Nordic AI Maturity

Advancing from practice to performance

Voices of Change

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

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Foreword by Per Österman

Since leaving the worst of the pandemic behind us, the European market has faced new challenges: ongoing war, an energy crisis and rising inflation. But we have also seen technology and human ingenuity help people persevere through difficult situations. One technology in particular, artificial intelligence (AI), has been applied in more ways than ever before—expediting immigration permits for refugees, advancing medical research and patient care, predictive maintenance, managing supply chain crises and innovating direct-to-consumer value chains.

Pre-pandemic, AI adoption was already in high gear in Europe, but the transformational journey to maturity in AI is accelerating even more rapidly as investments in cloud grow. AI enables speed to insights, enabling clients to make faster and better-informed decisions. So, it is no surprise that 32% of Nordic business leaders mentioned AI in their earnings calls last year—and often saw their share prices increase, too.

It's not a stretch to suggest that AI will emerge as a crucial component of the EU Commission's digital future agenda. But we still have a long way to go. Though AI adoption has gained momentum, our research shows that only 6% of Nordic companies (compared to 12% of European companies) can be categorized as AI Achievers (companies leveraging AI's full potential).

The tenets that will help Nordic companies progress in their AI transformation journeys and keep pace with the rest of

Europe include a strong cloud foundation to scale AI, alignment of strategy and sponsorship, AI talent and culture, and the responsible deployment of AI.

The good news is that the groundwork has already been laid—with 78% of organizations having reworked their strategy and cloud infrastructure plans in the last few years to achieve AI success. With more companies in the Nordics experimenting with AI, the region is in "pole position" to more than double the number of AI Achievers by 2025. In addition, upcoming EU AI regulations will also formalize standards for AI development, including generative AI technologies (like GPT-4 and DALL-E 2), further building confidence and trust in the sector's potential and real-world applications from AI practitioners and investors alike.

Across Europe, AI is set to play a critical role in alleviating sustainability concerns, trade imbalances, supply chain issues and regulation changes. AI, when used strategically, can bring meaningful change for people, the planet and profit centers—helping companies not only survive economic downturns and related challenges, but also thrive despite them. However, only those organizations that invest in maturing their AI capabilities now will be resilient enough to stamp their impact on our collective futures. As Winston Churchill once said, "Never let a good crisis go to waste."

78%

of organizations having reworked their strategy and cloud infrastructure plans in the last few years to achieve AI success.

Executive summary

Nordic companies are yet to take full advantage of everything that AI can do

Artificial Intelligence is no longer hype—we're seeing practical implementations in the day-to-day business operations of Nordic companies. Specifically, AI is a key part of products and services improving operational efficiencies vis-à-vis increasing productivity, enhancing worker and customer experiences, and building new synergies that were unimaginable a few years back.

Each of those benefits has been shown to improve a business's bottom line, too. According to Accenture's AI Maturity – Nordic Survey, conducted between September and October 2022, 15% of participating companies said the return on their AI initiatives exceeded their expectations, while only 1% of companies said the return did not meet expectations. Still, it's early days, and to further capture demand and win customers, Nordic companies must work differently across business and ecosystem partners.

Nordic countries rank high in the 2021 Government AI Readiness Index, according to "The Nordic AI and Data Ecosystem, 2022."[i] But executives understand that without a significant investment into AI from both the public and private sectors, the Nordic AI landscape cannot be elevated on a global AI map. Our research shows Nordic companies are planning an increase of budget dedicated to developing and implementing AI products and services. In 2019, Nordic companies devoted 10% of their total technology budgets to AI, on average, while in 2022 they devoted 19%. That figure is expected to grow to 27% by 2025. However, Nordic companies are still behind their European Achievers, who aim to dedicate about one-third of their total IT budget towards data and AI by 2024, creating more data- and AI-driven organizations in the process.

One way to catch up to continental competitors is enabling value chain optimization end-to-end. And our research shows that 48% of Nordic companies are optimizing their use of data and operating on enterprise-grade cloud platforms. And 44% of Nordic companies are actively addressing potential societal harms through techniques such as AI design co-creation, stakeholder impact assessments, consequence exercises, human-AI interaction design guidelines and environmental AI KPIs. But silos still exist, so Nordic companies must continue to encourage the sharing of experimental data that is AI relevant and increasing AI stakeholders within an organization, so that they can reap the full benefit of AI across the enterprise value chain.

Presently, the financial services, health & public services and communications & high-tech sectors are fast emerging as the front-runners increasing their AI index in the next three years. But favorable economic and technology policies will help Nordic companies of all types make significant leaps in their AI maturity.

What do AI Achievers do differently?

While there is clearly a science to AI, our findings demonstrate there is an art to AI maturity. We discovered in our recent global AI research that 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.**

Further, our machine learning models suggest that the share of Nordic AI Achievers will increase rapidly and significantly, more than doubling from the current 6% to 15% by 2025.

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

AI maturity: Why it matters

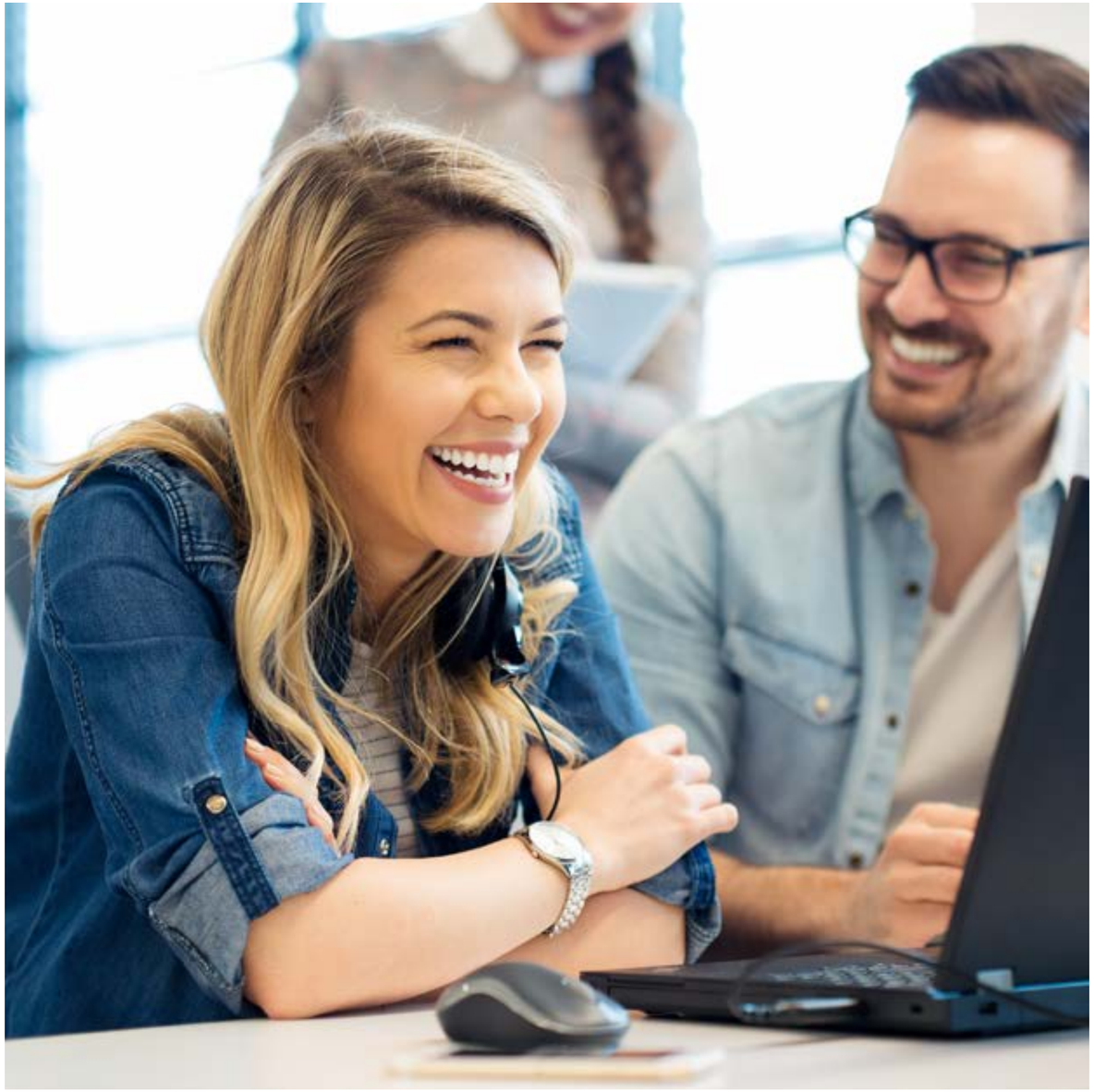
AI maturity: Why it matters

From optimizing operations to freeing up workers to be more creative, AI offers businesses a range of benefits that are becoming essential elements of competitive advantage. Intelligent, data-driven support systems can help businesses reimagine the way they build new products, serve customers and differentiate themselves in an increasingly competitive digital economy.

As a result, we're seeing close to half of Nordic companies shift their AI focus from developing proofs of concept (PoCs) to launching AI-powered products and services. And 78% of Nordic companies have adjusted their cloud strategy to align more closely with the progressing AI strategy to achieve AI success (compared to 73% of firms globally).

This clearly reflects the way Nordic executives perceive AI: They're taking ownership of AI programs. Our survey of more than 100 C-suite executives and data science leaders from the Nordic region found that AI strategy is being developed in the C-suite in new roles such as Chief Analytics Officers, Chief Data Officers and Chief Digital Officers, all of whom are working in close collaboration with CEOs and board members.

So, it's no surprise that the percentage of executives of the largest Nordic companies mentioning AI on their earnings calls is constantly growing – up to 32% in 2022 from 21% in 2017. What's more, in 2022, the largest Nordic companies were 6% more likely to see share prices increase when executives discussed AI on earnings calls, up from just 1% in 2018. In 2021, this figure was a staggering 36%, according to analysis by Accenture.[ii]



As always, execution is everything. And based on our client experience, it is important that CEOs and senior leaders focus on maturing their investment efforts and strategies to drive value and achieve desired AI outcomes. Timely and effective action is key to realizing growth, seizing market share and creating new value for all stakeholders.

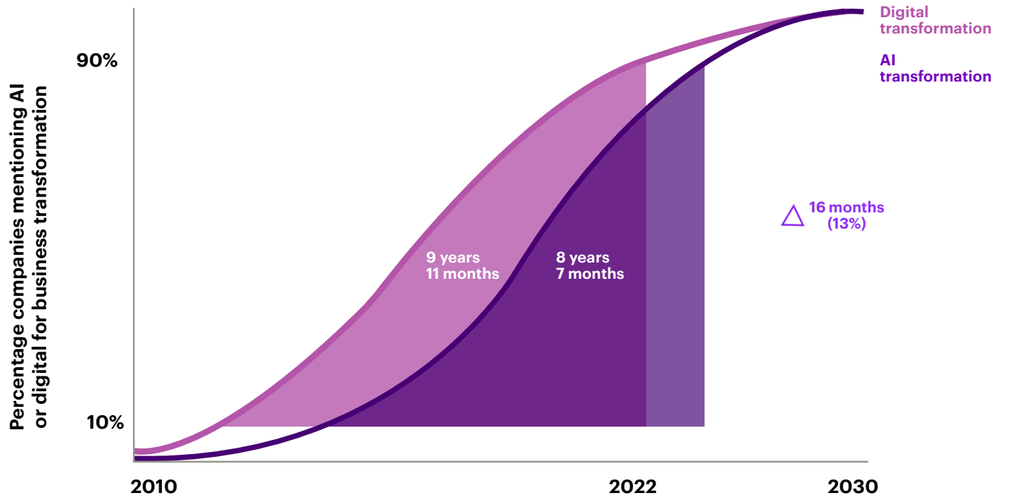
AI, accelerated

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

Our research suggests that Nordic companies are making a significant and timely push to strengthen their AI capabilities:

- Top priorities for Nordic companies are developing AI products and services (48%), improving ecosystem partnerships for innovation (46%), increasing operational efficiencies (43%), reimagining experience for customers and workers (43%) and seeking new growth opportunities (40%) over the next three years.
- Companies in the Nordic countries are planning a significant increase of budget dedicated to developing and implementing AI products and services from 2022 to 2025: +43% (global average: +37%).
- Presently, only 11% of Nordic companies dedicate more than 30% of their tech budgets to AI development, but by 2025 33% of companies intend to do so.

Figure 1: Accenture projects that AI transformation will take less time than digital transformation

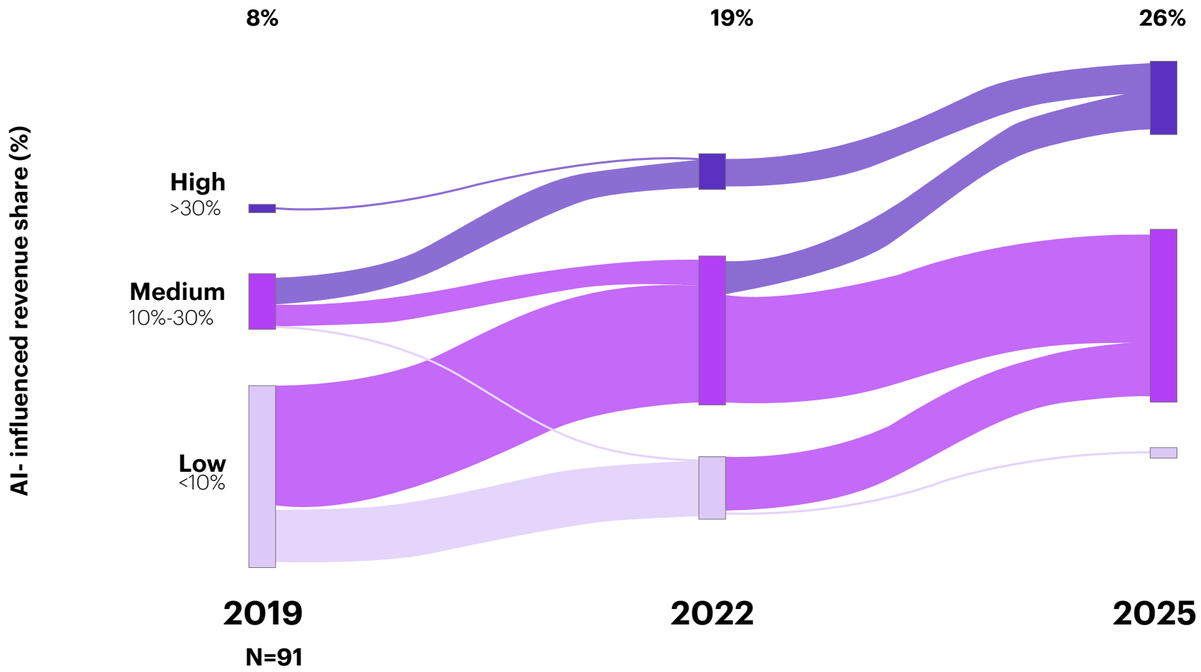


Source: Accenture Research

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 incentive to move quickly. We uncovered significant growth in Nordic companies' AI-influenced revenue share from 2019 to 2025. AI-influenced revenue doubled between 2019-22 (8% in 2019 to 19% in 2022), and is predicted to triple over the next three years (to 26% in 2025).

Figure 2: Evolution of companies' AI-influenced revenue share – 2019, 2022, and 2025*



Note: Color indicates the achieved AI-influenced revenue threshold within each time period.

Source: Accenture AI Maturity Nordic Survey, September – October 2022

Note: *2025 = projected

Legend:
High >30% | **Medium** 10%-30% | **Low** <10%

*Definition of "AI-influenced" revenues:

a. 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 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—to give companies a strong competitive advantage.

This includes "foundational" AI capabilities—like cloud platforms and tools, data platforms, architecture, and governance—that are required to keep pace with competitors. It also includes "differentiation" AI capabilities, like AI strategy and C-suite sponsorship, combined with a culture of innovation that can set companies apart.

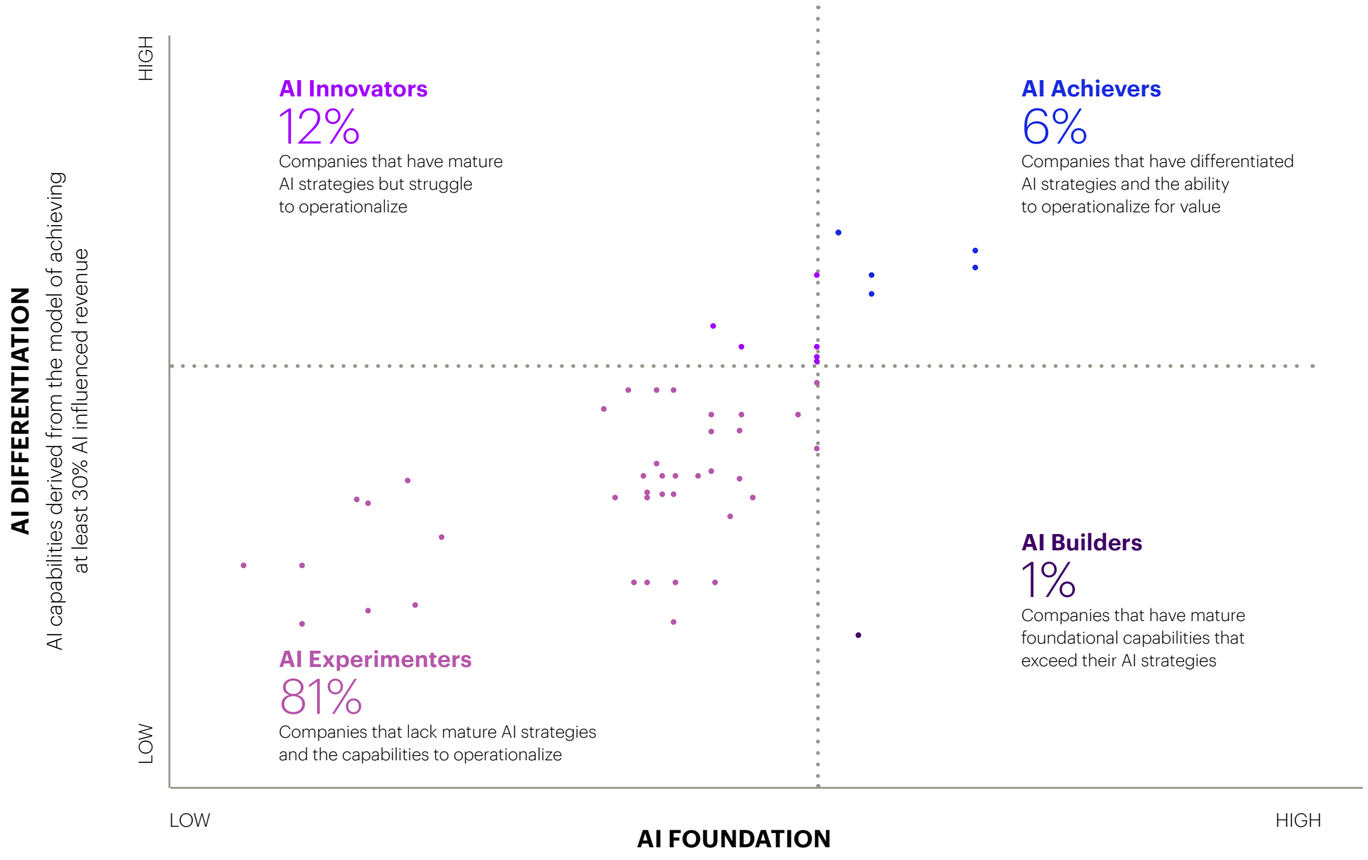
AI maturity measures the degree to which organizations have mastered AI-related capabilities in the right combination to achieve high performance for customers, shareholders and employees.

The companies that scored best in both categories are the AI Achievers. AI Builders show strong foundational capabilities and average differentiation capabilities, while AI Innovators show strong differentiation capabilities and average foundational capabilities.

According to our research, only 6% of the Nordic companies (vs. 12% globally) have both the foundation and differentiated strategy to fully capitalize on the power of AI. These organizations have advanced their AI maturity enough to achieve superior growth and business transformation. We call them AI Achievers.

Achievers, Builders and Innovators collectively represent just 19% (vs. 37% global) of the surveyed Nordic companies (Figure 3). These companies tend to have more resources (such as technology, talent and patents) to deliver on their AI visions and transform their organizations. Examples can be found across a wide range of industries: Financial Services;

Figure 3: Only 6% of Nordic organizations are AI Achievers



AI Foundational capabilities that are key drivers to achieving at least 10% AI influenced revenue

Source: Accenture Research analysis based on a sample of 91 Nordic companies. Thresholds are defined as top 25% of samples in both axes.

Health and Public Service (H&PS); Communications, Media and Technology (CMT); Resources (Energy, Natural Resources and Utilities); and Products (Consumer Goods & Services, Retail, Industrial Equipment, Automotive).

A fourth group we are calling AI Experimenters—those with average capabilities in both categories—make up the majority (81%) of those surveyed. These numbers suggest that a considerable number of companies may struggle to make the foundational and cultural shifts needed to realize of the promises of AI.

In general, the Nordic region benefits from a high degree of digital literacy and a supportive tech infrastructure. But many Nordic companies see cultural challenges within organizations as a barrier in scaling AI (one of top 3 challenges for 30% of respondents). Another barrier is the inability to set up an organizational structure that supports continuous innovation enabled through AI (25%).

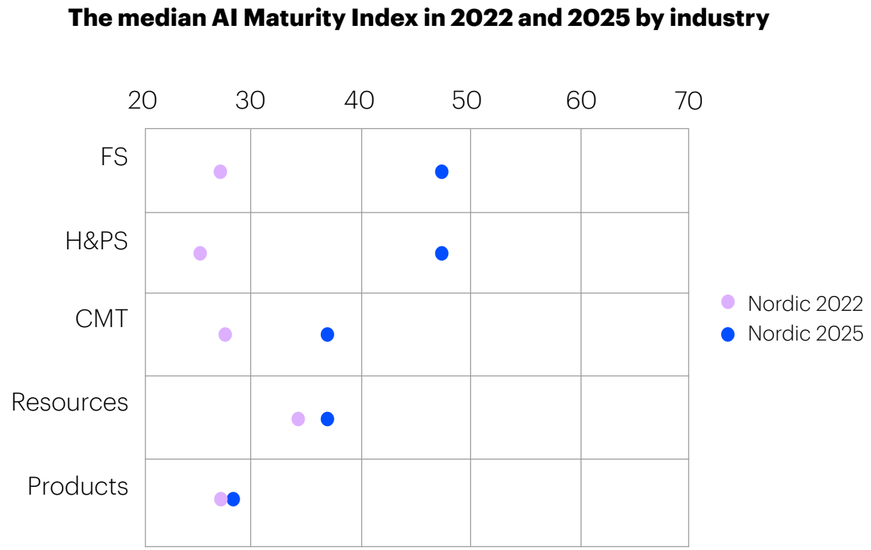
According to our research, only in 1% of Nordic companies do data and AI experts work hand-in-hand with the business leaders to drive the strategic agenda of the organization. In those companies, data science capabilities are fully integrated as strategic capabilities. In addition, among this 1%, a company's strategic roadmap and budget are aligned with data science initiatives at the C-Suite level.

AI, applied

Currently, the Resources industry is ahead of others sectors in its respective AI maturity.

PiiA (Process Industrial IT and Automation)[iii] and the Sustainable Process industry through Resource and Energy Efficiency (SPIRE) have funded many European initiatives to develop AI in process industries, and continue to support resource-based industries in accelerating the development of AI.

Figure 4: Levels of AI maturity by industry in Nordic 'Now' and 'Future' by median



Source: Accenture Research analysis based on a sample of 91 Nordic companies

Note: *2025 = estimated scores. Industries' AI maturity scores represent the arithmetic average of their respective Foundational and Differentiation index.

Other sectors—FS, H&PS and CMT—have so far been lagging because of legal and regulatory challenges, inadequate AI infrastructure and a shortage of AI-trained workers. However, these industries are expected to make significant AI advances and accelerate their AI maturity journey over the next three years.

Fintech is a sector in which Nordic countries are considered AI pioneers globally—but there is always room for expansion and innovation. For instance, P27 is a new Nordic initiative to build the world's first real-time, intelligent cross-border digital payment system in multiple currencies. Here, AI will be used to automate compliance and more quickly detect fraud.

All Nordic countries place a high priority on healthcare, and it is an important sector for AI development within their respective national AI strategies. Sweden and Denmark are particularly strong in life sciences, while Finland has a strong technology focus in the care delivery sector—in hospitals, for example.[iv]

Public services in the Nordics are highly digitalized, and AI is seen to make government more transparent, efficient and accountable. It's easy to point to examples of mature use cases, including secure login solutions for government websites and banks across the region—including NemID in Denmark, Bank ID in Sweden and Norway, and the Platform Altinn in Norway.

As applications like this scale, the region has the potential to quickly transform its economy. And according to a 2020 report by DIGG, Sweden's Digital Administration Authority, AI is estimated to be able to create economic value in public activities equivalent to SEK 140 billion annually (USD $13 billion).[v] To support this growth, open data initiatives in the public sector are becoming more common—for example, in 2021, the Swedish government launched an initiative to support municipalities to make better use of AI technologies, backed by SEK 100 million in funding.[vi]

AI, applied across industries

A global home appliance manufacturer's leadership had a clear agenda and vision for the future of the company—they wanted to be data led. The CIO and CDO knew they needed to tackle the organizational complexity that was impacting the company's data pipeline. To do this, the company launched a major initiative to reshape the company's data strategy, powered by AI and analytics.

Working closely with the global CDO, the company and Accenture designed and implemented the company's three-year business and data strategy, enabling the company to capitalize on its potential by using data to drive value through a supply chain, sales and manufacturing transformation. The manufacturer is now exploring ways to accelerate critical data use cases throughout the business, such as creating a consumer record to enable and improve aftersales revenue, influencing supply chain improvements, and improving forecasting and pricing through intelligent pricing.

A major refining company has hundreds of kilometers of oil and gas pipes in its processing plants. Keeping this large complex running smoothly means constantly monitoring the condition of all pipes, tracking their maintenance and, most importantly, checking for leaks—since leaks are not only costly, but also pose severe risks to safety and the environment. To ramp up inspections, extend the process to new pipelines, and reach its goals for efficiency, safety and environmental sustainability, the company embarked on a proof of concept. And with IoT, data and AI at the heart of its pilot, the company quickly realized a more manageable, scalable and safer inspection system.

Like its industry peers, a leading oil and gas company had an ambition to achieve greater interoperability within its application landscapes and digital workflows. With a suite of software from many different providers, the company began preparing to adopt Open Subsurface Data Universe (OSDU), a single unified platform that would enable the free exchange of data between applications. In just six weeks, OSDU was established and populated with a variety of different data types—a critical first step that will allow the client to accelerate its OSDU journey.

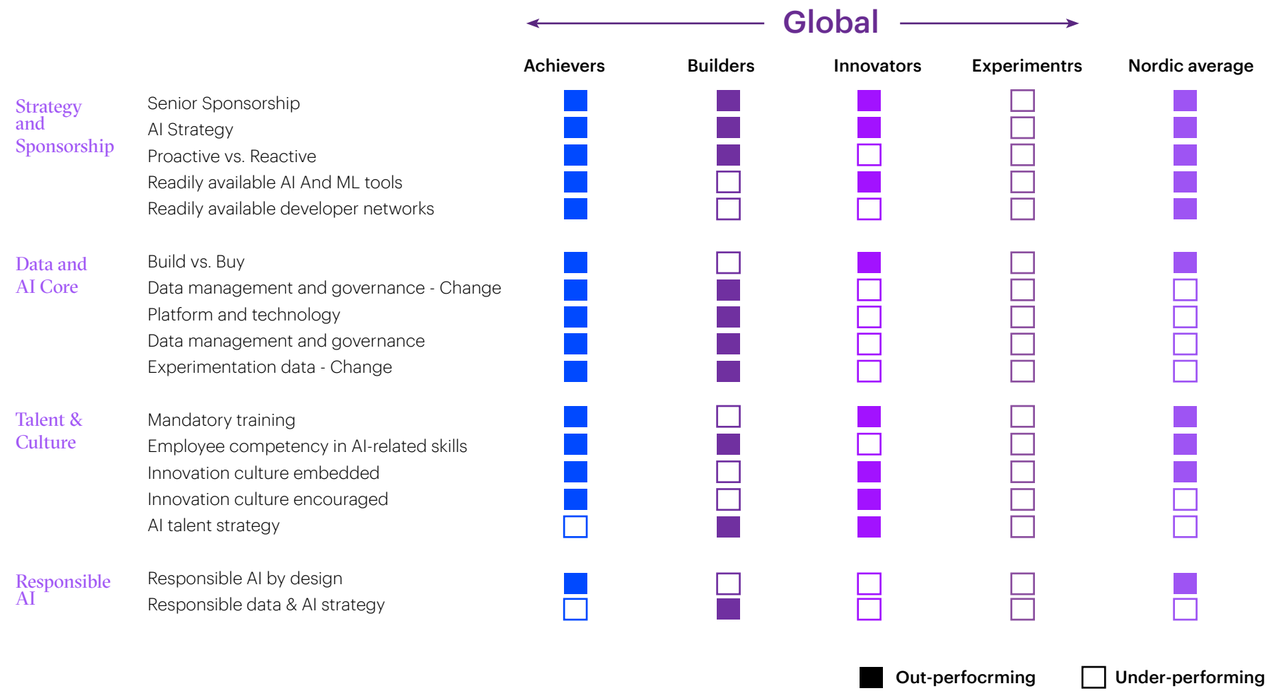
How do Nordic companies compare with global peers in their AI capabilities?

Nordic companies are like Global AI Innovators

With strengths in digitalization, accessibility and transparency, all Nordic countries are ready for the AI era, as per research by the Oxford Insights on Government AI Readiness Index. However, Nordic companies must further develop their data and AI capabilities before they can compete with their global peers.

Currently, Nordic companies resemble global AI Innovators, as they are defined by mature AI strategies but struggle to operationalize (i.e., they have strong differentiation capabilities and average foundational capabilities).

Figure 5: Nordic Companies' AI Capability Compared with Global Peers



Source: Accenture AI Maturity Nordic Survey, September – October 2022

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

Our research shows that some Nordic companies have a robust AI strategy in place, developed and sponsored by senior leadership. These leaders are sensing the impact of AI on business and are proactively helping their organizations leverage readily available AI and machine learning (ML) tools and developer networks that will help teams innovate faster.

In addition, companies in the region are embracing new training opportunities for all employees. And while leaders excel at cultivating AI fluency and establishing the innovation culture needed to drive adoption, many organizations today lack the foundational capabilities required to support AI at scale. More than 40% of Nordic companies have federated/disjoined data processes, creating silos across the enterprise value chain. Their workflows related to data and AI are still scattered in nature, driven by function-specific and project-specific requirements rather than enterprise-wide processes.

Further, Nordic companies have low data management and governance maturity, which is critical to realizing the full value of AI. Two-thirds (65%) of Nordic companies are following the federated/disjoined data management, governance and integration systems. Companies are yet to take practical steps toward forming, documenting and implementing data policies and procedures supporting a data mesh. Considerable progress is still required with respect to data quality, model management and monitoring at scale.

Many Nordic companies are heavy users of cloud and realize the need to establish a robust centralized platform and technology foundation that forms a backbone for enterprise-wide data management capabilities. But few have been through the complete cloud modernization journey. This is limiting the full value companies get from their cloud investment to support AI experimentation and innovation. Our research shows that may soon change: eight out of 10

companies have to some extent reworked their existing cloud strategies to be more in sync with their evolving AI strategy and roadmap.

Nordic organizations are pursuing pilots across multiple functions

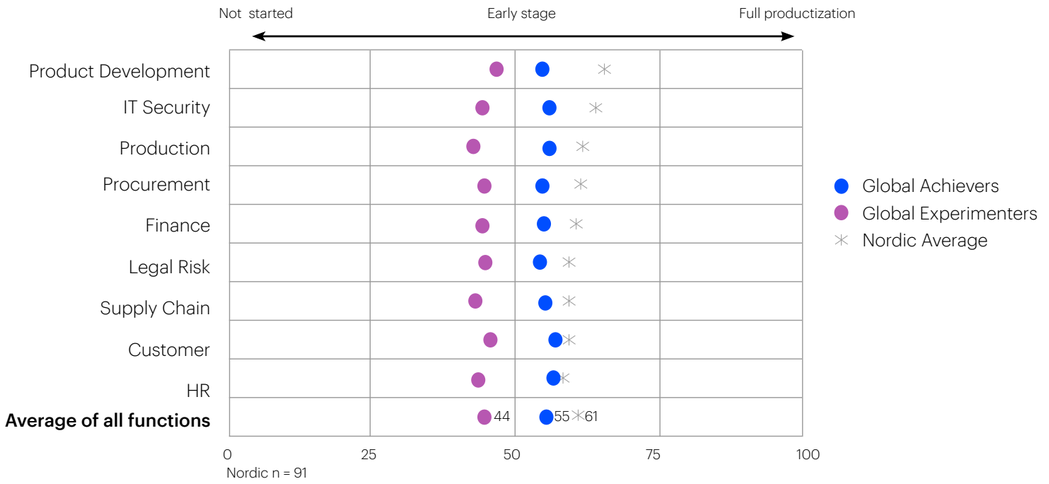
In the Nordic region, companies have a clear vision to be data- and AI-driven but struggle to execute. They understand the value of AI, but they do not know how to scale. Companies across industries are conducting pilots in multiple functions, but a large number of them are in early stages.

For Nordic companies, common barriers to scaling AI include cultural challenges within organizations, an inability to set up an organizational structure that support continuous AI-powered innovation and the lack of viable cloud data solutions to implement an AI strategy.

Transitioning from pilots to production is one of the key challenges for Nordic companies, according to the Nordic AI and Data Ecosystem 2022 report.[vii]

But our research suggests that Nordic organizations will move from pilots to production at scale in the next few years, thanks to a robust private sector, collaborative governments and a digitally mature population with high trust in both the private and public sectors.

Figure 6: Pilots across multiple business functions



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 can be statistically significant after controlling for industry, geography, and company size.

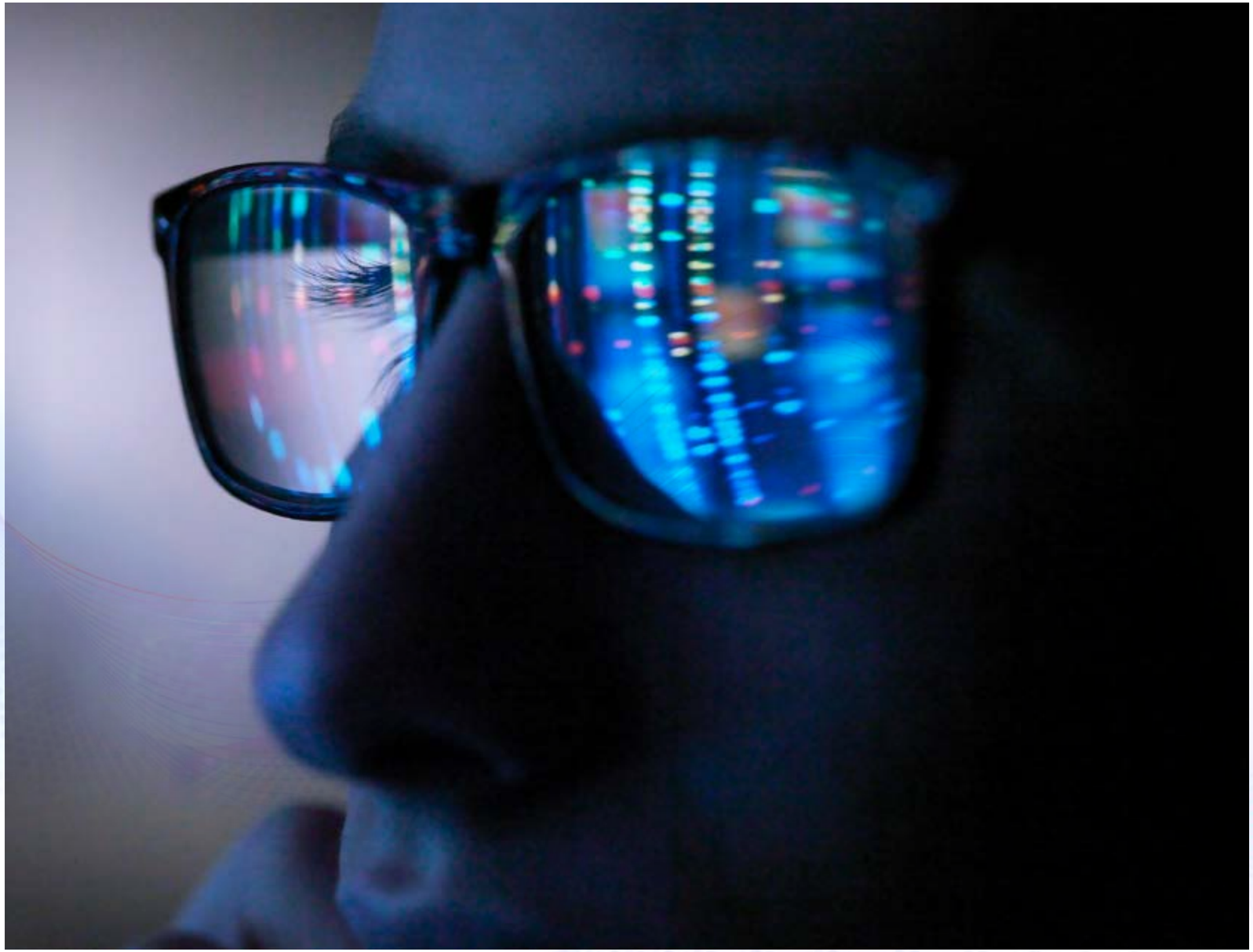
How AI Achievers master their craft

How AI Achievers master their craft

It is worth noting that the potential for AI-mature organizations will evolve along with the technology itself. High performance today will become business-as-usual tomorrow.

Today's AI Achievers have set the standard and are poised to remain leaders. While there is clearly a science to AI, they have shown us there is also an art to AI maturity.

They have demonstrated that excellence in areas like vision and culture are just as critical as algorithmic integrity. Our research uncovered five key success factors for AI Achievers.



Success Factor 01

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

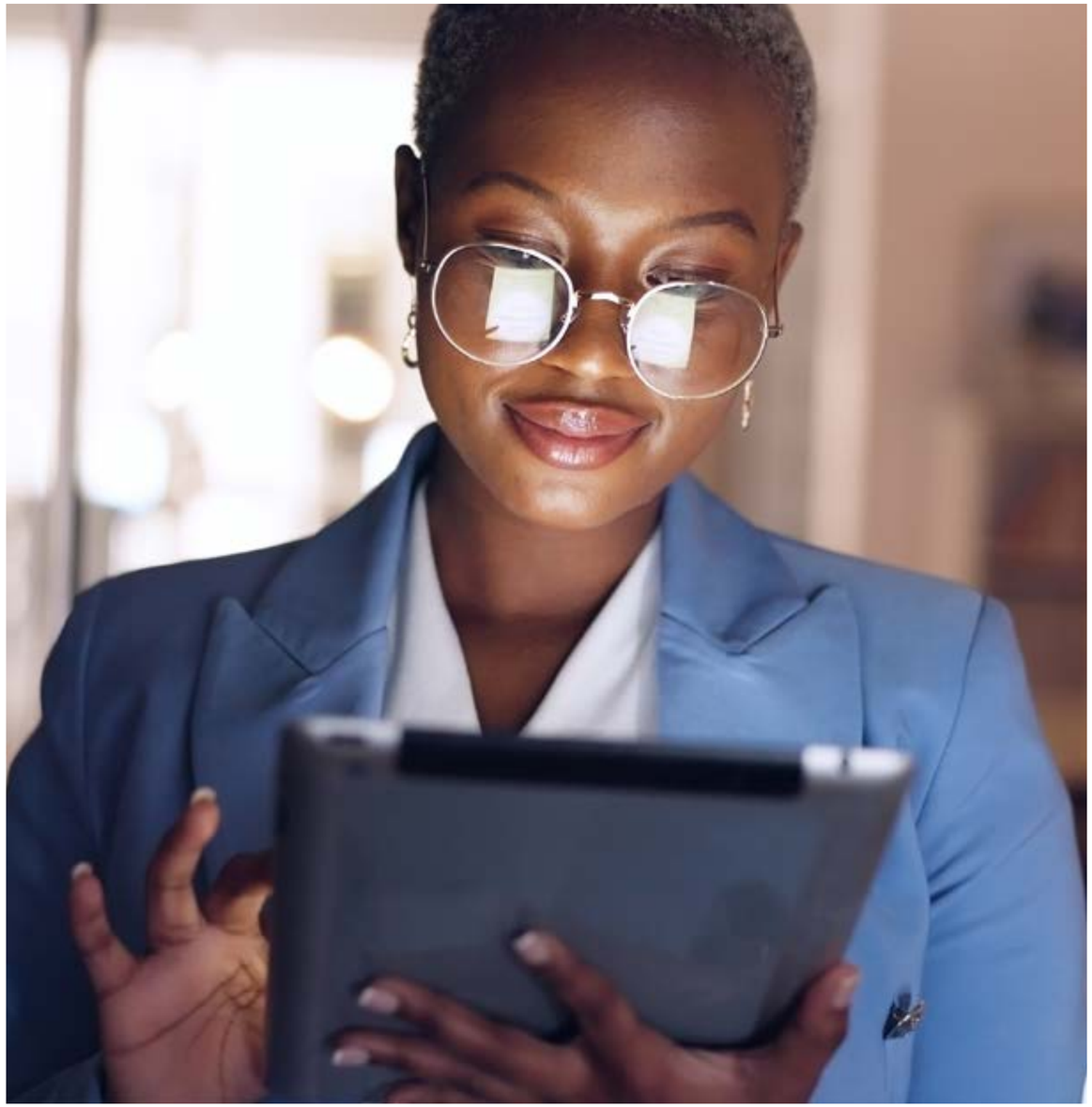
Companies are realizing that AI is increasingly becoming a must-have component to differentiate their respective businesses, especially in a post-pandemic economy.

Our research shows that, on average, 74% of Nordic companies have developed an AI strategy with strong sponsorship from the CEO and/or the board members (vs. 78% of European Achievers and 56% of European 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.

Over half of the Nordic companies in our survey say that they have created a platform through which all employees are able to showcase failed and successful experiments, and seek constructive feedback from leadership. In fact, 71% of the Nordic companies stated that innovation is integrated with their organization's vision, and that leaders hold each other accountable.

For the CEOs of AI 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. For them, innovation is a strategic discipline.



When one of the largest banks in the Nordic region was challenged with legacy technologies, siloed data, and no single view of the customer, they knew they needed to act. For its data-powered transformation, the team established a strategic roadmap, then worked to architect and implement a data lake, advanced analytics powered by more than 70 ML models, and a new campaign management system. This included a distributed agile framework across all geographies and time zones. The company now benefits from an intelligent marketing system that drives an omni-channel experience for clients, and a data-powered enterprise that is delivering greater value to the company. The bank has seen significant improvements in ROI, and a 42% uplift through ML models and triggers. Significantly, the client's leadership can now focus on improving the customer experience across the user journey.

42%

uplift through ML models and triggers

Success Factor 02

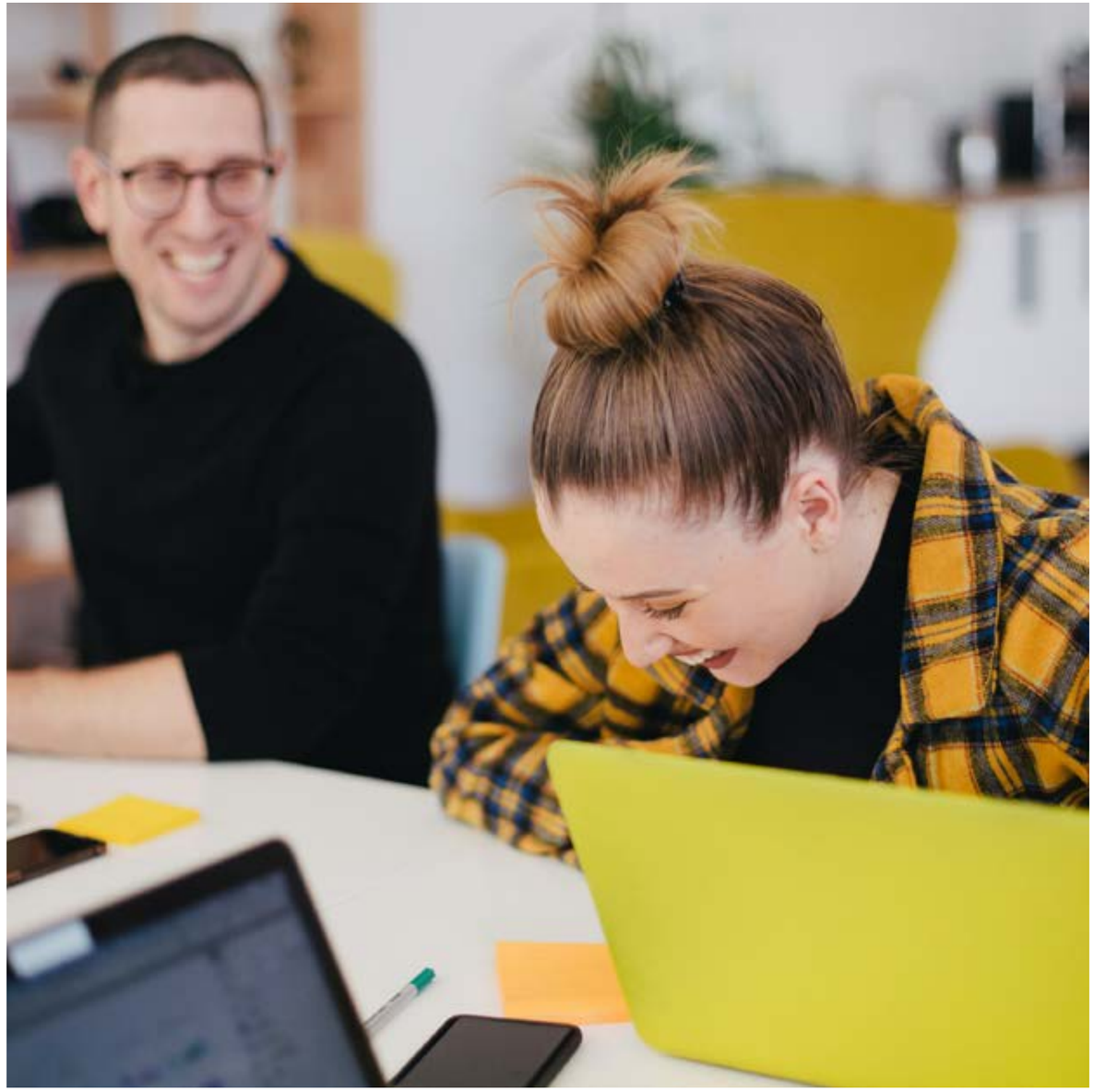
Invest heavily in talent to get more from AI investments

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 cannot end there.

We found that a whopping 87% of Nordic companies say they have made AI trainings mandatory for most employees, from product development engineers to C-suite executives (vs. 78% of European Achievers). Cleary, Nordic companies are serious about developing AI talent and upskilling their workforces—particularly around data engineering, AI/ML and domain expertise.

As part of their current ecosystem strategy, more than 80% of Nordic companies are leveraging to a moderate or great extent the readily available data science talent and AI/ ML tools that will help them innovate with data and AI.

Helsinki and Stockholm are among the top 50 global AI hubs, even though the Nordics represent just 2% of global AI talent, according to Silo Research and OECD 2022 research. The private and public sectors have developed novel educational programs to develop digital and tech talent; for example, Finland's industry-specific "AI for Built Environment" certification course launched in November 2021. Other examples include Sweden's national "AI competence for Sweden" curriculum, and "Elements of AI," an online course offered in all Nordic countries.[viii]



Perhaps more than ever, it is important that companies address gaps in their AI talent and skills. Already, 75% of the Nordic companies today have a defined AI talent strategy in place that includes protocols relevant for hiring data science talent and domain experts. Many are also formulating new strategies and methods to collaborate, create, sustain and extract value from data science capabilities.

What does this look like in practice?

A European government agency wanted to provide more trusted AI services with fair AI practices to support job seekers. The agency first went about defining their ethical principles and establishing an ethics governance body. It then created a playbook to identify "responsible AI ways of working" and ensure that every product and service for job seekers was deployed with the fair and ethical use of AI.

A global financial services firm, BBVA, enabled its digital journey with AI to create intelligent data-driven banking operations for greater agility and productivity. AI, automation and analytics didn't just improve its internal processes—BBVA used its AI maturity to improve its customer experience, too. It also enhanced its talent strategy by focusing on new growth opportunities, upskilling and security opportunities to realize a more than 30% reduction in costs.

75%

of the Nordic companies today have a defined AI talent strategy in place that includes protocols relevant for hiring data science talent and domain experts.

Success Factor 03

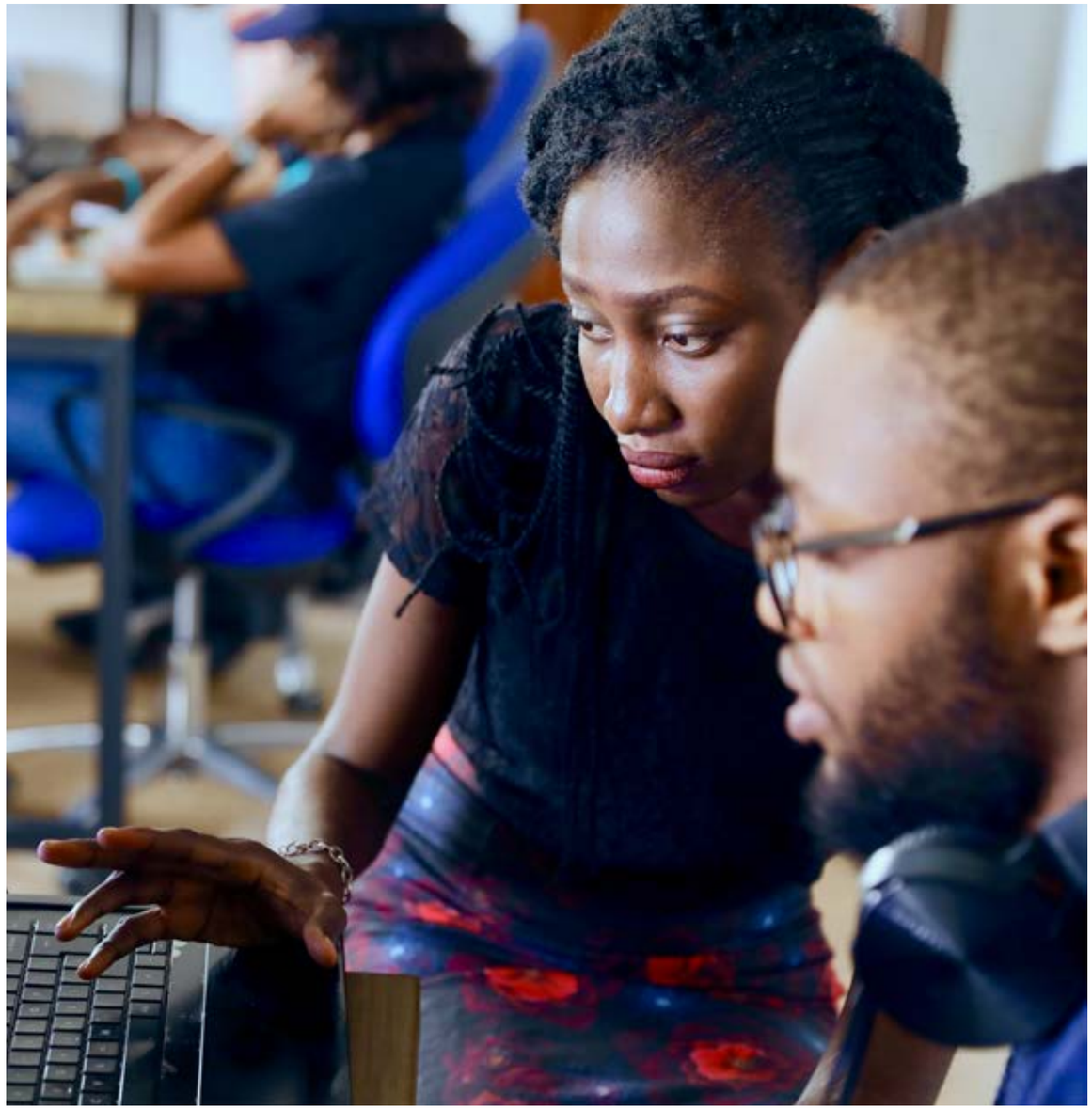
Industrialize AI tools and teams to create an "AI core"

Another priority for Nordic companies involves building AI cores—operational data and AI platforms that tap into company talent, technologies, and data ecosystems to allow firms to balance experimentation and execution.

An AI core also means, having the necessary set of tools, and platform capabilities that are scalable coupled with a robust data management & governance model in place, and harmonizing all of them across projects and business functions.

An AI core helps organizations productize their AI applications and integrate AI into other systems and business functions, which makes differentiation with AI more seamless.

To build AI cores, Nordic companies harness the power of internal and external data, making that data trustworthy and storing it in a common enterprise-grade cloud platform—complete with appropriate usage, monitoring and security policies. Our research shows that, on average, 54% of Nordic companies prefer to either develop custom-built ML applications or work with a partner that offers solutions-as-a-service (vs. 34% of European companies).



Another area where Nordic companies are increasing their focus is ML modeling capabilities (i.e., fully defined, optimized modeling and governance processes, and scaling ML models across the enterprise). In three years, 57% of Nordic companies are expected to orchestrate ML implementation across the organization, up from 4% today.

An AI core also works across the cloud continuum, from migration to innovation. An AI core provides end-to-end data capabilities (foundation, management and governance), manages the ML lifecycle (workflow, model training and model deployment), and provides self-service capabilities. And over the next three years, 63% of Nordic companies are planning to enhance their existing cloud platform to align completely with their AI strategy (vs. 17% today).

Bottom line: Before companies can race into an AI- and ML-powered future, they must first build a strong and scalable AI core.

A leading oil and gas company envisions becoming a world-leading, data-driven enterprise with digitalization at its core. To achieve this ambitious vision, the company knows that strategic and operational data must be high quality, as well as made available to the right users at the right times. The company conducted an initial design phase, which laid the foundation for a cloud-based platform that delivers important data to the business in an industrialized, scalable and sustainable way.

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 to building a sound data and AI foundation. The potential for regulatory changes in many countries makes the challenge daunting.

Nordic companies are benefitting from favorable AI policies and regulations. For instance, the Danish government designed a national strategy for AI back in 2019. The vision is to make Denmark a frontrunner in the development and use of Responsible AI (RAI) for the benefit of citizens and companies. And Sweden's national center for applied AI, AI Sweden, is jointly funded by the Swedish government and public and private partners. Its mission is to accelerate the use of AI for the benefit of everyone living in Sweden, while increasing business competitiveness outside country borders. [ix]

In a separate Accenture study of 850 C-suite executives, we found that only 35% of consumers trust how organizations are implementing AI. Regulation is one way to help address that trust deficit.

The EU's proposed AI Act is the best-known example. Once ratified, anyone who wants to use, build or sell AI products and services within the EU will have to adhere to strict requirements and obligations. Accenture's research shows that awareness of regulation (particularly from the EU) is generally widespread and well understood by businesses most

likely to be affected. Interestingly, many organizations view AI regulation as a boon rather than a barrier to success.

Nordic organizations realize the importance of acting responsibly with data and AI. Nearly half (45%) of Nordic organizations fully embrace responsible data and AI principles, in addition to meeting all legal requirements. They are establishing cross-functional AI ethics committees to manage top-down Resposible AI (RAI) implementations, tackle ongoing ethical questions and raise awareness about RAI principles with individual contributors.

Our research also predicts a significant rise in the proportion of Nordic companies that are implementing RAI frameworks and practices—from 3% today to 73% by 2025. For companies, the upshot of being responsible by design is an improved ability to meet future requirements, better mitigate risks and create sustainable value for themselves and their stakeholders.

A large telecommunications company knew that compliance with emerging responsible AI guidelines was essential. The client, familiar with industry AI solutions, embarked on key workstreams to guide the development and application of RAI frameworks, playbooks and governance processes across the business. This investment, one of the first major RAI projects in the region, has helped reinforce the company's industry-leading reputation and positions them as a company committed to RAI principles.

Predicts a significant rise in the proportion of Nordic companies that are implementing RAI frameworks and practices—from 3% today to 73% by 2025.

More than 90% of Nordic organizations believe that securing buy-in from leadership to understand and invest in foundational elements of AI is essential for building data-driven cultures.

Success Factor 05

Prioritize long- and short-term AI investments

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

Nordic executives understand that without significant investment in AI from both the public and private sectors, the Nordic AI landscape will continue to lag behind its European neighbors.

More than 90% of Nordic organizations believe that securing buy-in from leadership to understand and invest in foundational elements of AI is essential for building data-driven cultures. And nearly 80% of Nordic organizations say they receive AI funding primarily from a central pool sponsored by their senior leadership (whether part of a company's overall technology budget or an independent AI budget).

Our research shows that AI budgets are growing, on an average:

- In 2019, 10% of their total technology budget was devoted to AI.
- In 2022 this grew to 19%.
- In 2025, Nordic companies expect to devote 27% of their total technology budget to AI.

They also understand that their AI investment journey doesn't have a finish line. There is, they frequently note, no "peak AI." These companies know they have only scratched the surface of their AI transformations and that the quality of their investments matters just as much as the quantity.

For Achievers, continued investment largely involves expanding the scope of AI to deliver maximum impact, while "crosspollinating" AI solutions and redeploying resources in the process.

In a quest to reach net-zero emissions by 2040, the Municipality of Vienna is committed to investing more than €4 billion to increase renewable energy production (which includes photovoltaic energy, district heating and district cooling, and public transport). With a key partner in energy company Wiener Netze, the city developed a strategic digital twin for the city with a planning tool that will enable data-driven decisions for the upkeep and management of critical infrastructure. Officials can now visualize citywide energy demand with an interactive 3D model that aids decision making for investment, infrastructure and public policy. To date, the initiative's 10 connected data sources visualize 140,000 buildings and more than 2 billion simulated energy demand values every year.

The share of Nordic AI Achievers will increase rapidly and significantly, more than doubling from the current 6% to 15% by 2025.

Practice makes progress

Practice makes progress

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

Advancing AI maturity is no longer a choice, as CEOs and senior leaders are measured by their investors and boards on how well they execute and deliver on their AI promises. Companies in front of the AI maturity successfully:

1. Make their top leaders champion AI as a strategic priority for the entire organization.
2. Invest heavily in talent to get more from their AI investments.
3. Industrialize AI tools and teams to create a strong AI core.
4. Design AI responsibly, from the start.
5. Prioritize long- and short-term AI investments.

The top priority for Nordic executives over the next three years is to further enhance AI talent and skills to reinvent business models, improve customer experiences and unlock greater productivity.
Based on our research, while Nordic companies excel at cultivating AI fluency and the innovation culture needed to drive adoption, many lack the foundational capabilities required to support AI at scale. Organizations should be asking questions to assess their 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 all businesses is going to look very different—some will lead the change, and some will be subjected to it.

Those who 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. The future demands managing AI capabilities holistically across the value chain.

Are you ready for it?

How can AI help you differentiate?

As AI technologies become more prevalent, the future of all businesses is going to look very different—some will lead the change, and some will be subjected to it.

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

Meet the authors

Per Österman

Managing Director, Accenture Applied Intelligence Lead Nordics

Mattias Boman

Managing Director, Accenture Strategy and Consulting

Henrik Bibow

Strategy Principal Director Enterprise & Growth Strategy

Research director

Praveen Tanguturi, Ph.D.

Global Applied Intelligence Research Lead, Accenture Research

Contributors

Research team

Sachin Guddad

Research Manager, Accenture Research, Growth & Strategy

Yuhui Xiong

Research Manager

Yakub Wiatrak

Research Specialist, Human Insights Team

Yingchuan Zhu

Research Senior Analyst

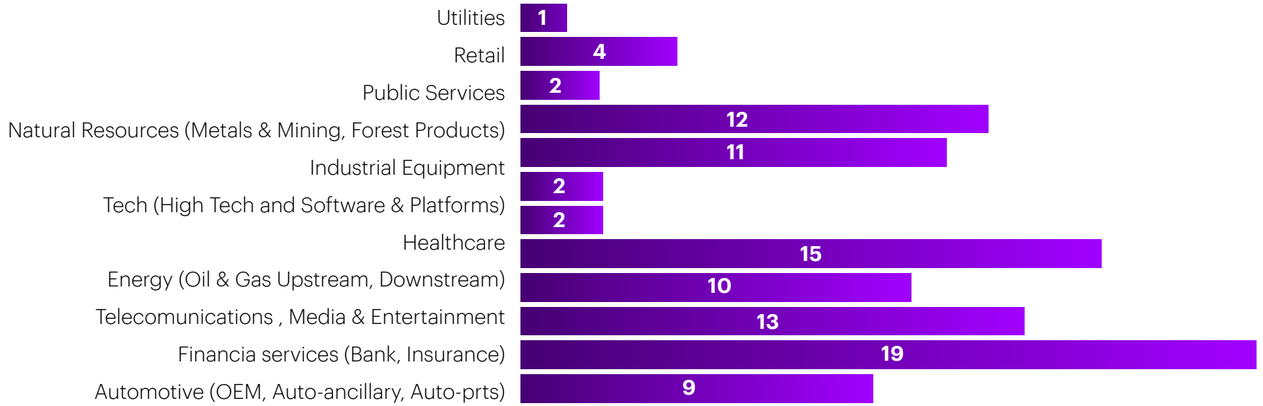
Marketing + Communications: Silje Viggen Opsahl, Venkat Subramanian, Karthick Paulraj, Neil Thomson

About the research

Accenture surveyed 100 senior executives (including CEOs, C-Suite, CAIO' and Data Science Leaders) from the Nordics largest organizations (with revenue greater than $1 billion). The survey was carried out across 4 major Nordic countries and 12 industries and fielded between September and October 2022.

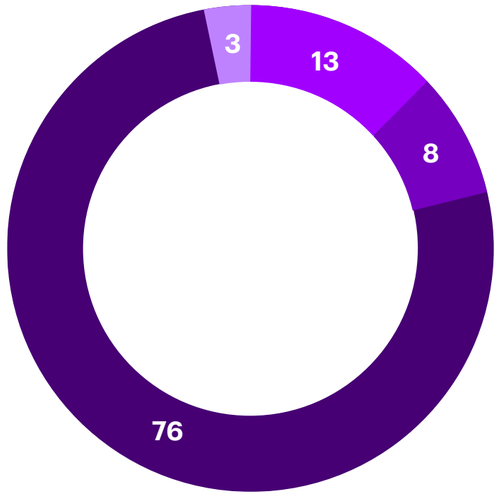
Survey includes those organizations who have at least agreed upon some basic AI strategy and have begun implementing relevant tools, to those who have a core AI strategy in place.

Industries



Revenue

- $1 - $4,9 billion
- $5 $9,9 billion
- $10 - $19,9 billion
- $20 billion or ore



Country

Denark **(17)**
Finland **(18)**
Norway **(38)**
Sweden **(27)**

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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About Applied Intelligence

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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