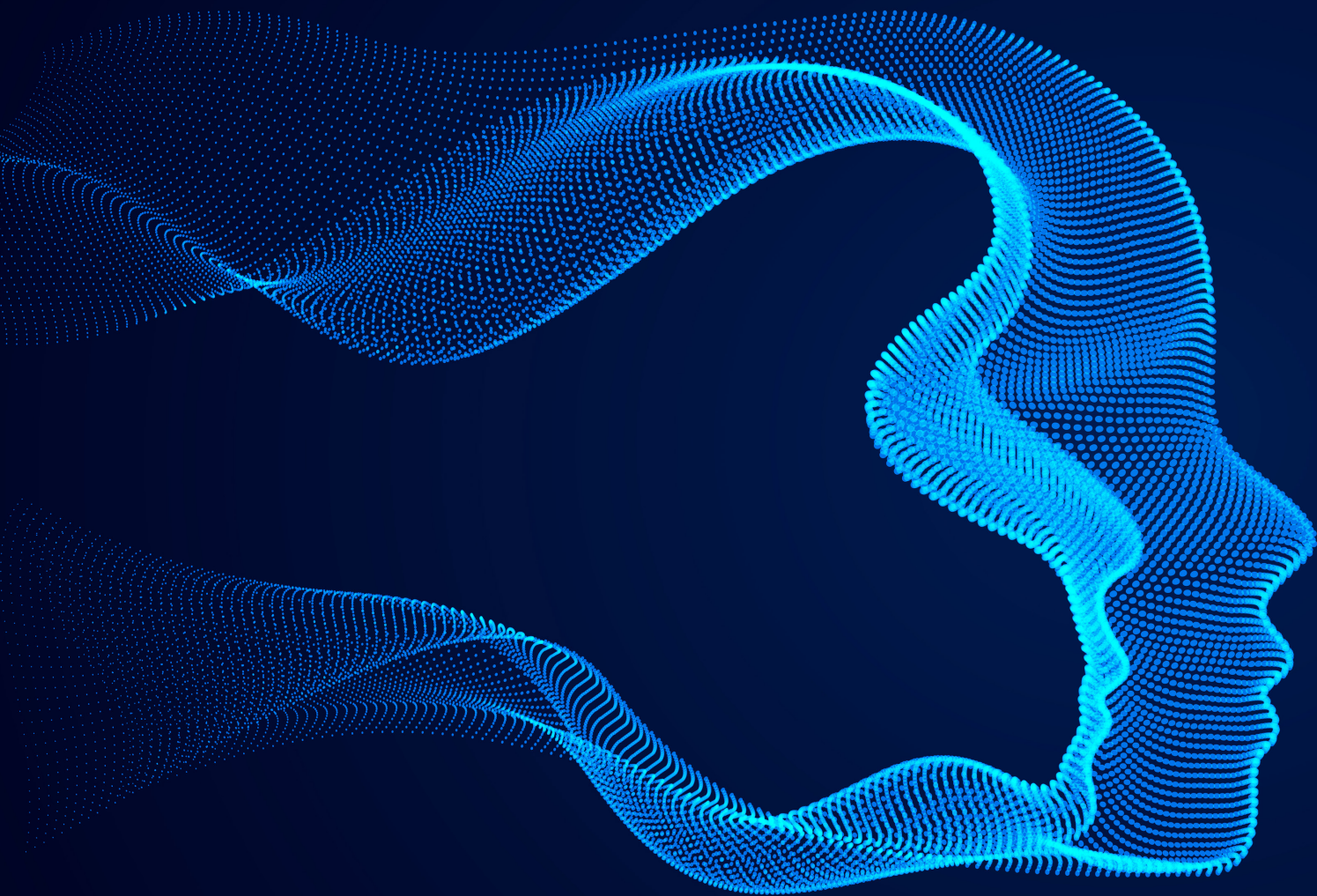


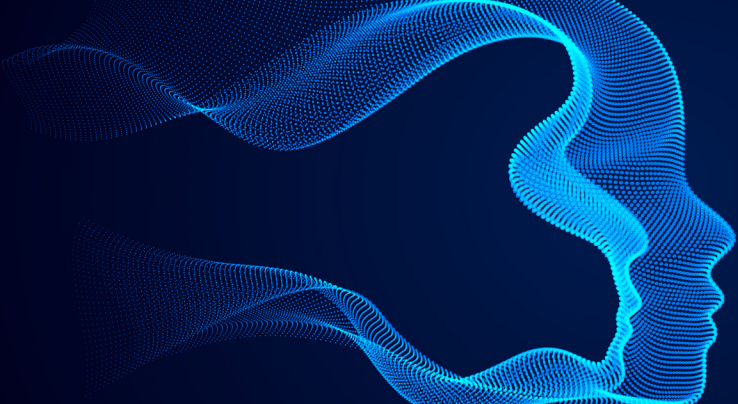


UNLOCKING AI'S POTENTIAL:

CHALLENGES & OPPORTUNITIES
FOR DATA LEADERS

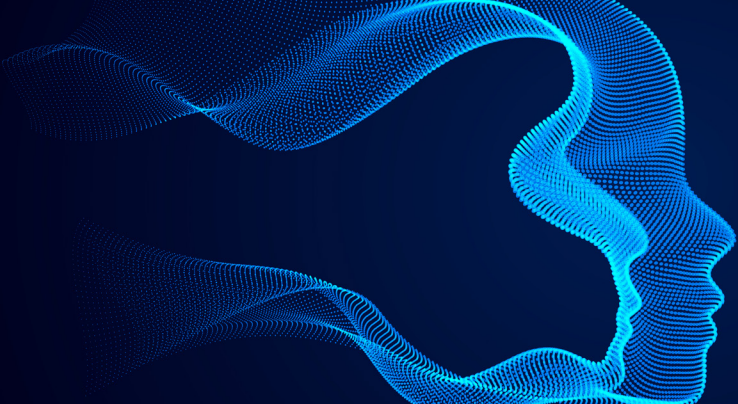
AHEAD

cdo CHIEF DATA OFFICER
MAGAZINE



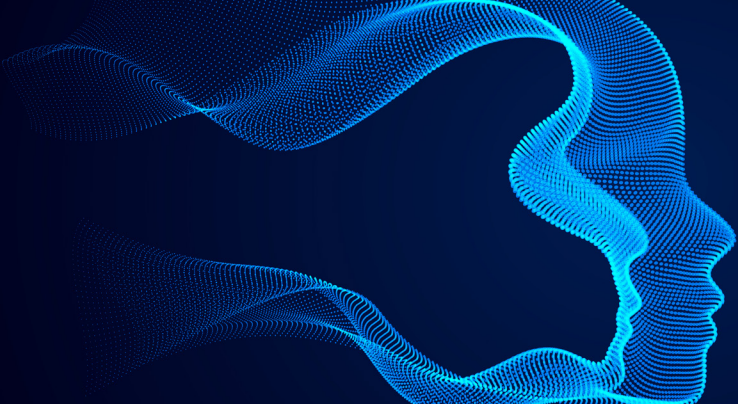
FOREWORD

Artificial Intelligence (AI), once a term of sci-fi fantasy, has become common lexicon among Information Technology leaders regardless of business segment. Akin to the industrial revolution or invention of the automobile, AI adoption will incite a fundamental shift in how organizations operate. AI ranges from state-of-the-art generative AI producing virtual assistants that can engage in human-like conversation with life-like video avatars to multi-language document summarization to more traditional computer vision object detection or AI-driven statistical risk analysis. The opportunities are vast and significant – but not all organizations are prepared to capitalize on those opportunities in the short term. Technology consulting company AHEAD is focused on building and delivering viable products, such as dedicated data labs, that are foundational to organizational AI readiness.



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INTRODUCTION

The impact of Artificial intelligence (AI) on business is multifaceted. It is accompanied by a promise of unprecedented opportunities, unique challenges, and most importantly, a series of unanswered business-critical questions.

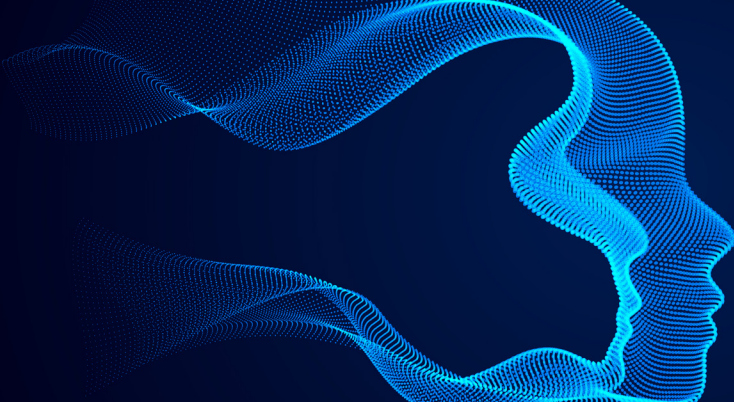
It has significant implications for efficiency, innovation, and competitiveness. AI-driven automation streamlines routine tasks, reducing operational costs and allowing employees to focus on higher-value activities. Similarly, AI-powered data analytics enables businesses to extract valuable insights from vast datasets, facilitating data-driven decision-making and personalized customer experiences.

We have reached a point in the AI transformation journey where we all agree that businesses that harness AI have an edge over those that do not. The new focus on adopting generative AI technologies has led to a whole new set of questions.

RESEARCH METHODOLOGY

This research report seeks to answer some of the crucial AI-adoption questions based on interviews with seasoned AI and data leaders, and a laser-focused survey conducted with key industry stakeholders.

Survey participants are from a variety of industries including adtech, construction, financial services, government, IT consulting, life sciences, and retail. Interviews featured participation from American Modern Insurance, Belcan, NeuralMetrics, Pendulum Therapeutics, and United Community Bank.



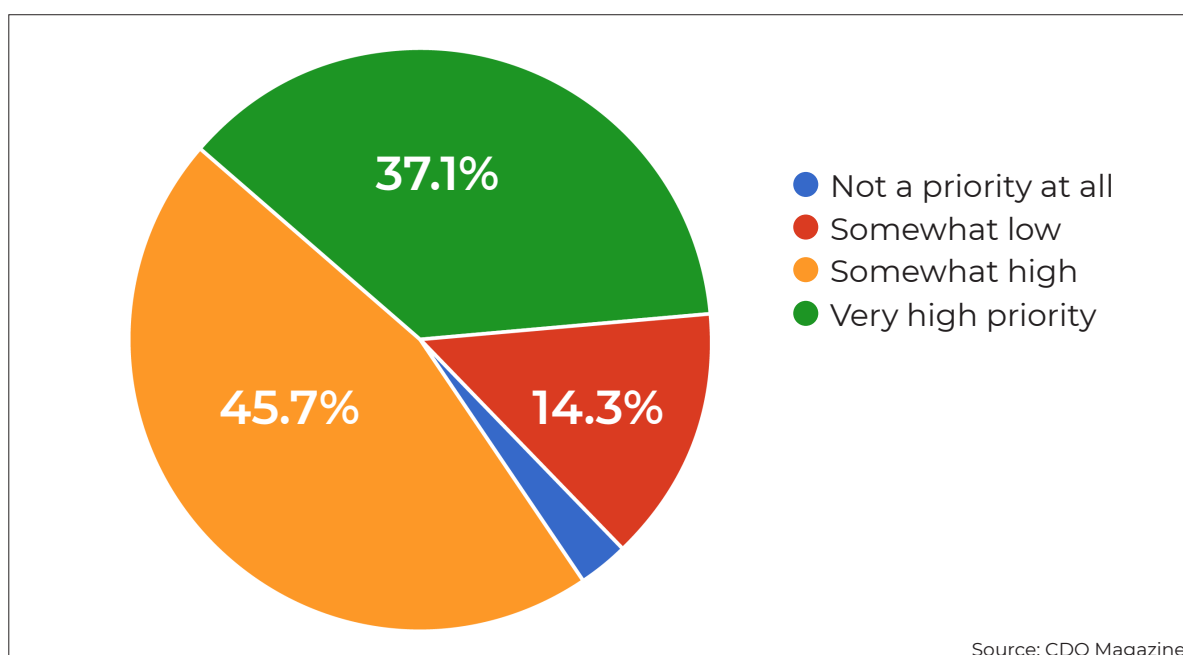
KEY FINDINGS

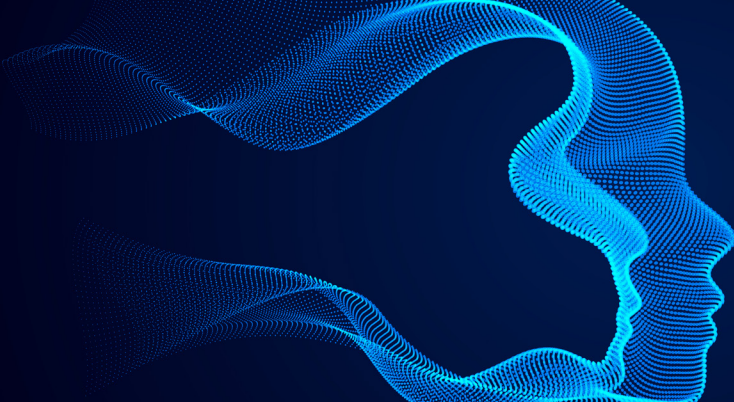
This report highlights the varying priorities, strategies, and concerns regarding AI adoption within the C-suite of organizations. While many view AI as a priority and recognize its potential benefits, there are significant challenges to address, including data-related issues, availability of specialized talent, and ethical considerations.

As organizations continue to navigate the AI landscape, addressing these challenges and having a clear strategy will be key to successful adoption and realization of AI's potential benefits.

Envisioning AI adoption

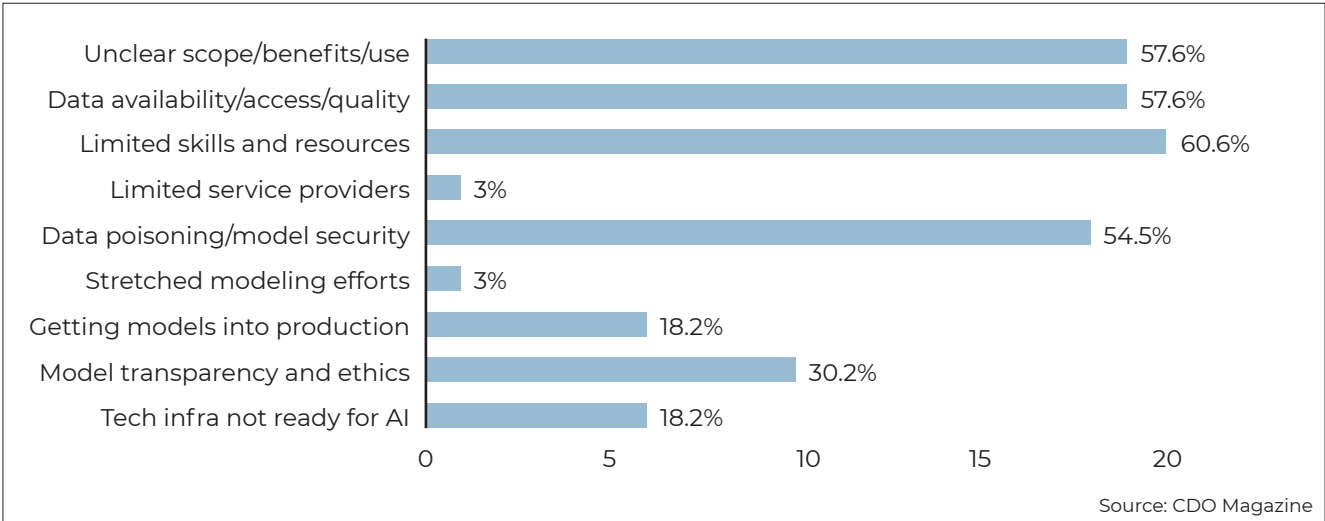
More than 80% of survey respondents considered “putting AI to use” a “high priority” for the C-suite of the organization, with 37% of them marking it as “very high priority.”





The survey also revealed the following **top five barriers to AI success**:

- 1. **Limited skill sets and resources – 60.6%**
- 2. **Confusion over AI scope, benefits, and use cases – 57.6%**
- 3. **Data availability, accessibility, and quality – 57.6%**
- 4. **Data privacy or poisoning, or model security – 54.5%**
- 5. **Model transparency and ethical use – 30.3%**

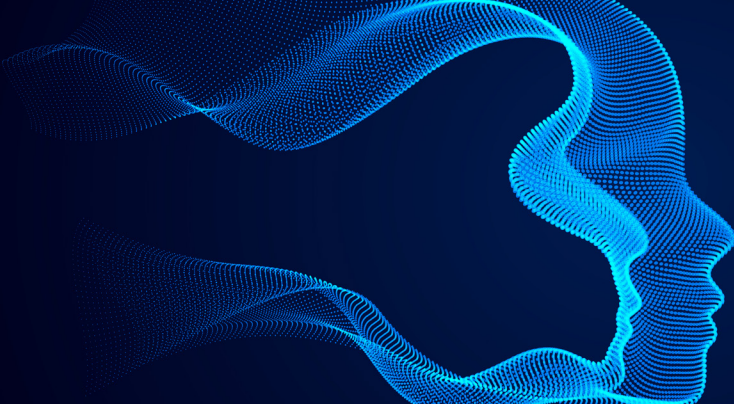


Like most insurance providers, **American Modern Insurance** is data rich. But the organization’s major challenges are in tracking exceptions and changes in data patterns. While AI’s role there is mainly automation, it is likely to widen in the next 12-18 months to include predictive analytics for changing patterns and understanding its impact on revenue and customers.

For companies in the business of managing risk, AI is also likely to make a significant impact in its Catastrophe (CAT) modeling. Shradha Puntambekar, American Modern Insurance Head of Enterprise Information Management, acknowledges that the question eventually will be about the readiness of the organization’s data foundation.



Shradha Puntambekar

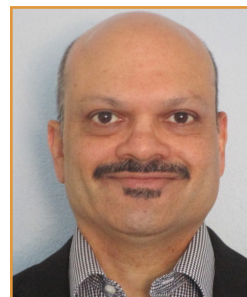


A key goal for **NeuralMetrics**, a strategic risk management partner to insurance organizations, is to leverage AI to make underwriting easier, and improve processes and operations. However, as Chief Data and Product Officer Simi George points out, a challenge is figuring out how to take advantage of siloed data within the insurance companies themselves. Solving that roadblock can open up a host of applications in underwriting, claims, and fraud detection.



Simi George

Biotechnology company **Pendulum Therapeutics** is pursuing the ability to answer business questions based on its business data. For example, AI can improve code and test data generation for Kiran Kanetkar, Pendulum VP of Data and Analytics, leading to more automation across business processes.



Kiran Kanetkar

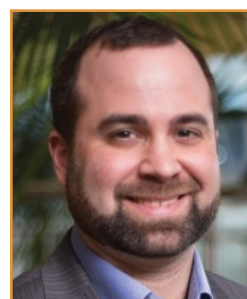
An important goal for Mark Mullins, Chief Data Officer at **United Community Bank**, is to ensure proper data management, which will enable data science teams to use AI tools in a more proactive way. Ensuring proper data management can play a key role in risk avoidance and automation, helping the bank achieve a favorable efficiency ratio.



Mark Mullins

For its business use case, **Belcan**, a global supplier of engineering, supply chain, technical recruiting, and IT services, plans to leverage generative AI for segregating customer data, discovering talent, code development, and improving analytics.

Belcan's Chief Security and Data Officer Matt King cautions that inputting customer information in a public generative AI model runs a major risk of introducing customer Intellectual property (IP) to the world. Accordingly, Belcan is looking to leverage an internal private AI model when the right data and protections are in place.



Matt King

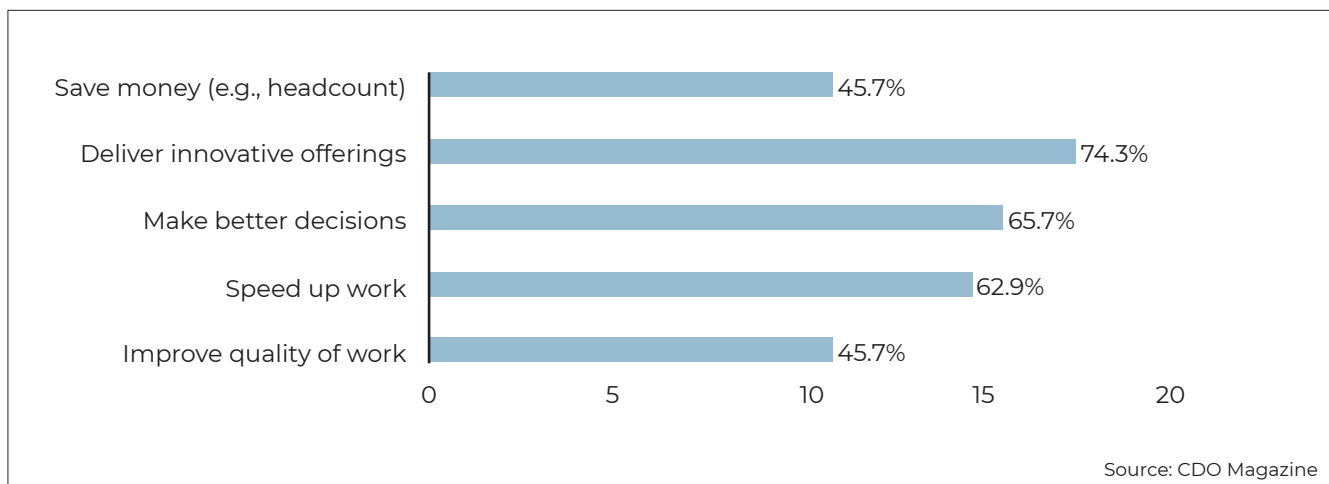


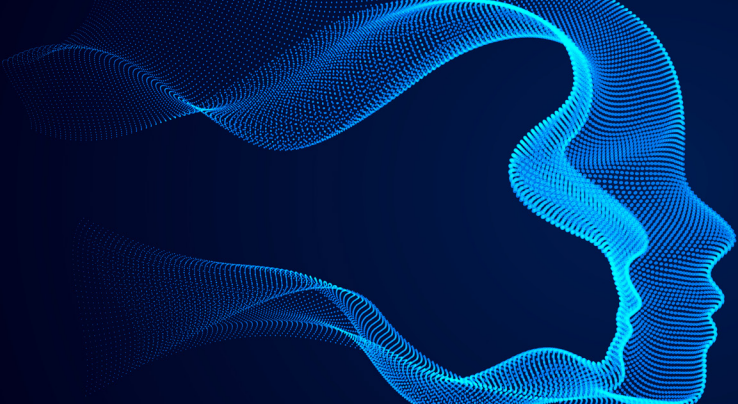
■ Identifying AI opportunities

We are nearing a point where AI adoption is table stakes for staying competitive in the ever dynamic business landscape. As widely believed, all AI initiatives should lead to business outcomes. The questions are – how does an organization prioritize opportunities, and who decides?

The top five critical business drivers of AI planning and strategy according to our survey are:

1. Delivering innovative offerings – 74%
2. Making better decisions – 66%
3. Speeding up work – 63%
4. Saving money – 46%
5. Improving the quality of work – 46%





George from NeuralMetrics states that any approach to bringing AI tools and technology into an organization without gauging business value is meaningless. She suggests building it “intentionally” after involving key stakeholders and creating a map for organizational needs.

She says it is important to “have a lot of conversations with the stakeholders and leaders to make sure that whatever you are attempting is valuable. You also have to rank the problems from the value and impact perspective.”

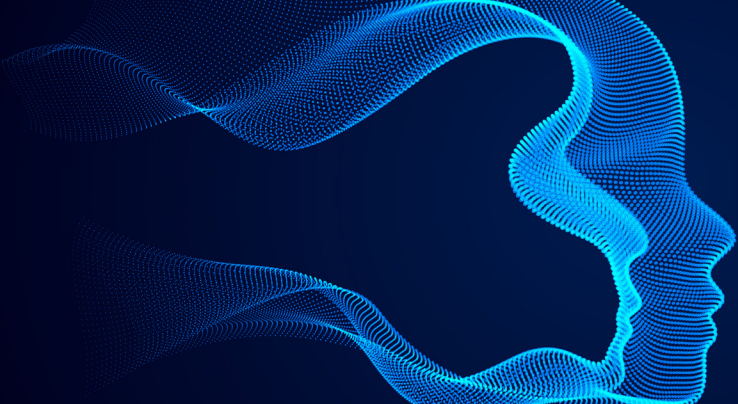
In terms of performance metrics, George pins it on the amount of money any initiative saves the organization.

Kanetkar reiterates the value-based prioritization factor for AI use cases. He also highlights the importance of data readiness. **“If you don’t have the right data, you won’t be able to execute a use case and be successful. So, look at the business priorities, map the use cases back to the data, and then figure out which one can be tackled first,”** he suggests.

At United Community Bank, the keyword is “process” followed by “identification.” Mullins recently authored the bank’s first enterprise data strategy, which he purposely labeled “Business-Driven Data Strategy” to tie it to business objectives.

The data strategy which is aligned with the bank’s annual growth objectives also doubles as the north star for AI value creation.

“As we grow and mature,” Mullins says, “we will be using this annual cycle of interaction with our executive team on what’s important within their individual functional areas and lines of business – to look for opportunities in their goals and objectives for AI.”



According to these data leaders, it can be particularly difficult to find opportunities to introduce AI without having clarity about business operations, their relationship with data, and how revenue is generated. In some cases, organizations may not know how to best leverage AI. In addition, it can be even more challenging to take the next steps if the data and IT processes are not in order.

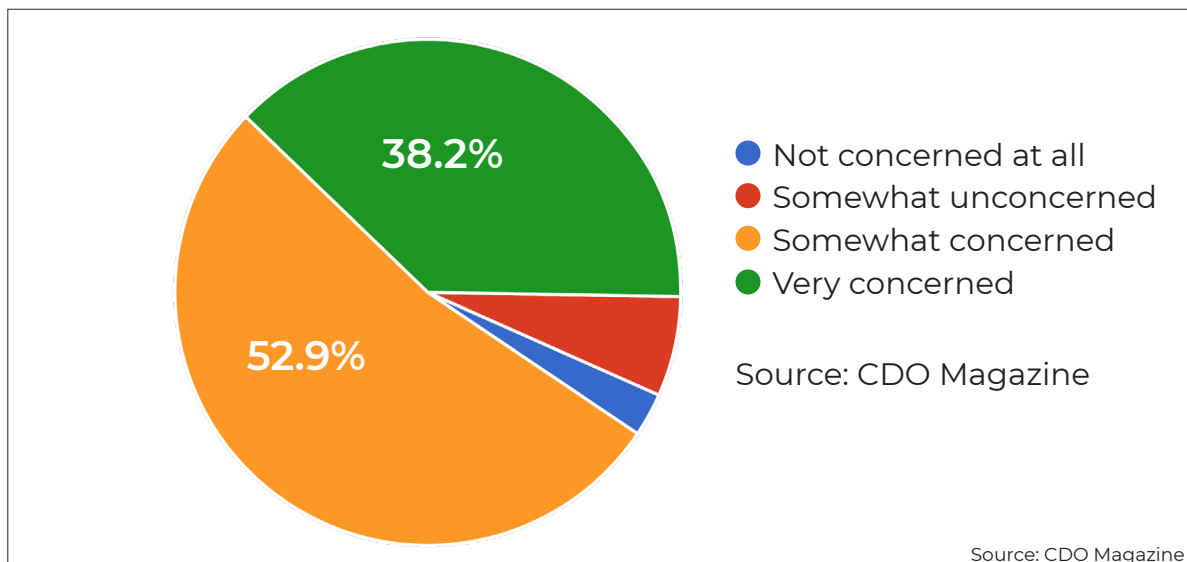
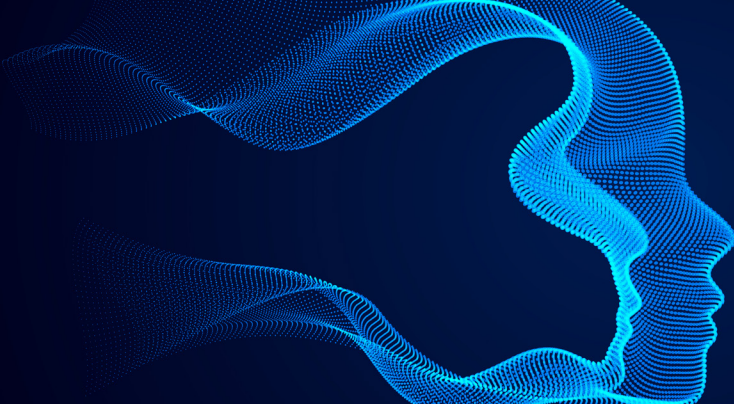
King from Belcan suggests building relationships with the business side, which can introduce a better intake system for IT-based requests. “That introduction is going to allow us to better understand the needs associated with how the business operates, and that’s going to lead to exposure of AI opportunities within the organization,” says King.

Governance and Security of Generative AI - Closed vs. Open Models

With more businesses exploring adoption, the governance and security of generative AI models have emerged as crucial considerations. At the heart of this discussion is the fundamental choice between closed and open models.

Closed models, typically controlled and proprietary, prioritize centralized governance and tighter security measures to protect against misuse. In contrast, open models advocate for transparency and accessibility, allowing a broader community of developers and researchers to contribute and utilize these AI tools.

Almost all survey participants (90%) expressed concerns about the ethical implications of AI models

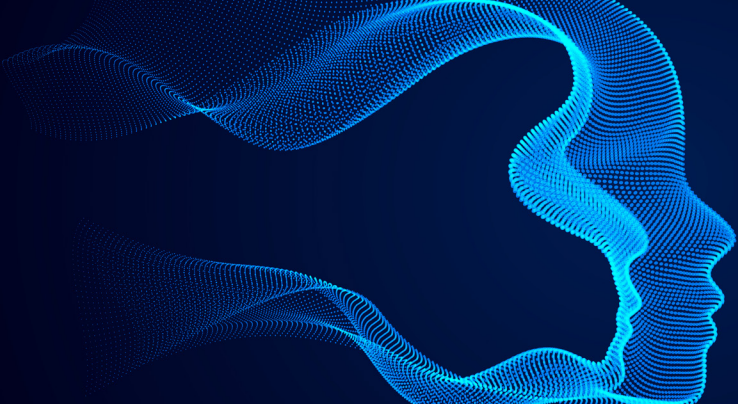


Adding to the concerns is the lack of transparency, clarity of use cases, security, and availability of specialized talent. Striking the right balance between the different approaches is essential to harness the benefits of generative AI while mitigating risks. Security is a critical topic for exploration and debate.

“We are very particular about not putting our data outside the company,” states Putnambekar. American Modern Insurance isn’t planning to rely directly on public models. Instead, it will be a hybrid in a “data lab mode” where the model isn’t built internally but leveraged, and the context of the data is provided.

NeuralMetrics’ George mentions that Large Language Models (LLMs) today are mostly used for text classification or customer service chatbots, and several startups are helping organizations architect their processes and security to take advantage of LLMs.

However, George flags the fact that industries like insurance are extremely regulated, with new regulations being updated frequently. This situation demands using explainable AI that ensures data security instead of relying on “black box” models.



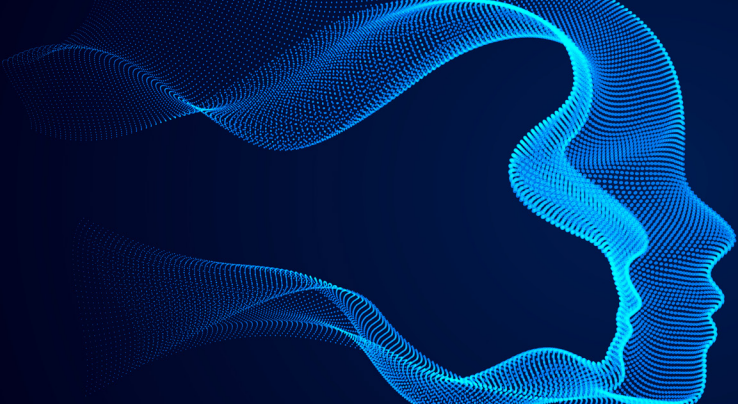
“Companies providing these models need to be transparent about how your data is getting stored and used, and if there is a firewall set up between enterprises who may use these models for fine-tuning or content engineering in their business use cases,” George says.

Settling the closed versus open model debate, Kanetkar suggests that models which answer questions based on company data have to be private or closed. “We just want to make sure business teams don’t utilize company data for open models because there are definitely some data privacy risks involved.”

United Community Bank’s Mullins shifts the spotlight to another unique situation. Most third-party vendors are embedding LLMs to enhance their products. For example, he points out that Salesforce now owns Tableau, which is integrating Einstein Discovery (LLM based business analytics tool) into its product for conversational analytics. He points out that this makes it impossible to separate the LLM from business data because the vendor product itself is built with the model inside it.

Mullins asks the question, “What is a model?” because models have an elevated set of requirements like annual backtesting along with a variety of other components. He states that the assessment of generative AI models has to evolve.

Mullins further stresses that Information Security (InfoSec) teams have to get more involved in the review of vendors and their use of such models within their products to understand how data is either being encrypted, transferred or moved between the different services.



At Belcan, King says that employees can search but not input anything on models like ChatGPT. He indicates it may be possible to have a private model for internal uses that requires ingestion of specific intellectual property, and a public model for other capabilities.

Reiterating Mullins' perspective, King adds, "If your organization doesn't have a third-party risk management process, procedure, or group, you have to get one before you get to this point. It is a matter of also assessing the risk of all the tools that you already use because they may also be using AI."

■ Challenges of preparing data for AI initiatives

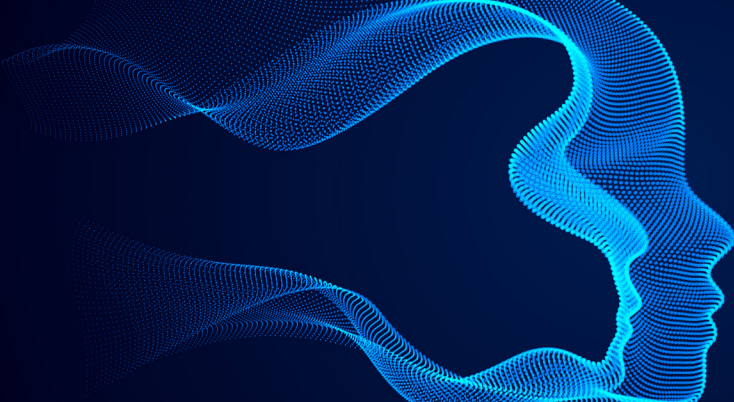
Quality data is crucial for any AI initiative. **About 58% of survey respondents flagged "data availability, accessibility, and quality" as a concerning barrier to AI success.**

Beyond quality issues, Pendulum Therapeutics' Kanetkar points out the "volume" challenge.

He explains that the private models require massive volumes of data for training and predictive analytics. Availability of large volumes of data is a problem especially for young companies like Pendulum. "We don't have a lot of data history yet," says Kanetkar.

For other growing organizations like United Community Bank, frequent mergers and acquisitions cause multiple data quality challenges while developing models and documenting data sources to get them approved for production.

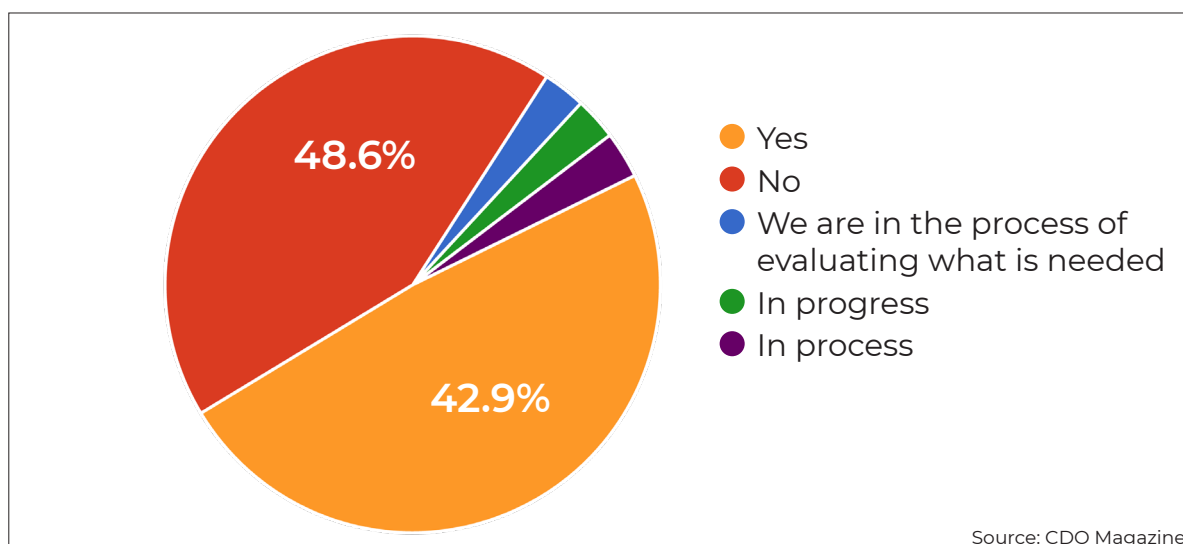
"It is very difficult because we're introducing new data into our core system and other systems almost two times a year," says United Community Bank CDO Mullins. "It would be very time-consuming and cost-prohibitive to understand everything that's happened from the data."



■ AI skill sets required to be successful

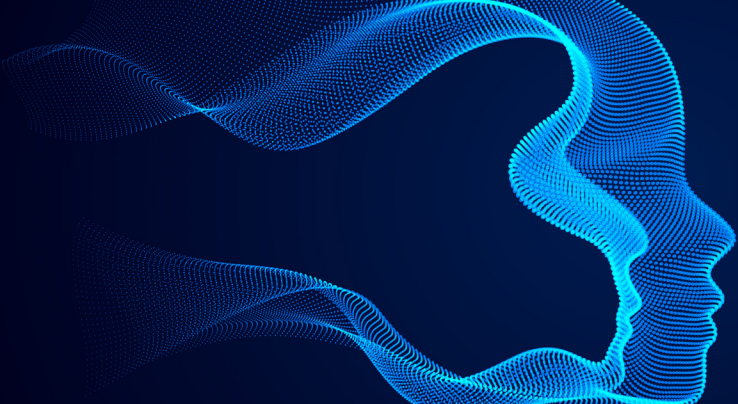
There is a growing demand for individuals with the expertise necessary to harness generative AI. From machine learning and deep learning proficiency to creativity, ethics, and problem-solving abilities, the field necessitates a multidisciplinary approach and range of skills to create value while navigating the ethical and practical challenges that come with it.

Nearly half (49%) of survey participants reported that their organization **has not yet assembled a cross-functional team to lead its AI strategy and execution**. Similarly, 60% of them cited “limited skill sets and resources” as a barrier to AI success.



With LLMs, one of the core skills is the understanding of natural language processing and how it works overall, says George, NeuralMetrics. She says this is a challenge since it is not typically covered in a data science curriculum.

George indicates that most of the available training is designed for solving label data problems and is more focused on supervised learning, not the other end of the spectrum.



In addition to training, George suggests that data scientists need to understand the domain they are in. For example, professionals in the banking space need to understand banking problems well and be able to figure out the various aspects of business data.

She also stresses that data scientists today need to perform end to end, meaning they have to be involved from the beginning to the final production deployment process, as well as know how to monitor the models.

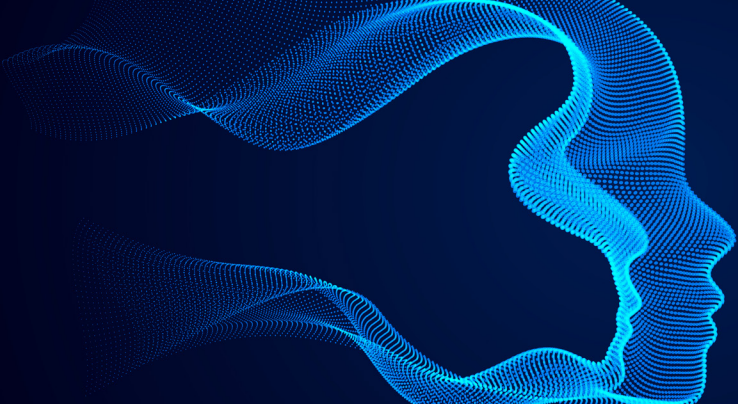
Kanetkar, Pendulum Therapeutics, adds, **“I have seen technology people not knowing the business side of things and vice-versa. They have to collaborate with each other to solve each other’s problems.”**

One of the ways he suggests to scale AI skills is promoting self-service capabilities, and having designated “data hours” where business and technology teams get together to solve their problems. The end goal is to develop citizen data scientists, says Kanetkar.

In the banking industry, Mullins states that it is imperative to develop proficiency on both the business and risk management fronts. Similarly, InfoSec teams need to have a nuanced understanding of technology and tools like Jupyter notebooks.

This understanding should extend to comprehending the data’s sources, connections, and associated elements, says Mullins. The Model Risk Management (MRM) team also needs skill sets to effectively evaluate the developed models.

While actively engaged with graduate programs at the University of South Carolina and Clemson University, he encourages the academic directors to improve, enhance, and expand the AI skill set curricula.



On the job, Mullins adds, “We need to allow our teams to take an hour or two per week to build skills, and stay abreast of emerging technologies and tools essential for our future endeavors.”

■ On prem, off prem, or both?

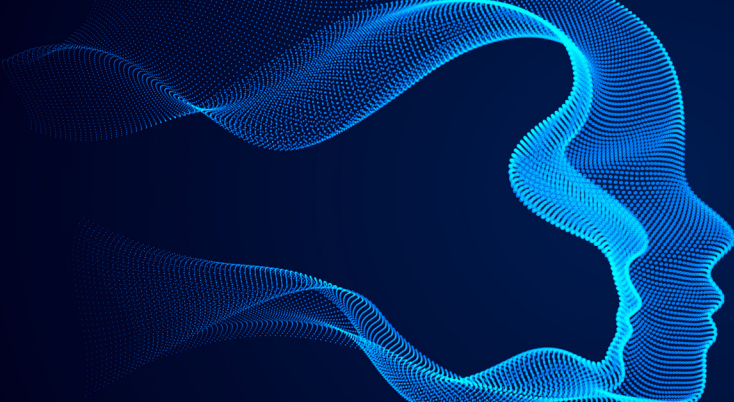
While more organizations migrate to the cloud as a general trend, United Community Bank is looking at a hybrid cloud environment. This is mainly because of modernizing its on-premise core, which is a major task, according to Mullins.

However, the bank is looking at a cloud-first approach for its AI initiatives. “We’ll try to use the AI initiatives to drive what data goes to the cloud first,” says Mullins.

He reveals that United Community Bank is already running a customer attrition model as a pilot to move data into the cloud. It is also looking at leveraging newer third-party infrastructure products designed to help manage multi-cloud and on-prem infrastructure, Mullins says.

Sharing from a solutions integrator standpoint, Mike Menke, Field CTO at AHEAD, says that edge computing and GPU utilization are predominantly observed in the manufacturing sector, particularly in applications involving computer vision for tasks like quality control and optimizing assembly line manufacturing processes.

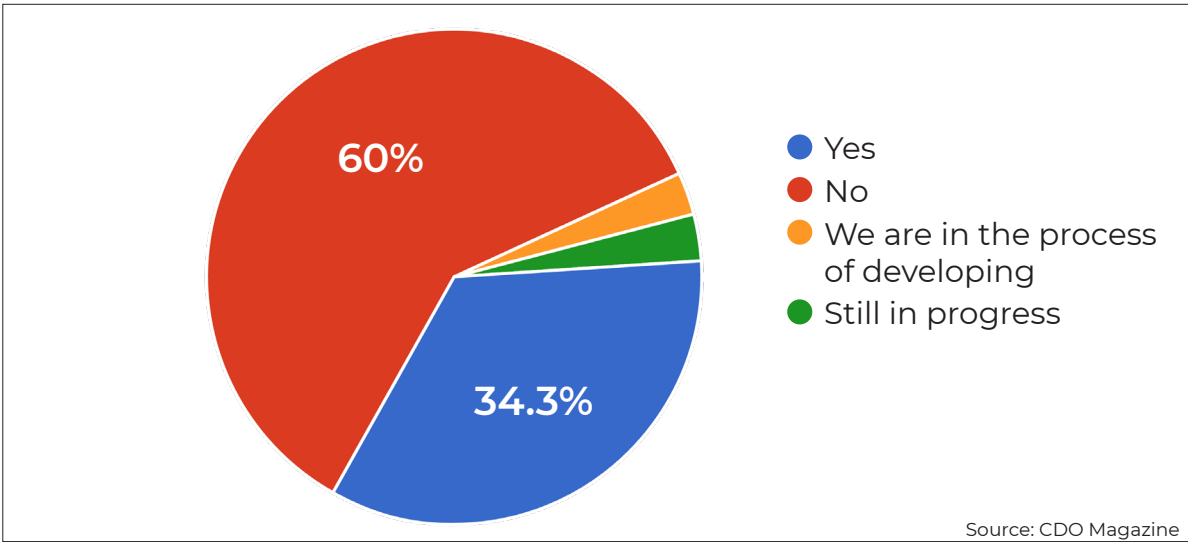
Menke mentions a recent deployment in a daycare facility. An on-premises data center was employed for facial recognition purposes, tracking both daycare children and employees. He highlights a trend where edge computing is initially deployed in scenarios featuring substantial volumes of unstructured video and imagery data.



Subsequently, the data is transitioned to the cloud for more extensive analytics or archival purposes. This migration to the cloud is often governed by considerations such as bandwidth constraints or time sensitivity.

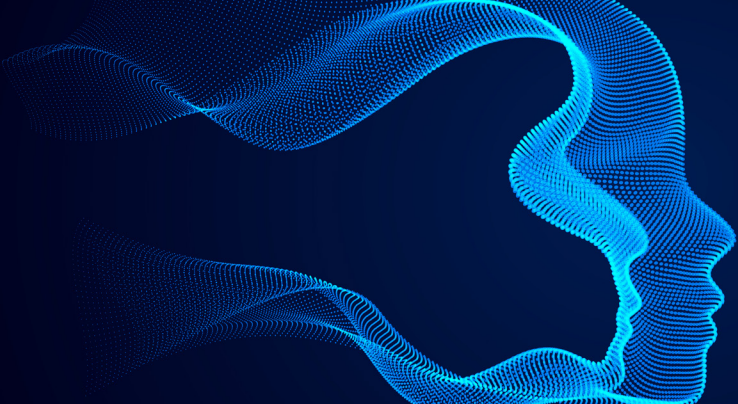
■ The critical role of solutions integrators

Around 60% of survey respondents reported that their organization lacked “a defined strategy, plan, and roadmap for AI adoption.”



The strategic utilization of solutions integrators becomes highly beneficial in specific situations, says Kanetkar, Pendulum Therapeutics. “We lack the in-house expertise required for certain tasks, and there are time constraints when developing these capabilities internally. We may opt for integrators primarily to expedite value delivery. It proves advantageous to collaborate with solutions integrators who may already possess experience with specific use cases,” he adds.

It is a balance between cost and internal skill sets/capabilities for Mullins, United Community Bank. He stresses the crucial need for selecting the right partners, conducting thorough assessments of these partners, and aligning them with specific business objectives.



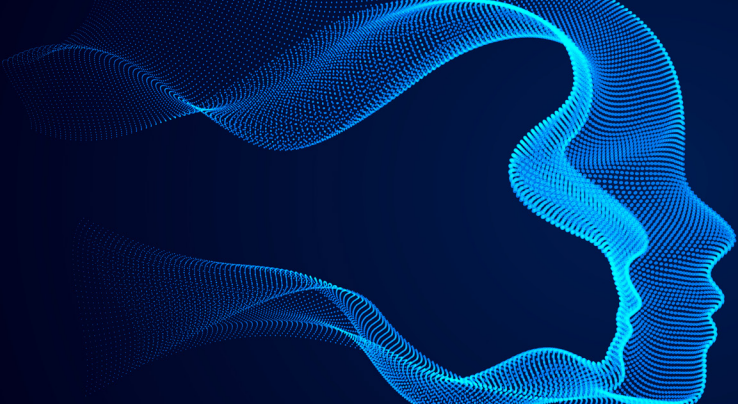
As a solutions integrator, Menke says that AHEAD has the advantage of being able to afford a wider range of data science experts compared to an individual organization. “This means, we can tap into individuals who can quickly realize the value of data science solutions, something that might take longer for a single organization to achieve internally,” Menke elaborates.

According to Menke, AHEAD has developed a well-structured ideation roadmap to help organizations understand the value they seek from their data. The roadmap begins with assessing whether the required data is available, and if not, exploring the options of obtaining it. Any investment in implementation is preceded by a workflow analysis to align business value and financial resources, whether it is for risk mitigation, generating new revenue streams, or a combination of both.

Additionally, Menke says that a dedicated data lab helps leverage flexible computing resources and infrastructure to validate whether the key performance indicators (KPIs) align with the intended use case. Once all these steps are successfully completed, a viable product can be developed using AI technologies.

“Our approach involves building and delivering this product to your organization, along with providing comprehensive education and support,” Menke adds.

Both George and Mullins agree with the value of working with a solutions integrator. They indicate that it starts with zeroing in on a business critical use case, and then deciding between building it internally or finding an external partner to work with.

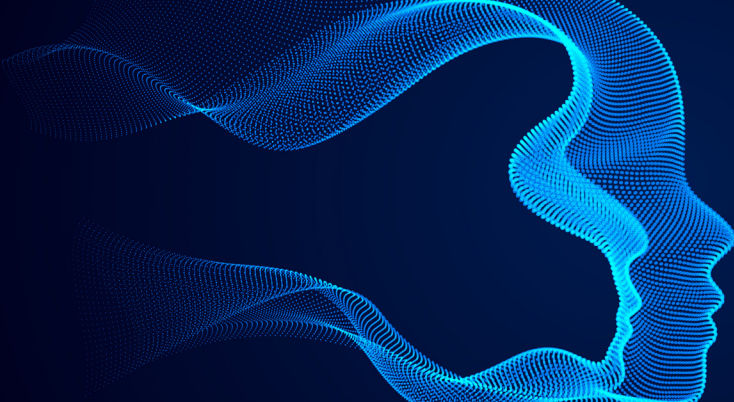


CONCLUSION

The findings suggest that AI holds importance among leaders, with 37% considering it a “very high priority.” Key drivers for AI strategy include cost savings, innovative offerings, better decision-making, and work acceleration. Delivering innovation and improving decision-making are top priorities.

A majority of organizations consider themselves somewhat or very immature in AI adoption, indicating that many are still in the early stages of their AI journey. Challenges in AI adoption include confusion about AI’s scope, data issues, limited resources, data privacy concerns, and skill shortages. Ethical concerns related to closed AI models are significant, with 90% expressing some level of concern.

While cross-functional teams are being assembled to lead AI efforts in 43% of organizations, only 34% have a defined strategy and roadmap for AI adoption. The report underscores the need for organizations to address these challenges and develop clear strategies to navigate the AI landscape effectively.

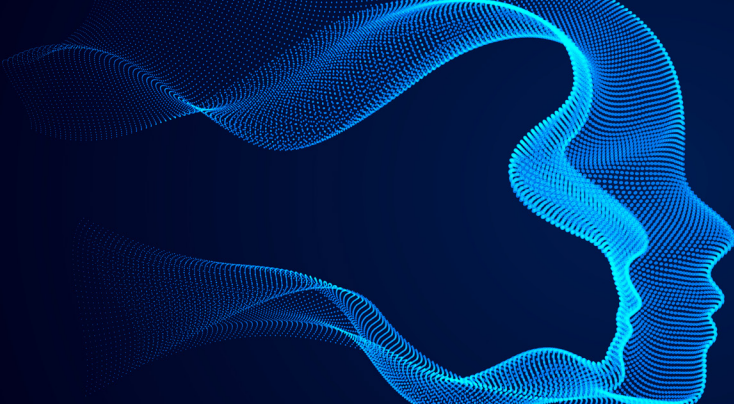


ABOUT AHEAD

AHEAD builds and manages digital platforms that power the most successful organizations in the world. Our consultative approach, unmatched engineering, and innovative solutions combine to accelerate the impact of technology in every client we serve.

Founded in 2007, AHEAD grew up in the data center and retains its deep digital infrastructure expertise at the core of its business. But as the market has changed, the company has always invested ahead of the curve, leading a business that will generate \$3.0 billion in annual revenues and employ 1,600 team members, two-thirds of which are in client-facing solution engineering positions.

With strategic consulting and managed services, along with innovation in practices like cloud, security, ServiceNow, and data and AI, AHEAD has become a key partner for countless enterprises in their path to digital business transformation.



ABOUT **cdo** CHIEF DATA OFFICER MAGAZINE

CDO Magazine grew out of MIT's annual CDO and Information Quality Symposium (MIT CDOIQ), led since 2007 by the MIT Sloan School of Management, in partnership with the International Society of Chief Data Officers (isCDO) and ComSpark.

The publication's vision and mission are to be the premier global print and digital medium, giving a voice to global leaders in strategic data management and analytics capabilities that form the foundation and core of the digital age.

CDOMagazine.tech delivers C-suite-worthy format and content quality — the insights essential to accelerating organizational adoption of the enterprise disciplines necessary to be successful in the new digital society. The goal is to be a catalyst where global data and analytics leaders can experience a deeper sense of community by creating a platform where the best ideas, innovations, companies, and leaders are celebrated.