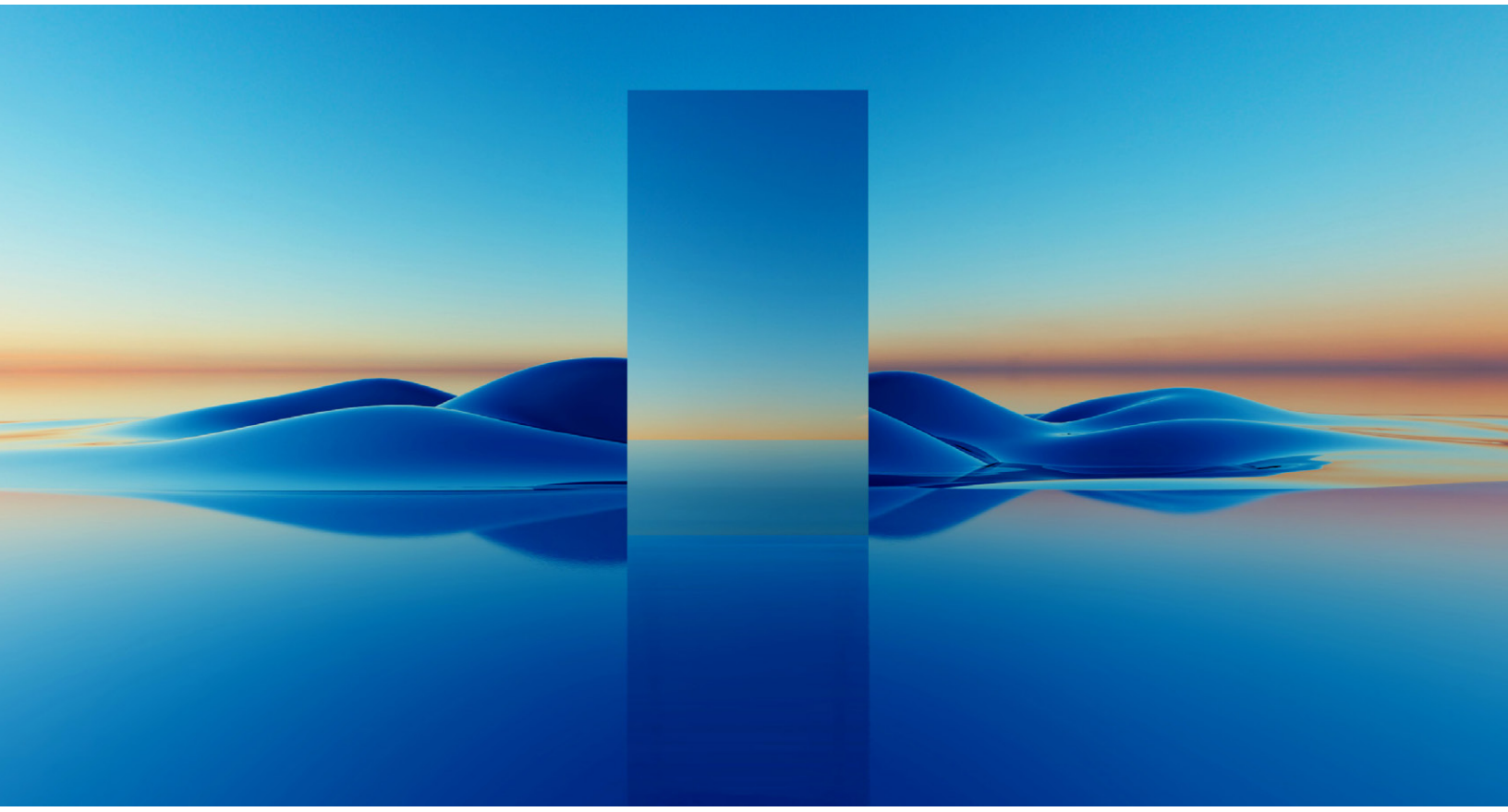
McKinsey Digital

QuantumBlack, AI by McKinsey

The state of AI in GCC countries—and how to overcome adoption challenges

In collaboration with GCC Board Directors Institute



May 2023

Research suggests that AI uptake remains low and points to how companies in the region can overcome the hurdles delaying the capture of AI's potentially high rewards.

Vinay Chandran
Ankit Fadia
Tom Isherwood
Nikhil Shah
Karan Soni

Artificial intelligence (AI) has the potential to deliver real value in the Middle East's Gulf Cooperation Council (GCC) countries—as much as $150 billion, according to McKinsey research.[1] That's equivalent to 9 percent or more of GCC countries' combined GDP, although the speed at which AI technologies like generative AI are developing suggests that figure could be quickly surpassed.[2]

Examples of how organizations in the region are already moving to capture AI's value have been well publicized. Careem, a Dubai-based company with operations across the region, says it has used AI to block 35,000 fraudulent users on its food delivery, payments, and transportation platform.[3] The AI-powered virtual assistant deployed by the Dubai Electricity and Water Authority has responded to some 6.8 million queries since its launch in 2017.[4] And the Fourth Industrial Revolution Center at Saudi Arabia's Aramco says it has reduced flare emissions by 50 percent since 2010 by using data and AI to monitor conditions and take preventative action.[5]

But are such examples indicative of widespread, rapid adoption of AI across the region, or do they stand out precisely because take-up is slow? To better gauge the situation, we partnered with the GCC Board Directors Institute to conduct an online survey of 119 senior executives and board directors and 21 interviews with respondents and industry experts in five main sectors across all six GCC countries (see sidebar, "Our methodology").

[1] Niklas Berglind, Ankit Fadia, and Tom Isherwood, "The potential value of AI—and how governments could look to capture it," McKinsey, July 25, 2022.
[2] "What every CEO should know about generative AI," McKinsey, May 12, 2023.
[3] "Careem: Identity based fraud detection using Neptune and Neptune ML," Amazon Web Services, accessed May 2023.
[4] "DEWA's virtual employee 'Rammas' responded to over 6.8 million enquiries until 2022," Government of Dubai, January 28, 2023.
[5] Rebecca Wallace, "How new technological applications are lowering energy intensity and cutting emissions at Aramco," Aramco, November 26, 2020.

Our methodology

BDI
GCC Board Directors Institute

In early 2023, in partnership with the GCC Board Directors Institute, we conducted an online survey of 119 C-level executives or board directors with a range of tenures. They represented all six GCC countries and included five main sectors: retail and consumer packaged goods; professional services (including technology, consulting, and legal); energy and materials (including oil, gas, metals, and chemicals); capital projects and infrastructure (including real estate, construction, and infrastructure); and financial services (including insurance, banks, and nonbanking financial companies).

We also conducted 21 interviews that included survey participants and other industry experts.

The survey results have been adjusted to exclude respondents who say that they were unaware of the level of AI adoption in their companies. The responses of other respondents may be subject to personal biases, and respondents' understanding of questions posed may be subject to variations.

The results are, we believe, indicative of the broader state of play in the GCC.

At first glance, the situation is relatively encouraging. Sixty-two percent of respondents say AI is being used in at least one business function in their organizations, which is roughly on par with North America, as revealed by our earlier global research (Exhibit 1).[6] But that figure masks significant untapped value.

This article identifies where companies in our survey are currently focusing their efforts to deploy AI and indicates some of the reasons for that focus. It also points to where untapped value lies, and its magnitude, and further suggests how GCC companies can overcome the hurdles that might be delaying its capture.

The state of play

Different sectors are adopting AI at different speeds in the GCC countries. According to our survey, retail companies have made the most progress, with 75 percent of respondents from that sector saying their companies have adopted AI in at least one business function. Respondents in the financial services and capital projects and infrastructure (CP&I) sectors say their companies have made less progress on the same measure (Exhibit 2).

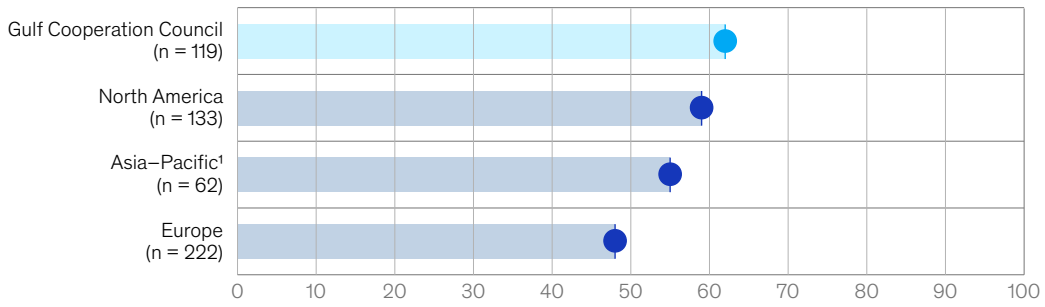
Different factors are likely driving the speed of adoption in different sectors. For example, many energy and materials companies have been early investors in AI because they operate in an internationally competitive market and are keen to capture the opportunities AI offers to raise efficiency in production, distribution, and maintenance. "You'll find many companies in the sector are fast adopting AI in order to compete on a global stage," one interviewee remarks.

Retail companies, the fastest AI adopters among our survey participants, have copious amounts of data that they have long mined to gain consumer insights and to inform pricing and promotions. Interviewees suggest retail companies are now using that same data to jump-start AI deployment.

Exhibit 1

Sixty-two percent of respondents in Gulf Cooperation Council countries report using AI in at least one business function in their organizations.

AI adoption in more than one business function, % of respondents (n = 536)



[1]Includes Australia, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, South Korea, Thailand, and Vietnam.

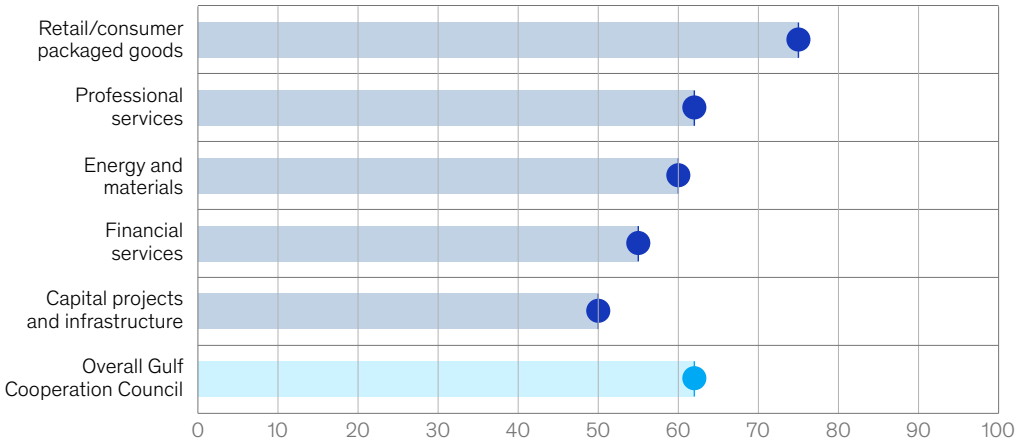
McKinsey & Company

[6] "The state of AI in 2022—and a half decade in review," McKinsey, December 6, 2022.

Exhibit 2

Among respondents in Gulf Cooperation Council countries, AI adoption is highest in the retail and consumer-packaged-goods sector.

AI adoption in more than one business function, % of respondents (n = 119)



McKinsey & Company

On the other hand, many companies in the Middle East construction industry either cannot yet collect the data required to train AI models, or do not have the necessary capabilities to stitch what they have together.

Size is also an issue. The construction industry is largely made up of subcontractors and smaller firms, many of which are not using Internet of Things (IoT) technologies to collect the data that AI requires. This not only makes it hard to capture data effectively but also makes AI's initial costs unaffordable, according to industry experts. Smaller enterprises in financial services face a similar problem. Several respondents say they see AI as an expensive investment that their companies are not yet willing to make.

In financial services, interviewees say there are also regulatory hurdles. In some countries, regulators do not allow certain data to be stored abroad on the public cloud. And respondents say that while they see the potential value of risk-related AI models, financial regulators have not yet established a corresponding risk framework, making it hard to obtain regulatory approval to deploy AI.

The research also suggests, however, that companies that are now deploying AI have barely scratched the surface of what it can deliver. To begin with, few companies are using more advanced, machine learning analytics and AI models, according to industry experts. Companies in the energy and materials sector, for example, typically use linear, regression-based analytics techniques for control processes. Only a few downstream refineries are now using machine learning models to optimize end-to-end processes, realizing savings of up to $1 per barrel, says one industry expert. Nor is AI being used across many business operations (Exhibit 3). The highest area of application in our survey is in marketing and sales, though only one-third of respondents report using AI in this function. That figure falls swiftly lower

Exhibit 3

Respondents report adopting AI most often in marketing and sales—still only one-third report doing so.

AI adoption by business function, % of respondents (n = 119)

McKinsey & Company

in other functions, leaving considerable, and often unrecognized, value on the table.

Lessons from high performers on tapping AI's value

Previous McKinsey analysis assessed the value of a range of AI use cases in different industries if applied globally, and how that value was divided based on business activity.[7]

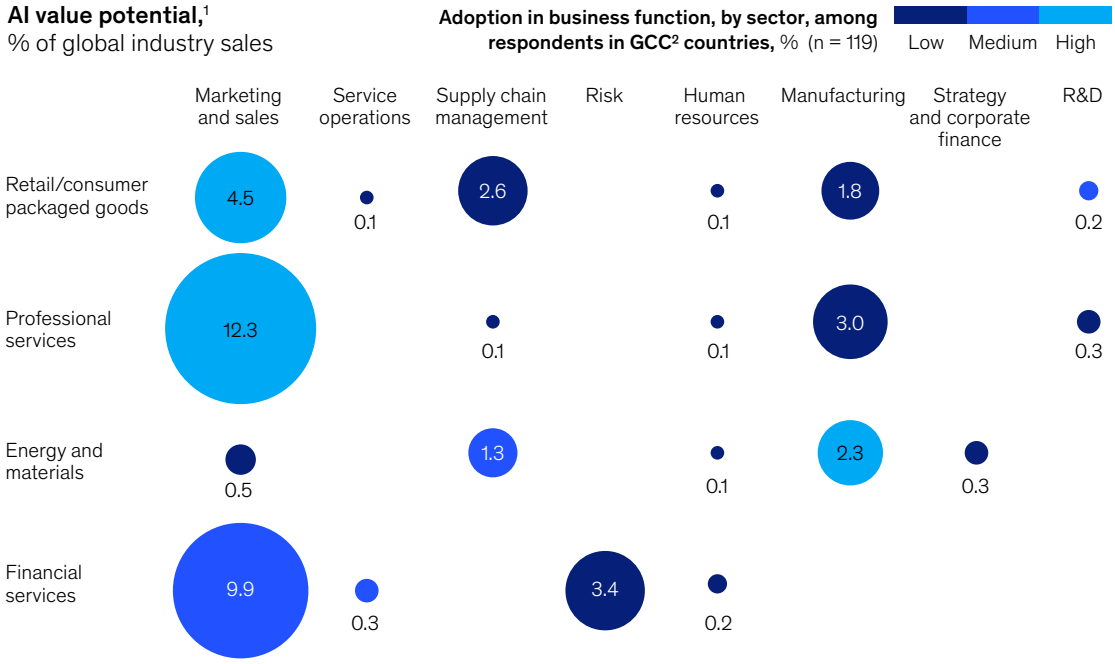
In retail and consumer packaged goods, for example, the supply chain management and manufacturing use cases analyzed had the potential to generate value worth some 2.6 percent and 1.8 percent, respectively, of global industry sales. In financial services, a huge opportunity lay in risk use cases such as fraud detection and debt management. Exhibit 4 indicates the size of the opportunity in certain sectors by business activity relative to the current level of adoption by the companies in our survey.

In retail and consumer packaged goods, AI use cases in supply chain management and manufacturing had the potential to generate value worth some 2.6 percent and 1.8 percent, respectively, of global industry sales.

[7] "The executive's AI playbook," McKinsey, November 7, 2018.

Exhibit 4

AI adoption is low in some functions where the value potential is significant, such as in manufacturing, indicating missed opportunities.



[1]Values not listed for functions where the potential is lower than 0.1% of global sales in an industry.
[2]Gulf Cooperation Council.
Source: Percent of global sales figures from "The executive's AI playbook," McKinsey, November 7, 2018

McKinsey & Company

The exhibit shows, for example, that in the retail sector, considerable value lies in supply chain management and manufacturing use cases, although adoption across these activities is low, according to our survey respondents. The same is true of risk in financial services or marketing and sales in energy and materials.

Capturing that potential is never going to be easy, as it requires a high level of organizational change to embed the AI technology and new ways of working. But our global work and research over the past five years has made clear what differentiates high-performing companies—those that derive 20 percent or more of their earnings from AI—from others.[8]

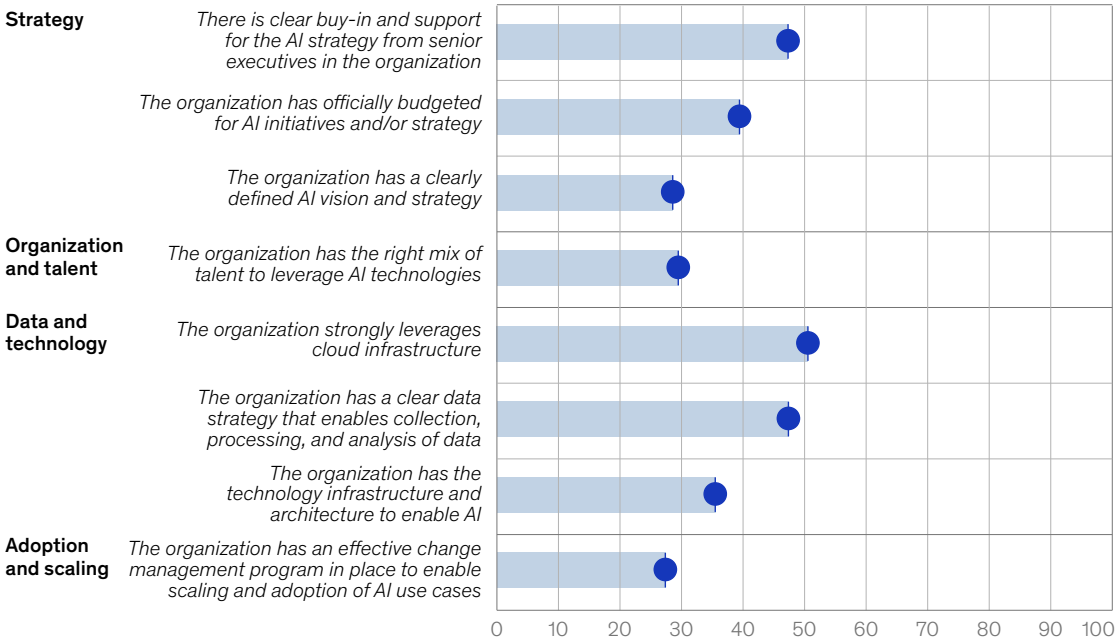
Exhibit 5 lists the measures high performers take to build their AI capabilities in four areas: strategy, organization and talent, data and technology, and adoption and scaling. It also shows how GCC survey respondents view their companies' performance in those same areas. For instance, only 30 percent say their companies have a clearly defined AI strategy or that their companies have the right talent. In data and technology, only 35 percent feel their companies have the technology infrastructure and architecture to support AI, while

[8]"The state of AI in 2022," McKinsey, December 6, 2022.

Exhibit 5

Less than half of respondents report that their organizations engage in the behaviors more often exhibited by companies that achieve high returns from AI.

Respondents' engagement in behaviors, % of respondents (n = 119)



Note: Survey respondents in Gulf Cooperation Council countries.
Source: List of behaviors more often exhibited by companies seeing the highest returns from AI from "The state of AI in 2022—and a half decade in review," McKinsey, December 6, 2022

McKinsey & Company

as few as 25 percent say that an effective change management program is in place. On no measure did more than about 50 percent of respondents say that their companies are well positioned.

These averages, of course, mask significant differences between sectors. In our survey group, respondents indicate that energy and materials companies are ahead of the curve in almost all areas. Adoption of cloud, key to powering AI, is highest in retail, but even here, awareness of the company's AI strategy is low, implying a piecemeal approach to the use of AI rather than a consolidated, enterprise-wide strategy.

Sectoral differences apart, however, the takeaway remains that all companies in our survey have considerable work to do to create the conditions that will accelerate the adoption of AI and realize its potential.

An acceleration plan

We asked survey respondents to indicate which of the four areas—strategy, organization and talent, data and technology, and adoption and scaling—posed the greatest challenge for their companies in building the necessary AI muscle. Organization and talent came out on top of the list. Thirty-seven

percent of respondents say this is the area of greatest concern, followed by data and technology (26 percent), adoption and scaling (21 percent), and strategy (15 percent).

With this in mind, we explored with our interviewees some of the precise challenges GCC companies are facing in each of the four areas and how they might be overcome. Several measures emerged that could help accelerate the adoption of AI by companies in the region (see table).

Strategy

Companies that generate the most value from AI have a strategy that links AI to their enterprise strategy, which means deploying AI to improve critical areas of the business. To help make that happen, companies can take the following steps.

Ensure senior leadership buy-in by building awareness. Probably the most important underlying enabler of a strong AI strategy is strong commitment from senior leadership. Without it, there may not be an AI budget—a problem identified by 60 percent of survey respondents, even though AI deployments inevitably require spending on data, technology, and analytics talent, and on embedding analytics into business process workflows. High-performers in our global research are nearly twice as likely than others to have strong leadership commitment to AI and eight times more likely to spend more than 20 percent of their digital technology budgets on AI-related technologies.

Leadership commitment is unlikely to be forthcoming, however, unless leaders understand AI models and potential use cases and, ultimately, the transformative power of AI. But this is often not the case: "Senior leadership does not have the awareness of how AI can be used in business operations, and what needs to be done to adopt it," one interviewee from the financial-services sector says. "AI for the CP&I sector is regarded as time intensive, expensive, and error prone,"

Organizations in Gulf Cooperation Council countries can accelerate AI adoption by tackling challenges in four key areas.

Business Area	Challenge	Solutions
Strategy	Linking AI strategy to the enterprise strategy	• Ensure senior leadership buy-in by building awareness • Develop a business-led use case road map • Communicate the strategy and make management accountable
Organization and talent	Building AI talent	• Craft an attractive value proposition • Consider offshore services • Invest in capability building • Collaborate with academia
Data and technology	Building a high-quality data pipeline and modern technology stack	• Manage data as a product to deliver short and longer-term value • Build a flexible technological architecture
Adoption and scaling	Overcoming resistance to making AI adoption a common mission	• Make analytics user friendly • Establish collaboration between IT and business teams • Embark on a change management program

says another, suggesting the perceived risks outweighed the benefits.

One way of promoting more awareness could be to make sure company boards include experts in digital technologies who understand their value. Without them, boards may be reluctant to make large investments in areas with unclear impact. "Board members, not unnaturally, feel more comfortable dealing with business issues with which they are familiar rather than venturing into the unknown," one interviewee says.

Develop a business-led use case road map. Several interviewees told us their organizations had a piecemeal approach to AI adoption, piloting AI use cases without a consolidated, long-term vision. A road map—one that clearly sets out the use cases that will be developed in years one and two of an AI transformation, and in what order —will help. In the shorter term, priority should be given to the use cases that will have the most impact, the aim being to rapidly demonstrate the value of AI and to build enthusiasm. With business impact in mind, it is also important that business teams work closely with those in IT when identifying and prioritizing use cases. And for each use case, a single person, ideally from the business, should be accountable for development and deployment to ensure their relevance to the business.

Communicate the strategy and make management accountable. Once committed, senior leaders should make sure the strategy filters down through the entire organization by ensuring that people understand the value at stake and are familiar with AI technologies and use cases—and by making senior and middle managers accountable for executing the AI strategy.

Organization and talent

The power of a well-crafted AI strategy hinges on the people who implement it, which is why competition is so fierce among companies to attract people with the right skills, and why the high performers in our global research work so hard to also build their own skills. They are three times more likely than others to have well-defined internal training programs.

The high demand is not for just technical talent but also for data scientists and AI engineers. The implementation of AI use cases depends on cross-functional teams that include data engineers, data architects, data visualization experts, and, of critical importance, those who help ensure that the insights generated from analytics translate into impact. These include the product managers who oversee AI application development and adoption and the analytics translators who form a bridge between business leaders and technical experts.

Several of our interviewees say their greatest talent challenge is to fill these roles. One, from a regional bank, says his company was late to realize their importance and, as a result, met with resistance among business teams to adopt AI use cases, feeling they were irrelevant.

Other interviewees recognize that attracting talent in a competitive global market may be harder for GCC companies given their relative lack of maturity in AI. They may well be able to offer attractive compensation packages, but in a field where technology is constantly leaping ahead, talent is attracted not just by compensation but also by opportunities for growth and learning, explaining why talent often gravitates toward tech clusters, such as Silicon Valley, that expose workers to the newest ideas and developments.

To overcome such challenges—and remember, 70 percent of survey respondents say their companies do not have the right mix of AI talent today—GCC companies will likely need a robust talent attraction and retention strategy. The following actions could help build one.

Craft an attractive value proposition. The best AI workers want to work on the most interesting problems with a high degree of autonomy, and they want career paths that help them develop their most valued asset: their skills. GCC companies may therefore need to take a cleansheet approach to

hiring. One interviewee says his company has been more successful attracting talent since it scoped out new, well-defined roles and career paths for analytics professionals in line with global benchmarks, rather than trying to tweak old roles, and developed a purpose-driven proposition.[9] "We realized that we had to craft roles and opportunities for talent that people find challenging and exciting," he says.

Consider offshore services. Some GCC companies use offshore services to bolster their AI resources, helping them to jump-start an AI strategy and develop cutting-edge use cases. "We've seen companies excel by taking advantage of the talent pools available in places like India," one respondent says.

Invest in capability building. Offshore services, while useful, cannot replace programs to upskill the current workforce. These are a means of building general awareness of the importance of AI technologies and use cases—an AI-first mindset—and of filling critical analytics roles. People who are close to the business and understand its priorities can often be given technical training to become much-needed AI translators and product managers. One respondent from the banking sector says his company has seen impressive results training managers in this way.

Collaborate with academia. Some interviewees say GCC companies are missing an opportunity to attract students from local universities and research institutions whose sights are often set on joining big international tech companies. Developing better relationships with these institutions by funding research or collaborating on certain projects could raise student awareness of the work GCC companies do—and their culture.

Data and technology

Organizations with reliable, easily accessible data can deliver solutions quickly and with greater precision. High performers in our global research are nearly four times more likely than others to be able to integrate data quickly into AI models. But interviewees tell us that building high-quality data can seem like a never-ending challenge. One describes it as a data trap—a constant effort to get the data product right that forever delays generating any value from it. High performers are also more likely to have modern technology capable of putting their data to efficient use. But all too often, companies' disjointed technology initiatives result in duplication of efforts and a tangle of bespoke technology architectures that are costly to build, manage, and maintain. It is hardly surprising, then, that 50 percent of survey respondents say their companies do not have a clear data strategy and 65 percent say they do not have the technology infrastructure and architecture to enable strong AI outcomes. A range of opportunities exist to help improve matters, including the following.

Manage data as a product to deliver short- and longer-term value. A good data product is one that is easy to access and that can be applied to different business challenges. But building such a product can often be a lengthy endeavor. To reap value from data investments more quickly, some companies develop data products in the same way they might go about developing a consumer product. Just as automakers design a standard model that can then be customized for different users to maximize sales, companies can design a base data product that can be customized. It can help them deliver value today while paving the way for more value as functionalities are added and the product evolves.[10] Much will still depend on good data governance that's led by business need rather than applying a one-size-fits-all approach to the entirety of an organization's data. Indeed, some organizations in the region say that their efforts to ensure high-quality data standards have underpinned much of their AI successes to date.[11]

[9] Sven Blumberg, Ranja Reda Kouba, Suman Thareja, and Anna Wiesinger, "Tech talent tectonics: Ten new realities for finding, keeping, and developing talent," McKinsey, April 14, 2022.
[10] Veeral Desai, Tim Fountaine, and Kayvaun Rowshankish, "How to unlock the full value of data? Manage it like a product," McKinsey, June 14, 2022.
[11] Bryan Petzold, Matthias Roggendorf, Kayvaun Rowshankish, and Christoph Sporleder, "Designing data governance that delivers value," McKinsey, June 26, 2020.

High performers in our global research are 2.5 times more likely than other companies to have a modular data architecture that can rapidly accommodate new AI use cases.

Build a flexible, modernized technological architecture. As many organizations have learned the hard way, legacy technologies are rarely fit for purpose in an AI-driven world, and adapting them is expensive and time-consuming. Moreover, as AI technologies advance, so does the risk of increasing technical debt and complexity. Companies should therefore think beyond what is fit for purpose today, and instead consider a modular, hybrid infrastructure—one in which the best available technologies can be easily integrated inside end-to-end processes and easily swapped out for newer ones without breaking the entire system, and one that includes both on-premise and cloud storage and compute power. High performers in our global research are 2.5 times more likely than other companies to have a modular data architecture that can rapidly accommodate new AI use cases.

Adoption and scaling

The fact that high performers are nearly 1.5 times more likely to integrate technologies into everyday business processes points to their success. "Organizations hype up small successes. There needs to be a fundamental shift toward a digital-first, data-driven mindset for organizations to truly adopt AI," says one interviewee, highlighting the challenge of integrating AI within their company. And an executive from a UAE-based retail company remarks: "We've done a lot of pilots over the past couple of years, but I'd say we've never really adopted AI."

Even companies with high AI ambitions can find themselves facing resistance when it comes to embedding pilots into broader business operations, according to interviewees. Part of the problem is that it can be hard to explain how AI models work, and so hard to accept that they will deliver value. Another is fear among employees that their work will change or that they don't have the skills that AI deployment requires. The following actions can help overcome resistance, making the adoption of AI into everyday operations a collaborative mission.

Make analytics user friendly. To overcome resistance, companies will need the right combination of technical tools, such as API-enabled middleware, and support tools such as intuitive dashboards, recommendation engines, and mobile apps. The aim is to make analytics user friendly and relevant for those making decisions, whether they are store managers or clinical laboratory specialists.

Establish collaboration between IT and business teams. As discussed, business teams need to work with IT to develop a road map for introducing AI use cases to make sure they have business impact. Yet such collaboration will also help drive adoption through a sense of a common mission. High-performing companies are twice as likely as others to have a collaborative process between business and technical teams to build and improve AI applications.

Embark upon a change management program. Companies often fail to recognize how important change management is to scale the use of AI. Recall that in our survey, 75 percent of respondents say their company does not have an effective AI change management program. Instead, they concentrate on more immediate matters such as acquiring the right data and talent. But if employees are not using AI in their everyday work, then any insights from pilots go to waste. High performers, on the other hand, are 1.5 times more likely to implement change management programs to make the adoption of AI a shared mission across the company.[12]

A powerful change management program should include a communication plan that conveys to everyone AI's importance, offers skill-building opportunities, and ensures role models are demonstrating the new ways of working. One UAE-based company represented in our survey has a change management program that is sponsored by senior leadership, raises awareness of AI use cases and their value potential, publicizes the impact achieved, and rewards AI adoption across the organization.

AI has the power to transform the way companies in the GCC operate, creating value for themselves and the economies in which they operate. Nevertheless, our survey indicates that many companies have been slow to embrace the technology.

The steps recommended in this article can help change that, aimed as they are at tackling the challenges surfaced in our research that can delay adoption. Other issues will need attention too, such as managing AI risk.[13] And companies are not the only organizations that can raise AI adoption in an economy. Governments also have a role to play.[14] Yet an awareness of just how much value remains untapped by GCC companies should encourage them to act decisively and without delay. AI adoption may often be a slow and challenging process, but the prize could be worthwhile.

Vinay Chandran is a partner in McKinsey's Dubai office, where **Ankit Fadia** is an associate partner, **Tom Isherwood** is a senior partner, and **Karan Soni** is a consultant; **Nikhil Shah** is a consultant in the Riyadh office.

The authors wish to thank Saadi Azeem, Ankit Bisht, David DeLallo, Jigar Patel, Erdem Senol, Hans-Martin Stockmeier, and Nitasha Walia for their contributions to this article. They also wish to thank Jane Valls and Neelam Bhatia from the GCC Board Directors Institute.

Designed by McKinsey Global Publishing

[12] "The state of AI in 2020," McKinsey, November 17, 2020.
[13] Kevin Buehler, Rachel Dooley, Liz Grennan, and Alex Singla, "Getting to know—and manage—your biggest AI risks," McKinsey, May 3, 2021.
[14] Niklas Berglind, Ankit Fadia, and Tom Isherwood, "The potential value of AI—and how governments could look to capture it," McKinsey, July 25, 2022.