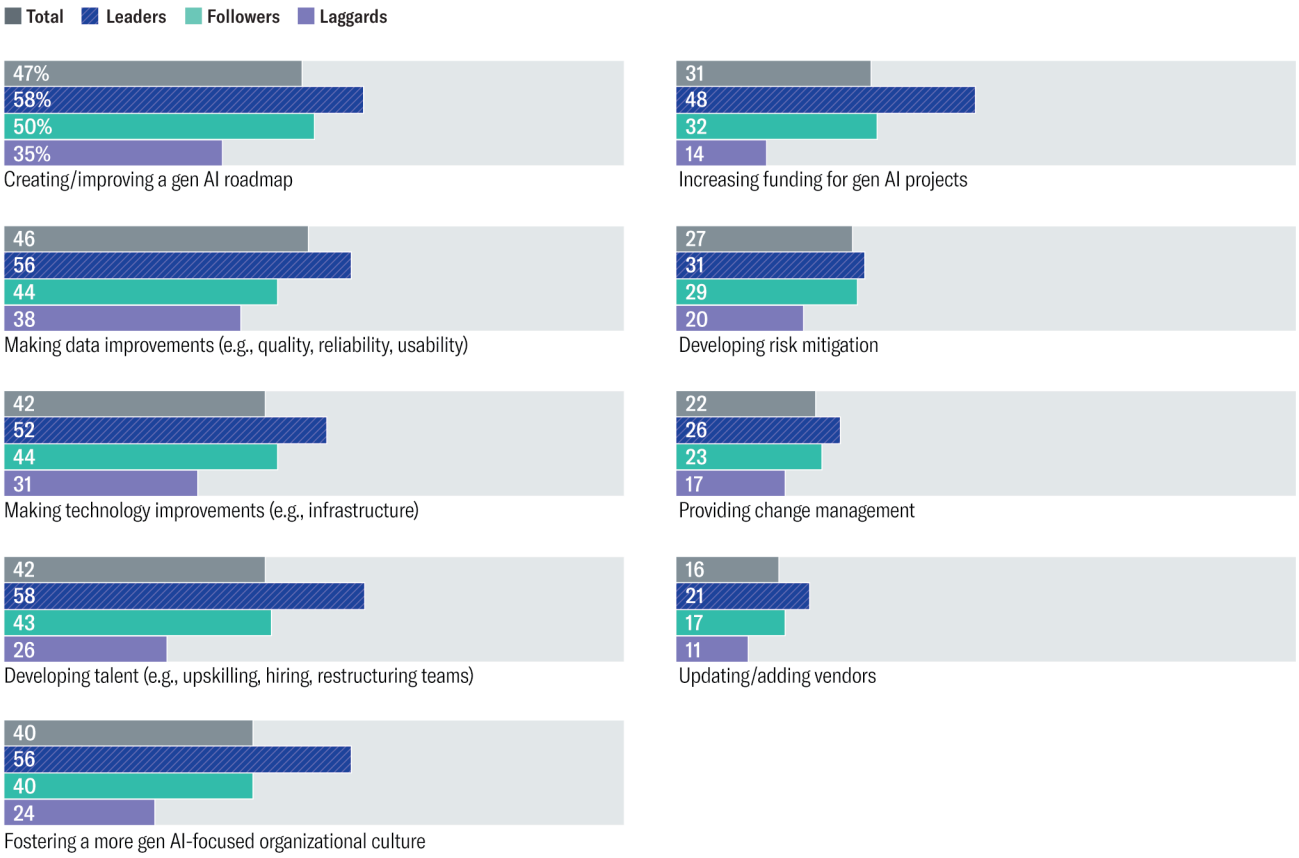
Even as organizations embark on scaling their gen AI activities, several hurdles may stand in their way. For some, challenges can seem insurmountable and put an end to gen AI projects. Of all respondents (including those whose organizations considered gen AI but aren't moving forward with it currently), 18% say their organization had gen AI projects that it started but then stopped working on indefinitely. The top cause for stopping a project is unclear business value/

FIGURE 4

The Journey to Scale

Creating a roadmap and improving data are priorities for many

What efforts is your organization working on (or recently completed) in order to scale up its use of gen AI? *Select all that apply.*



Base: 632 respondents whose organizations are moving forward with gen AI. Not shown: None (Total: 7%, Leaders: 0%, Followers: 5%, Laggards: 15%), Don't know (3%, 3%, 2%, 5%), and Other (2%, 1%, 1%, 4%).

Source: Harvard Business Review Analytic Services survey, August 2024

ROI of the project (52%). Other common causes include data issues (30%), business risk concerns (29%), and that leadership deprioritized the project (28%). **FIGURE 5**

Beyond stalled projects, at least 92% of those moving ahead with gen AI say they've experienced a challenge in scaling up its use, with data being the top culprit. But a variety of issues are at play. The top three challenges are data issues (39%), lack of a clear gen AI roadmap/strategy (37%), and business risks (36%).

When viewed by maturity group, some distinctions in gen AI scaling challenges are revealed. Leaders and followers struggle most with data issues (leaders 42%, followers 43%), business risks (39%, 40%), and difficulty measuring ROI/value (39%, 36%). Laggards' top challenges are different: lack of a clear gen AI roadmap/strategy (51%), difficulty identifying good use cases for gen AI (35%), and leadership prioritizing other business efforts (35%). **FIGURE 6**

It's a good thing over half of leaders are working on making data improvements to scale gen AI, as it's their most common scaling challenge. But when it comes to laggards, half appear challenged by unclear gen AI roadmaps or strategies, yet fewer (about a third) are working on creating or improving said roadmaps. In other words, it seems many leaders are tackling their top gen AI scaling problem, while fewer laggards appear to be doing the same.

Overcoming Barriers to Scale

Organizations have found ways to overcome several barriers to scaling their gen AI efforts, including limiting risk, supporting culture change, and fostering trust.

For example, Fresenius Medical Care is implementing a responsible AI framework with guardrails to ensure that its AI tools such as chatbots deliver reliable and trusted information. "We use retrieval-augmented generation to make sure our chatbot does not hallucinate or provide inaccurate answers. It is programmed not to fabricate information if the data is unavailable," says Kuang, the global head of data and analytics. "This approach has been essential in maintaining user trust."

Fresenius Medical Care is also building a data-centric culture to support its gen AI initiatives. "New technologies may come and go, but data is the one constant. We aim to empower every employee to think about data and use it to drive value and outcomes for the company," she explains. "That's why we launched a global data and analytics community in 2023 that has grown to almost 2,000 members spanning IT, business, and clinical teams. Through our events, we take people along on the gen AI journey, creating a shared understanding of the critical role data and data quality play in laying the foundation for AI."

Klapdor, the former Vista executive vice president, acknowledges that culture and mindset are critical elements when implementing new technology. "The biggest and most complicated piece with new technology is driving culture change and adoption. As the first step, your internal customers need to start trusting the data they see," he says.

"It's normal and human to be skeptical and to probe the data to see if it makes sense, particularly as gen AI is a black box that provides outputs, but users cannot see how those outputs were calculated. In fact, those who are reluctant and skeptical are often very valuable in the adoption process as they are the ones who can best judge the data quality," says Klapdor. "Instead of trying to win people over, rather seek the opinions of those who challenge the outputs of your data products."

Michael Cusumano, professor of management and former deputy dean at the MIT Sloan School of Management, has sobering thoughts on building a culture where people are empowered to challenge data quality or new technology. "Adopting new technology and new ways of working often require some culture change, and employees may be hesitant to be critical about a new system. This is not necessarily a trivial matter," he says. "For example, the tragic Boeing 737 Max crashes in 2018 and 2019 that resulted in the loss of lives of passengers and crew can be traced back to a technical system failure—as well as a management failure. One of the issues was that a number of engineers had known there were problems in the system, but they were reluctant to criticize senior management. They did not speak out loudly enough when they knew something was wrong."

FIGURE 5

Why Some Projects Never Get off the Ground

Unclear business value is the main cause for abandoning a gen AI project

What were the main reasons for stopping the project(s)? *Select all that apply.*

Base: 112 respondents whose organization had any gen AI projects it started but then stopped working on indefinitely. Not shown: 3% Don't know, 2% Other.

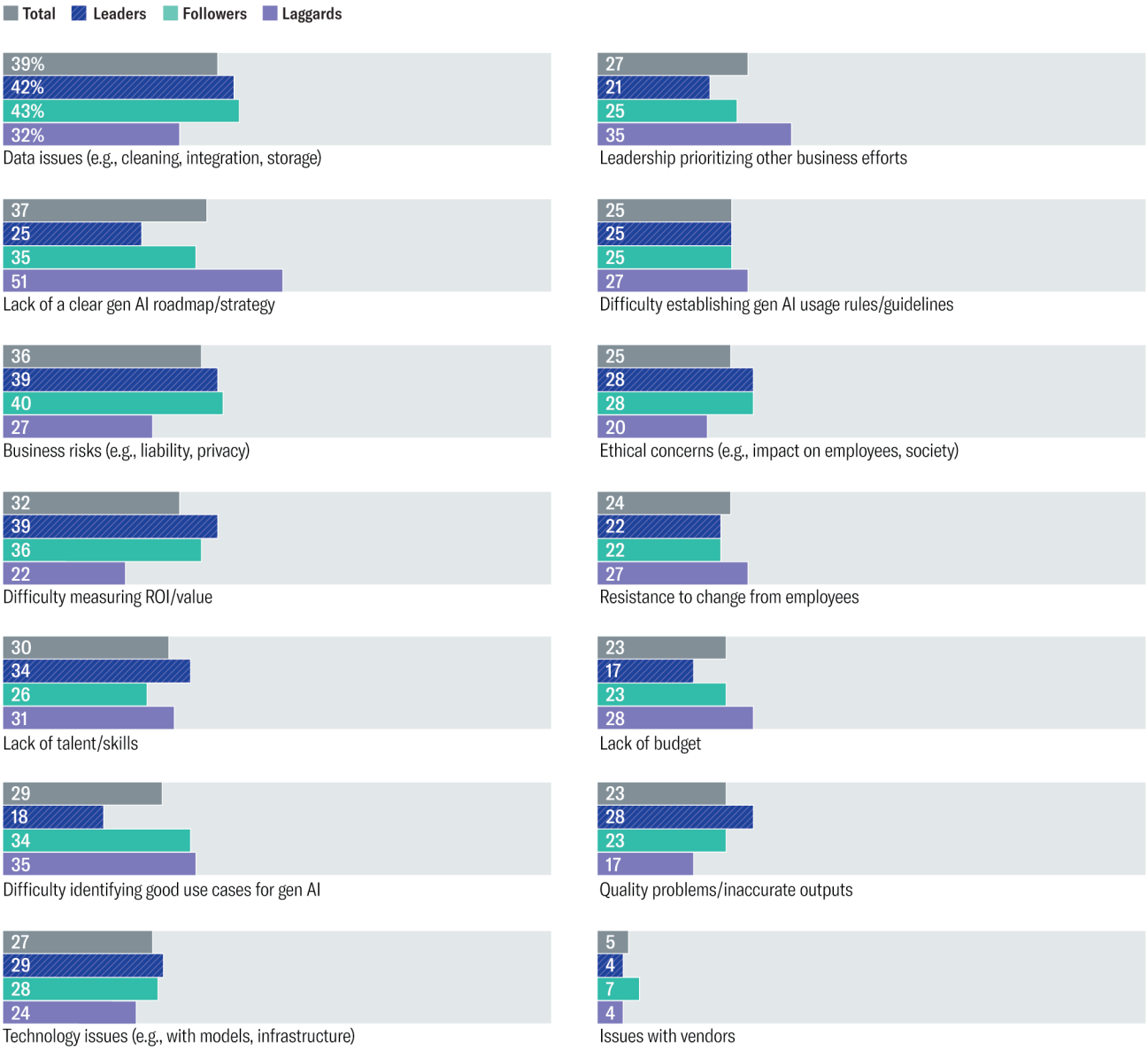
Source: Harvard Business Review Analytic Services survey, August 2024

FIGURE 6

Challenges to Scaling Up Gen AI

Data issues top the list, but others are close behind

What are the main challenges your organization has experienced in scaling up its use of gen AI? *Select all that apply.*



Base: 632 respondents whose organizations are moving forward with gen AI. Not shown: Don't know (Total: 4%, Leaders: 3%, Followers: 3%, Laggards: 5%), Other (3%, 4%, 1%, 3%), and None (2%, 2%, 1%, 3%).

Source: Harvard Business Review Analytic Services survey, August 2024

"Measuring efficiency is important, but there's also a culture component. And we're trying to get the right mix of metrics around productivity gains," says Craig Suckling, the British government's chief data officer, based at the Central Digital and Data Office.

Benefits and Measurements

Organizations moving ahead with gen AI are most often seeking organizational and employee performance gains from their gen AI projects, and some have started realizing such benefits. The survey finds that the leaders' cohort has realized the most sought-after benefits (employee efficiency, innovation, and productivity) at significantly higher rates than their peers.

When it comes to the most common KPIs used to measure the success of gen AI projects, reduced operating costs is the top metric used (37%) among organizations moving forward with gen AI. After that, around a third of respondents (34%) say they use productivity targets to measure the success of gen AI projects, and 35% draw on customer experience/satisfaction metrics to determine success. What leaders do differently is that they are more likely than followers or laggards to measure output-related metrics like customer experience or speed of work, not just reduced costs.

Suckling describes how the British government uses a variety of metrics to determine gen AI's value. "In our applications that aim to deliver productivity gains and efficiencies, we are doing studies on the time and effort spent on doing work," he explains. "But attached to that is a very interesting cultural question: Even if we're able to free up time, how do we make sure that we are shifting culture so that people are making best use of that extra time to do other things? Measuring efficiency is important, but there's also a culture component. And we're trying to get the right mix of metrics around productivity gains."

Indeed, the government has KPIs for internal purposes and outward-facing ones. "Regarding our external-facing applications for citizens and businesses, we're also drawing on a mixture of hard and soft metrics," Suckling continues. "We're looking at some of the traditional things like daily active usage, or thumbs-up and thumbs-down feedback from users. But we're also engaging in broad open forums of discussion with citizens to understand how they feel about gen AI and whether they would trust it in certain scenarios."

Strategizing for Success

The survey sheds light on what gen AI leaders in the sample do differently from organizations that are in the earlier stages of gen AI maturity. Most notably, the leader cohort puts a higher priority on gen AI, has data foundations that are more prepared, and has clearer ownership around gen AI data. They also have clearer ownership of gen AI projects between teams or roles. When it comes to leadership and talent, they are more likely to have their CDOs involved in business strategy and to be upskilling or reskilling their existing talent on gen AI.

Those organizations with less mature gen AI implementations that want to learn from the qualities exhibited by gen AI leaders in the survey might look at putting a higher strategic priority on gen AI, evaluating whether their data foundations could be made more gen AI-ready, and determining whether clearer designation of gen AI responsibilities—including project ownership and data ownership—is needed. For existing gen AI initiatives, executives could consider using more quality-based gen AI performance metrics as opposed to focusing primarily on financial metrics.

Organizations with early use cases could assess whether their teams are being held up in scaling gen AI due to data issues or business risk concerns, as these are top challenges to scaling for both leaders and followers.

Those organizations that have not launched many (or any) use cases might check in on their gen AI roadmaps and strategies and focus on identifying optimal gen AI use cases—both common barriers to scaling for those in the exploratory phases of gen AI. Considering that survey respondents say determining the gen AI strategy and deciding which use cases to pilot are the most critical gen AI decisions to get right, these issues could turn out to be particularly costly if left unaddressed.

Even those furthest along in their gen AI implementations, with many established use cases, can investigate areas for improvement, such as keeping an eye on data issues and finding ways to measure the ROI of their gen AI projects. No matter what stage of the gen AI journey, the following best practices can help organizations reap value from gen AI:

Accept that gen AI means it's no longer business as usual. Embracing gen AI requires a shift in strategy. "You must integrate gen AI into your business strategy or, at the very least, ensure your strategy is enabled by it," says Kuang. "Every company, regardless of industry, will increasingly

"History has shown that every transformation and industrial revolution has ultimately spurred more innovation, more productivity, and more jobs in new industries that were previously unimaginable. One thing is certain—this is a very exciting time," says Daniel Newman, CEO at The Futurum Group.

become a technology-driven organization. The mindset of sticking to what is familiar without incorporating emerging technologies simply won't work in the age of gen AI."

Keep to your North Star. At Liberty Mutual, Lyons stresses that the gen AI journey is a new one, so it's important to use business goals as the guiding direction. "With anything new—and especially something as transformational and as impactful as gen AI—you're not going to bring it in and immediately be good at it or attain scale," she asserts. "There's a learning journey that you need to go on to experiment, try a number of things, and even fail a little bit [in a safe manner] and then move on. You can't predict where the journey may take you, but you need to align the decisions you make along the way to your business goals and keep looking at your North Star as you go."

Get your data foundation right. "Data is the bedrock of your enterprise, and it's becoming more important every day," says Ballew. "Going forward, 80% of your activity is going to be in data and 20% of your activity is going to be in analytics, whereas 30 years ago, the situation was the exact opposite. This new data-heavy reality means you've got to get your data ecosystem right, end to end, including people, processes, and technology."

Create a data flywheel. Klapdor recommends investing in the data foundation one use case at a time. "Begin with one gen AI use case or data product and build a 'minimum lovable product' from a user perspective," he says, as opposed to the standard minimum viable product. "If the product adds value, scale it out further. If it still creates impact, then invest in your data foundation, including your talent, data governance, data management, and technology," he says. "A solid data foundation will help you build the next use case even faster." He compares this process to a flywheel, which requires a lot of effort to get started, but once it turns it builds momentum, making subsequent efforts easier. "Starting that flywheel and advancing your gen AI use cases while showing business impact is how to accelerate your value generation through data," Klapdor notes.

Use hard and soft metrics to measure value. "It's one thing to measure efficiency, but there's also a culture component to understanding value from gen AI," says Suckling. "You've got to find the right mix of hard and soft metrics to measure what you're trying to achieve."

Conclusion

Gen AI is clearly a strategic imperative, even if uptake, scaling, and maturity are still gaining traction. Whatever stage of the gen AI journey, the state of an organization's data plays a critical role in making sure that gen AI initiatives get off the ground, attain scale, and reap the hoped-for rewards.

However, the task of getting data gen AI-ready can be daunting and there is some complexity across roles and responsibilities when it comes to gen AI data. Not surprisingly, the role of the CDO, and the roles of other executives, too, have evolved: Gen AI is frequently seen as a broader business concern, as well as a technology/data one.

Despite the complexity, organizations are taking steps to make critical decisions, overcome challenges, and scale gen AI implementation—most notably by developing a roadmap for the process, improving the state of their data and technology, and supporting and developing their talent. Results are encouraging, as organizations are starting to see some benefits such as greater employee efficiency, enhanced innovation, and greater organizational productivity.

But the journey is just beginning, as organizations, and society, come to terms with the long-term changes that gen AI may leave in its wake. The Futurum Group's Newman believes that the outlook is promising. "We can't get around the fact that gen AI is controversial," he says. "Of course, there are worries about technology's broader impact on daily life and livelihoods. But history has shown that every transformation and industrial revolution has ultimately spurred more innovation, more productivity, and more jobs in new industries that were previously unimaginable. One thing is certain—this is a very exciting time."

METHODOLOGY AND PARTICIPANT PROFILE

Harvard Business Review Analytic Services surveyed 646 members of the *Harvard Business Review* audience via an online survey fielded between July and August 2024. Respondents qualified to complete the survey if they were involved in making their organization's data decisions, including decisions to use or not use gen AI (excluding anyone from an organization that has never considered using gen AI).

Size of Organization

39% 10,000 or more employees

35% 1,000–9,999 employees

8% 500–999 employees

18% 100–499 employees

Seniority

31% Executive management/ board members

37% Senior management

19% Middle management

14% Other grades

Key Industry Sectors

19% Technology

11% Education

10% Financial services

All other sectors less than 9% each

Job Function

12% IT

11% Product management/ operations/ production

10% General management

All other functions less than 8% each

Regions

41% North America

26% Europe

19% Asia Pacific

8% Middle East/Africa

6% Latin America

Figures may not add up to 100% due to rounding.

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ANALYTIC SERVICES

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