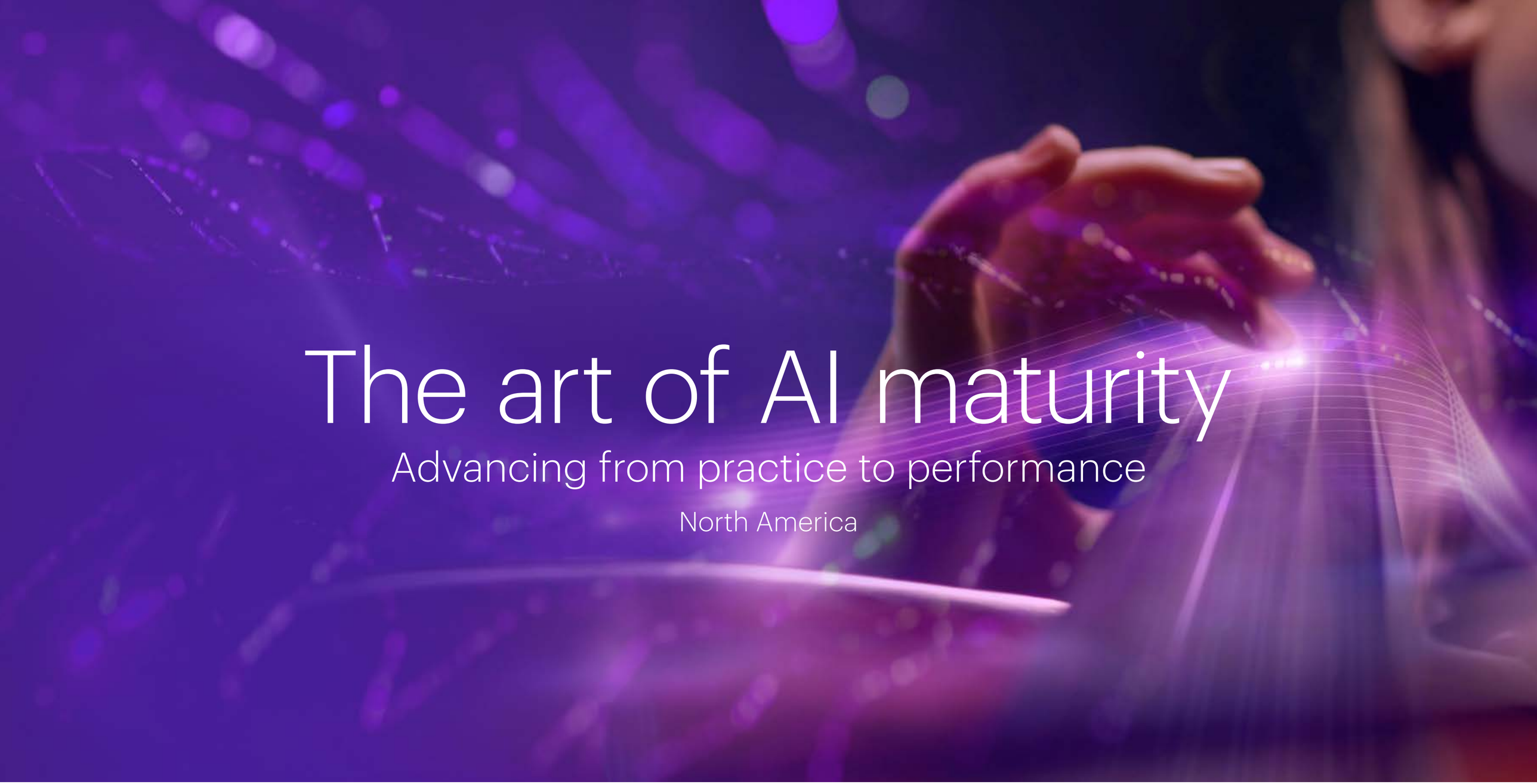


The art of AI maturity

Advancing from practice to performance

North America

Voices of Change

From insights to action, the path to extraordinary value starts here.

accenture

Contents

The art of AI maturity – North America perspective

Foreword

Today, AI is essential to gaining a competitive advantage in the marketplace. That's especially true in North America, which led the global AI market last year, accounting for about 43% of the overall revenue—a number that is estimated to triple by 2024.[1] As enterprises gain confidence in AI as a value driver, it will be full speed ahead: The pace of AI transformation is expected to be 16 months faster than digital transformation.

In this report, we reveal the secrets behind the early success of "AI Achievers." These companies have foundational AI capabilities, such as cloud platforms and governance structures, that provide competitive differentiation. AI Achievers also have strong C-suite sponsorship for their AI strategies and support a culture of innovation.

And while currently only 7% of organizations in North America are AI Achievers, there are tremendous growth opportunities on the horizon. Already, the AI industry landscape is shifting.

In February 2019, the US government launched the American AI Initiative as the nation's strategy for promoting leadership in artificial intelligence. As part of this initiative, federal agencies attempted to foster public trust in AI-based systems by establishing guidelines for its development and real-life implementation across different industrial sectors. In response, several financial institutions have switched over to monitoring transactions with AI. The US healthcare has also increased its use of AI and is at the forefront of drug discovery, medical diagnostics, bio-engineering designs, precision surgeries, and the use of algorithms to improve diagnoses and treatments. In retail, computer vision that uses cameras to automate inventory management will revolutionize the shopping experience for brands and consumers alike.

What's more, we found that the share of company revenue that was "AI-influenced" more than doubled between 2018 and 2021. That percentage is expected to roughly triple by 2024. And while there is no one-size-fits-all approach, today's AI Achievers have set the standard for companies willing to advance and invest in their AI maturity.

The question now, for enterprises in all sectors, is: How will you use AI to differentiate your business?

The answer will either lead companies to build the future or ultimately play by someone else's rules.

Arnab Chakraborty
Senior Managing Director,
North America Lead,
Applied Intelligence

Executive summary

In fewer than 70 years, artificial intelligence (AI) has evolved from a scientific concept to a societal constant.

Computer scientist John McCarthy coined the term "artificial intelligence" in 1955, proposing that "every aspect of learning can in principle be so precisely described that a machine can be made to simulate it." [2]

If that seemed a stretch back then, it feels almost inevitable today. So much of what we take for granted in our daily lives stems from machine learning. Every time we use a wayfinding app to get from point A to point B, use dictation to convert speech to text or unlock your phone using face ID, we're relying on AI. And companies across industries are also relying on—and investing in—AI to drive logistics, improve customer service, increase efficiency, empower employees and so much more.

Despite these ever-expanding use cases, when it comes to making the most of AI's full potential and their own investments, most organizations are barely scratching the surface. That's true even in established tech markets, according to Accenture's extensive analysis of approximately 1,200 companies globally.

For example, North America led the global AI market in 2021, accounting for about 43% of the overall revenue. But only 7% of firms in the region are what we'd call "AI Achievers"—meaning they've advanced their AI maturity enough to achieve superior growth and business transformation. Fewer than one in five (18%) firms in North America are somewhat advanced in their level of AI maturity, while the remaining 75% (the majority) are still mostly testing the waters.

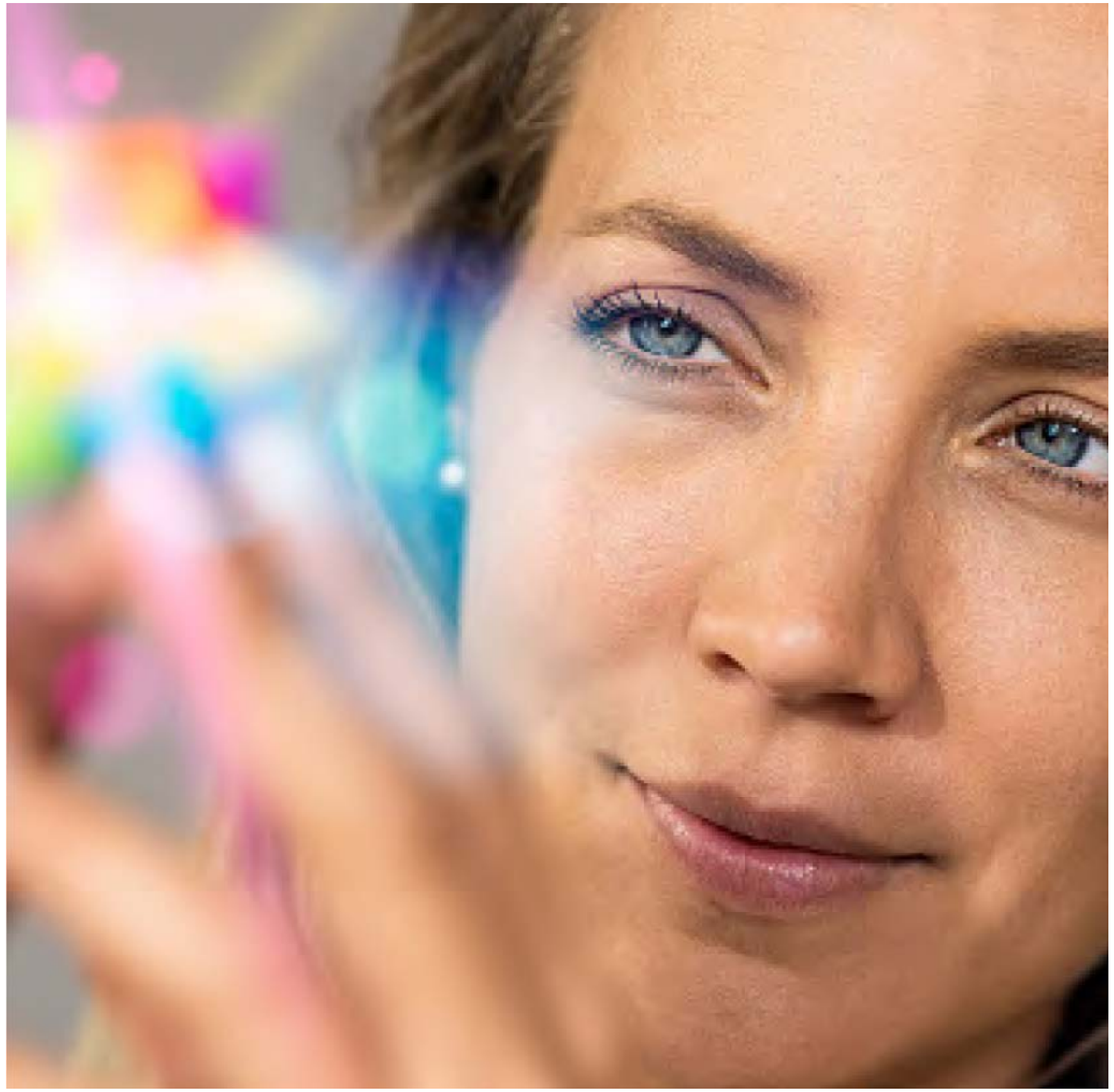
This journey to AI maturity has been in high gear for years because the business case is clear. Pre-pandemic (2019), AI Achievers already enjoyed 50% greater revenue growth, on average, compared with their peers. And in 2021, among executives of the world's 2,000 largest companies (by market capitalization), those who discussed AI on their earnings calls were 40% more likely to see their firms' share prices increase—up from 23% in 2018, according to our analysis.

75%

of firms are still testing the AI waters.

7%

of firms have advanced their AI maturity enough to achieve superior performance and growth.



What do AI Achievers do differently?

While there's clearly science behind AI, our findings suggest there is an art to AI maturity. AI Achievers are not defined by the sophistication of any one capability, but by their ability to combine strengths across strategy, processes and people.

Here are five ways AI Achievers master their craft:

1. **Their top leaders champion AI as a strategic priority for the entire organization.**
2. **They invest heavily in talent to get more from their AI investments.**
3. **They industrialize AI tools and teams to create a strong AI core.**
4. **They design AI responsibly, from the start.**
5. **They prioritize long- and short-term AI investments.**

Our own machine learning analysis models suggest that the share of AI Achievers in North America will increase rapidly and significantly, nearly tripling from the current 7% to 20% by 2024.

In short, advancing AI maturity is no longer a choice. It's an opportunity facing every industry, every organization and every leader.

AI maturity: Why it matters

AI maturity: Why it matters

There is a growing consensus that AI is absolutely essential to competitive advantage.

So, it's no surprise that in 2021, 46% of CEOs (of the world's 2,000 largest companies by market capitalization) mentioned AI on their earnings calls.[3]

More directly, our survey of more than 1,600 C-suite executives and data-science leaders found that nearly 75% of companies have integrated AI into their business strategies and reworked their cloud plans to achieve AI success.

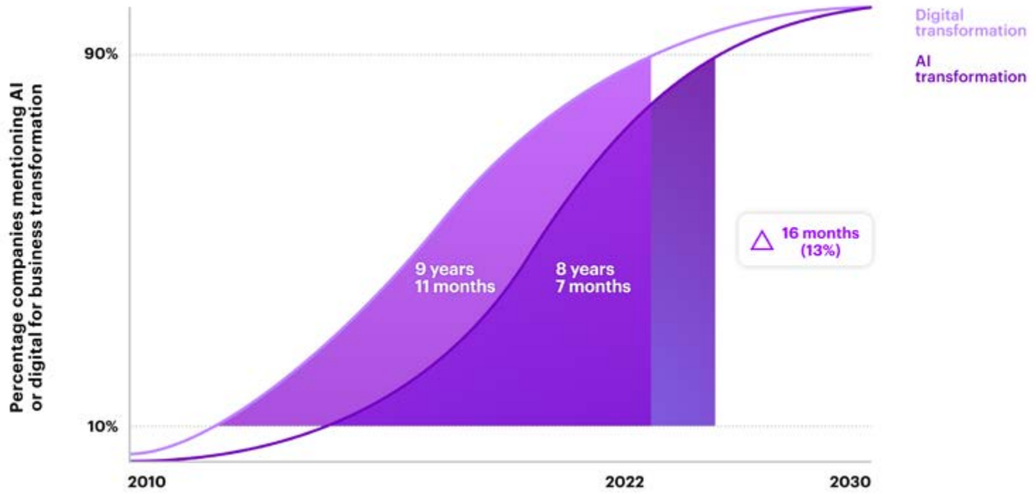
And companies are putting those plans into practice: Globally, about one-quarter (26%) of all AI pilot initiatives are subsequently scaled to deliver wide-ranging outcomes, from accelerating R&D timelines for new products to enhancing customer experiences.

In North America, the companies leading the way are already seeing the results—51% said that the return on their AI initiatives exceeded their expectations, while only 0.4% said the ROI fell short of expectations.

AI, accelerated

With early successes building confidence in AI as a value driver, we estimate that AI transformation will happen much faster than digital transformation—16 months faster, on average (Figure 1).

Figure 1: We project that AI transformation will take less time than digital transformation



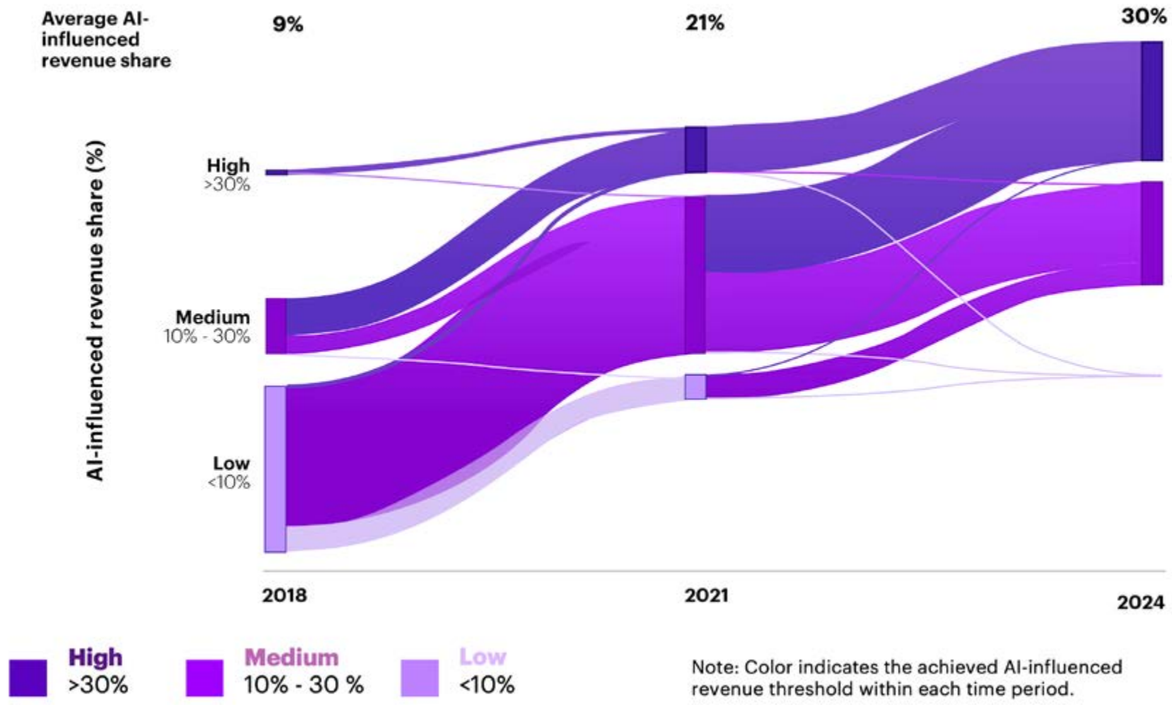
Source: Accenture Research

Note: Our estimate is derived from a natural language processing analysis of investor calls of the world's 2,000 largest companies (by market cap), from 2010 to 2021, that referenced "AI" and "digital" in tandem with "business transformation," respectively. Data was sourced from S&P earnings transcripts.

There is great incentive to move quickly. We found, for example, that the share of companies' revenue that is "AI-influenced" in North America more than doubled between 2018 and 2021, and is expected to roughly triple between 2018 and 2024 (Figure 2).

Given the evidence, it's easy to see why companies plan to increase and accelerate their AI investments. In 2021, Achievers in the region devoted 25% of their total technology budgets to AI. By 2024, they expect to devote 31%.

Figure 2: Evolution of companies' AI-influenced revenue share from 2018 to 2024*



Source: Accenture Research
Note: *2024 = projected

*Definition of "AI-influenced" revenues:
a. Sales of existing products and services made possible through better AI-driven insights on customers, supply chain, channels; **b.** Sales of new products and services made possible by human + AI, **c.** Higher prices through dynamic pricing ML algorithms. These sales include some cannibalization and net new revenues. In contrast, this definition is excluding higher efficiencies in production operations thanks to AI.

AI maturity: What it is

AI maturity: What it is

If most organizations are racing to embrace AI, why are some seeing more value than others?

To uncover strategies for AI success, Accenture designed a holistic AI-maturity framework. Fittingly, our analysis itself was conducted using AI. We applied machine learning models to unravel massive survey datasets and uncover drivers of AI maturity that would have been impossible to detect using more traditional analytical methods (more on the methodology appears in the Appendix).

Our research found that AI maturity comes down to mastering a set of key capabilities in the right combinations—not only in data and AI, but also in organizational strategy, talent and culture. Together, these capabilities give companies a strong competitive advantage. (See pages 37 and 38 for key capability descriptions.)

Foundational AI capabilities—like cloud platforms and tools, data platforms, architecture and governance—are required to keep pace with competitors. But those are incomplete without "differentiation" AI capabilities, like AI strategy and C-suite sponsorship, combined with a culture of innovation that can set companies apart.

AI maturity measures the degree to which organizations have mastered AI-related capabilities in the right combination to achieve high performance for customers, shareholders and employees.

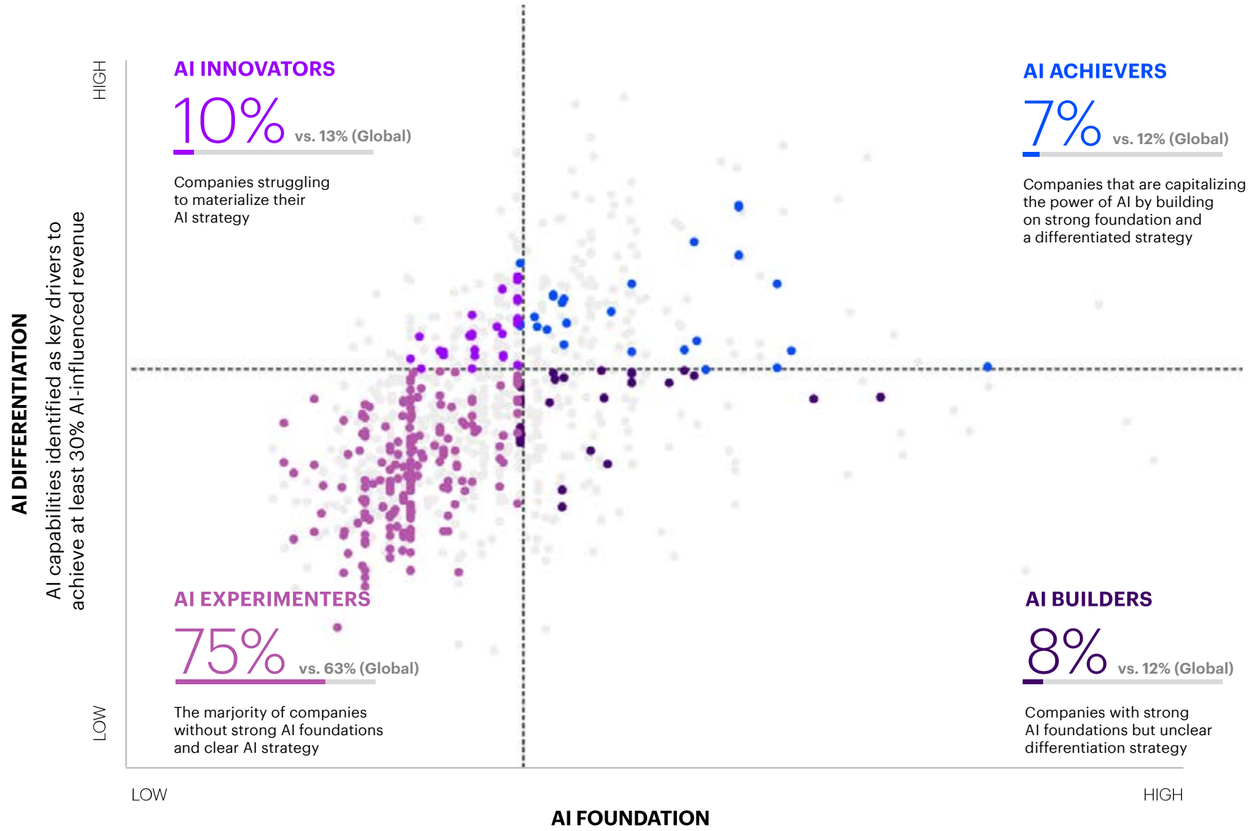
The companies that scored best in both categories are the AI Achievers and deliver high performance for customers, shareholders and employees. Meanwhile, AI Builders show strong foundational capabilities and average differentiation capabilities, and AI Innovators show strong differentiation capabilities and average foundational capabilities. Achievers, Builders and Innovators collectively represent just 25% of surveyed organizations (Figure 3).

A fourth group we're calling AI Experimenters—those with average capabilities in both categories—make up the majority (75%) of those surveyed.

Achievers, Builders and Innovators tend to have more resources (such as technology, talent and patents) than Experimenters to deliver on their AI visions and to transform their organizations. Examples can be found across a wide range of industries: healthcare, financial services, life sciences, utilities, retail, energy and more.

Even so, only 7% of the world's 2,000 largest firms by market cap can be classified as Achievers. This suggests that even with strategic investments, large firms may struggle to make the large foundational and cultural shifts needed to become AI Achievers.

Figure 3: Only 7% of organizations are AI Achievers



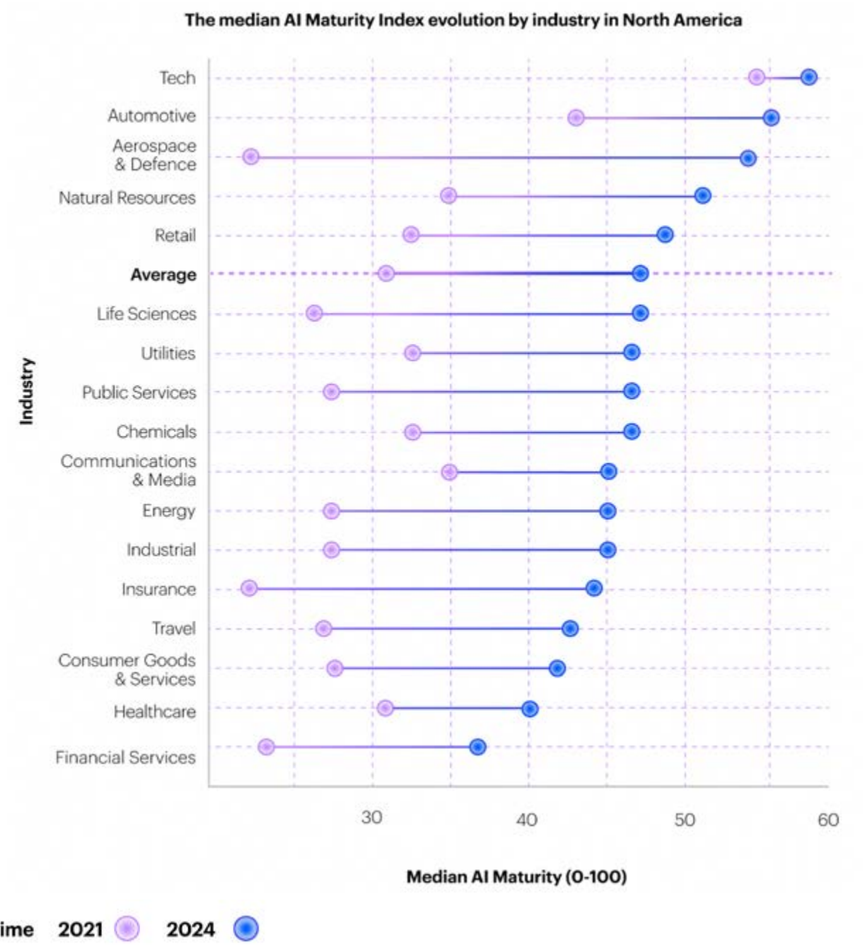
Source: Accenture Research.

AI, applied

While industries like tech are currently far ahead in their respective AI maturity, the gap will likely narrow considerably by 2024 (Figure 4). Automotive is betting on a big surge in sales of AI-powered self-driving vehicles. Aerospace and defense firms anticipate continued demand for AI-enabled remote systems. Retail will keep raising the bar of customer experience with AI. And the life sciences industry will expand its use of AI in efficient drug development. Still, there is enormous room for growth in AI adoption across all industries and an enormous opportunity for those organizations that choose to seize it.

For industry laggards like financial services and healthcare, a range of factors may be contributing to their relatively low AI maturity—including legal and regulatory challenges, inadequate AI infrastructure and a shortage of AI-trained workers.

Figure 4: Levels of AI maturity by industry, 2021 and 2024*



Source: Accenture Research

Note: *2024 = estimated scores. Industries' AI maturity scores represent the arithmetic average of their respective Foundational and Differentiation index. North America n= 373.

AI, applied across industries

- **A large chemicals and energy firm** is using drones and AI-powered surveillance to monitor its equipment and remote locations. The upshot: More frequent inspections at lower cost to the company and fewer safety risks for its maintenance workers.

- **A leading solar-panel installer** is using satellite photos and deep-learning algorithms to create fully automated rooftop installation plans and price estimates. In addition to offering end customers an industry-first ability to self-design their systems, the company expects its AI-led design efforts to ultimately lower the firm's sales costs by 25%.

- During the COVID-19 pandemic, **a major apparel company's e-commerce business** grew rapidly—it now makes up more than 50% of their total revenue, up from 15%. They used AI to drive a 60% improvement and reduction in split shipments. They added millions annually to the bottom line and improved the customer experience.

- **A major US-based beverage bottler** used AI to consolidate data sources and measure the effect of promotions on different retailers and markets, boosting the bottler's annual sales by 3%.

- **A leading US utility company** is using AI to deploy zero-emission vehicles to mitigate the effect of climate change and pollution, and meet their sustainability goals. With a cloud-based digital twin model and AI-driven insights, the firm can determine the highest-emitting vehicles in specific communities and then recommend zero-emission vehicle replacements.

- **A large social services organization** based in the US used AI to better understand the factors affecting the flow-through rates of their programs and take informed decisions on housing funding distribution and youth allocation. An AI-based digital twin process engine was used to execute simulations in different scenarios and generate actionable insights, which helped them develop a strategy and make housing available for the most vulnerable people in the society.

AI Achievers advance from practice to performance

AI Achievers advance from practice to performance

AI Achievers thrive when it comes to traditional performance metrics.

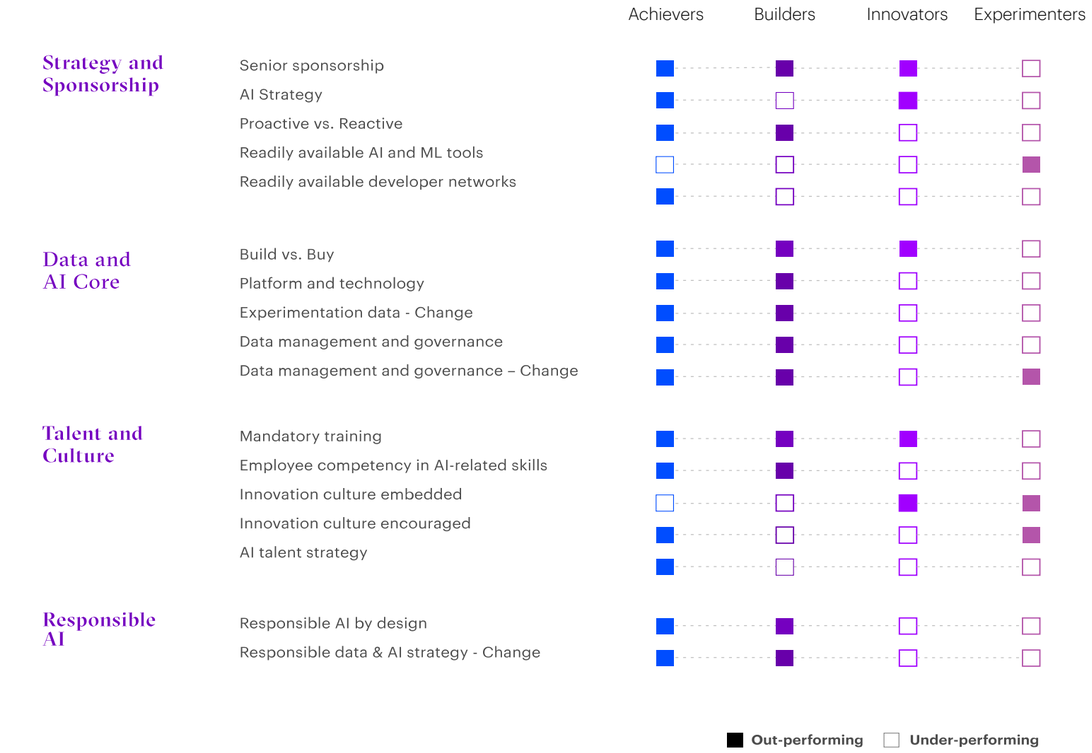
Pre-pandemic (2019), AI achievers globally already enjoyed 50% greater revenue growth, on average, versus their peers. And today, they're 3.5 times more likely than Experimenters to see their AI-influenced revenue surpass 30% of their total revenues.

These companies are going above and beyond, deploying AI solutions to solve problems, spot opportunities and outperform the competition. What, exactly, sets AI Achievers apart?

Mastery of multitasking

When compared with all other groups, AI Achievers demonstrate high performance by combining strengths across strategy, processes and people (Figure 5). By comparison, Innovators typically excel at securing senior sponsorship and embrace training for all employees, but they lack the foundational capabilities required to support AI at scale. Builders, on the other hand, excel at creating data and AI platforms, but they tend to be weaker at cultivating AI fluency and the innovation culture that is needed to drive adoption.

Figure 5: AI Achievers outperform in nearly all capabilities



Source: Accenture Research

Note: Each cube represents one of the 17 key capabilities. The cube is highlighted when the AI profile is outperforming against peers (higher than the average across all companies in terms of % of companies reaching the mature level).

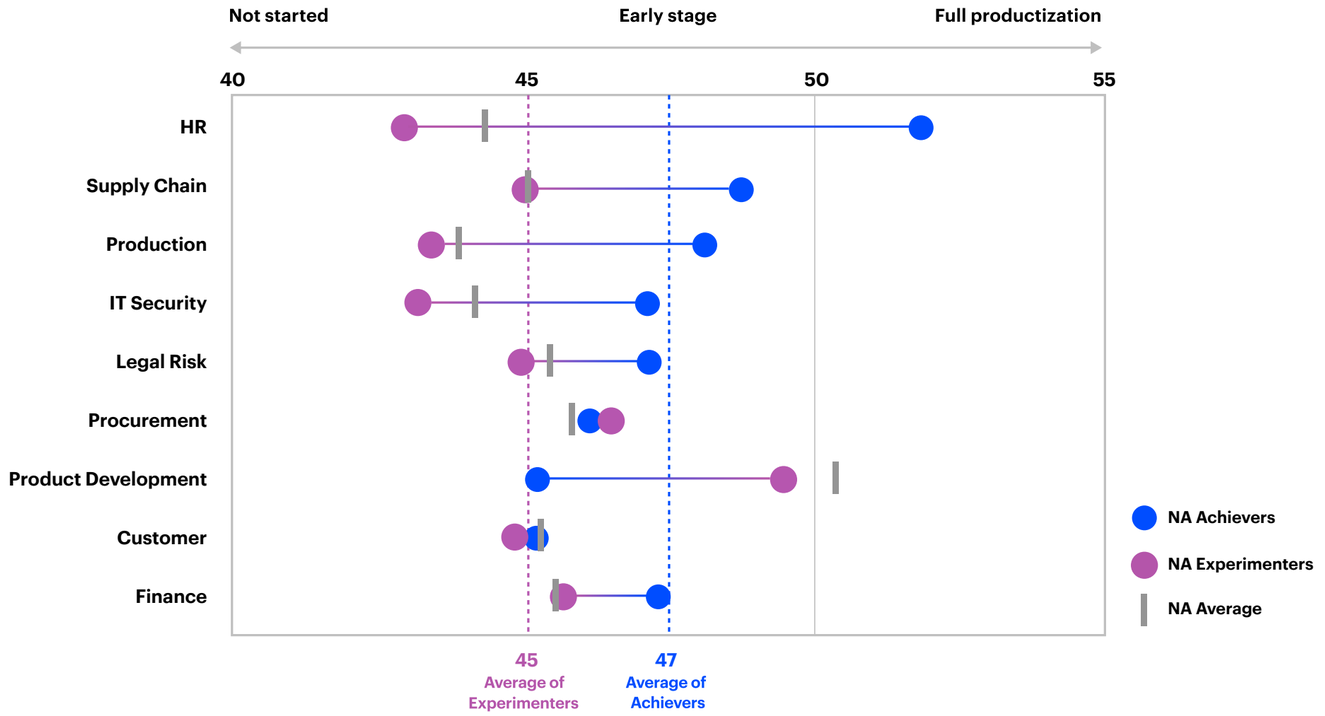
Turning pilots into production

Achievers have largely moved beyond the AI investment "tipping point," going from experimenting with new AI in isolation to applying AI at scale to solve critical business problems (Figure 6). Achievers in North America are 5% more likely to scale AI pilots across the enterprise compared with Experimenters.

Take product development as an example: **Procter & Gamble (P&G)** uses "explainable AI" algorithms to harness its proprietary data and formulation models, and recommend product improvements. If, for example, the company wants to increase the foam in its dishwashing liquid without changing the price, in-house software developers can now ask AI to recommend a replacement ingredient. And if that new ingredient modifies the liquid's color, developers can then instruct the AI to search for a new ingredient—and so on and so forth.

P&G also relies on AI to generate product formulations that are more likely to perform as expected, resulting in less physical testing of new products. The payoff is lower product development costs, as well as the ability to better tailor products for specific markets and launch them faster.

Figure 6: Achievers excel at turning AI pilots into production



Global n = 1286; North America n = 373

Source: Accenture Research

Note: Score 0-100, ranging from 0 = AI use case not started, 50 = AI use in early stage, 100 = having AI programs in place for full productization. The chart shows the difference in terms of average score for AI use cases of different functions, between Achievers and other firms. Those differences are statistically significant after controlling for industry, geography, and company size; see Appendix for more details.

Focusing beyond financial metrics

Achievers also develop strong relationships with customers—by building trust, reducing churn and boosting the quality and safety of offerings. Our stakeholder performance model showed with high statistical significance that Achievers score 8% higher than Experimenters on customer experience (see Appendix for more on methodology).

Additionally, they double down on their commitment to sustainability by, for instance, rigorously measuring and reducing their greenhouse gas emissions, consuming water and other natural resources more economically, and using AI responsibly.

Accenture's Sustainable Technology survey of more than 500 multinational companies found that 70% of firms that managed to reduce emissions from their operations relied on AI to achieve those reductions. Likewise, AI was a key tool for 75% of the surveyed companies that made strides in measuring and disclosing their carbon footprints more transparently.

One US-based utility company conducts remote monitoring of its extensive grid infrastructure via satellites, drones and other surveillance tools. With the help of advanced analytics, machine learning and computer vision, the company can quickly identify and prioritize areas for maintenance, improve public safety and better mitigate its scope 1 and scope 2 emissions.

The stakeholder performance model revealed the value-creation gap between Achievers and other companies is significant when it comes to sustainability.

How AI Achievers master their craft

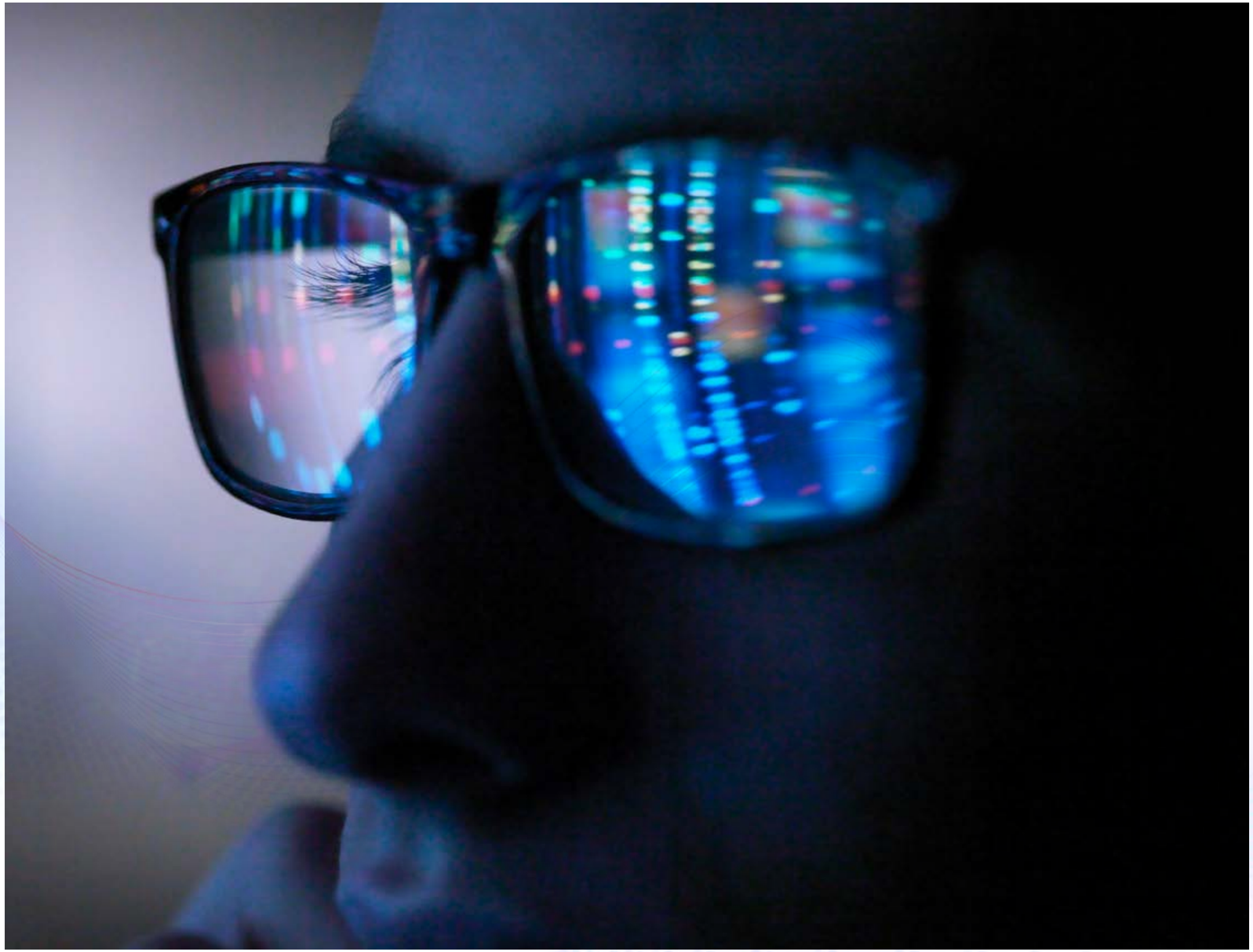
Five success factors

How AI Achievers master their craft

Today's AI Achievers have set the standard and are poised to remain leaders. They have demonstrated that excellence in areas like vision and culture are just as critical as algorithmic integrity.

But the potential for AI-mature organizations will evolve along with the technology itself—in other words, high performance today will ultimately become business-as-usual tomorrow.

So, here are five key success factors for companies aspiring to be AI Achievers.



Success Factor 01

Champion AI as a strategic priority for the entire organization, with full sponsorship from leadership

Companies can create strong AI strategies, but unless those strategies receive enthusiastic support from the CEO and the rest of the C-suite, they're likely to flounder, competing with other initiatives for attention and resources.

Achievers are more likely to have formal senior sponsorship for their AI strategies: we found that 85% of Achievers in North America have such sponsorship, compared to 53% of Builders and 57% of Experimenters.

Our research also suggests that the best AI strategies tend to be bold, even when they have modest beginnings. Bold AI strategies, in turn, help spur innovation. And for the CEOs of Achievers, creating a culture of innovation is itself a deliberate, strategic move—one that is used as a vehicle for experimentation and learning across the organization.

In fact, 48% of Achievers embed innovation in their organizational strategies, while just 33% of Experimenters do.

> "Data is nice—information is power. We've been on this journey, utilizing AI [artificial intelligence] and utilizing machine learning to help make credit decisions, to help make fraud decisions, to anticipate for our card members what offers to give them."[4]
>
> Stephen Squeri, CEO, American Express.

To encourage such end-to-end innovation, Achievers implement systems and structures that help employees showcase their innovation experiments and seek constructive feedback from leadership. We found that 16% of Achievers are already using platforms that allow employees to easily pose questions and share ideas with colleagues across the company—compared to 4% of Experimenters. That number will only grow as these companies expand their pools of AI talent.

For Achievers, the willingness to embrace new tools and technologies often pays off. **One global fashion retailer** headquartered in the US aimed to address key challenges, including managing an increasingly costly and complex retail supply chain. They adopted an inventory solution that combines AI and simulation-driven optimization to cut losses, increase profits and improve the customer journey in stores. Today, the brand is projected to reap an annualized margin uplift of US$70M and expanded product availability.

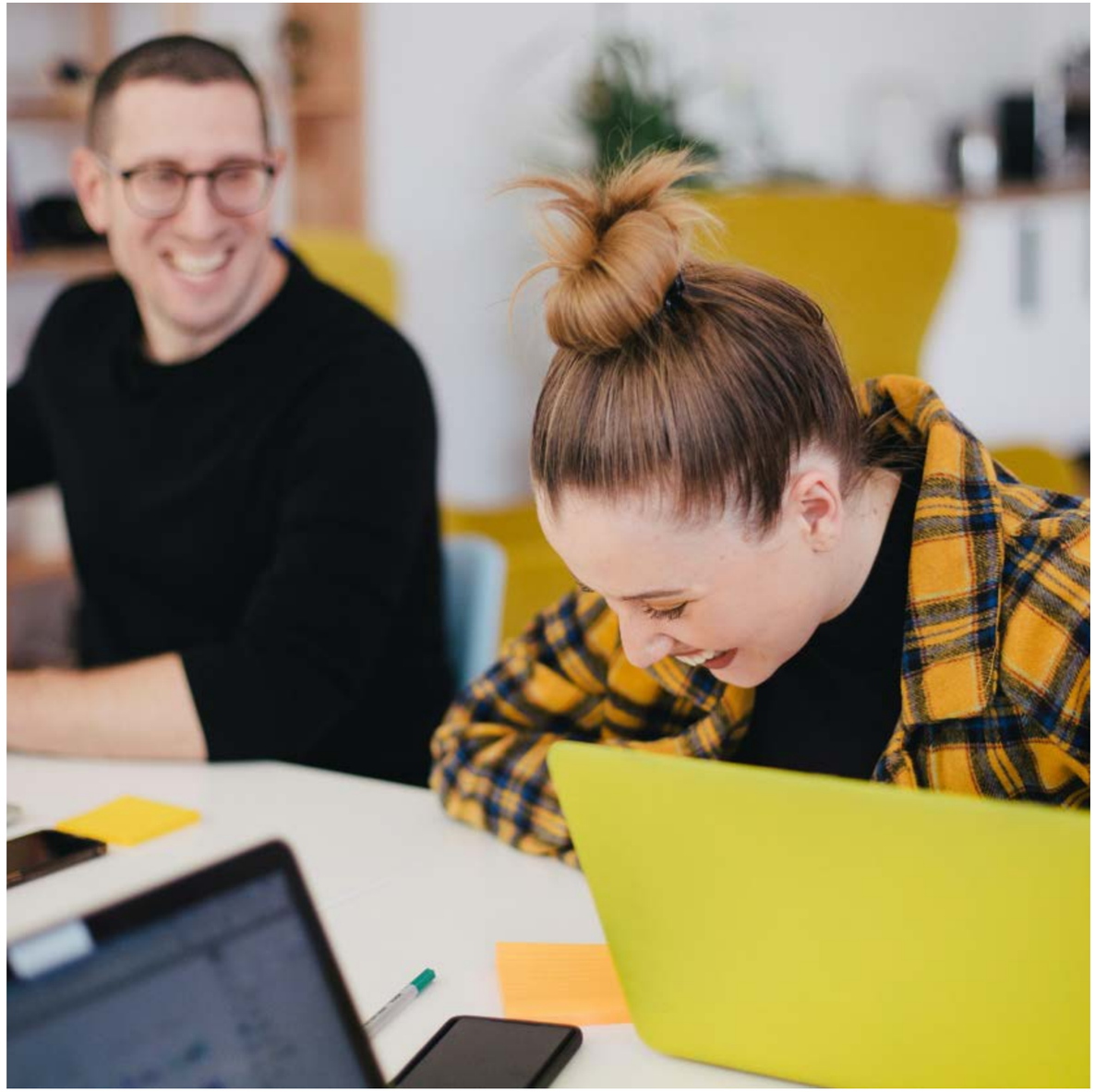
Success Factor 02

Invest heavily in talent to get more from AI investments

With a clear AI strategy and strong CEO sponsorship, organizations are more likely to invest heavily in creating data and AI fluency across their workforces. While AI proficiency must start at the top, it can't end there.

We found, for example, that 56% of Achievers in North America have mandatory AI trainings for most employees, from product development engineers to C-suite executives. Because Achievers prioritize efforts to build AI literacy in their workforces, it's no surprise that their employees are also more proficient in AI-related skills. This makes it much easier to scale human and AI collaboration and ensure that AI permeates the organization.

Today, more than one-third (35%) of Achievers have employees with consistently high AI skills competencies, while Experimenters (27%) have fewer such employees on average. Furthermore, Achievers have employees with higher competencies in almost all data- and AI-related skills.



Achievers also develop proactive AI talent strategies to stay at the forefront of industry trends. In addition to hiring, this could mean partnering with or acquiring specialist companies to fill critical roles (such as data or behavioral scientists, social scientists and ethicists). It also means having a plan to get these diverse, multidisciplinary workers to collaborate, create and sustain maximum value from the company's data-science capabilities.

In 2018, US utility **Exelon** established an "analytics academy." This training center upskilled employees like Jeffrey Swiatek, who, at the age of 41, transitioned from his longtime role as a maintenance worker to become a quantitative engineer (a higher-paying position). Swiatek has since used his training to write predictive software that saved Exelon an estimated $1 million over eight years on equipment maintenance.[5]

Another example: **A global retailer** in North America used data and AI to create a more inclusive workplace in which people could thrive in a culture of belonging. Moving away from often siloed, conventional approaches to bias detection (such as black box models or statistical machine learning), it used flexible analytics and I&D frameworks to determine the degree and significance of bias within the organization and develop a roadmap to achieve its representative staffing goals.

35%

of Achievers in North America have employees with consistently high AI skills competencies, while Experimenters (27%) have fewer such employees, on average.

Success Factor 03

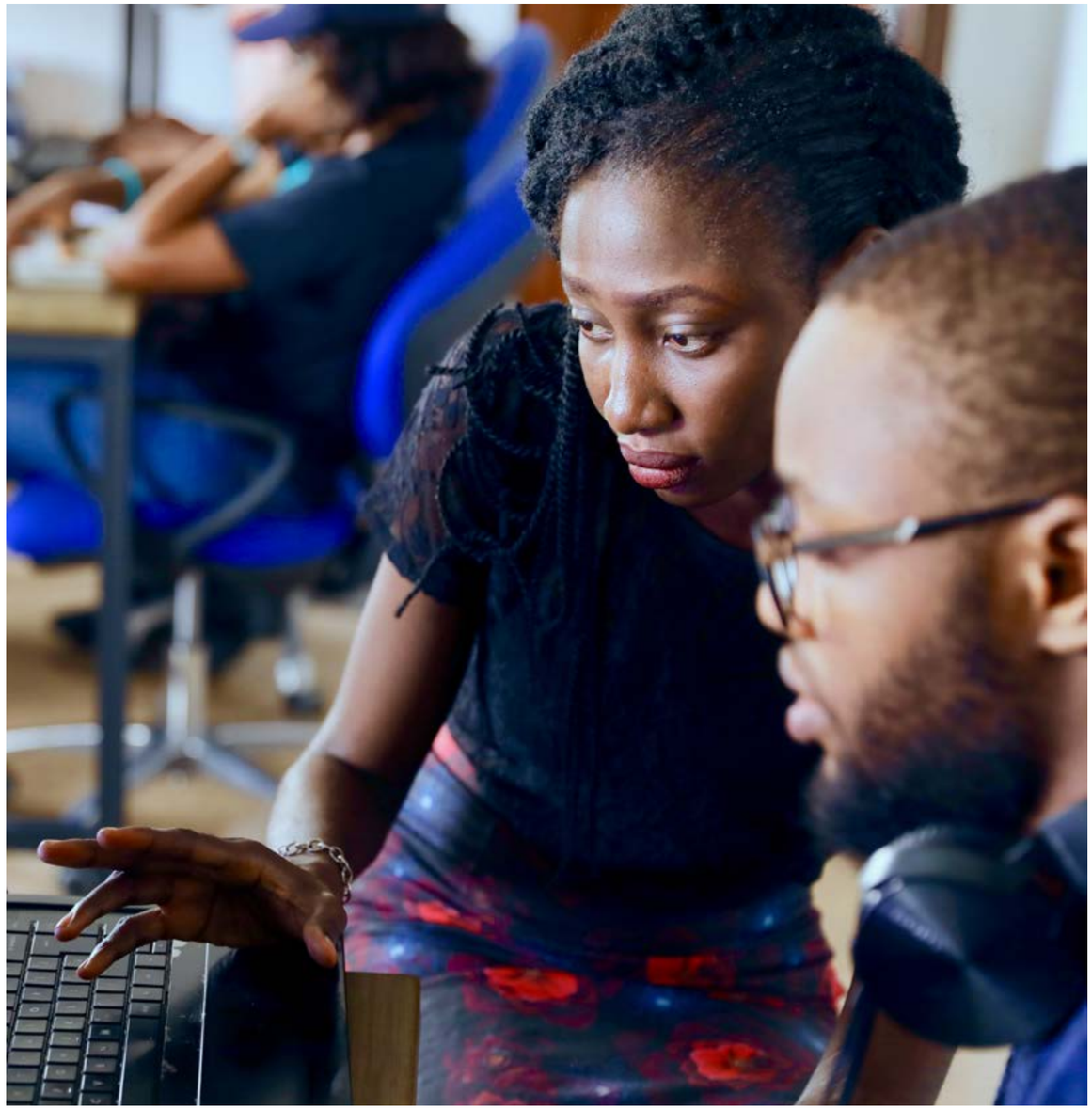
Industrialize AI tools and teams to create an AI core

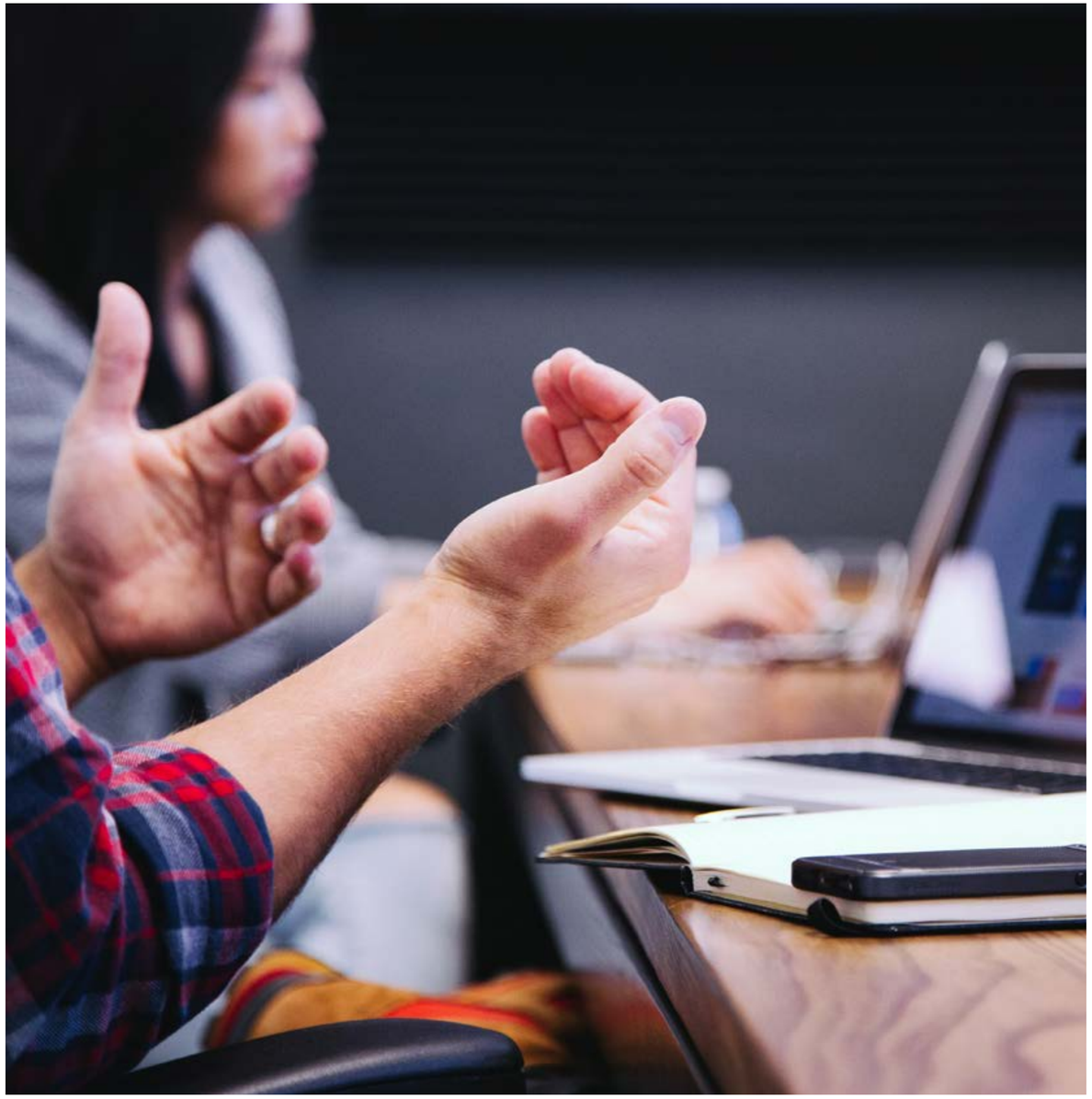
Another priority for Achievers involves building an AI core: an operational data and AI platform that taps into company talent, technology and data ecosystems, allowing firms to balance experimentation and execution. An AI core helps organizations productize their AI applications and integrate AI into other applications, which makes differentiation with AI more seamless.

An AI core also works across the cloud continuum (e.g. from migration to innovation), provides end-to-end data capabilities (foundation, management and governance), manages the machine learning lifecycle (workflow, model training and model deployment) and provides self-service capabilities. AI cores are, in turn, managed by dedicated interdisciplinary teams of machine learning engineers, data scientists, data-domain experts and systems engineers.

To build AI cores, Achievers harness the power of internal and external data, making that data trustworthy and storing it in a single enterprise-grade cloud platform—complete with appropriate usage, monitoring and security policies. Interestingly, 80% of North America-based organizations (vs. 75% globally) have already re-worked their strategy and cloud plans to achieve AI success.

To extract value from their data quickly and effectively, Achievers in North America are 72% more likely, on average, than Experimenters to either develop custom-built machine learning applications or work with a partner that offers solutions-as-a-service.





Achievers are also more likely than Innovators to use AI for innovation, tapping into readily available developer networks that can swiftly productionize and scale successful pilots.

A major insurer used to rely on its employees to manually administer claims—a tedious process that cost more than $500 million annually. The company explored native cloud-storage systems and AI with the goal to store, analyze and track images and other unstructured data to support claims processing. By industrializing its AI tools and teams, the company targeted efficiency gains of 5% in its first year alone, with longer-term cost savings of more than $100 million annually.

As part of its wider data and AI transformation, **A US-based food company** plans to pilot a data and analytics factory scale platform. Once formalized, this effort will help support alerts, transparency and collaboration; increase agility and responsiveness; and ultimately drive revenue uplift.

To strengthen their AI cores, Achievers often collaborate with external experts to stay on top of breakthroughs in science and engineering. In 2020, for example, **American Express** partnered with the Indian Institute of Technology Madras to create a data analytics, risk and technology laboratory at the prestigious university.[6] Such innovation ecosystems help Achievers develop AI apps tailored specifically to their needs and to help keep up with consumer demands.

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Success Factor 04

Design AI responsibly, from the start

As companies deploy AI for a growing range of tasks, adhering to laws, regulations and ethical norms is critical. The potential for regulatory changes in many countries makes the challenge to build a sound data and AI foundation even more daunting.

In a separate Accenture study of 850 C-suite executives, we sought to gauge attitudes toward AI regulation and assess organizations' readiness to comply. Nearly all (97%) respondents believed that regulation will impact them to some extent, and 77% indicated that compliance is a company-wide priority. Interestingly, many organizations view AI regulation as a boon rather than a barrier to success.

The ability to demonstrate high-quality, trustworthy AI systems that are "regulation ready" will give first movers a significant advantage in the short and long term, enabling them to attract new customers, retain existing ones and build investor confidence.

Achievers are consciously applying responsible AI with greater urgency than their peers. Achievers in North America are 47% more likely than Builders and four times more likely than Innovators, on average, to be "responsible by design." This means they are not only designing, developing and deploying AI with good intentions to empower employees and businesses, but also fairly impacting customers and society.

Achievers, then, engender trust and can scale AI with confidence.

For all companies, being responsible by design allows for an improved ability to meet future requirements, better mitigate risks and create sustainable value for themselves and their stakeholders.

A global investment and wealth management firm understands that AI's potential for generating growth opportunities will reach greater heights when data is collected and used responsibly. The company developed a data and AI ethics framework to support policy and capability development, including implementing new processes and piloting fairness tools.

Its accountability framework and roadmap will close the gap between ethical values and existing control frameworks and assessments, mitigating the risks of data misuse and supporting the company's scaling AI agenda. The company continues to explore the roles of AI leaders, enablers and practitioners when it comes to key topics like accountability and technical support. And in partnership with Accenture, the firm is ensuring that its data ethics program implements ethical data processing across teams and practices.

Even though only 3% of the North American companies surveyed had already implemented responsible AI practices, nearly half (45%) aspire to scale such frameworks by the end of 2024.

In 2018, Achievers in North America devoted 11% of their total technology budgets to AI. In 2021, that rose to 25%. By 2024, they plan to devote 31%.

Success Factor 05

Prioritize long- and short-term AI investments

To avoid being left behind, most companies need to increase their spending on data and AI. One reason Achievers get more out of AI is simply because they invest more in it.

Achievers also understand that their AI investment journey doesn't have a finish line. There is, as they frequently note, no "peak AI." For Achievers, continued investment largely involves expanding the scope of AI to deliver maximum impact, while "cross-pollinating" AI solutions and redeploying resources in the process.

As part of its efforts to create a more data-driven organization that can offer customers highly personalized digital service, **a global retail company** migrated from legacy databases to advanced cloud databases and analytics. It also built approximately 100 high-value AI products that create detailed customer profiles, help the company better optimize inventory and prices, and deliver next-generation services that will improve the lives of its valuable customers.

The share of AI Achievers in North America will increase rapidly and significantly, nearly tripling from the current 7% to 20% by 2024.

Practice makes progress

Practice makes progress

The concept of using AI to solve business problems isn't new.

By 2019, there was evidence that scaling AI beyond proofs of concept had a significant impact on ROI.[7] Then the pandemic hit. For many organizations, enterprise-wide transformation was a means of survival. For others, it quickly became a catalyst to thrive. The US saw a spectacular recovery in overall M&A activity, powered by key partnerships focused on enhancing research and development in AI. This, coupled with the boom in overall private investment for AI-funded companies, led to the emergence of the US as an AI investment hub (leading the world in overall private investment in funded AI companies).

AI Achievers are thriving. Across industries, they've moved past cloud migration to innovation. They've capitalized on cloud's scale and computing power to tap into new data sources and widely available AI technologies. But AI alone isn't their secret to superior performance. It's how they're approaching AI that makes them different. They've established that AI maturity is as much about people as it is about technology. As much about strategy as it is about implementation. As much about responsibility as it is about agility.

While Achievers are advanced relative to their peers, they'll set even higher standards for performance as their own maturity evolves.

Every organization should be asking questions to assess its own AI maturity. To help get started, Figure 7 has some sample questions for C-suite leaders, according to Accenture's AI maturity assessment. There are also tools available to help benchmark AI maturity and establish clear paths to progress and performance.

As AI technologies become more prevalent, the future of business is going to look very different—some companies will lead the change, but the majority will be subjected to it. Those that transform will be the ones whose teams master the art of AI maturity, using cloud as the enabler, data as the driver and AI as the differentiator.

How can AI help you differentiate?

Figure 7: AI maturity assessment: sample questions for C-suite leaders

Category	Key questions
Strategy and Sponsorship	• Does your C-suite have clear accountability for data and AI strategy and execution? • How do you identify potential value, and how are business cases prioritized—considering the potential risks and alignment with the overall strategy of the organization? • Are you allocating enough delivery resources to build AI products and services in-house, and are you able to get the most out of your ecosystem partners?
Data and AI Core	• To what extent do you have a cloud platform and technology strategy that supports your AI strategy? • Do you have an effective, enterprise-wide data platform, as well as strong data management and governance practices, to meet business needs? • Are you using data science and machine learning teams effectively across the lifecycle of AI development?
Talent and Culture	• Is your data- and AI-literacy strategy aligned to your business objectives? • To what extent have you prioritized data and AI fluency for senior leaders, business stakeholders and employees across your organization? • Do you have a holistic talent model to scale, differentiate, retain and develop AI talent (diverse, dedicated teams of machine learning engineers, data scientists, data-domain experts and data engineers)? • How are you institutionalizing a data and AI culture within your organization?
Responsible AI	• Do you have an enterprise-wide framework to help you operationalize responsible data and AI from principles to practice? • Are you applying a consistent and industrialized responsible data and AI approach across the complete lifecycle of all your AI models? • Are you methodically tracking the evolution of AI-related laws and regulations across the different jurisdictions in which you operate, while anticipating and preparing for future changes?

Source: Accenture Research

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Appendix

Survey
From August to September 2021, Accenture surveyed 1,615 C-suite executives at 1,176 of the world's largest companies—present in 16 industries and headquartered in 15 countries. In this report, we have highlighted the AI maturity trends in North America.

Interviews and case studies
We interviewed 25 CEOs, Chief Data Officers and Chief Analytics Officers. We also interviewed Renée Richardson Gosline (Senior Lecturer at MIT Sloan School of Management and Principal Research Scientist at MIT's Initiative on the Digital Economy) and Christine Foster (Chief Commercial Officer at The Alan Turing Institute), as well as numerous AI experts at Accenture. Through research and client work, we also developed over 40 company case studies on AI transformation.

Design thinking
We ran a MURAL session with more than 15 senior data scientists to validate our AI maturity model.

Economic modeling and data science
To assess companies' AI maturity, as well as other measures of performance, we took the following steps:

1. Identified key capabilities of AI maturity
We sought to understand the key capabilities that contribute to reaching both an "entry" level of AI maturity (i.e. deriving at least 10% of revenues from AI-influenced initiatives from 2018 to 2021) and a higher level of AI maturity (i.e. deriving more than 30% of revenues from 2018 to 2021). To do this, we built two machine learning models that account for more than 80 capabilities that contribute to the two different levels of AI maturity (see box below).

$$R_i = \beta_0 + \beta_i X_{it} + \beta_2 \text{ Capabilities}_{it-1} + \beta_3 \Delta\text{Capabilities}_{it} + \beta_4 \text{Capabilities Interactions}_{it,t-1} + e_{it}$$

R_i represents the level and evolution of a company's AI-influenced revenues (sustaining at >10%, reaching >30%) With i = company, t = 2021 and t-1 = 2018, X_{it} includes controls for industry, firm size and company location (country).

The model is a linear probability Lasso model, a K-fold cross-validation with 10 folds performed.

2. Defined "foundational" and "differentiation" capabilities
In our models, we classified $\text{Capabilities}_{it-1}$ and $\Delta\text{Capabilities}_{it}$ as AI foundational capabilities; $\text{Capabilities Interactions}_{it,t-1}$ are—as the name suggests—capabilities with interaction, with strong senior sponsorship and a well-defined AI strategy. We classified these interaction terms as AI differentiation capabilities.

From our models, we discovered that AI foundational capabilities have stronger explanatory power in the first model of "sustaining at >10%" than AI differentiation capabilities; in the second model of "reaching over >30%", AI differentiation capabilities have stronger explanatory power. In other words, AI foundational capabilities are essential to building the necessary foundation for organizations to enter the AI race. Meanwhile, AI differentiation capabilities are key for organizations to reach the next level of AI maturity.

3. Built the AI maturity index
We built two indexes that measure companies' AI foundational capabilities and AI differentiation capabilities, respectively, as identified by our two models. An overall AI maturity index is built as the arithmetic average of both AI foundational index and AI differentiation index, which is indicative of their probability of achieving high AI-influenced revenue. The median maturity index of all companies is 36/100.

4. Constructed AI profiles based on foundational and differentiation capabilities

The AI foundational capabilities and AI differentiation capabilities indexes were then used to construct a matrix. We used the top quartile as a threshold on both axes to cluster all the companies from the survey into four groups:

- AI Achievers—the top quartile on both foundational and differentiation median maturity index: 64/100;
- AI Builders—the top quartile on foundational but not on differentiation median maturity index: 44/100;
- AI Innovators—the top quartile on differentiation but not on foundational median maturity index: 50/100;
- AI Experimenters—all remaining companies median maturity index: 29/100.

5. Measured Achievers' financial premium

To assess AI Achievers' financial performance, we used data from S&P Capital IQ to build the following regression model: Revenue growth$_i$ = $\beta_0+\beta_1 X_i + \beta_2$ AI Achiever + e_i (i = company, AI Achiever as the dummy variable, and X_i including controls for industry, firm size, and company location).

6. Measured Achievers' stakeholder performance

To assess Achievers' stakeholder performance in the areas of customer experience, sustainability, workforce, and supply chain, we built scores from 0-100 in these respective areas using data from FactSet, Arabesque, Oxford Economics, and S&P Capital IQ, which measure companies' performance against their industrial peers. The difference between Achievers and other companies is highly statistically significant ($p < 0.01$) for customer experience and sustainability.

The following offers more detail on each area.

- Customer experience reflects how companies strengthen their sales pipeline by developing strong customer relationships; our measures include consumer trust, customer churn, product quality and safety, and an overall customer-centric mindset.
- Sustainability reflects how companies strengthen their commitment to environmental stewardship; our measures include greenhouse gas emissions, ecological management, resource use, water and waste efficiency, and various environmental solutions.
- Financial reflects how companies deliver profitable growth and operate efficiently.
- Workforce/employee experience reflects how companies unlock their workforces' full potential; our measures include compensation, employment quality, employee turnover, occupational health and safety, and training and development.
- Supply chain reflects how companies manage risks associated with their supplier networks and inventory levels; our measures include supplier diversification, supplier risk, and inventory management.

7. Measured the speed of AI transformation vs. the speed of digital transformation

To understand how fast companies undergo AI transformation compared to digital transformation, we used the frequency of mentions of both terms on companies' earnings calls as a proxy. To do this, we performed a natural language processing analysis of investor calls of the world's 2,000 largest companies (by market capitalization), sourced from the S&P earnings transcripts database. (Note: Our analysis included 744 companies with a consistent history of earnings calls during 2010-21.) Finally, we built predictive S-Curve models that estimated the time, henceforth, that it would take for 90% of such companies to mention the aforementioned terms on their earnings calls.

Key Capabilities

Strategy and Sponsorship

1. **Senior Sponsorship:** Organizations have an AI strategy that is developed by the Chief Analytics Officer, Chief Data Officer, Chief Digital Officer or an equivalent. The CEO and the Board actively sponsor and share accountability for the strategy and associated AI initiatives.

2. **AI Strategy:** Organizations not only have a core AI strategy aligned to the overall business strategy, but they also dedicate tools and tactics to execute it and continuously track their performance against that strategy.

3. **Proactive vs. Reactive:** Organizations have the resources (such as technology, talent and patents) to proactively define and demonstrate how AI can create value vs. apply AI as a reaction to a need. They're first-movers instead of fast followers in terms of applying AI for business value.

4. **Readily Available AI and ML tools:** Organizations work with an ecosystem of technology partners to access machine learning models and tools to help innovate new products and services.

5. **Readily Available Developer Networks:** Organizations tap into an ecosystem of technology partners to access developer networks that support the development of new products and services.

Data and AI Core

6. **Build vs. Buy:** Organizations develop custom-built AI applications or work with a partner who offers solutions-as-a-service, vs. purchase "off-the-shelf" AI solutions with little-to-no customization.

7. **Platform and Technology:** Organizations apply the necessary cloud, data and AI infrastructure, software, self-serve capabilities and industry best practices, and they adopt the latest tools available from platform and technology partners.

8. **Experimentation Data—Change:** Organizations improved their use of experimentation data between 2018 and 2021, effectively translating into a higher data and AI maturity. Experimentation data is the use of internal and external data to design new models and generate new insights. To do that, organizations use enterprise-grade cloud platforms to keep data clean and trustworthy, and to support decision making at greater speed and scale.

9. **Data Management and Governance:** Organizations scale their data management and governance practices to increase data quality, trust and ethics across entities —e.g. by implementing master data management and ensuring security, compliance and interoperability.

10. **Data Management and Governance—Change:** Organizations improved their data management and governance practices between 2018 and 2021, effectively translating into a higher data and AI maturity.

Talent and culture

11. **Mandatory AI Training:** Organizations enforce AI-specific training programs to improve AI fluency, which are tailored for senior leadership and specific functions, e.g. salesforce, product engineers, etc. They also create deliberate opportunities for employees to learn and apply AI in their roles.

12. **Employee Competency in AI-Related Skills:** Organizations regularly measure the competency level of employees to determine where further training is needed to improve overall acumen. They measure and build expertise in critical areas like coding, data processing and exploration, business analytics, domain and business acumen, machine learning, visualization and more.

13. **Innovation Culture Embedded:** Organizations ensure innovation is part of the day-to-day work environment. They encourage mindsets, behaviors and routines that all serve as a vehicle for experimentation, collaboration and learning from ideation to product development to market launch.

14. **Innovation Culture Encouraged:** Organizations promote and reward innovative mindsets and behaviors including entrepreneurship, collaboration and thoughtful risk-taking.

15. **AI Talent Strategy:** Organizations have an AI talent strategy—hiring, acquiring, retention—that evolves to keep pace with market or business needs. They also have an AI talent roadmap for hiring diverse AI-related roles, beyond just ML engineers—such as behavioral scientists, social scientists, and ethicists.

Responsible AI

16. **Responsible AI:** Organizations have an industrialized, responsible approach to data and AI across the complete lifecycle of their AI models—an approach that can meet changing regulatory requirements, mitigate risks, and support sustainable, trustworthy AI.

17. **Responsible AI—Change:** Organizations have improved their responsible data and AI practices between 2018 and 2021, effectively translating into a higher data and AI maturity.

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Applied Intelligence is Accenture's approach to scaling AI for clients by embedding AI-powered data, analytics and automation capabilities into business workflows, accelerating time to value with a powerful global alliance, innovation and delivery network that can deploy and scale AI within any market and industry.

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