AMD

SILO AI

THE NORDIC STATE OF AI

THE REPORT EDITION IV

AI FINLAND

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Introduction

Welcome to our fourth annual Nordic State of AI report. Looking back at our previous reports, it's obvious that both AI and the way in which Nordic companies have approached AI have changed a lot. From a wider perspective, AI continues to be the great technology wave of this century. It will create many new innovations and businesses, but also be the downfall of those who find themselves out of touch with the future. One key observation in this report regards how companies are ramping up systematic large-scale approaches in order to set AI at the core of their businesses, and how that is showing up in the types of AI investments they're making.

AI is also a moving target, with new technical innovations appearing on a weekly basis. Many Nordic companies have already transitioned from thinking about AI as an efficiency tool to seeing AI as a strategic driver. But companies need to be more ambitious and put in more effort if they wish to turn such plans into bold commercial successes.

Throughout this report, we aim to equip organizations with the knowledge necessary to make informed decisions about AI investments, talent management, and strategic implementation. This year we have again updated the report with some new data points. In particular, there's a wealth of information on how companies with the most success and satisfaction with AI differ from those with the least.

The best time to act on AI remains "now", when the cards are still being dealt between future leaders and has-beens. I hope this report will be an interesting read, but will also encourage you to achieve even more.

NIKO VUOKKO,
SENIOR DIRECTOR,
AMD SILO AI.

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Executive summary and key findings

WHILE AI OFFERS OPPORTUNITIES for market reinvention and competitive advantage, companies must align expectations, resources, and value creation approaches to harness its full potential. The primary challenge in scaling AI has shifted from a lack of talent to insufficient investments. However, most companies keep targeting relative quick wins, expecting returns on their AI investments within 1-5 years.

The report explores the satisfaction and expectations of companies regarding AI. Approximately 60% of surveyed companies are satisfied, or very satisfied, with their AI results, and a vast majority hold enthusiastic or cautiously positive expectations. One of the largest differences compared to last year's report, is that the proportion of companies that have some form of framework for assessing the success of their AI initiatives has risen from approximately 25% to 40%. There are, however, differences in AI adoption and assessment frameworks between private and public sector organizations, where the public sector lags behind in implementing such frameworks.

The report emphasizes the importance of managing AI effectively, including aligning infrastructure, data organization, and project management. It also stresses the need for continuous development programs, rather than viewing AI investments as one-off IT investments. While AI is still in its early days, a maturing understanding of how it creates value is evident, signaling a transition from the exploration stage to a more scalable exploitation stage.

- AI has the potential to provide a competitive edge and generate new revenue streams, mainly when it is deployed at the core of products and services.
- Insufficient investments are now the primary challenge in scaling AI, not a lack of talent.
- AI is becoming increasingly important for companies, as shown by the growing number that have frameworks to assess AI success.

AI adoption

The strategic role of AI in business should focus on its potential for new avenues of value creation and the management practices necessary for successful implementation. Key aspects are 1) the integration of AI into products for innovation and competitive advantage; 2) the shift in digital budgets; 3) architectural considerations due to AI; and 4) the importance of evaluating whether to build or buy AI solutions based on company capabilities and goals. Custom AI solutions can provide a lasting competitive edge. Considering the entire tech stack, including data and compute, is essential for achieving successful AI deployment.

The report explores the types of AI technologies being used and experimented with across different areas of business operations. NLP and Generative AI are widely used in personal productivity and company products. Other technologies like optimization engines, deep learning, and computer vision are more common in the context of technology R&D, production, and manufacturing processes. While AI technology adoption is increasing, some technologies like explainable AI are lagging behind.

- The integration of AI into products is the fastest growing area of AI deployment, providing opportunities for innovation and competitive advantage.
- AI is bulldozing through existing digital budgets, changing focus areas and raising questions about fundamental architecture. Owning your own data and building "AI for X" industry intelligence is emerging as the recipe for steering one's own destiny and market leadership.
- As the importance of AI increases, considerations across the tech stack are becoming more critical to user experience and business success. Cheaping out on AI and compute may make products unreliable and slow, suddenly putting "the plumbing" at center stage.

Investing in AI

Key factors for successful AI investments among companies include understanding how requirements, ways of working, and development processes can change when shifting from traditional software to AI. This includes a change in priorities related to AI development, data practices, talent nurturing, and the growing significance of regulatory compliance. These all can affect the total costs of AI.

Experimentation and AI development as part of a product are the most common investment areas for AI development. Many companies are also waking up to the need of investing in data collection and quality, as well as continuous evaluation of AI use cases. There remains a lack of investment in compute capacity. Its importance is nevertheless highlighted by how the reportedly most successful AI adopters have a distinctly higher focus on compute. Regarding AI talent and management, training and competence development are the most common investments, followed by recruiting.

The complex regulatory landscape requires companies to take a long-term view and stay informed of policy developments. Investing in the continuous monitoring and evaluation of AI models is important, both for value creation and for regulatory compliance.

- The key to continued innovation is an understanding of the investments required for the shift from traditional software to AI and accelerated computing.
- The priorities related to AI development, data practices, and talent nurturing among companies are changing, signalling ongoing maturation in companies' AI efforts.
- Maintaining regulatory compliance is becoming increasingly significant as AI moves into the political sphere. Companies need to invest in navigating a complex and evolving regulatory landscape.

The Nordic AI ecosystem

Similar to previous years, the most sought after talent is very technology savvy, in the form of data scientists and machine learning engineers. Elsewhere, there is a need to both build AI literacy and also grow ecosystem collaboration to support ambition and understanding across the field.

There is a growing gap between early adopters and laggards in AI adoption. The companies that report the highest satisfaction with the results they are seeing from AI tend to have frameworks for assessing AI success. They list AI as a key part of their strategy, and have focused on strengthening competitive edge and adding new revenue streams. They also recognize the need for more investment in AI, particularly in talent, data, compute capacity, quality assurance, and regulatory compliance. These companies seem to have a more mature understanding of AI's value and are more likely to engage in ecosystem collaboration, benefiting the entire Nordic AI ecosystem.

The Nordic region needs to attract talent from outside of the region. To do this, companies must have ambitious AI strategies and offer rewarding and challenging projects for the talent to engage with.

The companies most satisfied with the results they are seeing from AI have an overall higher ambition in their AI activities, as evidenced in this report. As they are also more likely to participate in AI ecosystem collaborations, they are great sources of learning for the entire ecosystem.

Companies with a more mature understanding of AI, including having frameworks to assess success, achieve better ROI from their AI initiatives. They also recognize the need for increased investment, not just in technology but also in talent and compliance.

01.

The role of AI

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In today's rapidly evolving technological landscape, the implementation and scaling of artificial intelligence (AI) technologies present both significant challenges and remarkable opportunities for businesses.

AI offers the promise of reinventing markets, creating innovative products and services, and ultimately gaining a competitive edge. Realizing this potential requires a strategic alignment of expectations, resources, and value creation approaches.

This section explores the critical factors that businesses must consider to harness AI's full potential, emphasizing the need for a holistic understanding of AI technologies and the industries in which they operate.

- AI has the potential to provide a competitive edge and generate new revenue streams, mainly when it is deployed at the core of products and services.
- Insufficient investments are now the primary challenge in scaling AI, not a lack of talent.
- AI is becoming increasingly important for companies, as shown by the growing number that have frameworks to assess AI success.

Great expectations

While AI has dominated discussions related to technology and business, the continuous hype that started with the release of ChatGPT in 2022 has the potential to cloud judgements, both in an overly positive and overly negative way. Consequently, the real question remains around how companies are turning AI's potential into business value.

Approximately 60% of the companies surveyed for this report are satisfied, or very satisfied, with the results they are seeing from AI. The other 40% are neutral or worse. A variety of factors impact these numbers, such as what industry a company is in, how well they understand new AI technologies, and how long they have been working with AI, just to name a few. Most importantly, satisfaction is always relative to expectations.

Companies surveyed were also asked about their expectations towards AI. A vast majority are either enthusiastic or cautiously positive, as one might expect, given both the hype and the real potential of AI.

Combining the level of satisfaction with reported expectations shows that, of those who are very satisfied with the results they have seen from AI so far, 100% believe that having AI as an integral part of their product, service, or operations will give them a competitive advantage.

But enthusiasm comes with the risk of turning into disappointment unless it is paired with a realistic understanding of the technologies at hand. In an attempt to gauge said understanding, companies were asked about the time scale at which they are expecting to see results from their AI deployment.

A majority of companies expect to see results in 1-5 years. What constitutes a realistic expectation regarding returns on investments into AI depends on the type of AI technology the organization has deployed and used. Many respondents noted this in their responses. For investments into AI tools that help improve individual efficiency, the returns are almost immediate.

However, each new technology provides its own set of strengths. With time, companies mature in their understanding of how to best put the new technology into practice and adjust ways of working to match the strengths provided by the new technology.

For larger investments, such as those needed for incorporating AI as an integral part of a product, service, or core process, returns should materialize over a longer time horizon. In other words, longer timescales in expected returns aren't so much about caution than about setting up ambitious investment programs that are expected to produce sustainable value over longer periods. Section 4 of this report shows how companies with the highest satisfaction levels regarding AI differ in their ways of working, compared to those with lower satisfaction.

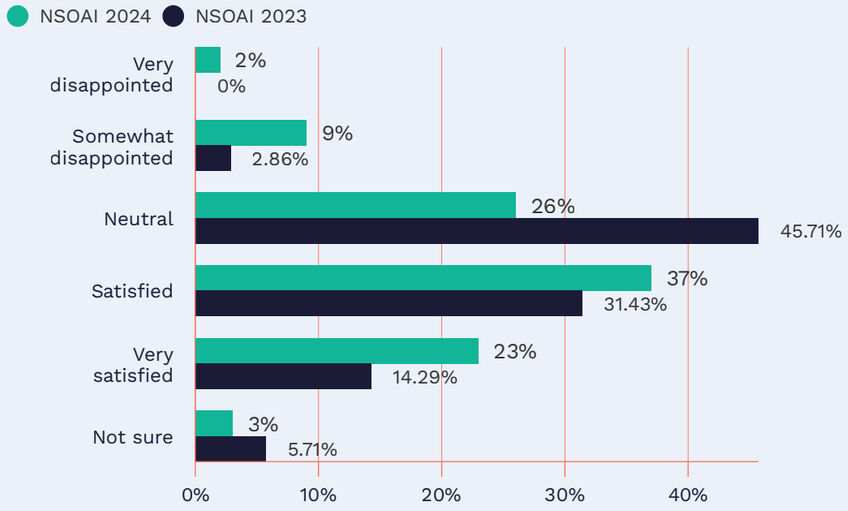


Figure 1: How satisfied are you with the results you are currently seeing from AI in your company?

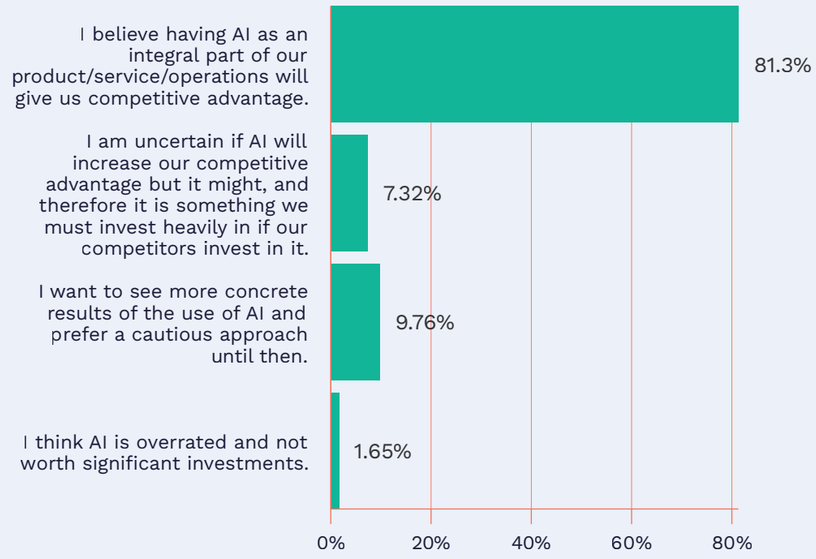


Fig 2: Which of the following statements best describes your expectations of AI?

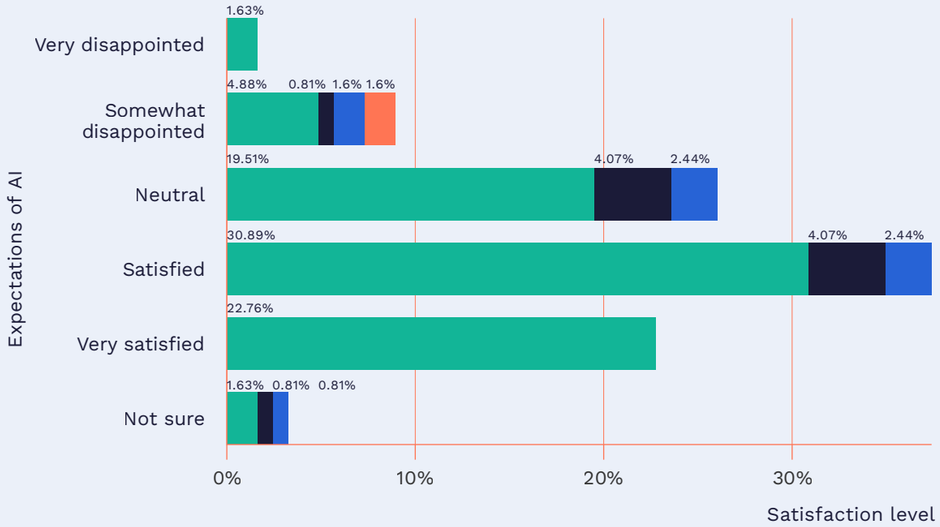


Fig 3: Expectations of AI and satisfaction with results from AI?

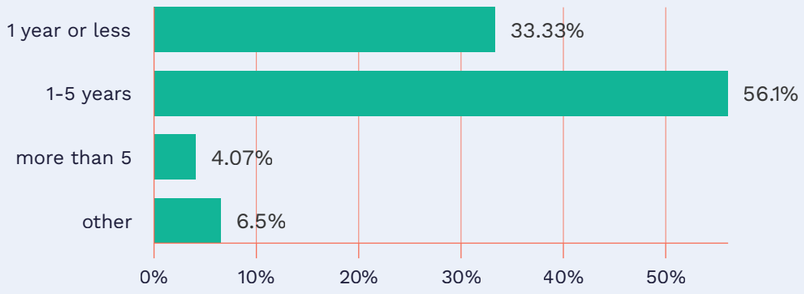


Fig 4: On what time scale are you measuring the success of AI investments?

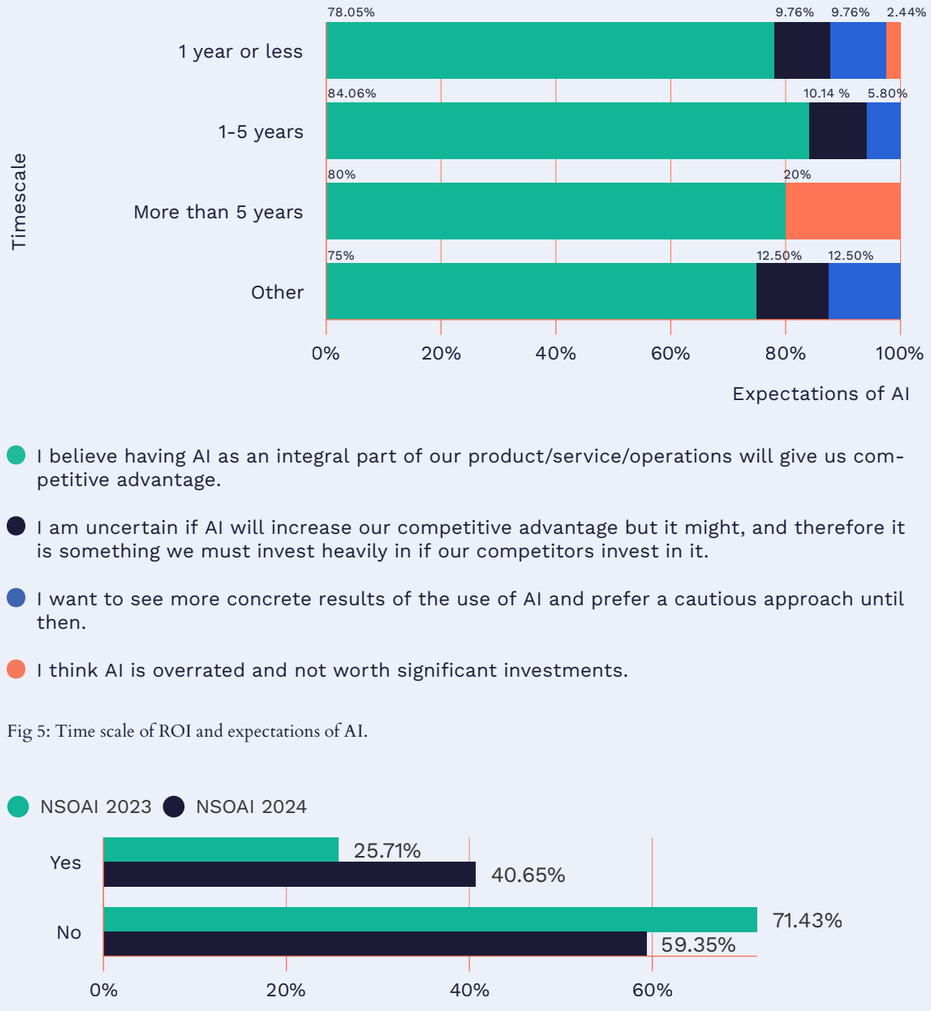


Fig 5: Time scale of ROI and expectations of AI.

Fig 6: Does your company have a framework in place for assessing the success of AI projects e.g. in terms of return on investment? 2024 vs 2023. All companies.

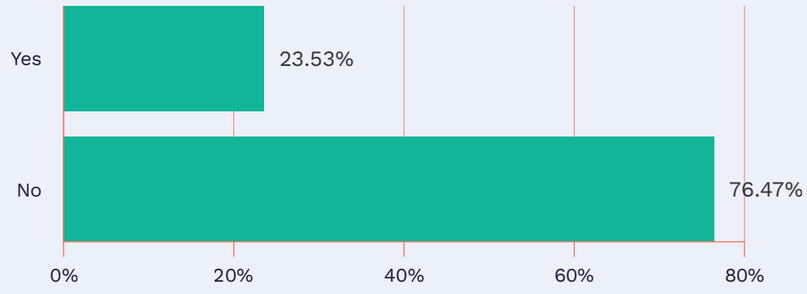


Fig 7: Does your company have a framework in place for assessing the success of AI projects e.g. in terms of return on investment? Public sector.

The strategic role of AI for value creation

In the interest of strengthening a company's competitive edge with AI, it is wise to remember that using the same available efficiency tools as competitors will hardly put any company in the lead. AI provides traditional industries the opportunity to transform into AI-driven industries. However, this shift requires substantial and long-term investments not just in technology, but in novel business models and ways to engage with customers, as well as training and collaboration for a company to get ahead of competition.

While AI is still in its early days, and companies are still learning how to best harness these new technologies, there is progress. Similar to last year, companies were surveyed on whether or not they have a framework in place for assessing the success of their AI investments. The rise in the portion of companies that do, indicates a maturing understanding for how AI creates value. This transition is also proof of AI moving from its exploration stage to its scalable exploitation stage.

The public sector shows a different trend. There, the proportion of organizations that do have a framework in place is significantly lower than among private companies. This remains an obstacle for organizations to learn and leverage the most efficient ways to use the technology, creating significant opportunity costs in a time of already strained public finances.

An understanding of value creation with AI and how it fits to an organization's operations is the foundation of derisking projects. It also helps in building an appetite for a broader portfolio of initiatives and, ultimately, for incorporating AI into a company's strategy.

The magnitude of the shift that AI entails for all industries could be comparable to that brought about by electricity. The technology will impact all industries and understanding how to leverage AI will separate the winners from the losers in both the corporate and nation state contexts.

When asked what role AI plays in their company's strategy, the responses were very interesting. In the group with the largest companies, a majority recognize AI as a transformational technology that requires further investment, while in the group with the smallest companies, a majority cite AI as being the tip of their strategic spear. Roughly speaking this shows the difference between the behemoths of traditional industries versus the digital natives who are looking to disrupt those industries.

The bigger companies that do see AI as the tip of their spear have the opportunity to transform their companies into industry leading AI-driven companies within their sector. But they face the innovator's dilemma: will they disrupt their own industry and profitable business models before smaller and more nimble companies do it. Overconfidently relying on a market position based on a business model crafted in a time before AI technologies can prove harmful. Similar examples can be found in recent history with the movie and music industries. Large movie studios and record labels had the capital to innovate on streaming technology, yet they chose to rely on business and distribution models that were working for them at the time. When they realized the disruption caused by companies like Netflix and Spotify, it was already too late for the industry titans to catch up.

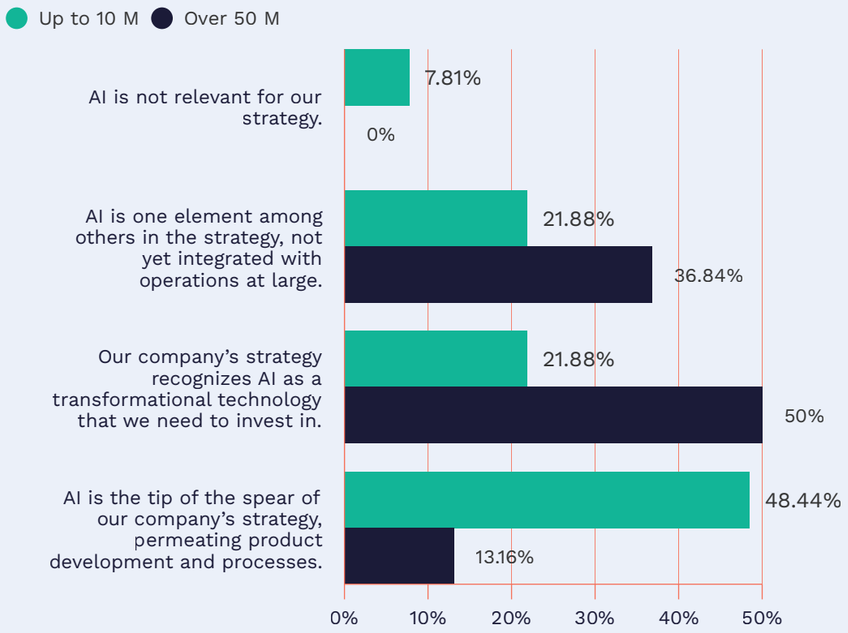


Fig 8: Which of the following statements best describe the role AI plays in your company's strategy? Companies with revenue of over €50 million annually compared to companies with a revenue of less than €10 million annually.

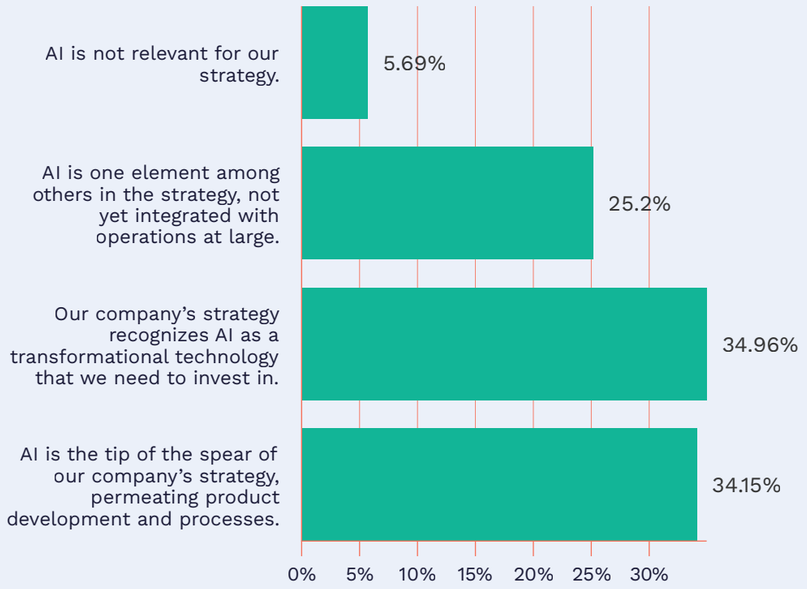


Fig 9: Which of the following statements best describe the role AI plays in your company's strategy? All companies.

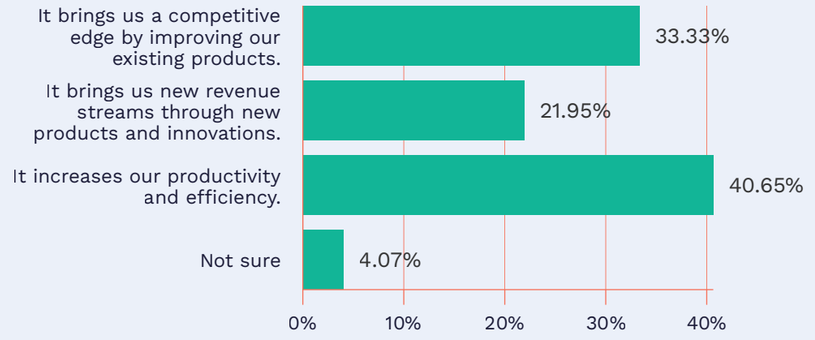
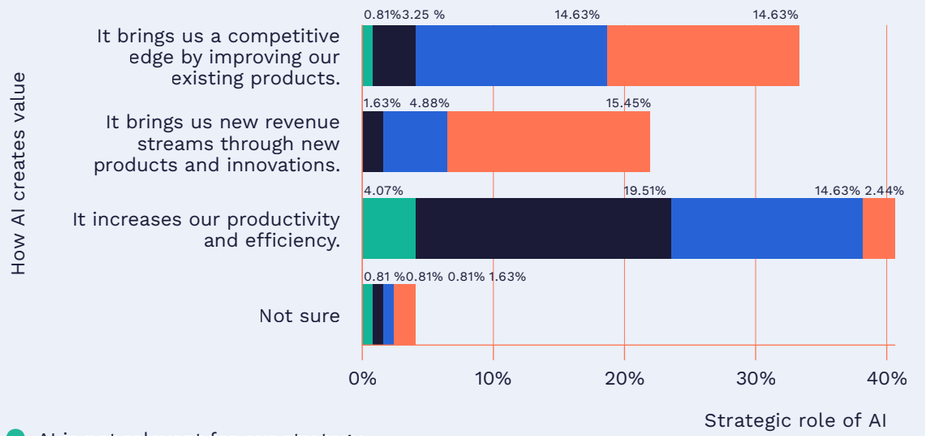


Fig 10: What is the main avenue through which AI creates value in your company?



- AI is not relevant for our strategy.
- AI is one element among others in the strategy, not yet integrated with operations at large.
- Our company's strategy recognizes AI as a transformational technology that we need to invest in. I think AI is overrated and not worth significant investments.
- AI is the tip of the spear of our company's strategy, permeating product development and processes.

Fig 11: The role of AI in company strategy and how AI creates value.

There are several ways in which AI can create value for a company. From an innovation and differentiation standpoint, the highest potential for value creation with AI lies in deploying AI as a core component of a product, service, or production process. As visualized in figure 11, companies that cite AI as the tip of their strategic spear also see AI as bringing them a competitive edge as well as new revenue streams. This highlights the argument that broad technological change, such as with AI, offers significant opportunities, but that these possibilities will be mostly seen in the reinvention of markets and creation of novel products and services, not in incrementally improving existing business and operating models. The data seems to corroborate that change brought by AI is dividing companies into winning and losing camps based on their ability to reinvent the long-term substance of their businesses. Section 4 of this report provides a closer look at that.

Managing AI

For the expectations of AI to be realized, a number of interconnected factors need to be considered. These include infrastructure choices, how data is organized, and how AI projects are managed. Only when these are all aligned can AI reach its strategic role and full value-creating potential.

How AI is managed differs from company to company and depends on the company's culture, maturity, and needs. There are synergies, cost savings, and efficiency gains to be achieved from broader collaboration within a company. However, at the same time, forcing units with differing objectives, technical needs, or levels of uncertainty under the same AI governance structure may seriously hamper the achievements of them all. Nevertheless, it's recommended that companies build up their AI infrastructure in a way that ensures access to needed resources across the organization. Key considerations to avoid such 'anti-patterns' or self-made handicaps in a field changing this fast are to see these efforts as continuous development programs rather than one-off IT projects, and to prioritize the direct, current needs of the users over architectural qualities and operational efficiencies. This reduces the risk of spending big on highly efficient machinery that nobody uses.

Survey responses show a clear difference between private and public sector organizations where the public sector is much more prone to silo their AI initiatives. This may be helpful in getting a number of first phase initiatives going and tested, but will essentially lead to incoherent and inefficient processes across the various departments in the longer run.

The management of AI naturally extends to the management of what resources are used to develop and deploy AI within a company. Keeping up with the available options can be challenging due to the rapid development of AI. Essentially, the forerunner organizations that want to leverage AI for strategic purposes need to invest much more in discovering and maintaining their edge in the developing field compared to the organizations that choose to consume AI technology through proven solutions and off-the-shelf products. In either case, carefully considered investments into AI infrastructure will, over time, lower the investment needed on a project basis level.

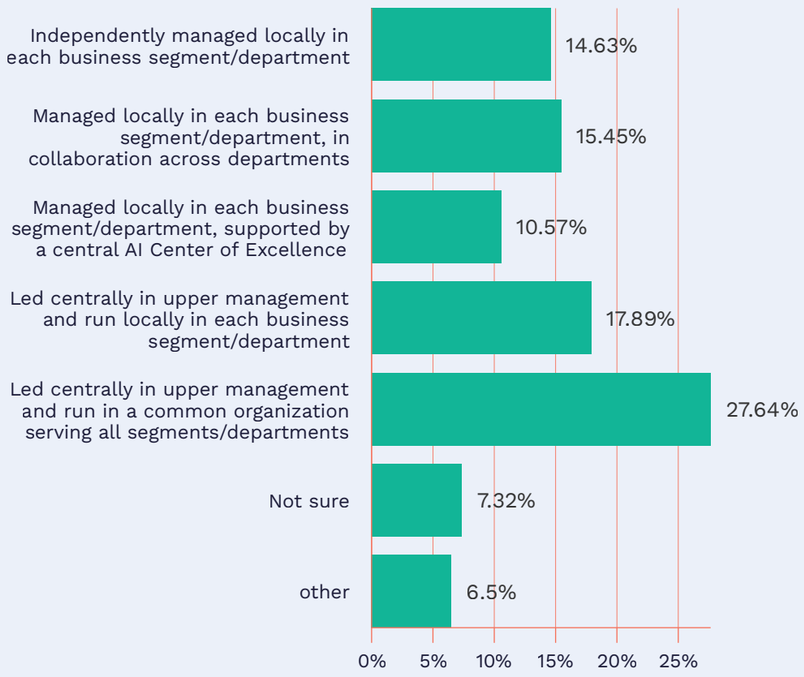


Fig 12: How are AI projects in your company managed and conducted? All companies.

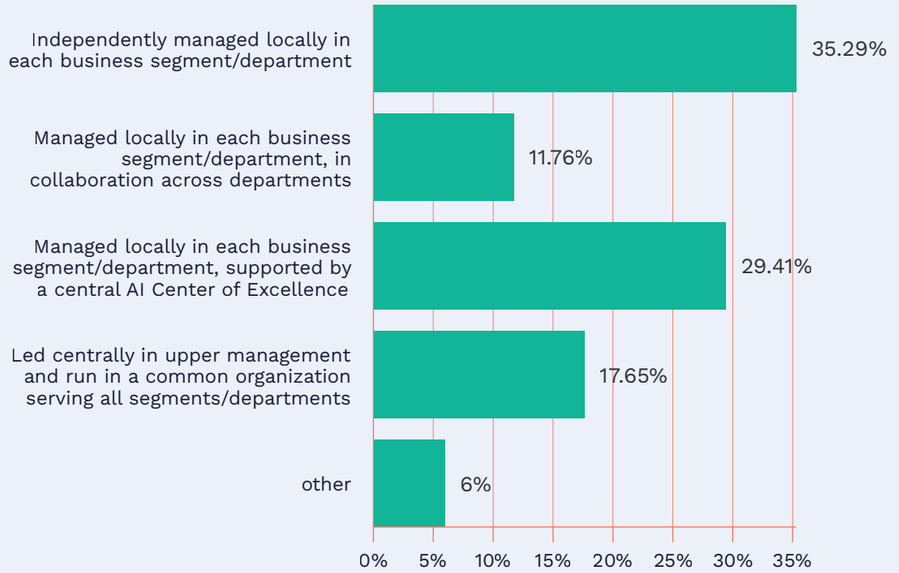


Fig 13: How are AI projects in your company managed and conducted? Public sector.

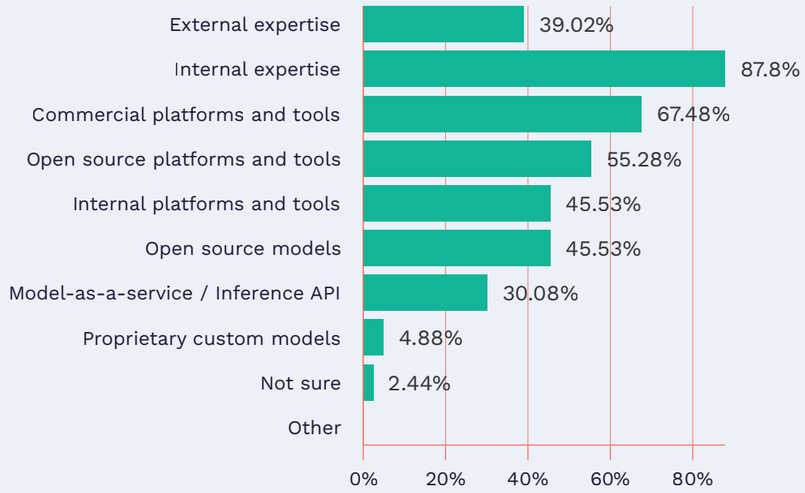


Fig 14: Which resources does your organization use to develop AI? All companies

An important part of good resource alignment is to understand the big picture of what needs to be achieved and aiming to match the internal rate of change with what's going on in the outside world. Aligning expectations, value creation approaches, strategy, and resources requires a holistic understanding of AI technologies and the industry in which a company operates. That is no small task and all companies are bound to stumble upon some challenges along the way.

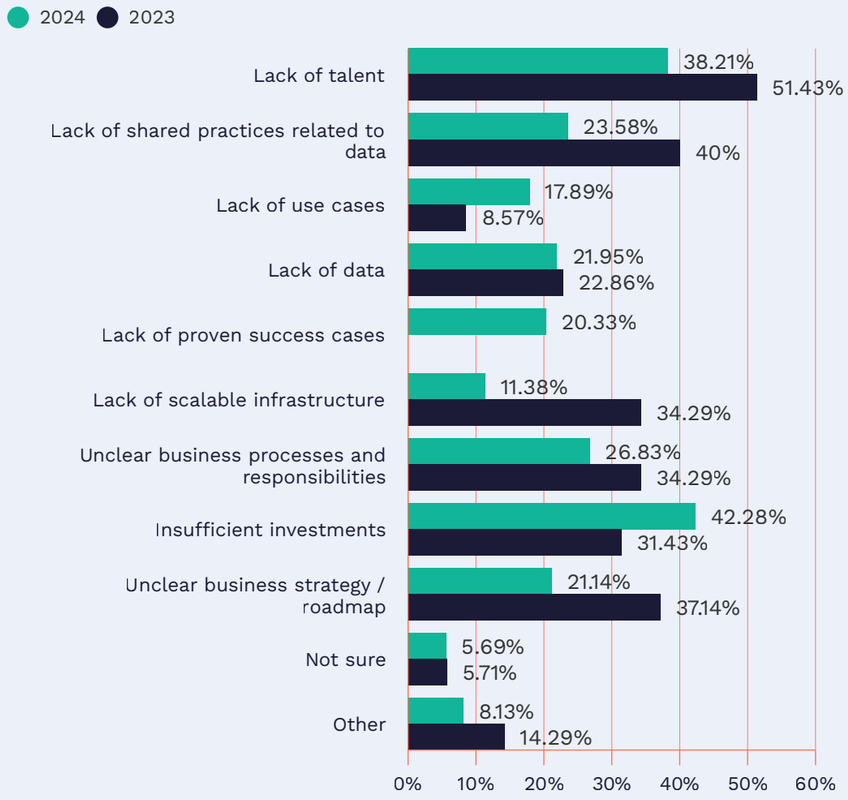


Fig 15: What are your biggest challenges in systematically scaling the use of AI at the core of your business?

Challenges

In the previous two years, the number one challenge in systematically scaling the use of AI has been a lack of talent. This year insufficient investments have taken the top position. The results indicate an increasing understanding among companies that to move from single point POCs to large-scale implementation and scaling of AI, significant investments are needed.

The challenge posed by a lack of talent is recognized not only by companies, but by policy makers as well, and related investments are included in national AI strategies. Investing in AI education is a necessity but not a short-term solution to the challenge. All of the Nordic countries will need to attract foreign talent in order to compete globally. Building AI ecosystems similar to those in Paris and Tübingen is paramount for attracting both talent and capital, and improving the competitiveness of the Nordic economies.

Expert Interview

WITH:
GIRISH AGARWAL

GIRISH AGARWAL is a seasoned technology leader with over two decades of experience spanning consulting and product companies, and specializing in digital transformation and AI-driven business innovation. Having worked with organizations like GE Healthcare, Husqvarna, and Piab, he has led the creation of IT and digital units from the ground up, focusing on architecture, AI labs, and scalable digital processes and infrastructure. Currently serving as Chief Digital and Information Officer of Vaisala, he balances two critical roles—ensuring seamless IT operations as CIO while driving digital business evolution as CDO. His expertise lies in integrating data-driven technologies to enhance business models, particularly within the Nordic industrial manufacturing sector. With a PhD in Artificial Technology Implications on Business Model Innovation, he is passionate about bridging technology and business strategy to create value, streamline operations, and accelerate market offerings through digital innovation.

Approximately 60% of the companies surveyed for this report are satisfied, or very satisfied, with the results they are seeing from AI. How would you reflect on that finding and how satisfied are you with the results from AI seen at Vaisala?

I find it encouraging that 60% of companies are satisfied with their AI results, but I believe the true impact of AI varies depending on its application. At Vaisala, we see significant value on the product innovation side, where AI enables us to enhance our offerings, create new revenue streams, and improve predictive capabilities in areas like weather forecasting and instrument monitoring.

However, on the operational efficiency side, the tangible ROI has been harder to measure. While AI tools like GitHub Copilot are widely used, the direct impact on productivity—such as measurable reductions in workload or operational costs—remains uncertain. I believe the key to unlocking greater efficiency lies in streamlining AI deployment across specific use cases with measurable targets and building strong foundational organization-wide data platforms. Companies that have invested in robust data pipelines and ML operations are likely seeing faster returns, and that is an area we continue to refine to fully realize AI's potential.

Has there been any use case on the operation excellence side where AI has delivered tangible business value?

Yes, maybe not at expected levels, but AI has delivered tangible business value on the operational excellence side, particularly in areas like process intelligence and sales optimization.

Our Key Takeaways

> One of the key realizations is that AI is no longer a tactical investment but a fundamental capability that employees need to master, much like how office productivity tools became second nature over time.
>
> - GIRISH AGARWAL -

For example, we are leveraging AI to enhance our sales process by integrating personal assistants that help consolidate emails, retrieve relevant documents, and streamline workflows. We are also developing AI-powered sales assistants that would provide a 360-degree customer view, integrating market data, competitor insights, and product information through a chatbot interface to support sales teams more effectively. Additionally, we are optimizing our service and customer care process to improve efficiency and decision-making. While these initiatives are already making an impact, we recognize that there is still room for improvement, and we are continuously refining our approach to maximize AI's value across operations.

How do you see AI creating value and has that influenced your strategic priorities?

AI has significantly influenced our strategic priorities by realizing and hence prioritizing transformation programs, learning initiatives, and a structured approach to AI adoption. One of the key realizations is that AI is no longer a tactical investment but a fundamental capability that employees need to master, much like how office productivity tools became second nature over time. This has led us to prioritize learning and adoption programs to build trust and familiarity with AI, especially in the Nordic region, where trust in processes and transparency plays a crucial role in adoption. Additionally, we have strategically differentiated where we build AI—mainly in our product offerings where it drives new value—and where we buy AI, such as in operational efficiency, where value realization often takes longer. A major insight has been that imagination, rather than technology, is often the biggest bottleneck in AI adoption. To overcome this, we are fostering collaboration and leveraging AI for brainstorming, strategy development, and automation, recognizing that AI's value depends on how creatively and effectively we apply it.

- AI retains the potential to provide companies with a competitive edge and to generate new revenue streams by creating innovative products and services.
- Realistic expectations on AI require deep understanding of technologies and business objectives.
- Effective AI management requires the alignment of infrastructure, data organization, and project management.
- Significant investments in AI are necessary for long-term benefits.

02.

AI adoption

This section delves into the strategic role of AI, exploring how it can create value as well as the management practices necessary for successful implementation and scaling of AI initiatives. By examining these aspects, this section aims to provide insights into how businesses can effectively harness AI to reinvent markets, innovate products, and ultimately strengthen their competitiveness.

- The integration of AI into products is the fastest growing area of AI deployment, providing opportunities for innovation and competitive advantage.
- AI is bulldozing through existing digital budgets, changing focus areas and raising questions about fundamental architecture. Owning your own data and building “AI for X” industry intelligence is emerging as the recipe for steering one’s own destiny and market leadership.
- As the importance of AI increases, considerations across the tech stack are becoming more critical to user experience and business success. Cheaping out on AI and compute may make products unreliable and slow, suddenly putting “the plumbing” at center stage.

To build, buy or to partner - that is the question

AI is changing industries across the board. However, this does not mean that all companies should build their own AI solutions. Companies need to comprehensively evaluate their capabilities, strategic goals, and data assets when deciding whether to build, buy, or partner for their AI needs.

Building custom AI solutions allows companies to develop systems finely tuned to their operational context. This enables lasting differentiation and competitive advantages, as competitors using standard solutions will struggle to match these specialized capabilities. Building in-house also strengthens an organization's ability to control its long-term destiny and minimizes external dependencies. In a changing environment, it helps to bet on new capabilities. These often find new uses and help an organization renew its skillbase, thus reducing the risk of unexpectedly falling behind. These new capabilities can be in the form of talent, infrastructure, or any other AI-related capabilities that grant one the ability to move fast when needed.

When operational complexity risks increase excessively, or when the AI's target objective is not closely linked to the company's competitive core, off-the-shelf AI products become more appealing. These products offer the benefits of quick implementation and proven reliability, which are crucial for businesses in areas with limited capacity or interest in developing a unique AI capability for competitive advantage. Such products usually also come with vendor support, adding a layer of risk mitigation and operational reassurance.

Of course, whether to build or buy are not mutually exclusive options, and as evidenced by the responses a majority of companies are opting for a combination of both.

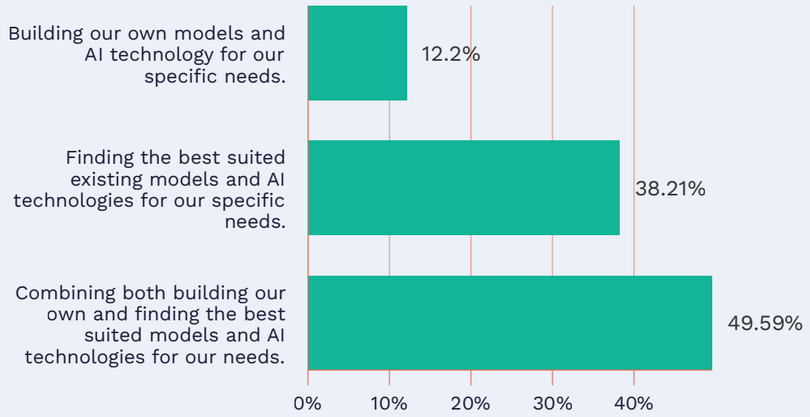


Fig 16: Which is your main focus when it comes to integrating AI into your business?

Opting for a combination of both shows an understanding of the fact that there is no one-size-fits-all solution to AI. It is important to consider the big picture when planning the development and deployment of AI. Defining the problem to be solved and scoping out what AI technologies to use, what kind of team is needed, what type of data is needed, and compute specifications, help to build an understanding of whether or not the project at hand is something a company can manage on their own or if it will need external support. Unless a company possesses the necessary talent to assess and define what to use AI for, the use of external expertise can be a good idea in order to not end up in a cycle of perpetual analysis paralysis.

AI technologies in use

One of the most interesting questions to follow over the years that this report has been produced relates to the kinds of AI technologies that companies have actually deployed in production. Both the responses and the response options are evidence of the fast pace of development within the field of AI. While Generative AI has received plenty of attention over the last few years, it's far from the only AI technology available. Choosing technologies should be done from the perspective of the challenge that a company is looking to address. Figures 17-19 show the distribution of which technologies are in use, or are being experimented with, over the areas of operations of a company. In an effort to emphasize distribution relative to AI technology of choice, absolute numbers have been left out.

The most commonly used AI technologies are NLP and Generative AI, including large language models. Generative AI is mainly used for personal productivity, which is without a doubt the lowest hanging fruit. In addition to using these for personal productivity, they are also commonly used as part of companies' products.

Following NLP and generative AI, optimization engines and deep learning are the next most widely used AI technologies. Together with computer vision, these are the technologies most commonly used as part of production or manufacturing processes. Considering the relatively recent emergence of large language models and generative AI, it is somewhat surprising that these are already among the top three AI technologies most commonly used in production and manufacturing.

For customer care, customer experience, sales, and marketing, the most commonly used AI technologies are NLP, Generative AI, and speech recognition.

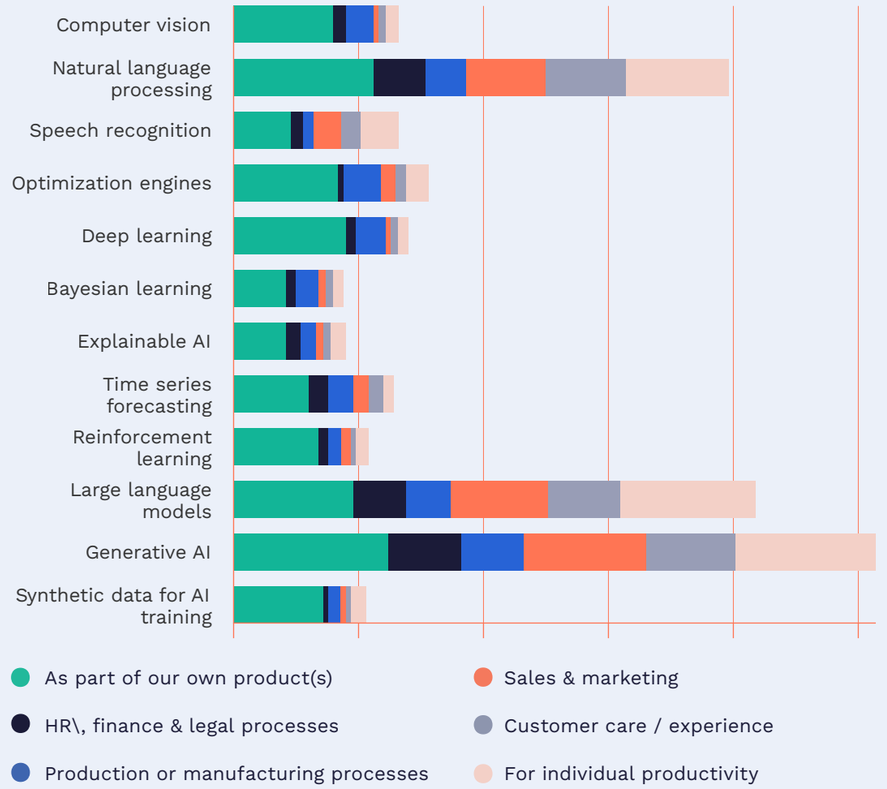


Fig 17: Which AI technologies do you have in active use in your company, and for what? All companies.

Integrating AI as part of products and services provides the best transformational opportunities with the greatest potential for long-term value creation and competitive edge. This long-term Silo AI mantra is proven true each year by the survey. Responses show that all AI technologies listed have made their way to being deployed as part of companies' products. However, having AI "as part of products" is still quite far from placing it at the core of all products. In other words, the direction is clear, but the work has only started.

Some AI technologies are falling behind in adoption, namely Bayesian learning and explainable AI. These technologies might not have as high direct feature value for products, and their implementation can be more time consuming, but they do improve the holistic quality of AI models and should not be neglected.

While correlation is not necessarily a sign of causality, it is interesting to note that of those who are satisfied, or very satisfied, with the results they are seeing from their use of AI, 85% use one or more AI technologies as part of their products or services. The corresponding number for the rest of respondents is 61%.

When considering the experiments that companies have ongoing, the distribution of AI technologies over areas of operations is very similar to that of where companies have already deployed AI.

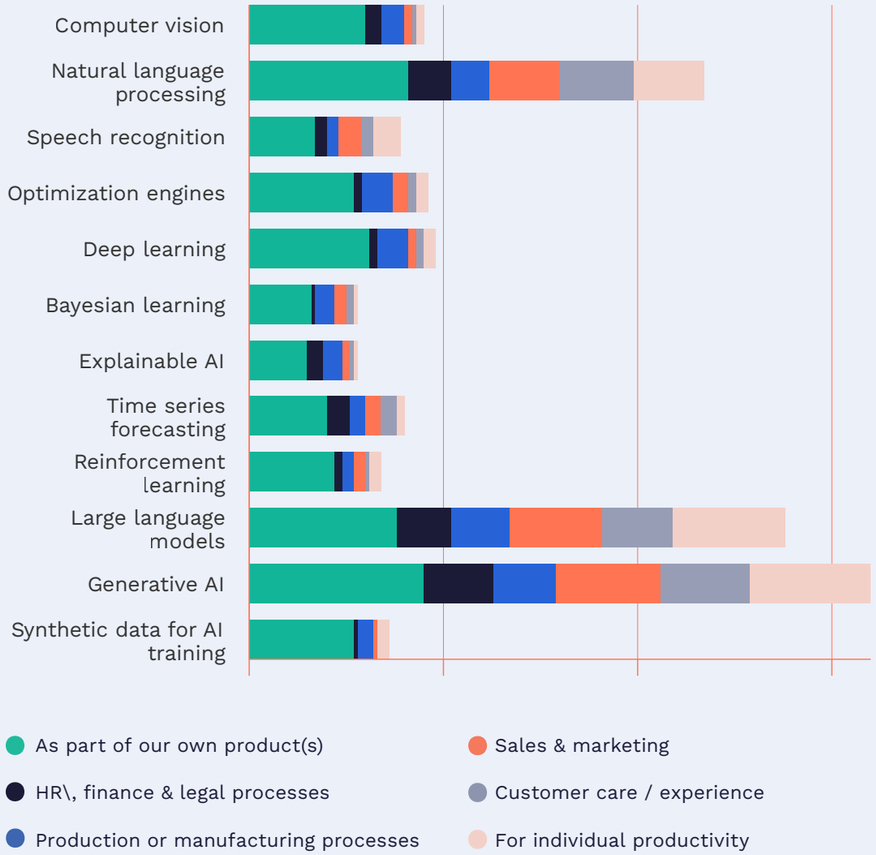


Fig 18: Which AI technologies do you have in active use in your company, and for what? Companies that are satisfied or very satisfied with results from AI.

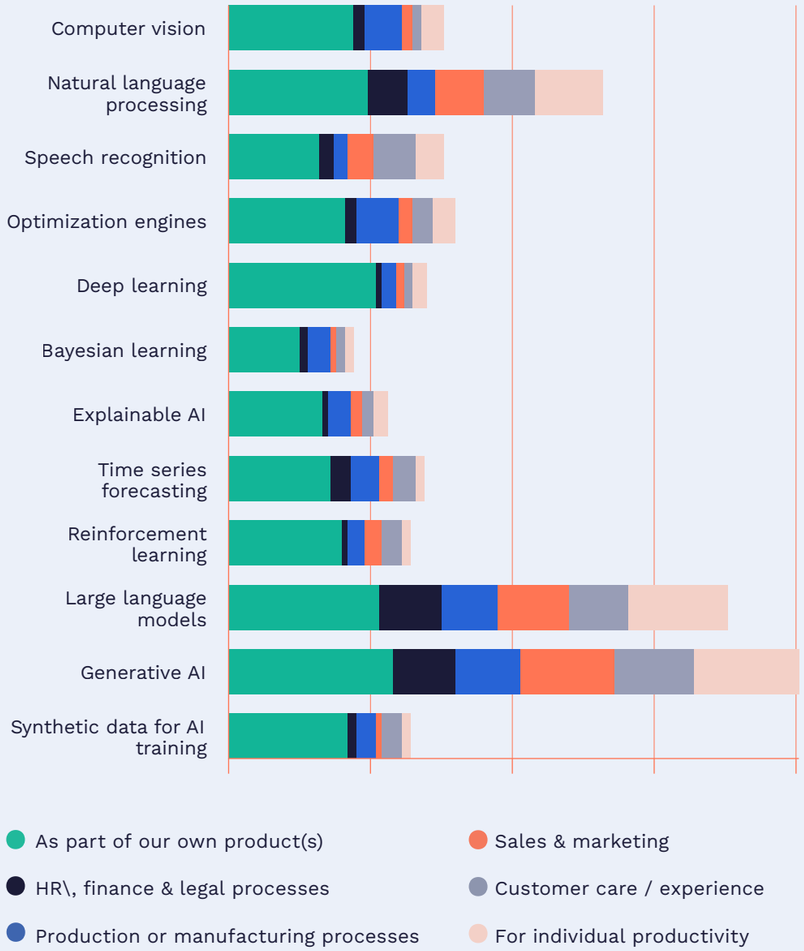


Fig 19: With which AI technologies does your company have ongoing experiments or development projects, and where?

A more interesting observation can be made when looking at the total number of AI deployments over areas of operations compared to the total number of ongoing AI experiments over the same. The fastest growing area for AI use is as part of a company's products. That is the largest category for AI deployments, and it is also the only category where ongoing experiments exceed the number of existing AI deployments.

As the field of AI is still developing at high speed, it is important to make choices regarding one's AI infrastructure that allows for flexibility and the incorporation of new technologies as they come along.

Compared to last year's survey responses, the adoption of AI technologies has increased across the board. The steepest inclines are visible for NLP, speech recognition, optimization engines, and in the use of synthetic data. Regardless of the type of AI technology in use, data and compute availability continue to be of critical importance.

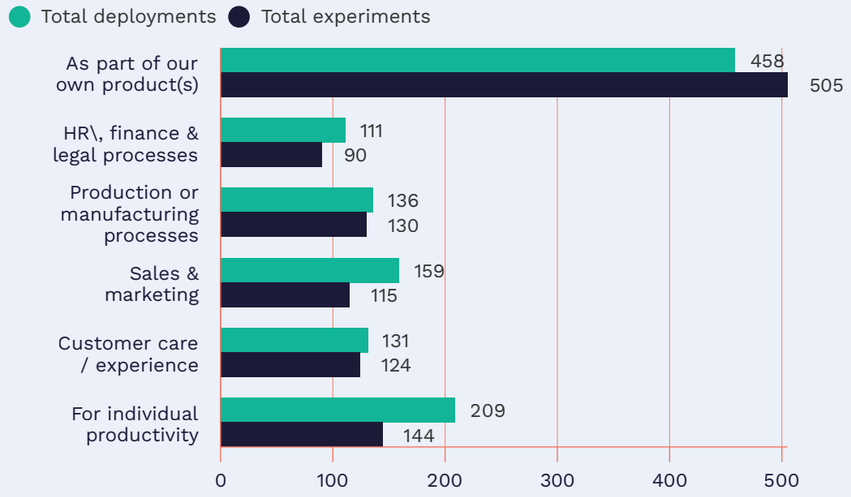


Fig 20: Total AI deployments and total AI experiments

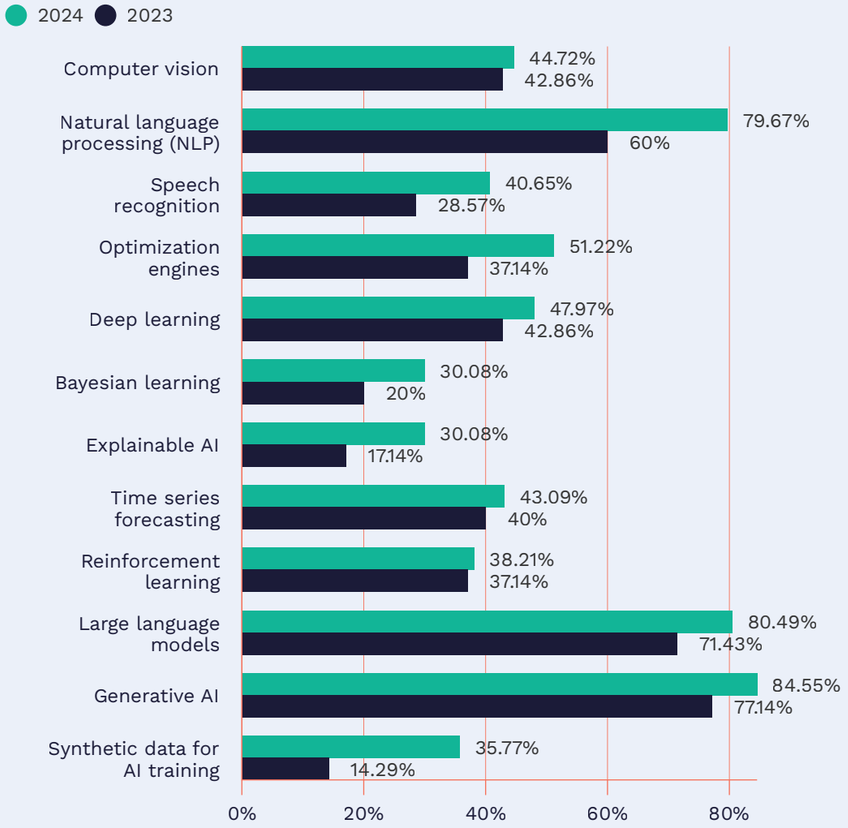


Fig 21: Changes in which AI technologies companies use, 2023 and 2024

Collecting data

AI is inherently dependent on the underlying data. This could give incumbent companies with large existing data holds and strong balance sheets an advantage in comparison with younger entrants to the industry.

While data is critical, it also poses challenges. 22% of respondents report lack of data as one of their biggest challenges when it comes to AI, and 23.6% report lack of shared practices around data as their biggest challenge.

Survey responses reveal diverse approaches to data collection for AI models. Companies most commonly combine automated and manual methods to gather their own proprietary data. This reliance on partially manual data collection may explain why shared data practices have not emerged. Open datasets represent the second most common means of data collection.

Synthetic data is also strongly on the rise. In the previous report, approximately 14% of respondents reported using synthetic data for model training. This year, approximately 43% of respondents report using synthetic data for model training. Additionally, 23.6% use synthesization as a means for gathering data. Synthetic data is often mixed into training data to enable training models that would otherwise require vast amounts of sensitive data, or real-world data that is hard or expensive to obtain, but there are also downsides of synthetic data. Lately, the AI community has warned about the risk of model collapse in language models. This occurs when very subtle features of synthetic data gradually replace the richer characteristics of real-world data over time. While synthetic data enables many new use cases, using it effectively requires substantial investments in model evaluation, deep AI science expertise, and a systematic, scenario-based AI development process.

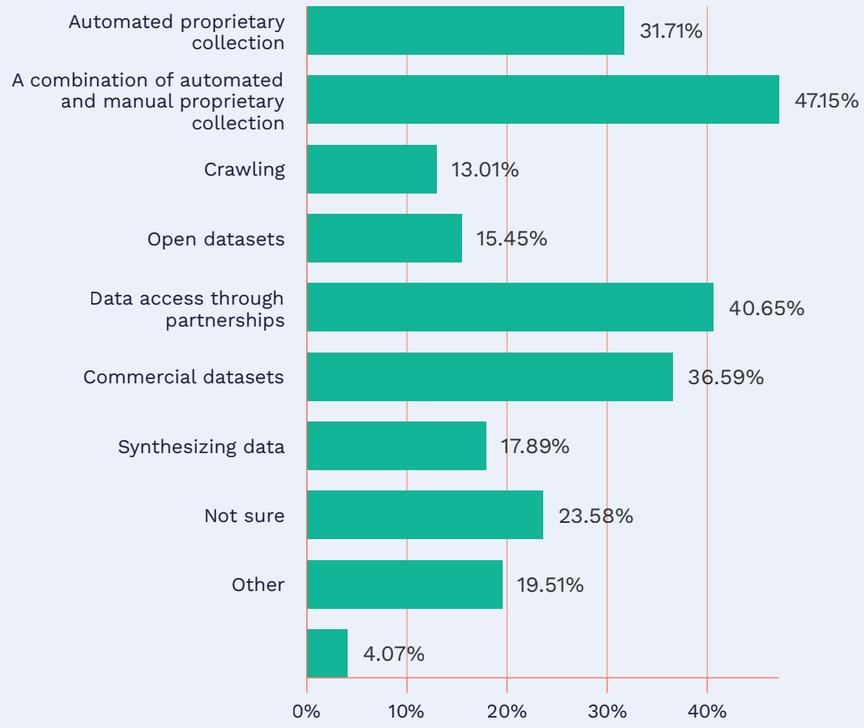


Fig 22: How does your company attain datasets used in relation to your AI projects?

Compute

Part of the challenge with insufficient investments as seen in this report's results relates to the sudden change in how digital investments work. Until recently, the hallmark of the digital revolution was its "zero incremental cost" nature, one where upfront investments in software could be ramped to an ever-increasing userbase without any significant spike in operational costs. This has now changed with AI. Despite continuous advances in optimizing AI models for compute, compute costs are taking up an increasingly large chunk of digital budgets, forcing AI-driven startups to pursue ever larger funding rounds to finance their compute needs while more established companies struggle to reorient their cost and project planning to this new reality.

Compute considerations begin with architectural questions. What AI capabilities (e.g. types of models, accuracy, throughput, latency, jitter) are needed, what is the acceptable unit cost of hardware, where can the data be moved on technical or legal grounds, where does the rest of the system sit, who will operate and maintain the compute system and how, and what amount of electric power is available? For edge AI, or on-device, smaller models are usually needed to run within the limited cost, power, size, and thermal budgets. The next matter of consideration is the user experience and its requirements. For example, with many hardware options cost and throughput can be significantly optimized with batching or by routing simpler needs through simpler models. But at some point these choices may start to degrade the user experience in terms of application responsiveness (latency) or model output quality.

This dynamic is now getting ever more important with recent innovations in reasoning models where additional runtime costs can directly improve model outputs.

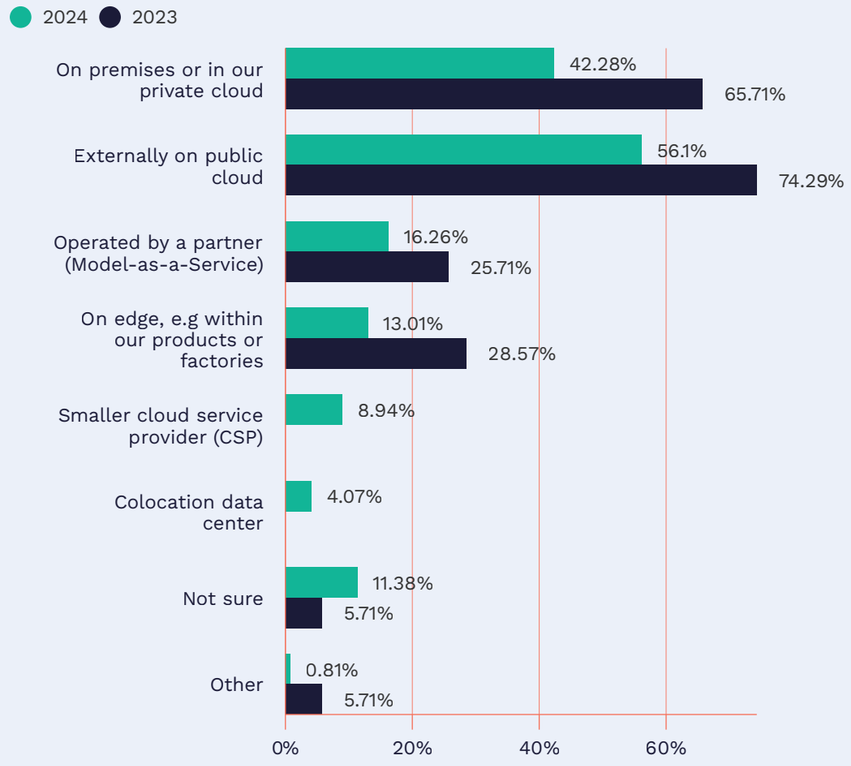


Fig 23: Where does computation of your AI models happen?

> For example, with many hardware options cost and throughput can be significantly optimized with batching or by routing simpler needs through simpler models.

In addition, there is the topic of volumes. While model training is more compute-intensive than inference, inference volumes may in many cases grow far bigger and dominate the cost equation. At the same time, training budgets are largely driven by the need to explore new capabilities offered by recent research, as well as to keep optimizing the overall system, its quality and cost, in a multitude of ways. Moreover, many companies choose to pick openly available models as their starting point and then fine-tune them for their own purposes. Yet this field of techniques for domain acquisition and adaptation is becoming more complex with time, offering various different trade-offs between costs and capabilities.

Specific hardware capabilities may also cause big knock-on effects in the overall cost picture. Optimizing the general cost-of-ownership in AI compute is pushing individual AI hardware devices, such as GPUs, to be bigger with higher power consumption and compute throughput. However, rising device throughput makes it harder at times to efficiently utilize the whole device. This is causing a rising need for new hardware capabilities in confidential compute and hardware partitioning that help multiple compute workloads share devices. Memory has risen as one specific constraint, despite many efforts to improve memory efficiency, as memory's share of the hardware cost rises at the same time as new AI model types often benefit in an outsized fashion from more memory.

The right choice of acquiring computation is thus a complex question of its own.

A company might purchase their own hardware, but that requires big outlays into building technical support teams. Another option is to leave that all to e.g. cloud service providers (CSP) to handle, but that often comes with a hefty bill to fund the depreciation of the CSP's hardware cycle.

Increasingly, governments are stepping in to address the high capital requirements of AI compute by investing in national and regional AI infrastructure. The European Union's AI factories initiative, built on the foundation of existing national high performance computing (HPC) centers, aims to provide compute resources through its network of High-Performance Computing centers. This will make state-of-the-art computing capabilities available to researchers and companies. Similar initiatives have been launched in other countries and regions, with governments worldwide investing in public compute infrastructure to complement private options as well as to democratize access to the computational resources needed for advanced AI development.

Among the companies in this report, the most common options for computation are either externally with a hyperscaler or via an on-premise data center or private cloud. Compared to the results of last year's survey, the options for computation have increased and companies seem to be spreading their compute over more options than before. This can be seen as a sign of AI infrastructure maturing and developing to cater to different needs, but also companies being better prepared to make these technical decisions.

Expert Interview

WITH:
GALINA ESTHER SHUBINA, KING

GALINA ESTHER SHUBINA is the Senior Director, AI Strategy and Shared Technology, at King, with a focus on AI/ML strategy and integrating AI-driven solutions into game development and operations. In this role, she collaborates across domains to identify opportunities, needed capabilities, and support innovation. She also strongly believes in the need to develop more – and more diverse – data and AI talent in the Nordics. To this end, outside work, Galina Esther Shubina co-organizes the Women in Data Science, AI & ML Sweden organization. Now in its 7th year, the organization's goal is to create, inspire, and support a strong community of women technologists in Sweden specifically, but also in the Nordics in general. Among other activities, they run yearly WiDS Sweden and Nordic WiDS conferences, as well as mentorship programs.

With a mission of Making the World Playful, King is a leading interactive entertainment company. With more than 20 years of history, King has some of the world's most iconic games in the mobile gaming industry, including the world-famous Candy Crush franchise, as well as other mobile game hits such as Farm Heroes Saga. King games are played by more than 200 million monthly active users. King, part of Microsoft (NASDAQ: MSFT), has Kingsters in Stockholm, Malmö, London, Barcelona, Berlin, Dublin, San Francisco, New York, Los Angeles, and Malta.

Could you describe your data/AI infrastructure and what has prompted the choices you've made in regards to it?

Already from early days, King has been a data-driven company/organization. The company went through many stages, from creating web games and Facebook games to becoming the Candy Crush powerhouse it is now, but throughout that time, data-driven product development, really following and looking at what all of our users do and figuring out how to make games more fun for our players at scale, was at the center of it. We have continuously run AB tests to figure out what makes our users tick and what delivers the most value.

So our data infrastructure was there to enable scalable flexible data collection and for data scientists to easily extract player insights. There's a lot of talk about data being the new electricity with the arrival of AI. It so happens that extracting incremental value from data, by hands-on understanding and optimizing user experience, prepared us well for augmenting and automating it with AI. But there's still a lot of work to do – especially where other types of data assets are concerned.

Much like other companies of our age, we started out with an on-premises setup that has transitioned to a cloud solution in recent years. Spotify went through a similar journey some years ago now. Our move to the cloud has significantly improved access to actionable data, making it much faster and more convenient. Moving into the cloud also unlocked new levels of speed and scalability, and gave us access to a world-class ever-improving suite of AI, that are continuously improved by the best and the brightest minds in the tech industry.

We also use state-of-the-art generative AI models and tools, and strive to stay on top of the latest technological developments and product offerings in the AI for productivity space. They are available to everyone in the company and people are adopting it to their own workflows and adding custom co-pilot capabilities to many of our own internal tools.

In your use of AI, to which extent is the emphasis on building your own AI solutions/products and to which extent on using off-the-shelf solutions/products? Where do you see either of these approaches make sense, and where do they not?

As in many industries, off-the-shelf AI solutions have been continuously improving and continue to commodify what would previously make sense to be custom built. One thing to reflect on is that the digital solutions, products and underlying infrastructure are never static, but need to continuously evolve for competitive reasons, as well as those of security and customer expectations. So the boundary between off-the-shelf and custom-build tradeoff is a moving target.

At King, like at many other companies, more and more of the data and AI infrastructure is taken care of by off-the-shelf commodity cloud or open source solutions, with focus for custom solutions remaining at the layer above. This is the layer that represents our core business areas, where workflow speed or optimization create some form of competitive advantage and where custom integrations need to be made into specialized applications.

For example, one of our important AI use cases is playtesting, which enables us to quickly test levels before we release them to players, as well as continuously improve existing ones. Custom-created AI models enable us to automatically test levels created by level designers, ensuring that they provide the best player experience and work well with in-game features. Running them involves calling game code and other custom logic.

Automated playtesting started out as a research project about a decade ago and has long since transitioned into a core enabler that speeds up how quickly we can create new levels and make them available to our users. This is not something that we expect to be doing with off-the-shelf solutions any time soon.

Another example lies with new generative AI solutions. We've moved beyond piloting generative AI and are actively using it in several areas, improving workflows, and supporting creativity across teams. While off-the-shelf interfaces, APIs, and frameworks are currently being used for fairly standard use cases, like document summarization, there are now ongoing projects to integrate them with internal company data. Certain tedious work will hopefully become faster, and I am excited about being able to more easily discover and analyze 20 years of great insights into game development currently buried within scattered documents and presentations.

What factors have most significantly accelerated or slowed AI adoption within your organization? How have you navigated these challenges?

Some of the main factors that accelerated King's AI adoption are good data – between 100 million and three billion data points are collected every minute, for example, when a player clicks or swipes on their phone. For AI, data is needed to train the machine learning models, as well as to evaluate them. Other acceleration factors are King's technical and organizational capabilities.

Positively, a long-running AI research function was given space to innovate, experiment and grow the first use cases – it can take time to land first scalable use cases and patience is needed. Then an acquisition of an AI platform company augmented the company with more technical and transformational talent to accelerate adoption.

In my experience, for traditional AI use cases, a lack of product management mindset is also a big hurdle to AI adoption, as juxtaposed against

Our Key Takeaways

> The first integration and the first live test tend to be only the initial steps in creating a useful AI feature – continuous improvement and iteration are essential to arrive at something that works well.
>
> - GALINA ESTHER SHUBINA -

a project management mindset. AI use cases need to be managed continuously and show different development patterns from regular features. The first integration and the first live test tend to be only the initial steps in creating a useful AI feature – continuous improvement and iteration are essential to arrive at something that works well. And after, AI features need to be continuously monitored to avoid data and model drift.

Additionally, to reiterate the point recently made by Andrew Ng, as writing software becomes continuously easier, the demand for the AI product management skillset will increase. At King, we have created an internal training in AI for product managers specifically, as we believe that in the future all product managers will be AI product managers, and that future is coming very soon now.

Lastly, doing "everything everywhere all at once" can also be a big hurdle – starting with one or two key AI use cases, showing clear value, making them operational and moving on from there opens up a path for broader AI adoption. People tend to be reluctant to change their ways of working and wary of handing decision-making to technology they don't understand. AI adoption is an organizational growth project – a change management project.

Are there specific metrics or frameworks that have proven effective in demonstrating value to stakeholders?

At King, AB testing is usually used to evaluate new experiences and features that we provide to our players. We look at how well the users engage with our games when part of the test, compared to the control group. We evaluate AB tests based on many metrics, and work to ensure that there's a robust statistical methodology. There's really nothing that speaks quite as loudly about value, as the actual benchmarked engagement.

AI creates predictions that need to be evaluated based on how often they are right or wrong, or their error rate. For that reason, data-driven evaluation of outcomes is even more essential for ML-driven solutions compared to regular products or features.
At the same time, we are starting to look into how machine learning itself could speed up evaluation of new experiences.

Other data-driven methods include time benchmarking of internal workflows, to see how we can speed them up. Removing drudgery from creative work, adding new features to our tools to create more fun experiences and spark creativity – these are usually evaluated by means of surveys, as well as old-fashioned user interviews.

It's important to consider the big picture when planning the development and deployment of AI. One needs to define the problem to be solved, scope out what AI technologies to use, and determine what kind of team, data, and compute specifications are needed to reach an understanding of the total resources required.

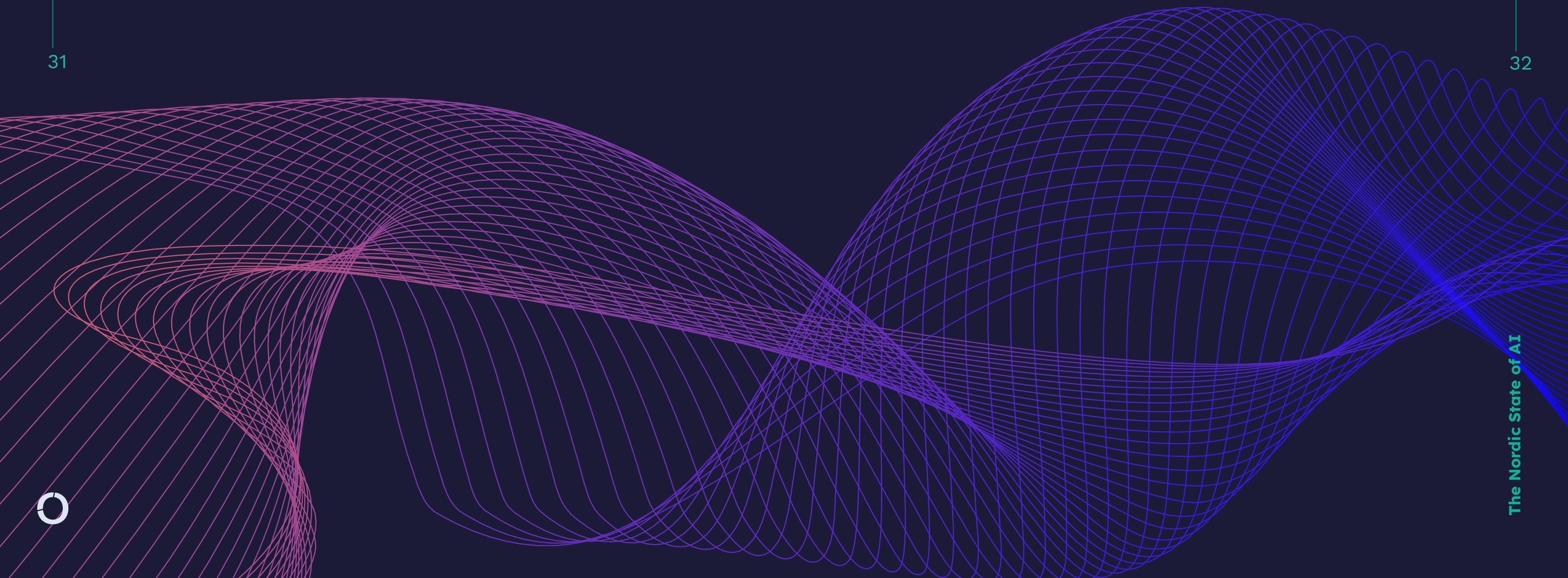
- Custom AI solutions enable lasting differentiation and competitive advantages. Building in-house also strengthens the organization's ability to react to inevitable change.
- AI as part of products is where the race is really happening. Ticking this box is a good start, but now the focus of the game is on who can control the industry's future by putting AI at their core.
- Control and flexibility over working with data and compute are essential for building industry leadership with AI, as well as to accommodate new technologies, and to manage long-term costs.

03.

Investing in AI

AI can help companies improve efficiency, enhance decision making, automate repetitive tasks, improve product development, optimize operations, innovate new revenue streams, and enhance customer experiences. Companies are therefore increasingly prioritizing AI investments. The following explores key trends in corporate AI investments.

- The key to continued innovation is an understanding of the investments required for the shift from traditional software to AI and accelerated computing.
- The priorities related to AI development, data practices, and talent nurturing among companies are changing, signalling ongoing maturation in companies' AI efforts.
- Maintaining regulatory compliance is becoming increasingly significant as AI moves into the political sphere. Companies need to invest in navigating a complex and evolving regulatory landscape



Worth investing in

The Western economies, including the Nordics, have had a good run over the decades. High-quality education has resulted in scientific discoveries and new technologies that have formed the foundation for new products, scalable franchises, and well-functioning societies.

Digital transformation, while requiring significant effort, has introduced new digital capabilities that have become part of how work is done today, and that also define what types of products are possible to build. Now the world is facing yet another large transition.

Spearheaded by traditional software being replaced by AI, the meaning of digital is changing. At the same time, AI is creating another parallel shift by disrupting the concept of zero incremental cost in digital investments. Accelerated computing is becoming an essential technology for businesses to attain what is no longer feasible to achieve by traditional means.

The recipe for successful innovation remains the same in this new era though. Find and produce scientific discoveries and engineer workable real-world products on top of them. The challenge investors face today is in getting companies to shift their focus to the new source of innovation–AI and accelerated computing. Only then can they continue to be successful as they move forward.

The extent to which companies truly understand the total expenses related to AI remains an open question. Based on the responses gathered for this report, more than 50% of companies intend to invest less than €500 000 over the next 12 months. This might be understandable for companies with smaller revenues, but a similar trend is visible also among larger companies. If Nordic companies wish to stay globally competitive, investments will need to be significantly larger.

Perhaps equally interesting as the amounts of total investments that companies are dedicating to AI, is what exactly that money will be used for. Three different dimensions –AI development, AI talent and management, and AI oversight activities – are highlighted in this report.

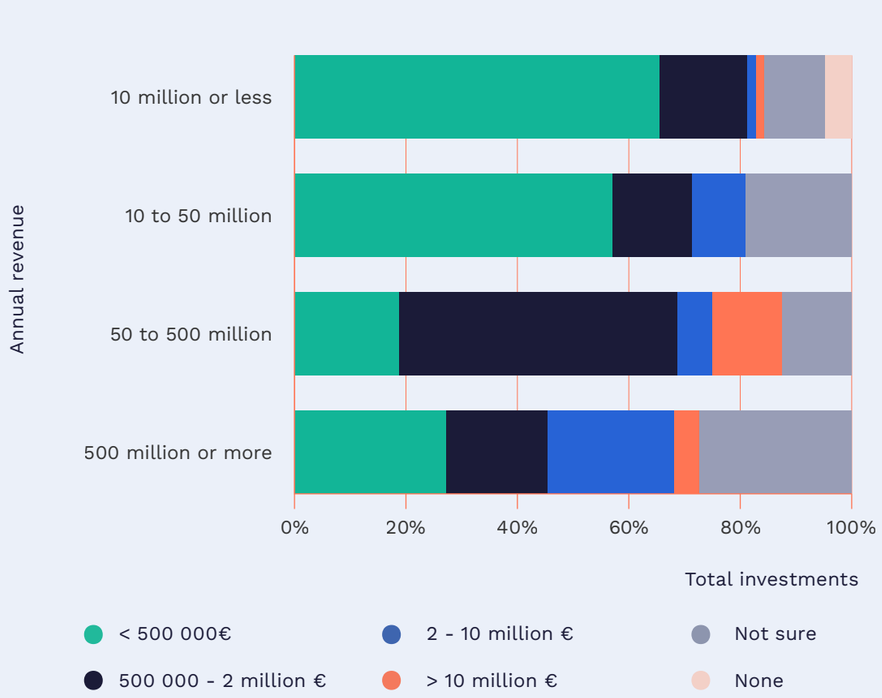


Fig 24: Approximately how much is your budget for AI over the coming 12 months?

AI talent management

One of the top challenges that companies have reported over the years that this report has been published is a lack of talent. Therefore it comes as no surprise that this is an area several companies are investing in.

Last year was the first time responses indicated that companies are placing more emphasis on training and competence development than on recruiting new AI talent. It is expected that this is partially due to the lack of talent available on the market. The same trend continues this year. Hiring new talent and continuously investing in developing existing talent are, of course, not mutually exclusive paths. The pace at which AI is developing imposes changes on all aspects of companies and their operations, not only on those working hands-on with the development of AI. AI literacy is needed across all functions of all companies. At a minimum, all employees should have an understanding of how to use available AI tools. In addition to this basic understanding, employees who manage to find ways for using AI in order to develop or even disrupt existing ways of working will help companies become leaders in the age of AI. Change management, an option introduced this year, is seeing investments in a significant number of companies.

In both the private and the public sector training and competence development is the most common investment. While it is followed by investments into recruiting and AI strategy practices on the private sector side, the public sector is coupling training and development with change management.

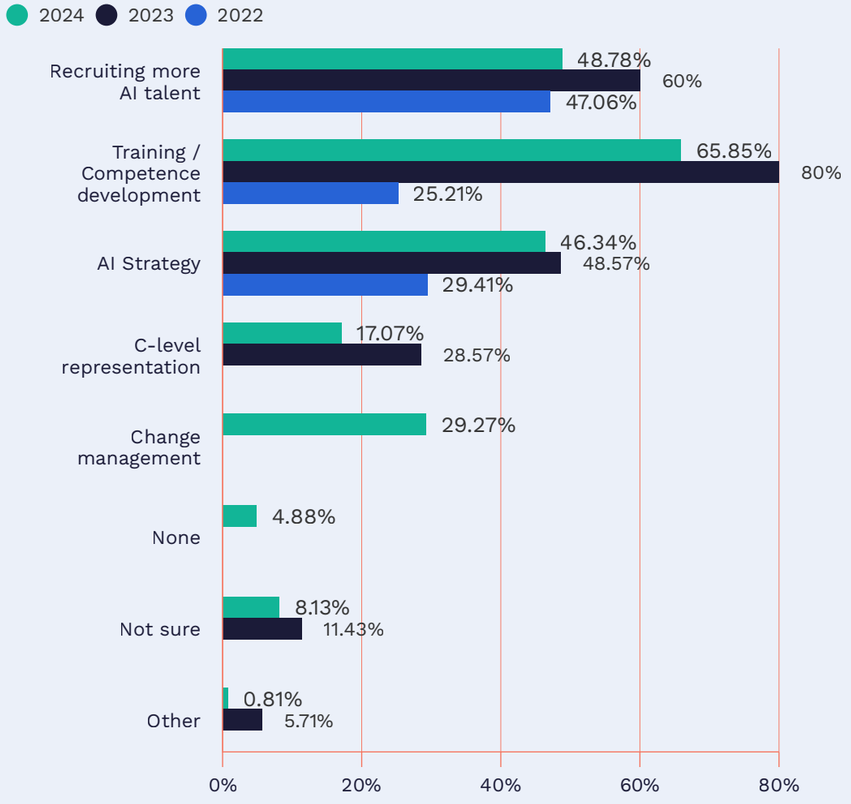


Fig 25: Which AI talent and management activities are you investing in financially during the next 12 months? All companies.

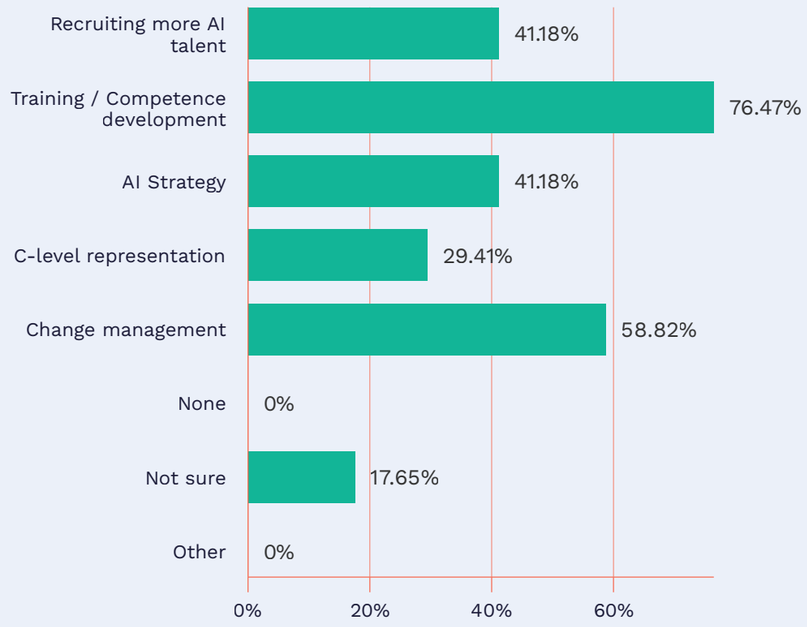


Fig 26: Which AI talent and management activities are you investing in financially during the next 12 months? Public sector

AI development

Similar to last year, the most common investment area for AI development is experimentation. The second most common investment area, also in line with last year's results, is AI development as part of product. As covered in previous sections, deploying AI at the core of a company's product or service is a good route for long-term value generation. As could also be seen in the previous section, integrating AI as part of products and services is the area of AI technology use that is growing the most among companies. It is encouraging to see that this is reflected on the investment side as well as it is a sign of maturing AI practices.

One of the most crucial aspects of AI success is data, something that has been highlighted in the previous two sections as well. It is therefore encouraging to note that over the next 12 months many companies are investing in both data collection and data quality.

While AI requires initial investments to get off the ground, expenses will also occur on the maintenance side. Continuous evaluation of AI use cases is an investment option introduced in this year's report. As AI increasingly permeates the daily operations of companies, continuous evaluation will become an activity that companies need to undertake as existing AI technologies evolve and new technologies become available. Survey responses show that this activity is seeing almost as frequent investments as data-related activities. Continuous monitoring ensures quality of the AI models over time, and also ensures compliance with regulation.

Perhaps the most surprising finding in terms of AI development investments is the lack of investments in compute capacity. Using off-the-shelf AI products usually doesn't require much attention to the use of compute. But once a company's focus moves to emphasize improving the operations and to increase end user value, compute suddenly becomes a more relevant question. Due to this, the importance of compute hinges on a company's ambition level when it comes to AI.

Additionally, it is quite common that compute expenses for AI are embedded in more general compute budgets for the sake of simplicity. As the AI workloads, data volumes, and number of users increase, AI's proportion of a company's total compute grows. Because of this, compute availability becomes a key enabler for AI, prompting companies to look for better solutions for compute in search of both efficiency and productivity gains.

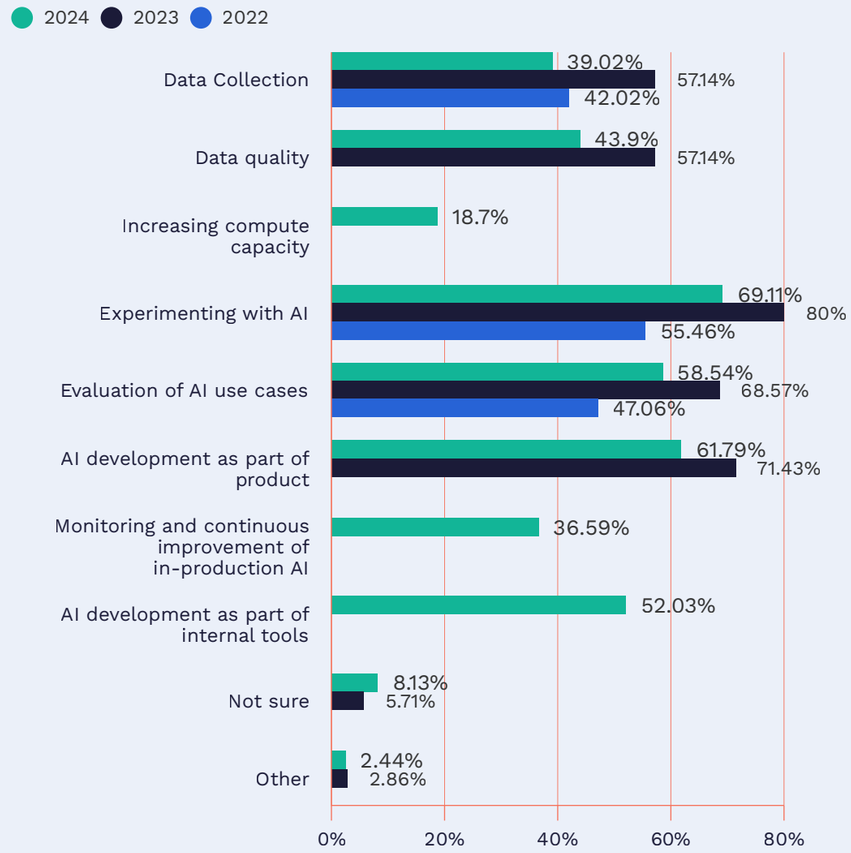


Fig 27: Which AI development initiatives are you investing in financially during the next 12 months?

The AI regulation landscape

Another trend in AI investment is the emphasis on regulatory compliance. AI has rapidly moved from research labs to boardrooms and is now squarely in the political sphere. As AI becomes increasingly central to economic and social development, it has emerged as a key focus of political discourse and policy-making globally. This heightened political attention brings both opportunities and uncertainties for companies investing in AI development and deployment.

The regulatory landscape is evolving rapidly across different jurisdictions. The European Union leads with the AI Act, the world's first comprehensive AI regulation, which entered into force in 2024. The Act takes a dual approach, regulating both specific use cases based on their risk levels and setting requirements for general-purpose AI models that could have systemic impact. This regulatory evolution mirrors earlier developments in telecommunications, where Nordic companies played a pivotal role in setting global standards - from GSM to 5G. Its implementation is now taking shape through various mechanisms including the AI Office's development of codes of practice.

In the United States, approaches have fluctuated between executive orders and voluntary commitments, while also implementing strategic technology controls, particularly in semiconductor exports. International organizations like the OECD continue work on AI governance frameworks, while industry initiatives such as the AI Pact and Hiroshima Process aim to establish voluntary standards. These varied approaches reflect different

> In addition to new regulations emerging because of AI, there is also a need to consider how to interpret existing regulations in an era of AI.

philosophical stances toward AI regulation. While the US has generally favored a lighter-touch approach reminiscent of early internet regulation, the EU has opted for more comprehensive oversight. However, recent discussions around European competitiveness, particularly following Mario Draghi's landmark report, suggest potential evolution in this stance.

In addition to new regulations emerging because of AI, there is also a need to consider how to interpret existing regulations in an era of AI. An example is the regulation of copyrights.

For companies, particularly in the Nordic region, this complex landscape requires a strategic long-term view. While compliance with immediate regulatory requirements is crucial, equally important is understanding broader developments in international standards and best practices. These will shape not only direct regulatory obligations but also expectations from suppliers, customers, and partners across global value chains. As AI continues to evolve as both a subject of and tool for geopolitics, staying informed of policy developments becomes an essential component of AI investment strategy.

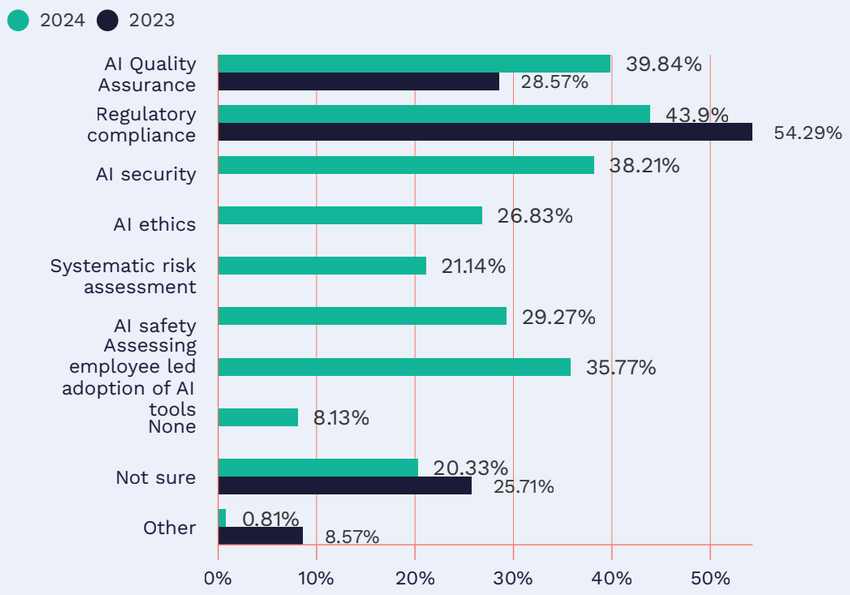


Fig 28: Which AI oversight activities are you investing in financially during the next 12 months?

Expert Interview

WITH:
YNGVAR UGLAND,
DNB

YNGVAR UGLAND is a dynamic leader and innovator at the forefront of technological advancement, heading the New Tech Lab at DNB, Norway's largest financial services group, where he focuses on "moonshot innovation"—pioneering transformative opportunities enabled by cutting-edge technology. With a passion for leveraging generative AI in groundbreaking ways beyond traditional improvements, Yngvar has been deeply engaged in AI for nearly a decade. Alongside his industry role, he has served as Industry Professor II at the Norwegian School of Economics (NHH) in Bergen. He has previously lectured on Moonshot innovation at Singularity University and Rehumanize Institute, and is pursuing an industry PhD in artificial intelligence. With a background in mathematics from NTNU in Trondheim, Yngvar bridges theoretical foundations with practical applications, embodying a visionary approach to technological progress.

What emerging AI trends or technologies are you most excited about and how do you see them transforming your industry in the next three to five years?

I'm most excited about the evolution of actionable AI, particularly large action models and agentic AI, which enable AI systems to perform tasks and take actions autonomously. Additionally, multi-modal large language models are a fascinating development, as they move beyond text-based inputs to incorporate speech, vision, and auditory capabilities, paving the way for generative AI-native devices that offer more natural and intuitive interactions. In our lab, we're actively exploring and developing such devices.

Another area that excites me deeply, and aligns with my PhD research, is the intersection of AI and trust. This is an area where I believe the Nordic region has a unique advantage, leveraging societal trust in ways that are difficult for Silicon Valley to replicate. Building AI systems that are trusted and aligned with ethical principles is not just a trend but a necessity for the future.

How do you envision your organization's AI maturity evolving over the next few years? What key investments or strategic shifts are you planning in order to achieve this vision?

Over the next few years, our organization's AI maturity will focus on strategically leveraging generative AI and large language models to drive meaningful innovation and scalability. Following the wave of democratization brought about by tools like ChatGPT and Copilot, we are adopting a lighthouse project approach—prioritizing small, focused, yet strategically significant projects that provide both learning opportunities and tangible value. For example, we aim

> Building AI systems that are trusted and aligned with ethical principles is not just a trend but a necessity for the future.
>
> - YNGVAR UGLAND -

to revolutionize customer service by integrating advanced AI models that go beyond traditional chatbots, offering truly useful, context-aware assistance.

In parallel, we're exploring AI's potential in areas like credit scoring and investment advisory to empower our teams with better insights and tools. By iterating and learning from these initial implementations, we plan to identify the necessary skill sets and scalable strategies to expand AI's impact across the organization.

What kinds of investments or initiatives do you think are needed in Norway in order to enable these kinds of strategic shifts in companies overall? And should something be done for the compute infrastructure there?

To enable strategic shifts in companies across Norway, it's essential to invest in collaboration within the Nordic region and beyond, leveraging our shared cultural and linguistic heritage. By pooling resources, such as funding for compute infrastructure and expertise, we can create shared AI facilities and develop language models that cater to the unique linguistic needs of smaller countries like Norway. Training models on Norwegian and related languages—while also drawing on broader Germanic language data—can preserve our linguistic and cultural identity in an increasingly anglicized digital space.

Furthermore, Europe should explore developing its own foundational models to ensure independence and alignment with regional values, though this requires extensive coordination and investment. Norway and the Nordic countries can lead by focusing on trust as a competitive advantage, emphasizing ethical AI and fostering collaboration across borders to achieve scalable and impactful innovation.

Our Key Takeaways

- A strategic long-term perspective on AI investments, considering both immediate regulatory requirements, and broader developments in international standards should be favored.
- Invest in continuous monitoring and evaluation of AI models to maintain quality over time, help mitigate risks, and improve model performance.
- Ensure that AI investments align with the company's strategic goals and value creation approaches. This alignment will maximize the impact of AI on business operations and innovation.

04.

The Nordic AI ecosystem

The Nordics have a long history of cross-border political and commercial collaboration. Working together in AI will help the Nordics punch above their weight in this global technology race. This section explores talent needs related to AI and what can be learned from companies who are the most satisfied with the results they are seeing from AI.

- Deep technical roles such as data scientists and machine learning engineers remain the most sought after talent when it comes to AI. At the same time, continuous internal training to expand AI literacy and ambitions is needed to make the most of AI.
- Ecosystem collaboration is one avenue for increasing the understanding of AI in the Nordics, as well as for encouraging companies to broaden the scope and ambition of their projects. Clear gaps are starting to form between early adopter companies and laggards.
- The companies that report the highest satisfaction with AI are leading the way forward with larger investments and a more holistic understanding of AI in terms of value creation.

The Nordic AI ecosystem

AI companies alone do not create an ecosystem. Companies that deploy AI, whether developed in-house or as off-the-shelf products, and universities, investors, and public sector organizations can at best form a positive flywheel where the whole is greater than the sum of its parts. The companies and public sector organizations that participated in the survey this report is based on make up a significant part of the Nordic AI ecosystem.

They represent a variety of industries, although information technology and services are by far the largest group. The average age of the companies is 37 years, with the youngest being just a year old and the oldest being several centuries old. 60% of the companies surveyed have operations in at least one other country than the country they were founded in. Unsurprisingly, Europe is the most common international market for Nordic companies. North America and Asia come in at second and third place.

Competition in the field of AI is fierce. In the Nordics, similar to the rest of Europe, investments in AI lag behind the US and China. While there is no way around the fact that more investments are needed, throwing money at a challenge alone does not solve it. The Nordics have a long history of collaboration across fields and across countries. Now, perhaps more than ever, that collaborative spirit has the potential to help the Nordic region punch above its own weight in the global AI race.

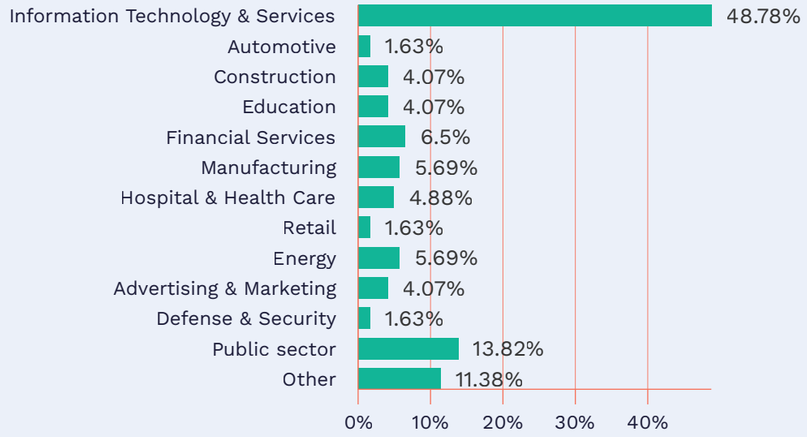


Fig 29: Industries represented in the survey.

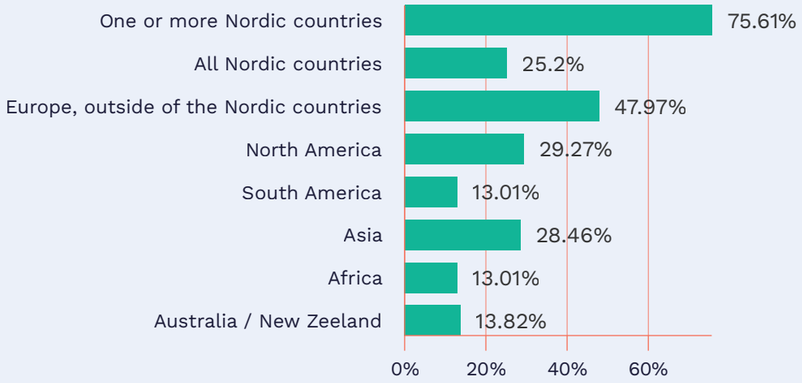


Fig 30: Markets in which survey participants are operational.

The war for talent

As has been noted already in this report, lack of talent continues to be one of the most common challenges for companies, as it has been in previous editions of the report. Despite this, survey responses show that as much as a quarter of the companies report that they will not be recruiting any AI-related talent during the next 12 months. This is a stark increase compared to the previous year. Delaying investments such as recruiting AI talent can become extremely expensive in the longer run. In the end, all initiatives hinge on the existence and availability of proficient talent. Within the public sector the proportion of respondents reporting that they will not be recruiting new AI talent is even higher, at 35%. As was noted in the previous section, their emphasis lies with training and development, and change management.

Most companies report intentions to recruit 1-5 new AI-related talents within the next 12 months. As was noted in the previous section, a greater number of companies are investing in training existing talent than in recruiting new talent. Despite this, a valid question is whether or not companies will be able to meet their AI-related objectives with their current talent resources.

When it comes to the types of skills that companies are looking for, data scientists and machine learning engineers top the wishlist for most companies. Aside from the purely technical roles, companies are also looking for product managers and change managers. Employee attitudes toward AI affect how well companies adopt AI, particularly AI tools designed for individual productivity. In light of this, having people dedicated also to the emotional side of AI adoption seems a reasonable choice.

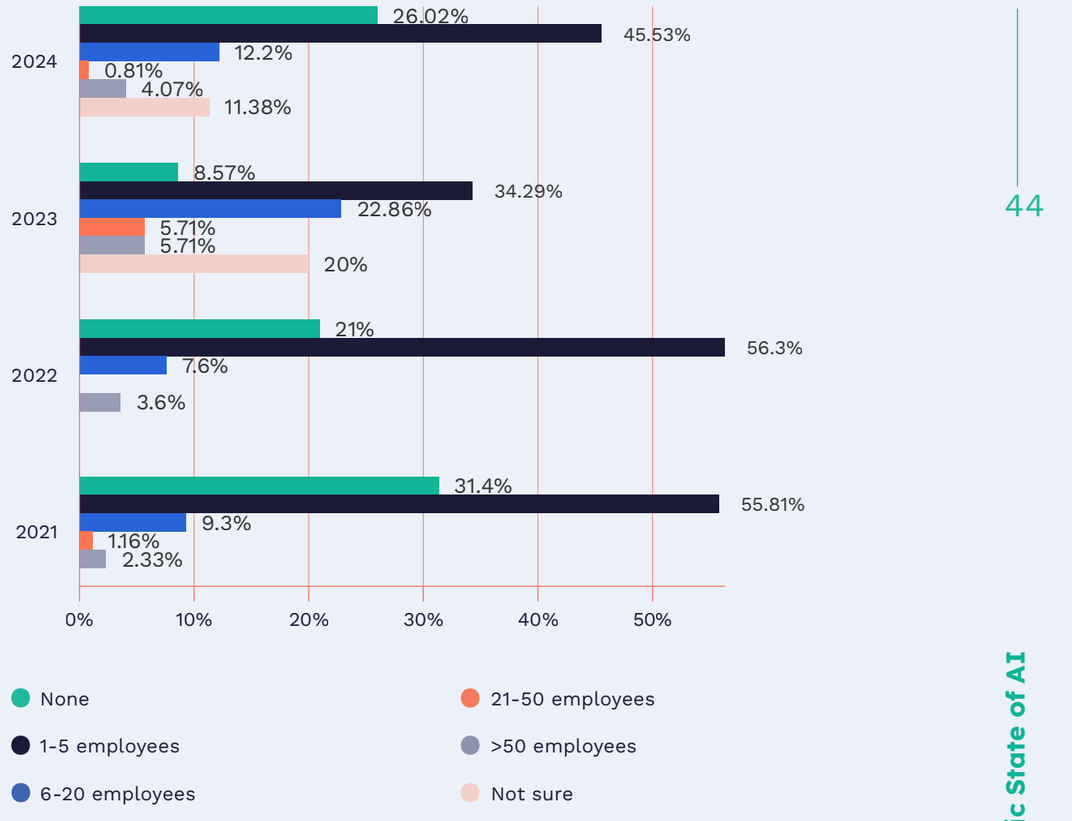


Fig 31: How much new AI related talent is your organization recruiting in the next 12 months?

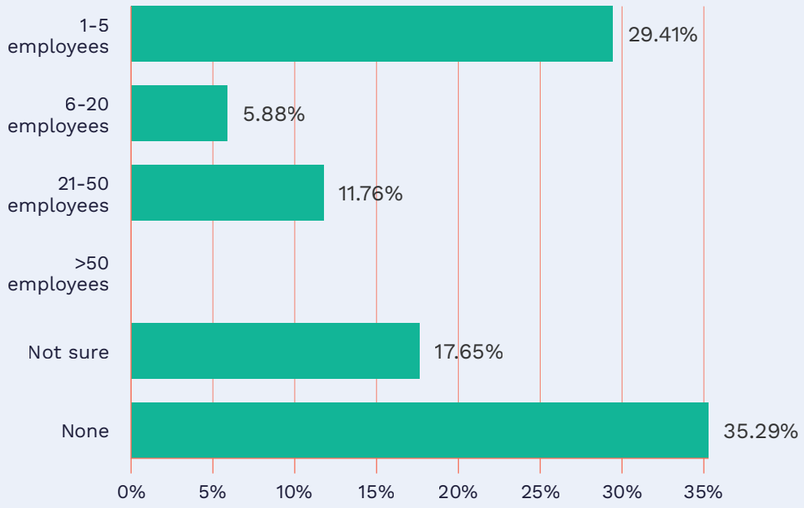


Fig 32: How much new AI related talent is your organization recruiting in the next 12 months? Public sector

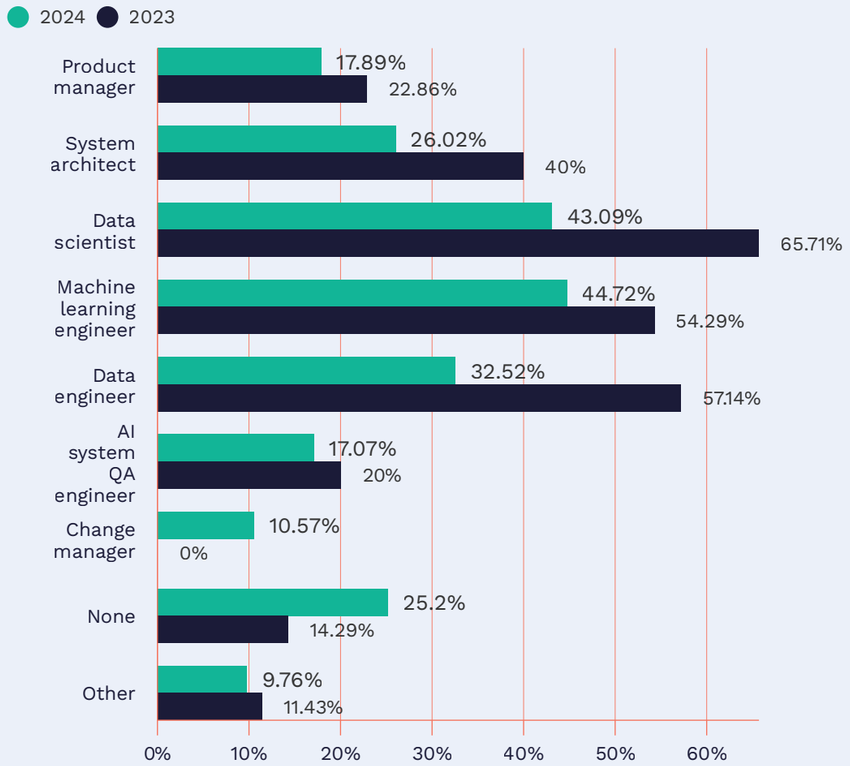


Fig 33: What kind of talent related to AI are you looking to recruit?

Ecosystem collaboration

In order for the Nordic region to truly perform well in AI and tech competitiveness, it is essential that organizations collaborate to find synergies and conduct the type of ambitious projects that will attract ambitious people to the region.

For the first time in the history of the Nordic State of AI report, companies were surveyed on participation in different types of ecosystem collaborations. Responses show that over 60% of companies are participating in ecosystem collaborations.

Examples of this collaborative spirit is the recently formed New Nordics AI. In it, stakeholders from the Nordics have laid the foundation for a Nordic AI Center focused on the responsible development and use of AI.

The EU has also initiated various projects to strengthen European tech competitiveness, for example, the launch of Europe's AI factories and the OpenEuroLLM project, to name a few. Several Nordic actors such as AI Sweden, the University of Oslo, and the universities of Helsinki and Turku are represented in these initiatives.

A fair amount of startups and corporations are engaging in collaborations with academia. This is a positive sign as close ties between research and business can help foster innovation when properly conducted. Turning these collaborations into commercial success requires effort and long-term commitment. Such partnerships benefit both sides: universities gain industrial perspectives and a better understanding of how end users actually use the technology, which can inform further research, while companies get access to cutting-edge technology research. This virtuous cycle leads to faster commercialization and maximizes the impact of research breakthroughs. Strong ecosystems foster strong companies. Collaboration helps everyone in ecosystems flourish and learn from each other.

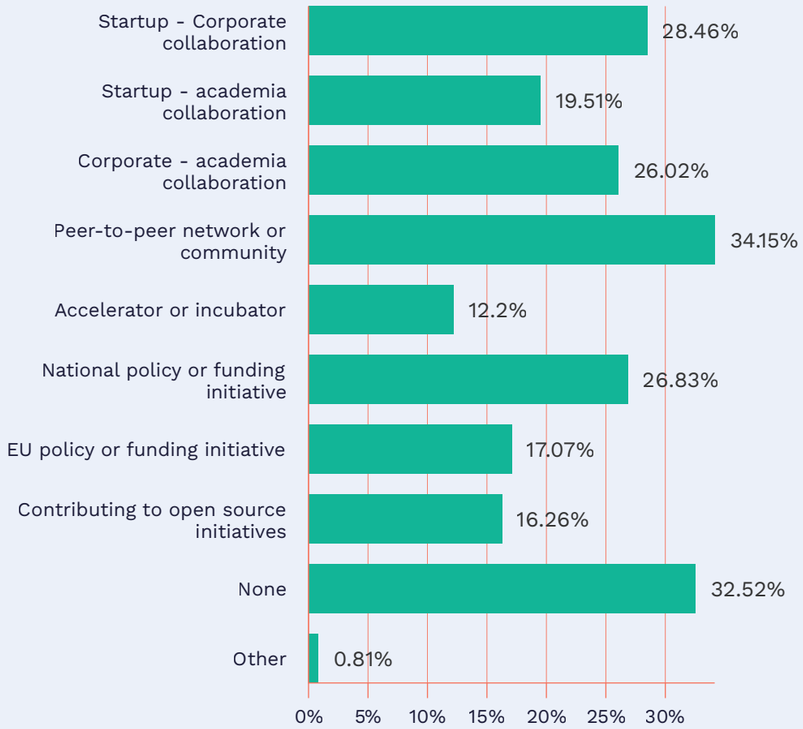


Fig 34: Is your company involved in some form of ecosystem collaboration or initiative?

What separates the most satisfied companies from the rest?

Taking a look at the companies that are the most satisfied with the ROI on their AI investments might offer a teachable moment for others in the ecosystem. These companies look much like the rest of the survey respondents. Their average age is 32, while the average age for the whole cohort is 37. They operate internationally, as do most companies.

Going deeper, a notable difference among the companies reporting they are satisfied, or very satisfied, with the results they are seeing from AI, is that a larger proportion have a framework in place to assess the success of their AI initiatives. In fact, such frameworks are present in the majority of these companies.

A larger share of companies among those who report being satisfied with the results of AI also list AI as the tip of their strategic spear.

A greater share of the most satisfied companies report competitive edge and new revenue streams as the main avenues through which AI creates value. 85% of the most satisfied companies use AI as part of their products and services, compared to 61% among the other survey participants.

One of the most common challenges companies have reported in previous years is a lack of talent. This year, that challenge was surpassed by the challenge of insufficient investments. It seems the driver for this change comes from the companies that are the most satisfied with AI.

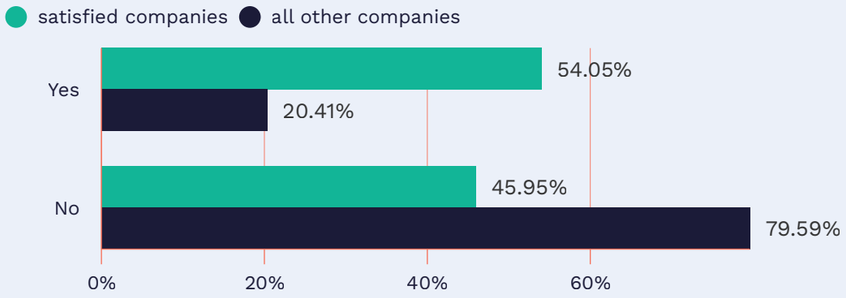


Fig 35: Does your company have a framework in place for assessing the success of AI?

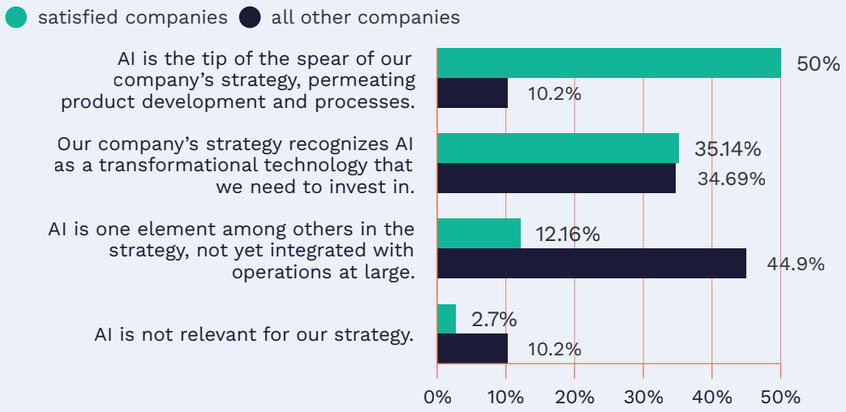


Fig 36: Which of the following statements best describes the role AI plays in your company's strategy? All other companies vs the most satisfied companies.

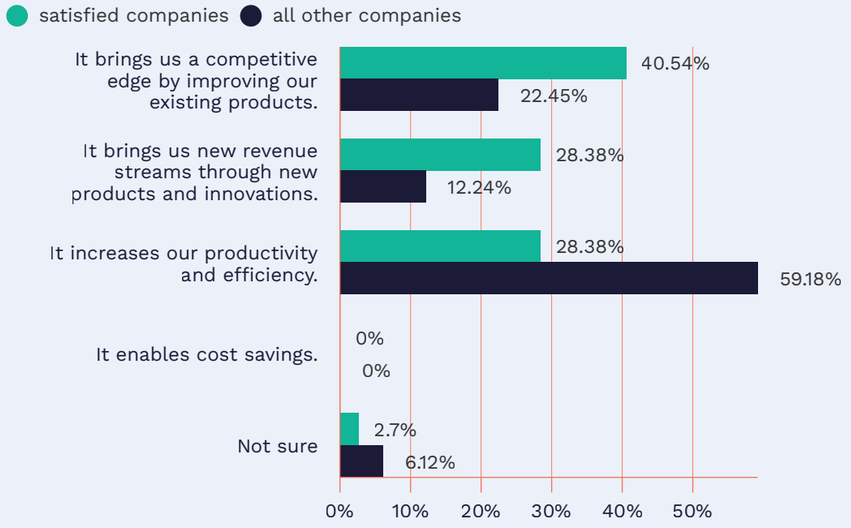


Fig 37: What is the main avenue through which AI creates value in your company? All other companies vs the most satisfied companies.

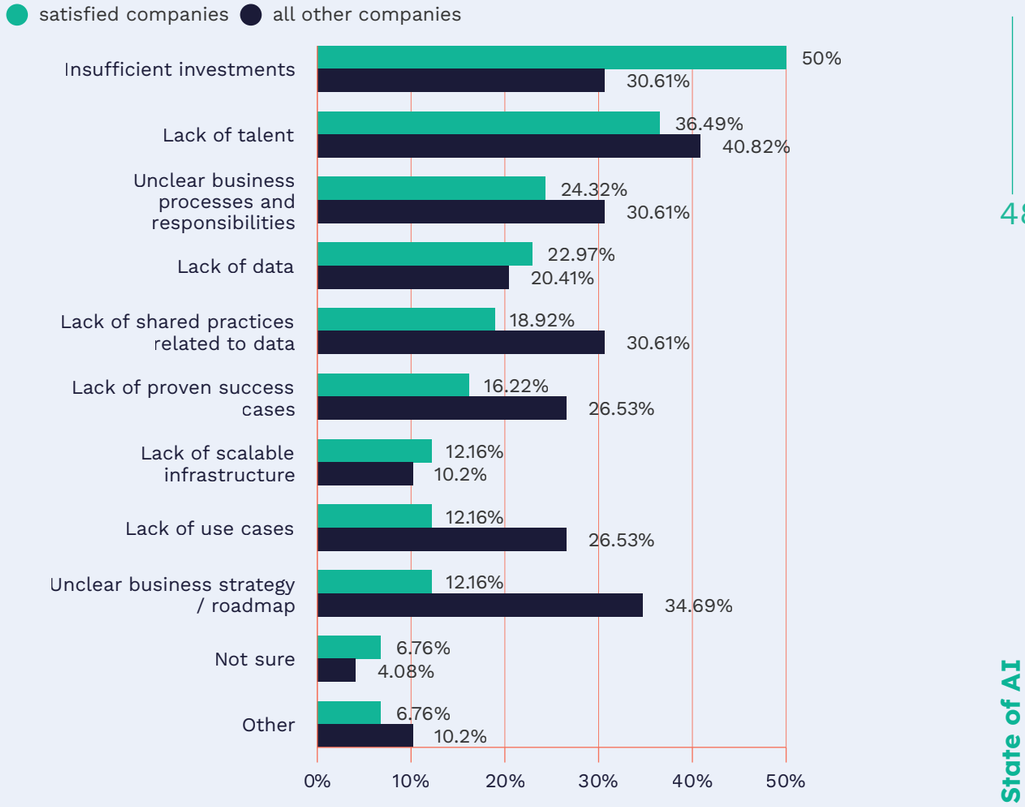


Fig 38: What are your biggest challenges in systematically scaling the use of AI at the core of your business? All other companies vs the most satisfied companies.

The fact that investments in AI among Nordic companies is insufficient was addressed in Section 3. This trend also holds true among the companies who are the most satisfied with AI, the difference is that there is a greater realization of this among them.

While the companies most satisfied with AI, like all companies, do not invest enough in AI to compete on a global scale, their investment emphasis differs in interesting ways. Notably, there is a stronger emphasis on recruiting more AI-related talent, data-related investments, increased compute capacity, quality assurance, and regulatory compliance investments.

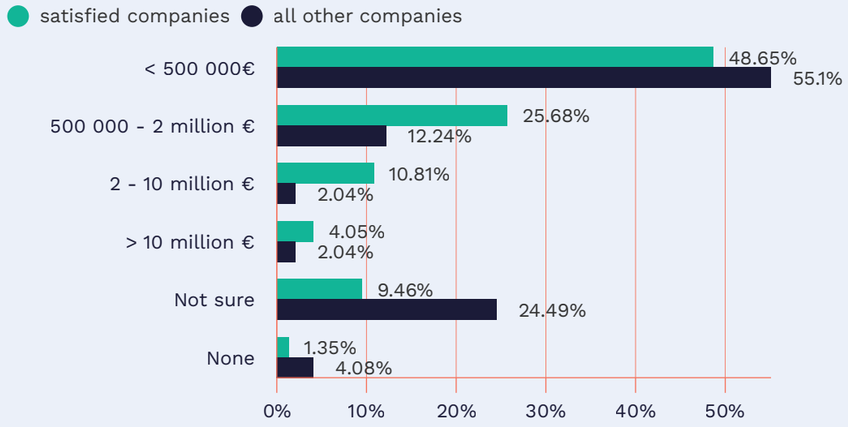


Fig 39: Approximately how much is your budget for AI over the coming 12 months? All other companies vs the most satisfied companies.

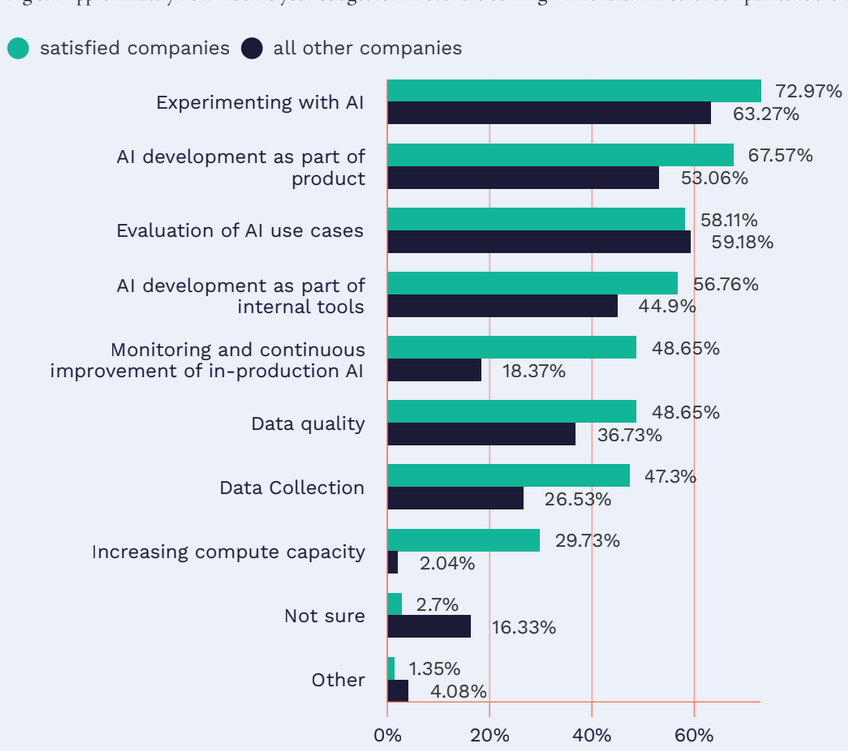


Fig 40: Which AI development initiatives are you investing in financially during the next 12 months? All companies vs the most satisfied companies

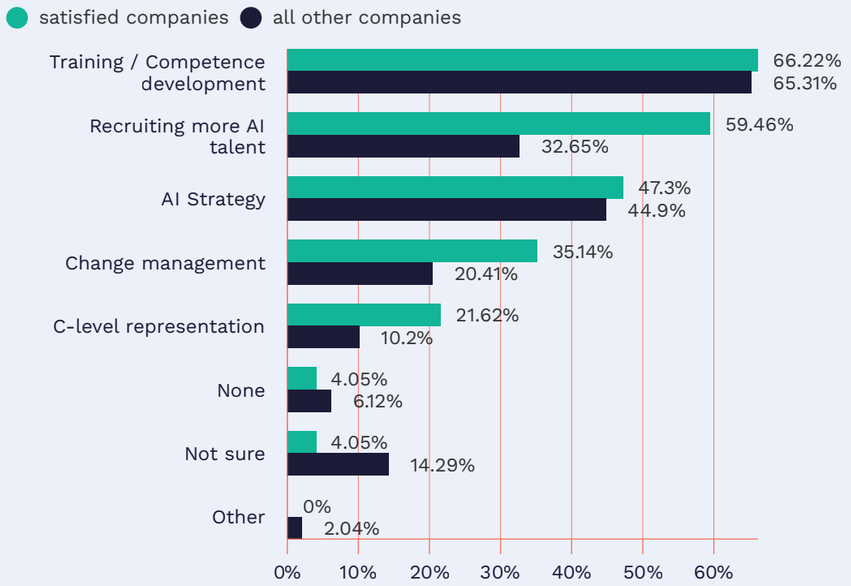


Fig 41: Which AI talent and management initiatives are you investing in financially during the next 12 months? All companies vs the most satisfied companies.

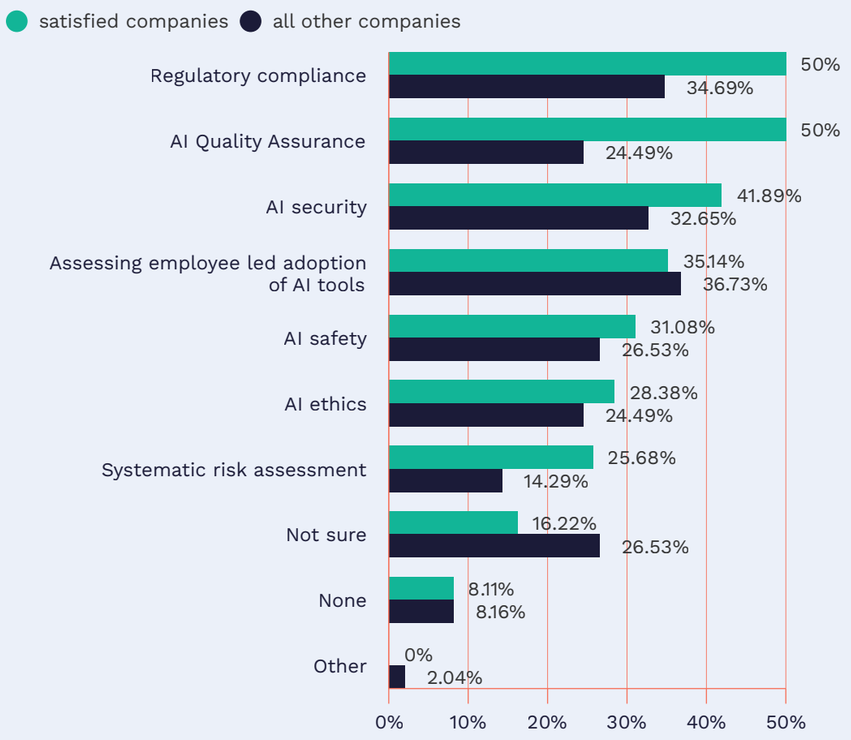


Fig 42: Which AI oversight activities are you investing in financially during the next 12 months? All companies vs the most satisfied companies.

The above findings could be interpreted as follows: the companies most satisfied with the results they are seeing from their AI initiatives have a more mature understanding of AI's value creating potential. They are deploying AI at the core of their products and services and see AI as a path to differentiation and competitive advantage to a greater extent than the companies at large. Evidently, the most satisfied companies have also embraced the idea of ecosystem and collaboration to a greater extent than the cohort at large, with only 20% reporting that they are not participating in any form of ecosystem collaboration, compared to 51% among all companies.

This is favorable to the whole ecosystem as these companies are interested in learning from each other and sharing their knowledge with each other. Collaboration is the way forward. By working together, companies can advance.

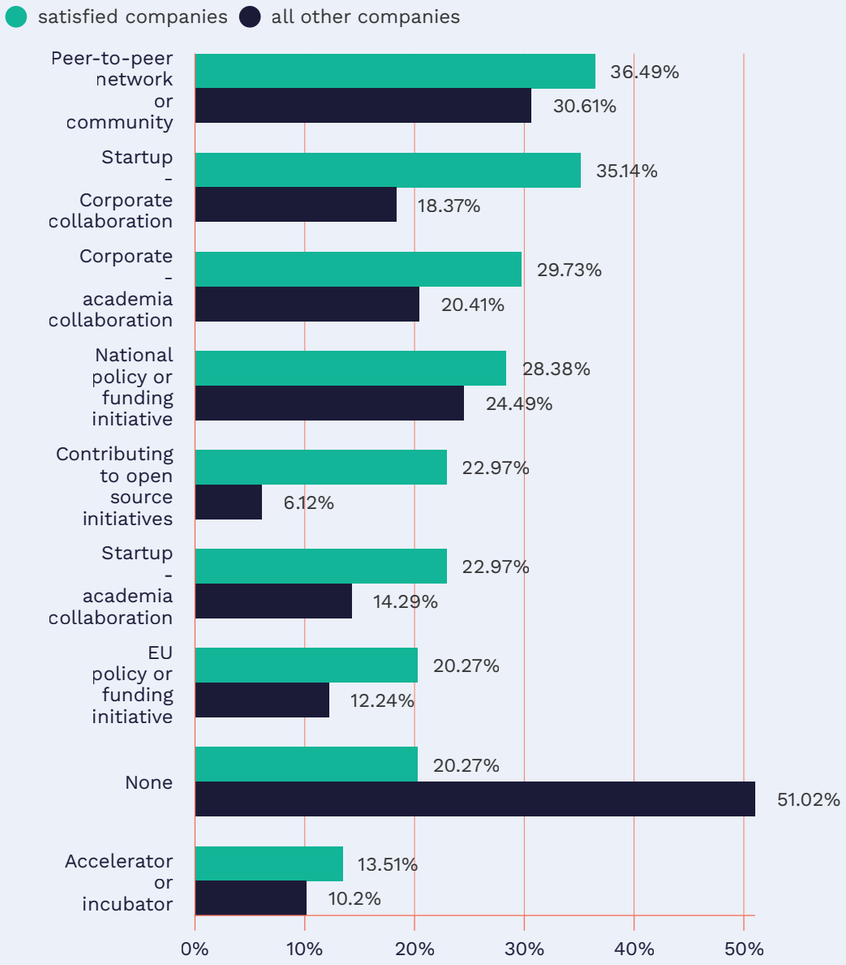


Fig 43: Is your company involved in some form of ecosystem collaboration or initiative? All other companies vs the most satisfied companies

Expert Interview

WITH:
METTE BECK-NIELSEN,
DIGITAL DOGME

METTE BECK-NIELSEN is the CEO of Digital Dogme, a Danish alliance of companies that drive growth, innovation, and job creation in Denmark – and which increasingly require digital skills. Originally founded by Netcompany, TDC Group, Copenhagen Airport, and Danske Bank, Digital Dogme has grown to include around 100 large companies and organizations. Digital Dogme's aim is to bring people together to share knowledge and insights, particularly at the executive level. The focus is on helping companies become more mature in using AI and other technologies, and lift digital and AI competencies across the board.

What steps have been recently taken in Denmark to build AI competencies among Danish companies and organizations?

A major recently announced initiative is the Danish Pact, which is a collaboration involving universities, large private companies, public institutions, and organizations like Danish Industry. Its goal is ambitious: to develop 1,000,000 AI-related competencies in three years in Danish society.

Through the Pact, we work with up to 200 organizations to map and understand how they approach learning and upskilling. We're gathering insights about what works in practice—whether it's informal learning, specific projects, or structured education—and using that to create recommendations and white papers. We also publish an annual report on the state of AI competencies, which gives us a clearer picture of progress and areas for improvement.

How do you approach upskilling or reskilling to stay ahead in the evolving AI landscape?

Our approach is based on the idea that learning happens most effectively in real-world settings. Many companies already use a model where 70% of learning comes from working on projects, 20% from collaboration with colleagues, and 10% from formal coaching or training. We're adopting this method and applying it more broadly.

What's important is that we rethink how education works, particularly for AI. Traditional six-week courses at universities might not be the most effective way to build skills in such a fast-moving field. Instead, micro-credentials or learning on the job might be better. We're also working with universities to help them develop more agile and relevant ways of teaching. The idea is to create education that aligns with how companies actually operate and learn.

Are there particular challenges you've faced in building AI expertise?

Our Key Takeaways

> What we've found is that you need buy-in from leadership and a more holistic approach that includes both executives and employees.
>
> – METTE BECK-NIELSEN –

One of the biggest challenges is the fast pace of change in AI. It's hard to rely on traditional education methods because things evolve so quickly.

Another challenge is making sure upskilling is part of a company's overall strategy. Too often, training is seen as an isolated activity, and that makes it fragile—it doesn't create lasting value. What we've found is that you need buy-in from leadership and a more holistic approach that includes both executives and employees.

Universities also find it difficult to create courses that are relevant and valuable to companies. There's a gap between what's being taught and what's actually needed. That's something we're trying to address through our work.

Do you see particular bottlenecks to increasing the adoption of AI that initiatives on an ecosystem level might help solve?

One issue is the lack of coordination between organizations working in AI. In Denmark, there are many groups doing great work, but they often operate independently. There's no central alignment.

Another bottleneck is helping companies scale their efforts. It's not enough to focus on just a few individuals or teams—you need strategies that work across the whole organization. That's where an ecosystem perspective really helps. By sharing insights and best practices, companies can learn from each other and avoid reinventing the wheel.

Where do you see the biggest potential in terms of Nordic collaboration in increasing AI adoption?

I think the biggest potential lies in sharing knowledge. For example, many companies are working on AI assistant projects. If we can gather insights about how these projects were developed, what challenges were faced, and how they were solved, it would be hugely valuable. The Nordic countries have so much potential to work together, and by collaborating, we can all move forward faster. For me, that's the real opportunity in Nordic collaboration—sharing methods, best practices, and cases to help everyone improve

- The Nordic region needs to attract talent from outside of the region. To do this, companies must have ambitious AI strategies and offer rewarding and challenging projects for the talent to engage with.
- The companies most satisfied with the results they are seeing from AI tend to be more ambitious in their AI activities, as evidenced in this report. As they are also more likely to participate in AI ecosystem collaborations, they are great sources of learning for the entire ecosystem.
- Companies with a more mature understanding of AI, including having frameworks to assess success, achieve better ROI from their AI initiatives. They also recognize the need for increased investment, not just in technology but also in talent and compliance.

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Technology Industries of Finland
Teknisen kaupan liitto
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Methodology

Online Survey

We followed the structure of last year's report, but this year extended the scope of our survey. In total, we approached around 700 Nordic companies and organizations and received 157 replies, of which we qualified 123 responses from companies + 17 public sector organizations. The responses that did not make it into the report material were disqualified because they did not represent Nordic companies, or we already had a response from the same company.

Respondents were either C-level executives (40.65%), VP/Director level (26.02%), senior level tech staff (6.51%), senior level business developers (5.69%), or other (21.13%). The respondents filled the survey online. The survey consisted of a total of 32 questions, out of which the first 11 were demographic questions.

Interview methodology

This year we conducted four expert interviews with Nordic thought leaders and AI experts with various backgrounds. Each session was approximately a half-hour-long, semi-structured interview. We asked interviewees to reflect on their experiences with Nordic and local AI ecosystems, providing insights into a specific theme or topic related to AI. Each interviewee was carefully selected to provide the best overview possible of what is happening in the Nordics.